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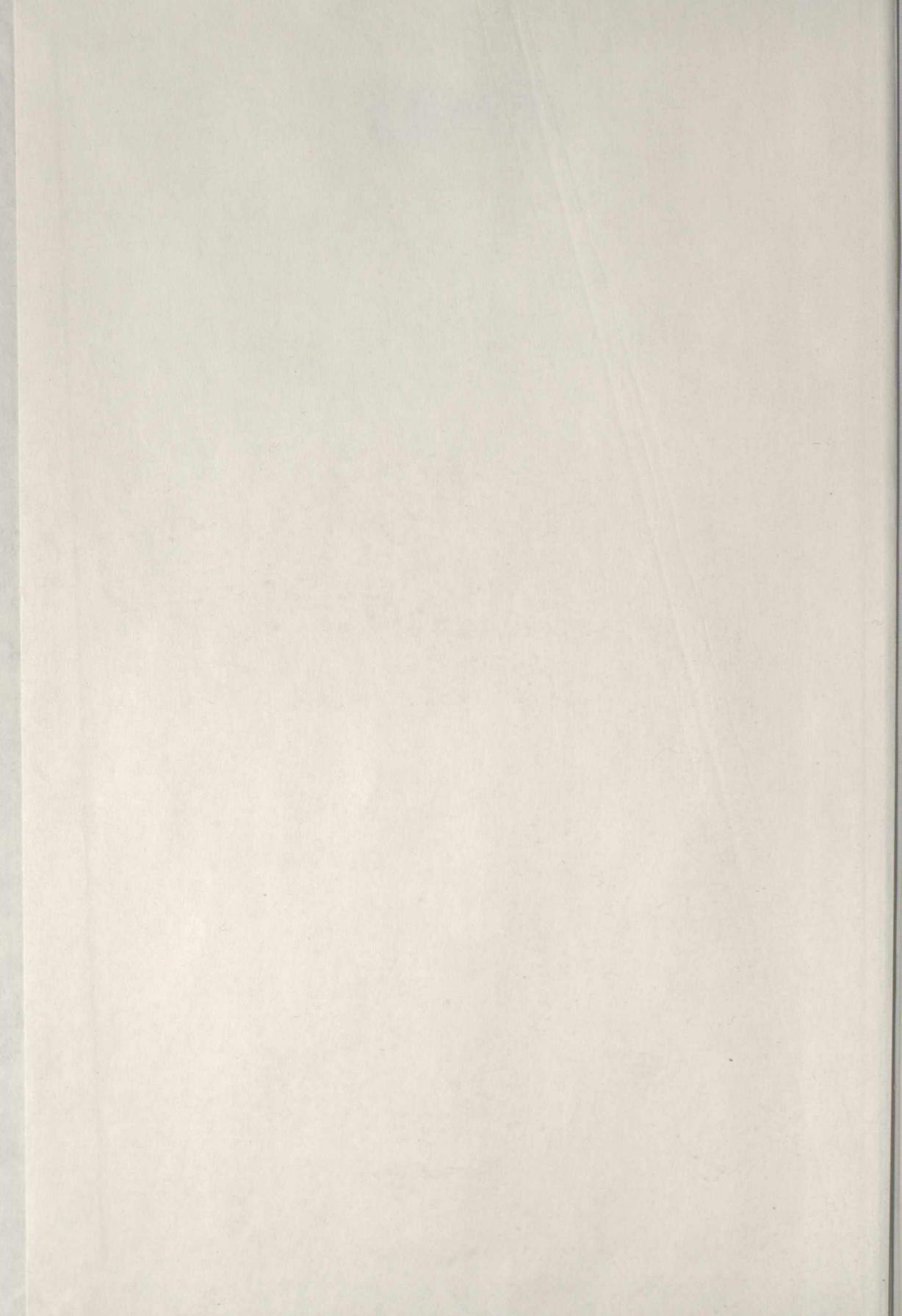
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J Canada. Parliament. House
103 of Commons. Select
H7 Committee on Telephone
1905 Systems.
T4 Proceedings ...

A1 DATE
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NAME — NOM



SELECT COMMITTEE ON TELEPHONE SYSTEMS

APPENDIX 'A'

CORRESPONDENCE.

*Telegram.*11

No. 1.

Sir WILLIAM MULOCK,
Postmaster General,
Ottawa.

Telephone meeting. This joint committee representing the county council, town councils, trade and labour councils, and boards of trade of the county of Waterloo, assembled in the town of Berlin, this 23rd day of March, 1905, to discuss the organization of a competitive town and rural telephone service, learning of the action taken by the government in the appointment of a committee looking to and the taking over of the telephone service of Canada do hereby defer further action pending the outcome of such investigation. We hereby congratulate the Postmaster General, Sir Wm. Mulock, on the action he has taken and unanimously recommend the Government to entirely take over and operate the telephone service of Canada.

ANTHONY OCHS,
Chairman Telephone Committee.

No. 1a.

OTTAWA, March 24, 1905.

DEAR SIR,—I have the honour to acknowledge the receipt of your telegram of the 23rd instant favouring me with the views of the joint committee representing the county council, town councils, trades and labour councils and Board of Trade of the county of Waterloo, assembled in Berlin on the 23rd instant to discuss the organization of a competitive town and rural telephone service, and recommending the Government to take over and operate the telephone service of Canada.

I shall have pleasure in communicating your telegram to the Parliamentary Committee at present engaged in studying this important question.

Yours faithfully,

WM. MULOCK,
Postmaster General.

ANTHONY OCHS, Esq.,
Chairman, Telephone Committee,
Berlin, Ont.

No. 2.

W. J. ROCHE, M.D., MP.,
House of Commons, Ottawa, Ontario.

DEAR MR. ROCHE,—As you are a member appointed to inquire into the telephone system in Canada and elsewhere, I venture to make some suggestions which may prove useful in your investigations.

In the first place, there is no public telephone system in Canada worthy of the name, except the Bell Telephone Company, and so far as I am aware there is no

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telephone man competent to discuss the proposition anywhere outside of the Bell Company's employ, so unless your committee gets some outside expert's assistance there will be a danger of your not covering the situation completely. As a matter of fact the bulk of the independent operating companies are located in the middle or western states, there being only three or four cities of any importance from Chicago to the Rocky Mountains which have not competing companies operating with greater or less success. In some of the Territories where these independent companies operate, the Bell people have been entirely driven out, or maintain only long distance stations, leaving the local work entirely in the hands of the smaller companies.

Effective competition is given to the Bell people only by those companies which are strong enough to parallel every mile of long distance telephone or toll lines operated by the Bell Company, and such independent companies, as have done this have also expended their toll lines so as to thoroughly serve the various communities in a way which the Bell people never could be induced to do.

There are four or five telephone men in the United States, any one of whom could elucidate the whole subject, and be of most valuable assistance to your committee. But whether or not you will be able to get them is another question. One of them is Mr. T. A. Potter, who is general manager of an extensive independent plant operating in Iowa, Minnesota and Dakota. His company have over six thousand miles of toll lines and a long number of exchange. Another one is a Mr. Bills, of Milwaukee, a gentleman whom I have not had the pleasure of meeting, but whose experience I have reason to believe is very extensive. The third, Mr. Charles Webster, of Minneapolis, who was the head of the syndicate which endeavoured to get a charter last session from the Manitoba legislature, and the fourth is Mr. A. T. Averill, an Iowa man, whose address I do not know. There are also several in Chicago.

In going into the question of the cost of operation, the committee will have the greatest difficulty without the assistance of an undoubted expert, in arriving at the true value of any portion of the Bell Telephone Company's plant. The fact is that any telephone plant prior to 1895 is now obsolete, and not only imperfect in operation but more expensive to maintain. Since 1895 there is to be taken into consideration a ten per cent annual depreciation, and only such portions of the plant as have been constructed since about 1900 are really modern. You will find upon investigation that the Bell people conduct their business upon the principle that they must receive in returns every five years the total investment, plus dividends and operating expenses. Therefore, the amount of money necessary to expropriate the whole Bell telephone plant will certainly be very much less than the apparent book investments of the company.

I would like very much if business engagements permitted to place my services at the disposal of your committee for the purpose of facilitating its work, but I am very much afraid I will not be able to do so, as I have trials now which will keep me in court for about three or four weeks continuously, but any information I can give you, will be cheerfully furnished. My own idea (short of government ownership, by which I mean Dominion government ownership, which involves the expropriation of the Bell plant) will be to grant a charter to a strong financial company, who will undertake to parallel the Bell long distance system and connect with municipal systems, which in return for long distance services would operate a long distance line upon percentage basis. This would give municipal ownership an impetus and would enable local interests to be served far better than Dominion government ownership would be able to do, as the various municipalities could operate at costs and supply free telephone service to the ratepayers, in any event they could reduce the expenses to a minimum.

I am sending a copy of this letter to Mr. Maclean, with whom I last week discussed the matter while in Toronto, and if there is anything further I can do, I shall be obliged if you will let me know.

With kind regards, believe me, faithfully yours,

GEO. A. STEWART POTTS.

APPENDIX No. 1

No. 2a.

OTTAWA, March 22, 1905.

DEAR SIR,—Your communication of the 18th instant to Mr. Roche was referred to the Select Committee on Telephones to-day, and I am instructed to thank you for the information contained therein.

The committee is desirous of obtaining from every possible source such information as will assist in reaching a practical solution of the telephone problem. I am therefore writing to the gentlemen whose names you have been good enough to furnish.

If you can yourself supply any data in regard to the working of telephone systems in the west, the committee would much appreciate your assistance in this way.

The following are the leading points upon which the committee desire information :—

1. Name of company and territory covered.
2. Amount of capital and bonded indebtedness, if any.
3. Number of telephones in operation.
4. Miles of long distance lines.
5. Rates per annum for local service.
6. Long distance toll charges.
7. Name of competitive company.
8. Number of telephones operated by competitive company.
9. Miles of long distance lines operated by competitive company.
10. Rates per annum charged by competitive company.
11. Long distance toll charge of competitive company.
12. Rates charged before advent of competition.

Any further information of a general nature regarding the operations of telephone companies of which you may have knowledge will be welcomed by the committee.

I may say that the intention of the committee is to conduct the investigation in an absolutely impartial manner and solely in the interests of all classes of the people to whom the telephone has become a daily necessity; therefore any assistance you can render in supplying reliable data or information as to the source from whence such may be obtained will at all times be gladly received.

You do not state Mr. Potter's address; might I ask you to be favoured with it.

Faithfully yours,

WILLIAM MULOCK.

No. 3.

TORONTO, ONT., March 21, 1905.

DEAR SIR,—I take the liberty to write as I understand the members of the committee for the investigation of a telephone service for the farmers, have made the statement that they are thankful for any information received in relation to their business of investigation.

In the suburbs of Toronto (Toronto Junction) there is now in operation an automatic telephone service of nearly two hundred telephones. This system is kept in perfect working order by one man, and needs no more than two wires from each 'phone to central, the central connections being made strictly automatically. I am personally very interested in electricity and understand and can appreciate the value of anything new in the way of telephones; therefore am in a position to judge. I might say that this system is unlimitable as far as the number of stations are concerned, and from what I can understand seems to be the very thing you are in quest of for the local districts, although Mr. Stark (of the Stark Company, Limited) who is manager of this company, states that with this system one is able to telephone over longer distances than with the Bell Telephone. I might here state that Mr. Stark was for many years the backbone of the Bell Telephone Company here in Toronto, and rose up from a position

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of line's man. This system that he is endeavouring to introduce into Canada is also working under one of the largest incorporated telephone systems of the United States, in the city of Chicago.

The rates which the Stark Company, Limited, are able to offer their subscribers are exceedingly reasonable, notwithstanding this fact that they still are able to pay good dividends on their investments.

Hoping that this information will be of some service to you and the executive committee, I am

Sincerely yours,

G. L. BEARDMORE.

Sir WILLIAM MULOCK,
Postmaster General,
Ottawa, Ont.

P.S.—Any further information that I can give you will be a pleasure.

No. 3a.

OTTAWA, March 23, 1905.

DEAR SIR,—I have to acknowledge receipt of your favour of the 21st inst., and beg to thank you for the information contained therein.

I assure you that the committee will at all times greatly appreciate any information upon the subject of telephone operations in Canada and elsewhere which any member of the community is in a position to furnish, as it is intended to thoroughly investigate this question from every conceivable standpoint, with a view to securing the very best telephone service for all classes of the people at the lowest possible cost. Again thanking you,

Believe me, dear sir,

Yours faithfully,

WILLIAM MULOCK, P.M.G.

G. L. BEARDMORE, Esq.,
Per The John English Co., Ltd.,
14 Strachan Ave., Toronto.

No. 4.

TORONTO, March 23, 1905.

Hon. Sir WILLIAM MULOCK,
Ottawa.

Re Telephone Committee.

SIR,—I had charge some years ago of the matter before the Department of Agriculture, wherein the Bell Telephone patents were declared invalid, and then became possessed of some information which may be of some service in considering the question of public telephone system.

The Bell Telephone commenced business with a capital of about \$500,000—of which \$100,000—represented an investment, the balance of about \$400,000 being given in payment of certain patents, which at that time were invalid by reason of breaches of the Patent Act, and which breaches had been committed to the knowledge of those selling them. This stock was largely held by the American Bell Telephone Company, of Boston, who practically controlled the Canadian company, and sent their representatives to take charge of the work. Some of those interested in the management of the Boston company were also interested in companies who supplied electric and telephone appliances, and the apparatus required by the Bell Telephone Company was purchased to a large extent from this company. The result was that prices were paid largely in excess of what the work could have been obtained for from other manufacturers or contractors. For example:

APPENDIX No. 1

One switch-board was advertised and stated to have cost the Bell Telephone Company \$50,000, being purchased from a United States manufacturer, which was, as I believe, controlled by the Boston company. I could have had the same switch-board manufactured for the Bell Telephone Company for about \$15,000—so when the statement is made that the present rates do not pay, it must not be forgotten that the capital of the company has been inflated to a very large extent by the means above indicated.

There are affidavits on file in the courts in which the value of the Bell equipment as given by themselves and disinterested parties are shown up and the result of this evidence was such that on a motion made by me that the Bell Telephone Company should give security for costs, they being a foreign company to Ontario, having their head office at Montreal, to which they gave the answer that they had assets in Ontario, after the Master in Chambers had heard the affidavits and argument on behalf of the Bell Telephone Company, he, without even calling on me, ordered them to give security for costs, as their assets were in such a shape that I would have been unable to realize my costs if successful. The Bell Telephone Company did not risk an appeal from this decision.

I do not know if the above facts are pertinent to the inquiry being made by your committee and if not I trust you will pardon my writing you at this length, but from what I saw in the newspaper it seemed to me that a knowledge of these facts might be useful to those inquiring into the matter.

I have the honour to be, sir,

Your obedient servant,

JAS. R. ROAF.

No. 4a.

OTTAWA, March 24, 1905.

MY DEAR SIR,—I have the honour to acknowledge the receipt of your letter of the 23rd instant conveying to me certain information with reference to the Bell Telephone Company, and shall have pleasure submitting your communication to the parliamentary committee at its next meeting.

Yours sincerely,

WM. MULOCK.

JAMES R. ROAF, Esq.,
Barrister,
88 Church St., Toronto, Ont.

No. 5.

BRANTFORD, March 23, 1905.

Sir WILLIAM MULOCK, P.M.G.,
Ottawa, Ont.

DEAR SIR,—Brantford has been taking a deep interest in the telephone business for the past two years, and was about passing a by-law to install either a municipal or an independent system, but after knowing you are going into the question we do not think it is wise to go until after your commission get through collecting all information.

As stated before, we have secured an immense amount of information and data through Ald. Norman Andrews, who has visited a great many places, and has championed the cause from its beginning, and would be able to give your commission a lot of valuable information, and is quite willing to do so, if you notify him to do so. It would be very gratifying to the people of Brantford to keep in close touch with this question, and this would enable us to do so.

Trusting you will give this your best consideration, I remain,

Yours respectfully,

JOHN MUIR.

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No. 5a.

OTTAWA, March 24, 1905.

DEAR SIR,—I have to thank you for your letter of the 23rd instant with reference to the telephone inquiry now proceeding. I observe what you say respecting Alderman Andrews possessing valuable information on this subject, which he is quite willing if desired to communicate to the committee. The committee desires to obtain all available information respecting this important matter, and will welcome any assistance in that direction which Mr. Andrews may be able to render.

Before a Parliamentary Committee summons a witness, it is usual for such committee to know in a general way the nature of the evidence that he may be able to offer in order that it may be decided whether or not his testimony would be material. I judge from your communication that Alderman Andrews has been studying the workings of various systems. If this be the case, his evidence would, no doubt, be very helpful. I have to-day written him upon the subject. Thanking you for your communication, I am,

Yours sincerely,

WM. MULOCK.

JOHN MUIR, Esq.,
The Goold, Shapely & Muir Co.,
Brantford, Ont.

No. 5b.

OTTAWA, March 24, 1905.

DEAR SIR,—Mr. John Muir of Brantford, informs me that you have obtained much information and data respecting telephones, that you have visited many places, and would be glad to furnish to the Parliamentary Committee much valuable information. I would be glad if you would kindly let me know in a general way the nature of the information which you could communicate to the committee. I will then have the pleasure of submitting your letter to the committee for its consideration and determination whether it would desire your personal attendance at Ottawa to give oral testimony.

Yours sincerely,

WM. MULOCK.

Alderman NORMAN ANDREWS,
Brantford, Ont.

No. 6.

OTTAWA, March 22, 1905.

DEAR SIR,—Your name has been furnished to the Select Committee on Telephones, now sitting in Ottawa, by Mr. George A. Stewart Potts of Winnipeg, as a possible source of information regarding the working of telephone systems in the United States. The committee has therefore instructed me to communicate with you in the hope that you would be willing to furnish some few particulars regarding the operation of companies with which you are associated.

If you can see your way to furnish the committee with such information upon the following points as you may see fit, your kind assistance in this matter will be much appreciated.

1. Name of company and territory covered.
2. Amount of capital and bonded indebtedness, if any.
3. Number of telephones in operation.
4. Miles of long distance lines.
5. Rates per annum for local service.

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6. Long distance toll charges.
7. Name of competitive company.
8. Number of telephones operated by competitive company.
9. Miles of long distance lines operated by competitive company.
10. Rates per annum charged by competitive company.
11. Long distance toll charge of competitive company.
12. Rates charged before advent of competition.

Any further information of a general nature regarding the operations of telephone companies of which you may have knowledge will be welcomed by the committee.

Thanking you in anticipation,

Believe me, dear sir,

Yours faithfully,

WM. MULOCK.

CHARLES WEBSTER, Esq.,
Minneapolis, U.S.A.

No. 7.

OTTAWA, March 22, 1905.

DEAR SIR,—Your name has been furnished to the Select Committee on Telephones, now sitting in Ottawa, by Mr. Geo. A. Stewart Potts, of Winnipeg, as a possible source of information regarding the working of telephone systems in the United States. The committee has therefore instructed me to communicate with you, in the hope that you would be willing to furnish some few particulars regarding the operation of companies with which you are associated.

If you can see your way to furnish the committee with such information upon the following points as you may see fit, your kind assistance in this matter will be much appreciated :—

1. Name of company and territory covered.
2. Amount of capital and bonded indebtedness, if any.
3. Number of telephones in operation.
4. Miles of long distance lines.
5. Rates per annum for local service.
6. Long distance toll charges.
7. Name of competitive company.
8. Number of telephones operated by competitive company.
8. Miles of long distance lines operated by competitive company.
10. Rates per annum charged by competitive company.
11. Long distance toll charged by competitive company.
12. Rates charged before advent of competition.

Any further information of a general nature regarding the operations of telephone companies of which you may have knowledge will be welcomed by the committee. Thanking you in anticipation,

Believe me, dear sir,

Yours faithfully,

WM. MULOCK.

Mr. BILLS,
Milwaukee, U.S.

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No. 8.

CHICAGO, March 21, 1905

Sir WILLIAM MULOCK,
 Dominion Parliament,
 Ottawa, Ontario.

DEAR SIR,—We note in a recent issue of the *Toronto World* that you are the mover of a resolution appointing a committee to investigate the general telephone situation, and that you have been appointed a member of the committee.

We beg to say that we shall be pleased to give you any information that we may have at hand at any time, regarding the development of independent telephony in the States, and the work along this line with which we have been connected in your Dominion.

Will say that in the States, the past ten years, there have been established about 6,000 independent public service exchanges, having in operation over 2,500,000 stations at an investment of approximately \$200,000,000.

In sections in the States and also in the few towns in the Dominion where independent service has been properly established, there are in use one telephone for about every ten inhabitants.

According to the last report of Mr. C. F. Sise, President of the Canadian Bell Company, they have 475 exchanges, with 66,160 stations, showing that your average is less than one telephone to 100 inhabitants.

To show that the rate of one to ten can be maintained in your smaller towns, we enclose herewith a description of the exchange at Neepawa, Manitoba, and also of the exchanges at Port Arthur and Fort William, all of which maintain even a better rate.

We shall be pleased to hear from you at any time.

Yours very truly,

INTERNATIONAL TELEPHONE MFG. CO.,
 HENRY SHAFER, *President.*

No. 8a.

OTTAWA, March 23, 1905.

H. SHAFER, Esq.,
 President, The International Telephone Mfg. Co.,
 Harrison and Clinton Sts., Chicago, Ill.

DEAR SIR,—I have to thank you for your favour of the 21st instant, and on behalf of the Select Committee on Telephones, beg to assure you that any information or assistance you may afford the committee will be much appreciated.

As you have been good enough to make this kind offer, I venture to ask that you forward me such information as you conveniently can regarding the operation of telephone systems of which you have actual knowledge.

Among other information which will be of assistance to the committee are the following most important data :—

1. Name of company and territory covered.
2. Amount of capital and bonded indebtedness, if any.
3. Number of telephones in operation, what proportion copper or iron, metallic, or grounded circuits ?
4. Miles of long distance lines, what proportion copper, metallic, or iron grounded circuits ?
5. Average cost per telephone of subscribers lines inclusive of central equipment.
6. Average distance of subscriber's stations from central office.
7. Cost per mile of single wire of long distance lines.
8. Rates per annum for local service.

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9. Long distance toll charges.

10. Name of competitive company, territory covered and number of telephones operated by it at this date.

11. Miles of long-distance lines operated by competitive company, and toll charges for use of same.

12. Rates charged before the advent of competition.

The committee also desires to secure general information regarding the operation of telephone systems in rural communities, as this section of the public has been to a great extent overlooked so far as the provision of telephonic facilities is concerned.

Thanking you in anticipation of your further kind services,

Believe me, dear sir,

Yours faithfully,

WM. MULOCK,

Postmaster General.

No. 9.

INTERNATIONAL TELEPHONE MANUFACTURING COMPANY,
OFFICE AND FACTORY,
HARRISON AND CLINTON STREETS,

CHICAGO, March 25, 1905.

Sir WILLIAM MULOCK,
Postmaster General,
Ottawa, Canada.

DEAR SIR,—Your valued favour of the 23rd instant is received. We note your inquiries and beg to say that the cost of telephone plants varies considerably, depending largely on local conditions, that is, it depends on the average distances of the subscribers from a central office point, the condition of the soil affecting the cost of digging trenches for underground conduit work, the setting of poles and conditions of this kind.

The amount of capital and bonded indebtedness of the different companies depends, not only upon the difference in cost of construction, but also the difference in plan of promotion. Some of the companies which are organized on a conservative basis, show in their capitalization and bonded indebtedness, the actual cost plus a reasonable construction profit, while others cover large amounts for promotion, &c.

To give you information accurate and direct, from some of our largest independent companies, built on the most conservative basis, we would refer you to Mr. E. M. Coleman, secretary of the Louisville Home Telephone Company, and vice-president of the Kentucky Long-Distance Telephone Company, of Louisville, Kentucky. Mr. Coleman was also, for a number of years, secretary of the Independent Telephone Association of America. He can probably give you the most forceful information.

Mr. M. H. Bentley, electrical engineer, 330 Illinois street, Indianapolis, Indiana, who had charge for many years of the long-distance business in Indiana can give you valuable information on this line.

We would also refer you to Mr. C. H. Judson, General Manager of the Mutual Telephone Company of Des Moines, Iowa, who built the exchanges at Des Moines, St. Paul and Minneapolis, Minn., and Kansas City, Missouri,—some of the largest independent companies in the States. We can further refer you to Mr. Frank H. Hall, of Wheeling, W.V., who built the exchange at Wheeling, Salt Lake City, and Ogden, Utah, as well as others.

With reference to telephone systems in rural districts, wish to say that it has been clearly shown in the States here, that service can be given at the most reasonable rates and serves the most people by local companies, either on a corporation basis or co-

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operative basis. This can be readily understood, as if the service is owned by a company, for instance like the Bell, it requires a manager and other help, whose time is given exclusively to the telephone system, while if operated by a local corporation, or local business firm, or on a co-operative basis, it can be maintained and operated by persons having other occupation.

The companies that are financially controlled by local interests, are also more freely supported and the management more satisfactory to its patrons.

We beg to suggest, that even under Government control of the telephone systems, it would be unwise for the general Government to aim to control local village systems, and rural country party line service. The plan which has proved most successful in the operating business here, is for one corporation in a section, to control the long-distance lines and not aim to control the local exchanges, but make connection upon a standard basis with all of the local systems, allowing the local systems to be financed and controlled by local people.

If applied to municipal or Government ownership upon the same basis, it would suggest the ownership of the long-distance lines or inter-province lines connecting the larger cities by the general Government, the local city systems by the municipalities, and the rural systems by co-operative companies or the town boards.

What the municipalities can do in the business, is clearly shown at Port Arthur and Fort William, Ontario; Neepawa, Man., and other towns, who have established municipal or independent systems in the Dominion, and it cannot be denied that what one town can do can be accomplished by all others, if the matters are taken up on the same business basis.

We shall be glad to give any further information that may be desired at any time, and are always yours to command.

Yours very respectfully,

INTERNATIONAL TELEPHONE MFG. CO.,

HENRY SHAFER, *President.*

No. 10.

SPRAGUE TELEPHONE COMPANY,

DEMORESTVILLE, ONT., March 21, 1905.

W. F. MACLEAN, M.P.

DEAR SIR,—As you have for some time taken a deep interest in public ownership of telephones, of which principle you have many followers throughout the country, myself amongst the number, and as I see that the Postmaster General has now made a move in the direction of ascertaining to what extent that feeling exists, therefore, I take the liberty to write you on the subject. We have now in operation about two hundred miles of line (including trunk lines), and about two hundred subscribers, being the largest private telephone system strictly rural in Canada. We have had all the inconveniences to contend with in regard to the use of trunk lines service of which the Bell people have a monopoly, and as you know, handicaps any independent company, and no private system is complete without the use of the trunk lines. We are using our own private capital in this system, and giving the very best service for a rental for each subscriber of \$10 per annum. We have now arrangements with the Bell Company for the use of their trunk lines, so that our subscribers have a very complete rural system. I should like very much if you could induce the Government to at least take over the trunk lines, so that the people might get service not only cheap, but by having the trunk available, independent lines could start up all over the country and give good service. I will not trouble you at present with anything further, as I know your time is fully occupied. Press on in your good work.

Yours most respectfully,

JOHN A. SPRAGUE.

APPENDIX No. 1

No. 11.

HARRIETSVILLE, ONT., March 21, 1905.

W. F. MACLEAN, Esq., M.P.,
Ottawa, Ont.

DEAR SIR,—Please accept best wishes of our co-operative association in your fight for the nationalization of trunk lines of telephones. We have only been in business less than a year, and I think our annual report herein sent is quite a creditable showing, when we consider that it is entirely a rural telephone system.

We could do much more business if we had money to build the line, and could get connection with the long-distance lines (Bell). We are using Bridging telephones with long-distance transmitters, and on a metallic circuit, and can have 16-25 instruments on one line, and any subscriber on said line can talk to any other subscriber on same line without using central.

Our association is with you in your endeavours, and the work of the special committee, of which you are a member. Kindly keep me supplied with information of outcome of your inquiries.

Yours truly,

W. DOAN,
Harrietsville, Ont.

P.S.—Our annual rental per 'phone is \$9, payable half-yearly in advance.

W. D.

No. 11a.

FIRST ANNUAL REPORT OF THE HARRIETSVILLE TELEPHONE
ASSOCIATION, LIMITED.

HARRIETSVILLE, December 31, 1904.

To the shareholders of the Harrietsville Telephone Association, Limited.

Herein find statements of capital and revenue accounts ending December 31, 1904.

Telephones installed December 31, 1904, 48.

Miles of poles, 22.

Miles of metallic circuit, 25.

This 25 miles of metallic circuit is composed of four party lines converging and ending in our switchboard at Harrietsville.

Supplies on hand December 31:—75 poles, 500 lb. wire, 150 glass insulators, 100 side blocks, wood pins, porcelain spools, &c., valued at \$100.

The earnings of your association hereafter, because of the increased number of telephones which will be soon installed, should be better than in the excellent showing made herein.

The Harrietsville Telephone Association, Limited, of Harrietsville, Ont., has pleasure in inclosing warrant for past half year for dividend No. 1, of 4 per cent, being at the rate of 8 per cent per annum, payable on or after January 1, 1905.

The annual meeting of shareholders will be held on Monday, January 23, 1905, at 2 p.m., in the I.O.O.F. Hall, Harrietsville, Ont.

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CAPITAL ACCOUNT.

RECEIPTS

135 shares sold and fully paid at \$10 each.. . . .	\$1,350 00
Interest....	6 45
	\$1,356 45

EXPENDITURES.

Purchase of interests in old line....	\$ 161 00
Construction of lines, switchboard, &c....	1,160 16
Balance in bank....	35 29
	\$1,356 45

REVENUE ACCOUNT.

RECEIPTS.

Rentals of phones to December 31....	\$ 132 50
Toll charges..	14 23
Interest..	2 65
	\$ 149 38

EXPENDITURES.

Operating expenses..	\$ 59 83
Balance on hand, including dividend No. 1.. . . .	89 55

Your trustees have deemed it wise to set apart ten dollars of the net earnings of the past half year into a reserve fund.

It has not been possible to give service to all who have desired to use the system.

We believe the plant to be in good working order, and are offering sixty-five more shares for sale to allow of extensions.

All of which is respectfully submitted.

W. DOAN }
S. E. FACEY } Trustee Committee.

No. 12.

CITY CLERK'S OFFICE, TORONTO,
March 28, 1905.

DEAR SIR,—I have the honour to forward horewith a copy of a resolution which was adopted by the city council on the 27th instant, as follows:—

'Resolved, That this council, learning of the action of the Dominion Parliament in the appointment this session of a Select Committee looking to the taking over of the telephone service of Canada, do hereby endorse said proposal ; this council congratulates the Honourable the Postmaster General on the action he has taken, and unanimously recommend the Government to entirely take over and operate the telephone service of Canada, and that copies of this resolution be forwarded to the city members of Parliament and to the Postmaster General.'

Your obedient servant,

W. A. LITTLEJOHN,
City Clerk.

Honourable Sir WILLIAM MULOCK,
Postmaster General, Ottawa, Ont.

APPENDIX No. 1

No. 13.

GORMLEY, ONT., March 24, 1905.

Re TELEPHONE SYSTEMS.Sir WILLIAM MULOCK,
Ottawa.

DEAR SIR,—Would you allow me as one who has had a little experience in connection with an independent telephone system to suggest to you the advisability of confining the national ownership of the telephone to the ownership of the 'trunk lines' and leave to local management either to companies or perhaps more preferably to municipalities the ownership of the local systems. The local managers would understand much better the local currents of business and traffic which must be taken carefully into consideration in laying out the system and in locating the local exchanges.

Of one thing I am firmly persuaded, an efficient system can be furnished by Government and municipal ownership at a fraction of the cost to users that the Bell Company charges. The system with which I am connected has now in operation about twenty-five miles (of two wires) line with over 40 'phones installed and extending from Stouffville to Markham and the surrounding country in Markham township and White Church. A farmer paying us \$12 per year is allowed the free use of the entire system whereas the Bell Company are charging some farmers in the district \$20 per year with the privilege of talking to one village only without paying extra. In addition to the service that we are now giving we are at present considering the question of extending to Aurora and adding about 16 miles to our line and probably another 30 'phones all free to a subscriber for \$12 per year for a private house or \$15 for a business man, and we expect our investment will pay us a dividend.

By all means let us have public ownership.

Yours respectfully,

ALEX. D. BRUCE.

No. 13a.

OTTAWA, March 25, 1905.

DEAR SIR,—I have to thank you for your letter of the 24th instant favouring me with your views regarding the telephone question. I do not know whether your communication was sent to me for the information of the Parliamentary Committee, and therefore I write to see whether I have your permission to lay your letter before that body. I have no doubt that the Committee would be glad to have from you a full account of your system from the beginning, and should you have no objection, I would suggest your furnishing amongst others, the following particulars:

Date of commencement of your system; amount of capital invested; mileage, number of telephones in use; cost of maintenance; total revenue; total expenditure; extent of privileges of patrons, including connection, if any, with other systems.

Yours sincerely,

ALEXANDER D. BRUCE, Esq.,
Messrs. Bruce Bros.,
Gormley, Ont.

WM. MULOCK.

No. 13b.

GORMLEY ONT., March 29, 1905.

SIR WILLIAM MULOCK,
Postmaster General,
Ottawa.

DEAR SIR,—Yours of 25th instant *re* information on telephones, arrived yesterday.

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In reply, you are at liberty to use my letter of 24th instant in any way that may appear useful to you.

In reply to your inquiries, I will be pleased to give you the information for which you ask and also any other information I may be able to give you, but will require a few days to obtain some of the particulars to which you refer.

Our executive committee meets on the 31st, and as president, I shall bring up some of the questions you asked.

To me it appears that the arrangement of the local services throughout the country is the most serious problem facing the government in dealing with the telephone question.

Respectfully yours,

ALEX. D. BRUCE.

No. 14.

CANADIAN MACHINE TELEPHONE COMPANY, LIMITED,
TORONTO, March 30, 1905.

Sir WILLIAM MULOCK,
Chairman Special Telephone Committee,
House of Commons, Ottawa.

DEAR SIR,—While the Committee of the House of Commons is considering the telephone question as it exists in Canada, we respectfully desire to call attention to the work we are at present prosecuting and the system we manufacture and are installing.

We will first refer briefly to the work we have in hand at present. Last year we were given a franchise in the town of Peterborough, Ontario, where we are installing a system in competition with the Bell Telephone Company, and where, after the franchise was granted, in about four weeks we secured between four and five hundred subscribers for our service. We have about completed our outside construction, having built two miles of underground conduits in the business and central portion of the town and covered the remainder of the town and immediate neighbourhood with the most modern construction. In fact, we believe we can say without boasting there is no outside construction in Canada that is of the same modern and substantial class we have in Peterborough. We anticipate that upon giving satisfactory service there will be an immediate demand for more services, and we have installed cable for 1,100 telephones. We have erected our own central office building. Our central office equipment is now completed at our factory and will be shipped for installation in a very short time. Before the end of May we will be giving service in Peterborough. We may say that quite a number of towns and cities are awaiting this demonstration before deciding the question of granting a competitive franchise in their municipalities.

We own the Lorimer system in Canada and it is this we are installing in Peterborough.

As regards this system we would point out that it is a Canadian invention and has been pronounced by Canadian and American experts to be an improvement on anything in the telephone field. It is in fact the only automatic telephone system in existence that is the product of Canadian brains and Canadian money, and it is a matter of much gratification to know that Canadian inventors have produced something that telephone engineers state is in advance of anything of its kind. In fact, it has been called 'the telephone of the future,' and we are satisfied that its future will prove that it is fully entitled to this name. It is a machine or automatic system requiring the services of no operators at the central office to make connections. It has been designed and worked out on a different principle from any other automatic system that has ever been invented. Some of its advantages are efficiency of service, absolute privacy or secrecy, accuracy and simplicity of operation.

APPENDIX No. 1

We have a factory on Duncan street, Toronto, where we are manufacturing apparatus and where we have at the present time a 200 and a 500 exchange in operation. We would be pleased to have you and the members of your committee, or as many as could make it convenient, visit our factory and see our system in operation. This is the most satisfactory way of placing you in possession of the merits of the system and allowing you to judge of the place it will take in the telephone field.

As an indication of the claims of this system we might add that the patent for the United States has just been sold for a very large sum, the investment not being made, as you can readily understand, until the opinion and report of acknowledged leaders in the telephone field in the United States had been secured. A most thorough investigation of the merits of the system with a view to deciding not only the quality of the service it would give, but particularly to ascertain and weigh the advantages it possesses over any other system at present operating, was made. The fact that it stood this test and that the reports were sufficiently favourable to cause an investment to be made in it that was one of the largest probably ever made in a patent in the United States is all that is necessary to convince any one that our system is one that will immediately take a leading place in telephone work.

We have troubled you with these details in a desire that you might consider it of sufficient importance in connection with telephone development in Canada to investigate our system and its possibilities and the work we are doing.

We are sending you under separate cover a copy of an illustrated pamphlet which shows our system, although the telephone instrument illustrated in this pamphlet has been considerably improved in the one we are putting out in commercial operation. Also copies of Peterborough papers which have made reference to our work there.

Trusting this will prove of some interest to you and the members of your committee, and thanking you in anticipation of any attention it may receive, we will esteem it a privilege to give you any further information in our power.

We remain, yours truly,

CANADIAN MACHINE TELEPHONE CO., Limited,
F. D. MACKAY, Manager

No. 14a.

OTTAWA, March 31, 1905.

GENTLEMEN,—I have to thank you for your letter of the 30th instant, with reference to the telephone question, and shall have pleasure in submitting your communication to the Parliamentary Committee now dealing with this subject. Perhaps you would desire to appear personally and give testimony before this committee. If so, I am sure the committee would be glad to hear you. Would you kindly inform me whether, and if so, where, your system is now in operation.

Yours sincerely,

WM. MULOCK.

Canadian Machine Telephone Company,
Duncan Street, Toronto, Ont.

No. 15.

CANADIAN MACHINE TELEPHONE COMPANY, LIMITED.

TORONTO, April 3, 1905.

Sir WILLIAM MULOCK,
Chairman Special Telephone Committee,
House of Commons, Ottawa.

HON. SIR,—Following your suggestion, on Saturday last, while examining the Lorimer system of automatic telephony in our factory here, we desire to point out as

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briefly as possible some of the claims made for our system. The most vital possibly fall under the two headings of 'cost' and 'efficiency of service.' Without attempting to go into any detail of description, we place the following concise paragraphs under these two headings.

QUESTIONS OF COST.

The switchboards can be built at less cost than the modern multiple switchboard.

The switchboards can be maintained at a lower annual cost, being substantially built and all parts being made interchangeable, and readily accessible substitution of parts can be made without interfering with service.

The cost of operating is less, the services of the girl to make connections being dispensed with, and no more skilled labour being required to look after the apparatus than now employed in a central office.

The cost of increasing the capacity of the central office apparatus or switchboard is never out of proportion to the number of subscribers to be served. The capacity of a central office may be increased by adding any number of additional sections that may be required (each section giving an additional capacity for one hundred subscribers) without interfering or depreciating the plant already installed. This means that an exchange may be increased to any number of subscribers without the necessity of increasing the rates, as is the case at present.

EFFICIENCY OF SERVICE.

The connections are rapidly made, and in a uniform time. There are no waits.

The service is absolutely secret. Every conversation is over a private wire, as there is no way a third person at the central office can cut in or listen to a conversation.

When a conversation is completed the hanging up of the receiver automatically releases the apparatus that made the connection, and therefore at no time is the apparatus tied up or occupied by 'dead connections.'

The automatic release also enables a number of calls to be made consecutively in a very short time.

You cannot be cut off until you are through with your conversation and hang up your receiver. You are master of the situation.

The machine switchboard gives the same service day and night and all day Sunday. This feature, together with the secrecy of the service, will be an appreciated advantage in the smaller places and rural communities.

A compact exchange apparatus can be supplied for use in villages and small exchanges, and give all the advantages of service.

Besides such claims as outlined above, there is a great advantage possessed by the system, in that it is flexible or capable of being utilized to give special service at lowest rates. By special service, we mean the attachment of buttons for fire alarms, police calls, ability to give a measured service or party line service, &c.

As stated in our former letter, practical telephone men—and they are foremost in their profession—who have investigated this system for capitalists who have purchased the American patent have admitted its advantages to be in excess of all others. They have after investigation passed on the claims we made and one of the most eminent of them adds: 'Beyond and besides all this, my study of the application convinces me in a definite, though quite general way, that there is more in this system than has been claimed.'

However, what we particularly desire to call your attention to is that inside of two months' time we will have a system in commercial operation in the town of Peterborough, Ontario, where we have spent a very large amount of money in the very best construction work and have shown our faith in the future success of our system by providing for a growth to 1,100 subscribers, without any addition to our underground or cable system. This plant at Peterborough will allow the general public to pass judgment on our service and its many advantages.

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As stated before, this is a Canadian invention, and, while demonstration plants in practical service have been in operation, the first commercial exchange in the world is being installed in a Canadian town. The system is bound to immediately take an important place in telephone development, and this is the reason we have troubled you by placing some of its advantages before your committee.

In concluding, we desire to express our appreciation of the interest you have manifested in the telephone question and of the trouble and time you gave to your visit to our factory. We sincerely trust we will have the pleasure of a visit from other members of the committee. Any further information we can supply will be most cheerfully given.

We beg to remain, hon. sir, sincerely yours,

CANADIAN MACHINE TELEPHONE CO., LIMITED.

F. D. MACKAY, Manager.

No. 16.

The Chairman,
Telephone Committee,
Ottawa.

DEAR SIR,—As president of our local Farmers' Institute, East Elgin, I am fairly well in touch with the needs of the farmers, and the question of rural telephones is becoming an important one.

As there are quite a number of rural 'phones in use near here, and I am a member of the managing committee for one of the lines, I thought that perhaps a statement from me might be of some use.

The Harrietsville exchange has 48 rural 'phones, perhaps 40 miles of line and a 'central.'

Local stock company, \$9 per year on each phone, paid good dividend last year and extended lines.

Belmont exchange has 4 lines centering at switch, in drug store, 36 'phones and 30 miles of line.

Built by subscription.

No charge to anybody for using the 'phones, but to pay operator at switch, a fee of 5 cents is charged on each message passing from one line to another.

'Phone holder may commute switch fees at \$2 per year.

Aylmer, Kingsmill and Mapleton line, 17 'phones, 10 miles line, built last summer.

I was one of the promoters of this line.

We raised \$150 in five-dollar subscriptions by farmers, about \$25 in smaller subscriptions, and the banks, business and professional men of Aylmer gave us about \$100.

This \$275 built our line, and no charge is made for using it. On all the lines above mentioned, the telephones are private property, paid for by the farmer.

Thirty to thirty-five 'phones, such as we use, may be put on a line without 'central' or switch-board. Each 'phone-holder has separate calls, as—Mr A, one long ring; Mr. B, a long and short; Mr. C, two ls. and one s.; Mr. D, l.s.l.; Mr. E, l.,l.,s.,s., and so on. Eight short rings will call the whole line, to listen to someone playing the piano, reading some important news, giving weather reports or election returns.

I purchased the material and superintended the building of this Aylmer-Mapleton line, bought the 'phones and put them in, and have general charge of the line. Before buying the 'phones, I corresponded with 11 telephone manufacturers, and finally bought those made at Indianapolis, Indiana. They cost \$13 each, f.o.b; duty, \$3.13; freight about 30 cents; total, \$16.43. Locally our line gives perfect satisfaction, and others are projected in our county.

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If the government could give us long-distance connections, it would be a great step in advance.

Yours respectfully,
L. M. BROWN.

No. 17.

THE UNION TELEPHONE COMPANY, LIMITED.

FLORENCEVILLE, N.B., March 27, 1905.

Sir WM. MULOCK,
Ottawa, Ont.

DEAR SIR,—I see by the *Daily Star* that your Telephone Committee wish the names and headquarters of all independent telephone companies. Our headquarters is Florenceville. We operate about 400 miles of long-distance 'phones, and a Strowger automatic exchange at Woodstock, N.B. I believe that all town and city exchanges should be owned and operated by the town or city, and that the Dominion government should build and operate all long distance lines on the same principles as the post office is administered. This would prevent duplication of systems, and in a few years be a source of revenue to the government, as the telephone development in the rural communities is only in its infancy. Something should be done at once to give the independent companies access to the railway stations. It is ridiculous that a business man cannot be answered from a station over an independent 'phone.

Yours truly,
THE UNION TELEPHONE CO., LIMITED,
Per D. W. Ross, Secretary.

No. 18.

THE PEOPLE'S TELEPHONE COMPANY.

SHERBROOKE, P.Q., March 31, 1905.

Sir WILLIAM MULOCK,
Postmaster General, Ottawa.

DEAR SIR,—Inclosed you will find a map of the People's Telephone System, to enable you to understand that we are a company with vested interests, and at the same time debarred from connecting with Canadian Pacific Railway stations and most of those of the Grand Trunk Railway.

We are interested onlookers of what is going on at Ottawa in the telephone investigation.

Yours truly,
CHARLES SKINNER,
Gen. Manager.

No. 19.—(abridged.)

ST. MARY'S, March 29, 1905.

There is a private or independent telephone company organized in the township of East Nissouri, county of Oxford, known as 'Nissouri Telephone Association.' They have twenty-three miles in operation; and along the route that the wire is strung farmers' houses are connected. Farmers are charged \$5 per year and doctors and merchants \$10 per year. They connect with the Bell system at Thamesford, and they

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soon intend to come to St. Mary's, and place householders on same basis as farmers, \$5 per year, and merchants and doctors \$10.

At present the business is so successful in the township of East Nissouri that this private corporation paid a dividend to its stockholders for last year of twenty per cent, and they expect this will increase as they branch out. This shows that cheap telephone service can pay big dividends. Mr. Philip Harris, of Lakeside P.O., Ont., who is a stockholder, gave me this information.

Yours truly,

JAMES BAXTER,
St. Mary's P.O., Ont.

No. 20.

RALPH SMITH, Esq.,
House of Commons,
Ottawa, Ont.

BRITISH COLUMBIA TELEPHONE COMPANY, LTD.,
VANCOUVER, B.C., March 30, 1905.

DEAR SIR,—I notice from the eastern papers that you are a member of the special committee appointed to inquire into telephone matters. I would like to have an opportunity of appearing before the committee, but unfortunately, owing to pressing business engagements, I cannot leave here just at present. Would it be possible to get from the stenographer a copy of the proceedings from day to day; one could then see whether there was anything particular calling for explanation or comment by us?

Our company owns all the systems in British Columbia; the capital is entirely local, the Bell Company do not hold and never have held any shares. The relations of the company with its subscribers have been on a friendly footing, and the company has always been willing to extend wherever there was a fair chance of business. Last year, at a heavy expense, over \$100,000, we laid a cable to connect Vancouver Island with the mainland and conversations are now carried on between Nanaimo and Vancouver, Victoria and Chilliwack, and indeed all island and mainland points. This is not a money-maker, but is a great convenience to our subscribers.

The maximum rate we can charge is fixed by our Act of incorporation at \$5 per month, but we have never charged more than \$4. Our general rates are:—

- Business, individual, \$4 per month.
- Business, two party line, \$3 per month.
- Residence, individual, \$3 per month.
- Residence, two party line, \$2 per month.

In small places our rates are lower, e.g., Nanaimo: \$3.50 individual business, \$2 individual residence. Taking into consideration the very high rate of wages (\$3 for eight hours), in British Columbia and the distance from our source of supplies, these rates are very low; in fact, they are nearly 50 per cent lower than the rates at Seattle, Tacoma, &c.

Friends of mine from Australia and New Zealand passing through here, inform me the government systems there are all single wire and poor, out-of-date plants, while the rates, considering difference in cost of operation, are not any lower than ours.

That this company is progressive can easily be seen by reference to the official statistics of telephones (enclosed herewith). We have in British Columbia many more telephones per head of population than any province in Canada, and in Vancouver we have more per head than any city in the British Empire. I also inclose a statement taken from a magazine called 'Sound Waves' for June, 1904. It is an advocate of independent telephony; the statement shows that even with fierce competition in places where wages are much lower than here, the competitive rates are about equal to ours without competition; we claim our rates are as low as possible compatible with good service, and that our service and plant are equalled by few places and excelled by none.

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We send round periodically a special agent to interview subscribers and ask if any complaints. In Vancouver he interviewed 600 with under 1 per cent of complaints, and these on investigation found trivial. In Victoria there were no complaints; the subscribers were loyal to the local management, and would not, we concluded, even if any cause, complain to a stranger, particularly from Vancouver.

I will be exceedingly obliged if you will kindly keep me posted on this matter. The journey is a long one; as I was east just before Christmas, I do not want another trip, but will go to Ottawa if necessary. I am sending you one of our calendars that will show you we are not so slow.

Thanking you in anticipation,

Yours faithfully,

W. D. FARRELL,

Taking the population of the last census, there is in Canada one telephone instrument to every 65 persons.

By Provinces :—

Ontario, one telephone to every....	59 ⁷ persons.
Quebec " "	63 ⁸ "
Nova Scotia " "	99 ⁴ "
New Brunswick " "	85 ³ "
P. E. Island " "	215 ⁰ "
Manitoba " "	51 ⁵ "
N. W. Territories " "	251 ³ "
British Columbia " "	33 ⁴ "

W. D. FARRELL,

President,

B. C. Telephone Co., Ltd.

VANCOUVER, B.C.,

March 30, 1905.

TELEPHONE RATES.

J. B. Ware.

The following statistics were obtained in March, 1904, from mayors of the cities reported, and are believed to be entirely accurate :—

City.	Bell Rates.		Independent.	
	Bus.	Res.	Bus.	Res.
Allegheny, Pa.	\$125	\$100	\$75	\$58
Atlanta, Ga.	84	48	42	30
Buffalo, N.Y. ....	..	..	48	36
Columbus, O.	72	36	40	24
Dayton, O.	72	35	40	24
Elizabeth, N.J.	100	54	36	30
Erie, Pa.	60	30	40	28
Fall River, Mass.	81	63	36	24
Fort Wayne, Ind.	48	36	36	24
Grand Rapids, Mich.	36	24	30	18
Harrisburg, Pa.	72	57	36	21
Indianapolis, Ind.	72	48	40	25
Kansas City, Kan.	84	60	54	48
Lincoln, Neb.	48	36	36	21
Los Angeles, Cal.	60	40	48	24
Memphis, Tenn.	84	30	48	30
Mobile, Ala.	48	30	30	18
Portland, Me.	76	25	42	24
Rochester, N.Y.	60	40	40	30
Savannah, Ga.	50	18	40	25
Scranton, Pa.	80	63	36	24
St. Joseph, Mo.	50	36	40	30

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	Bell Rates.		Independent.	
	Bus.	Res.	Res.	Bus.
San Antonio, Tex.	60	24	36	24
St. Paul, Minn.	84	48	48	30
Syracuse, N.Y.	80	48	36	24
Toledo, O.	72	36	48	30
Troy, N.Y.	96	50	40	30
Wilkesbarre, Pa.	72	57	28	24
Wilmington, Del.	36	24	36	24

Most probably Independent Companies make no profits after providing for depreciation, a very heavy item—10 per cent per annum on outside plant at least.

W. D. FARRELL.

VANCOUVER, B.C.,
March 30, 1905.

No. 21.

BRUCE BROS.—CARRICK ROLLER MILLS,
GORMLEY, ONT., April 8, 1905.

Sir WILLIAM MULOCK,
Postmaster General,
Ottawa.

DEAR SIR,—In reply to your inquiries of March 25 re telephone system :

1. The Bethesda and Stouffville Association commenced business August 15, 1904.
2. Capital invested, \$2,350.
3. Length of line, 25 miles of two-wire line.
4. 'Phones in use, 41, with 6 applications for 'phones, which will be installed as soon as 'phones arrive; the above capital of \$2,350 will cover said installation.
5. Cost of repairs to date. (Salary of central office operator not fixed.)
6. Revenue from paid messages—

August 15 to October 1.	\$ 7 35
October 1 to January 1.	11 26
January 1 to April 1.	18 70
	\$37 31

In connection with this, our entire system (including connection with other lines) was not in operation until December 1, and the public are gradually learning to make more use of the line.

In addition to the above income from fees, we have a current rent roll from rented 'phones of \$154, which, together with the income from the eight 'phones, which will be put in immediately, will give us an annual rent roll of \$235 (irrespective of income from paid messages, as above) on our investment of \$2,350.

Privileges of Subscribers.—A shareholder is entitled to one 'phone free, and has to keep same in repair; if he desires more than one 'phone, he must buy his instrument and be at all cost of connecting with main line and of repairs, and pay one-half the regular rental charged non-shareholders.

'Phones are rented to non-shareholders at \$12 per annum for private 'phones and \$15 for business 'phones upon a three years' contract in each case.

In the case of both shareholders and lessees, the entire system is at the disposal of the subscriber without any extra charge. And also, we have an exchange with three other independent lines, giving a total connection of about 68 miles of line, with between 70 and 80 'phones, the exchange between the four co-operating lines is absolutely free to subscribers. In the near future we expect to make connection with one, and perhaps two, new independent lines on similar terms to the above, and, to

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facilitate the co-operation of the various lines, steps are now being taken to organize a central committee to deal with matters of common interest to the co-operating lines.

When we first contemplated the organizing of our association, we endeavoured to secure connection with the Bell Company, and were, as we supposed, cordially received; but when we came to discuss details, we found the terms to be such that we dropped the negotiations, and, judging from our experience up to the present, we have no reason to regret our decision.

Concerning the prospects of the association, we have decided to construct 7 miles of new line this season, and have under consideration total extensions of 16 miles; these extensions will also be free, to subscribers, from extra charge. In view of the fact that we have spread ourselves over some long stretches with but few 'phones on them, we believe that by working up the business and filling in the vacant stretches, we can make the system pay its way and possibly pay the shareholders something on their investment, besides giving them their telephone service *free*.

If we, being amateurs, and purchasing our material at retail rates and paying 25 per cent duty on 'phones, can do this, it appears to me that a national system of telephones should be a good investment for the government.

In conclusion, I would respectfully suggest that your Committee give special attention to the solution of the difficulties that would be encountered in arranging the local services throughout the country. It will be in that direction that public ownership will meet its greatest difficulties, and yet it will be upon the efficiency of that part of the service that the success of the entire national system will largely be judged. The difficulties, however, can apparently be overcome.

Respectfully yours,

ALEX. D. BRUCE.

No. 21a.

SELECT COMMITTEE ON TELEPHONES,
OTTAWA, CANADA, April 10, 1905.

SIR,—I beg to acknowledge receipt of your favour of the 8th instant, and, on behalf of the Select Committee on Telephones, I thank you for the information contained therein.

Yours faithfully,

WILLIAM MULOCK,
Postmaster General, and Chairman of Committee.

ALEXANDER D. BRUCE, Esq.,
Carrick Roller Mills,
Gormley, Ont.

No. 22.

THE NATIONAL-INTERSTATE TELEPHONE ASSOCIATION,
CLEVELAND, O., April 5, 1905.

HON. SIR WILLIAM MULOCK,
Postmaster General and Chairman of Committee,
Ottawa Canada.

SIR,—I have the honour to acknowledge receipt of your favour of the 28th ult. Under separate cover, I am sending you five copies of prospectus, including constitution and by-laws, of the National-Interstate Telephone Association, which will explain themselves.

We have over 2,500,000 independent telephone subscribers in the United States. The Bell people make claim for considerably less than that number. Mr. Vinton A. Sears, of Boston, Mass., has recently published a booklet on the telephone development,

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which I think would be of interest to you, and which you can get by inclosing him 35 cents in stamps.

According to last reports we have in Ohio 196,617 independent telephones, 104,379 Bell; independent exchanges 617, Bell 157; independent toll stations 1,452, Bell 753; independent stockholders 1,729. I have not at hand the same kind of statistics on any of the other states, but the percentages in all the states of the central west are equally good, in many cases better, than those of Ohio.

The equipment used by the independent telephone companies is manufactured by the independent manufacturers of the United States.

The independent companies now have quite extensive toll line systems here in the States, and it is possible for me to talk from Cleveland to Rochester and Syracuse, New York, on the east; Charleston, West Virginia, and Louisville, Kentucky, on the south, Grand Rapids and Saginaw, Michigan, and other points in that vicinity on the north-west; and as far west as St. Louis, Missouri.

The National-Interstate Telephone Association will have its next convention in Chicago on June 20 and 21, at which time we expect to have the majority of the States well organized and affiliated with this association.

If there is any other way in which we can assist you in getting an independent telephone system in Canada to connect with the independent interests of the States, we will be very glad indeed to have you call on us.

I am, sir, yours very truly,

JAS. B. HOGE.

No. 22a.

SELECT COMMITTEE ON TELEPHONES,
HOUSE OF COMMONS, OTTAWA, April 10, 1905.

SIR,—I beg to thank you for your favour of the 5th inst., and the information contained therein. The Select Committee is desirous of communicating with as many of the independent telephone companies in the United States as it is possible to obtain the addresses of, and I am informed by Mr. A. L. Têtu, of Louisville, Ky., that possibly you would be good enough to favour me with a list giving the names and addresses of the majority of these companies. If you are in a position to do this the Committee will much appreciate your kindness. In the event of your not having this information, might I ask you to favour me by saying where you think it may be obtained.

Thanking you in anticipation.

I am, sir, yours faithfully,

W. MULOCK,

Postmaster General and Chairman of Committee.

JAMES B. HOGE,

The National-Interstate Telephone Association,
Cleveland, Ohio.

No. 23.

CORPORATION OF TOWN OF PETERBOROUGH.

OFFICES, 127 SIMCOE STREET—HENRY BEST, MAYOR.

CLERK'S OFFICE, PETERBOROUGH, ONT., April 11, 1905.

HON. SIR WM. MULOCK,
Postmaster General,
Ottawa, Ont.

HON. SIR,—Your favour of April 6th received. I enclose, as you requested, a certified copy of the agreement between the Canadian Machine Telephone Company

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and the Town of Peterborough. This company has not quite completed the installation of its plant, but expects to be ready for business by the first of May.

We are pleased that parliament is making an inquiry into the telephone business, as the question of the control of the streets is a very important one for the municipalities. Judging from the trend of public opinion as to public utilities, government ownership of the trunk telephone lines would be approved, and with this view we are in sympathy.

I have the honour to be, Sir,

Your obedient servant,

HENRY BEST,

Mayor.

No. 23a.

TORONTO, October 3rd, 1904.

To the Mayor and Council of the Town of Peterborough.

GENTLEMEN,—The question having been raised in regard to the position of the manhole covers in connection with the telephone conduit subway which we propose laying on your streets, we hereby agree and undertake, in the event of the street levels being changed at any time owing to the town laying a permanent pavement or improving the present pavement, to make any necessary changes in our manhole covers so as to conform to the new level thus established. This we will do at our own expense at the time the town is doing the work on the pavement, the town to give us reasonable notice of its intention to do work on any street or streets.

We beg to remain,

Respectfully yours,

CANADIAN MACHINE TELEPHONE COMPANY, LIMITED,

F. D. MACKAY,

Manager.

No. 23b.

This indenture, made in duplicate this twenty-first day of May, in the year of our Lord, 1904, between the Canadian Machine Telephone Company (Limited), (hereinafter called the Company), of the first part, and the Corporation of the Town of Peterborough (hereinafter called the Corporation), of the second part.

Whereas, the Company has applied to the Corporation for the right to use the streets and lanes in the municipality for the purpose of placing poles, ducts and wires for carrying on a telephone business, and it is desirable in the public interest to grant such request upon and subject to the terms and conditions hereinafter mentioned and the Corporation has agreed to pass a by-law for such purpose.

This indenture therefore witnesseth that in consideration of the premises and the agreement on behalf of the Corporation hereinafter contained, the said Company hereby covenants and agrees with the said Corporation as follows :—

1. That the said company will within twelve months from the date hereof install and have in working order in the said Town of Peterborough a complete and efficient Lorimer telephone system sufficient in all respects to handle the business of its customers.

2. That the said Company will furnish telephones to and connect same through a central station with all who desire to subscribe for same and are residents of the Town of Peterborough, or to any place of business in the Town of Peterborough at the maximum price of \$15 per year for private houses and twenty dollars (\$20) per year for places of business, and will supply any one person or firm with a telephone at his house and another at his or their place of business for thirty dollars (\$30) per

APPENDIX No. 1

year, and will not hereafter during the term of this agreement raise the price of any of said telephones.

3. That the said company will at all times, give as good and efficient and modern telephone service in the Town of Peterborough as it furnishes in any other place in Canada in which it may be doing business and will keep the same supplied with the latest improved machines and appliances manufactured or used by the said company in any place in Canada.

4. That in case the said company shall fail to install the said system within the time above limited or should fail to operate the same at any time after such installation provided such failure to operate is not caused by strikes, accidents or unforeseen or inevitable casualty and in that case not exceeding thirty days, or should it enter into a combination or amalgamation with or sell out to any other telephone company doing business in the town of Peterborough, then in any of said events the right of the said company to use the streets and lanes of the town of Peterborough shall *ipso facto* cease, or in case of the breach by the company of any of the terms hereof, then the right of the said company to use the streets and lanes of the said town shall after notice has been given to the company by the corporation of the default and the same has not been remedied within two months after the notice has been given *ipso facto* cease and the said company will on demand at once remove its poles, wires and other appliances from the streets and lanes of the said town.

5. The said company will on the following streets or parts of streets in the said town place its wires underground and shall not erect any poles, namely on George street from Murray street to Charlotte street, on Hunter street, Simcoe street and Charlotte street from Water street to Aylmer street and on Water street from Murray street to Simcoe street and will not place any poles on George street between Charlotte street and one hundred feet south of Charlotte street or on Water street between Simcoe street and one hundred feet south of Simcoe street, and will also when and if required by resolution of the council place its wires underground on any additional streets or parts of streets of the said town on which the wires of other companies are hereinafter placed underground, and will if conduits are hereafter constructed by the corporation on streets on which the company shall have put its wires underground allow the corporation to remove such wires to such conduits and will on streets on which the company shall have its wires on poles remove such wires to such conduits at its own expense and will pay in each case the annual charge fixed by the said corporation for the use of such conduits.

6. That the said company in doing any work on the said streets or lanes or in laying ducts, stringing wires or placing poles including the height and quality of said poles and the position of such poles, ducts and wires, shall be under the control of the corporation engineer or such other person as may be designated by the council, and shall do all work under his supervision and to his satisfaction and subject to his approval, and shall not unnecessarily incumber or obstruct the streets or lanes, and after any work on the same is done will at once restore the streets and lanes to the same condition they were in before such work was commenced and replace or remove any soil or material taken from, placed or brought on such streets or lanes by the company or its employees, and the said company shall place, construct, and maintain its poles, ducts, conduits and wires and all other works so that the same will not interfere with, obstruct, injure or damage the corporation sewers, water pipes, water tables, drainage and other corporation works or the private property of any person, firm or corporation, and in respect to such any work shall comply with the provisions of section one of by-law No. 770 of the said corporation and the provisions of any by-law hereafter passed respecting the regulation of poles on the streets and lanes of the town.

7. That the company, on the written request of the corporation engineer or other officer designated by the corporation, if in his opinion a change in the location of any pole or poles is necessary, shall and will at its own expense change the location of such pole or poles, provided such change will not require the removal of any pole for a greater distance than fifty feet.

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8. That from and after the said company shall have two hundred subscribers and over and from and after the time the said corporation shall charge any other company doing a telephone business in the said town a pole rental the said company will pay to the said corporation such rental per pole as is charged to other companies having the right to place poles on the streets of the town.

9. That the said company will not cut or trim any trees on or adjoining the streets or lanes of the said town or allow the same to be done by its employees except with the express permission of the council or such officer as it may designate by resolution and on such terms as may be imposed.

10. That the said company shall and will indemnify and save harmless and keep indemnified and harmless the said corporation from all claims, actions, damages, loss, costs and expenses whatever arising or occurring by reason of the construction, maintaining, repairing or operating the said telephone system or in any way connected therewith or relating thereto or resulting from or arising out of the same or by reason or on account of any matter or thing done or omitted to be done by the company under or by reason of this agreement, or the failure or neglect of the company to do or perform anything which the company is by agreement or by law required to do or perform and will pay to any person, firm or body corporate any damages, such person, firm or body corporate may sustain in consequence of any act or default of the company.

11. That the said company will allow the said corporation free of charge the right to use the poles of the said company for the purpose of placing wires thereon for a fire alarm system, a police patrol system or other like corporation purposes, provided the effective operation by the company of its telephone system shall not thereby be impeded or injured.

12. That on the expiration of the said term of ten years for which the said company is to have the right to use the streets and lanes of the said town the said company shall and will on demand remove its poles and wires from the streets and lanes of the said town.

This indenture further witnesseth that in consideration of the premises the said corporation hereby agrees with the said company that provided the said company performs, fulfils and keeps the covenants and agreements on its part to be observed, performed and kept that the said company may for a period of ten years from the first day of January, 1905, use the streets and lanes of the said town for the purpose of placing in, upon, over or under the same, poles, ducts and wires as above mentioned for the purpose of carrying on a telephone business in the said town, but nothing herein contained shall be deemed to limit or interfere with the control of the streets and lanes of the said town by the corporation under the Municipal Act or any by-law or agreement now in force or hereafter passed with regard to placing poles on the streets or lanes, or its power to grant any right or license to any other company or individual to use the said streets and lanes of the said town for the placing of poles, ducts and wires for any purpose.

In witness whereof the said company and corporation have hereunto caused their corporate seals to be affixed, attested by the hands of their proper officers thereto duly authorized.

ROBERT NEILL, *President.*

L.S.

Signed and sealed in the presence of,
F. D. MACKAY,

M. H. LUDWIG, *Secretary.*

G. M. ROGER, *Mayor.*

L.S.

S. R. ARMSTRONG, *Clerk.*

I hereby certify the foregoing to be a true copy.

S. R. ARMSTRONG,

Clerk, town of Peterborough.

Peterborough, April 10, 1905.

APPENDIX No. 1

No. 24.

INTER-STATE INDEPENDENT TELEPHONE AND TELEGRAPH
COMPANY.

AURORA, ILLS., April 11, 1905.

DEAR SIR,—A communication from the 'Select Committee on Telephones' signed by yourself, was received at this office a few days since.

To supply the information outlined in the list of questions accompanying the communication, it would entail no small amount of work and would represent duplication of a thoroughly tabulated volume of information compiled by the 'Department of Commerce and Labour, Bureau of Census of the United States of America,' recently gotten out on the same subject.

The latter portion of your communication you request 'a statement of general view upon this class of service and the results up-to-date of your operations in regard to this branch of your business,' referring to rural telephone service as I take it. I might say in reply to this inquiry I am more or less familiar with three different plans for supplying rural telephone service, either one of which has proven reasonably satisfactory, and at the same time profitable.

The 'Inter-State Company,' of which I am secretary and general manager, is operating in round numbers 15,000 telephones in the state of Illinois (that portion of it lying north of Springfield). Of this number there are approximately 4,000 stations in farmers' residences. We own the telephones, wire and poles, complete, in this class of service as in all others operated by this company. We charge an annual rental for this class of rural service of \$12 to \$18 on party lines of 10 subscribers per line, which pays for the exchange service only in the village or town where the switchboard is located. If service is desired to any other exchange a toll charge is made of not less than five cents, which is the minimum charge between any two points. We are operating thirty-five exchanges and have something over 1,000 miles of copper, trunk toll lines. For what we call long-distance toll service we charge five-eighths of a cent per mile, air line distance.

I am a one-third owner of a county system in Iowa, operated on a different plan. Here we own and operate an exchange in the county seat and instead of building rural lines ourselves, supply a circuit from the corporation into our switchboard connected with a metallic circuit owned by the farmers on the road traversed by the line. We restrict the number of parties on a pair of wires to ten. Each one of the ten pays his proportionate share of the cost of the line, and owns his own 'phone. We charge them 50 cents a month for switching them at our exchange, and give them all the subscribers connected with it without extra charge. This has proven satisfactory to the farmers and profitable to us.

I was interested in the organization of a county system in this state (Illinois), where the plan carried out contemplated the ownership by a company of the exchange in the county seat, which also built toll lines to all the smaller villages in the county connecting with the exchange. These small exchanges were in turn owned by local interests in the smaller towns and villages. The Central Company in this organization made a charge of \$3 per year for each subscriber in the smaller exchanges for maintaining toll connections with the county seat, and over its own lines between the towns themselves. The annual charge of \$3 per subscriber, I think, is as low as could be made and be profitable, however, in the county in question there are something like 2,000 to

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2,500 subscribers in the smaller exchanges, and each separate exchange becomes responsible for the amount due the Central Company of \$3 per subscriber, thus relieving the Central Company of the annoyance of making collection of the subscribers themselves, and I can say the plan has worked admirably, and consider it one of the finest examples of modern methods of supplying telephone service in a territory organization such as our counties are.

The information referred to as compiled by the 'Government of the United States' is full and complete, and absolutely reliable, and I should judge available for your investigation should you desire to examine it.

Hoping I have in some measure covered some of the points you desired information upon, I beg to remain,

Yours respectfully,

Sir WILLIAM MULLOCK,
Ottawa, Canada.

E. R. CONKLIN,
Sec'y and Gen'l Manager.

No. 24a.

OTTAWA, April 13, 1905.

DEAR SIR,—I have the honour to acknowledge the receipt of your letter of the 11th instant, and beg to express my very grateful appreciation of your courtesy, and the valuable and interesting information contained in your letter. Perhaps you would not mind my asking an explanation of that portion of your letter on the first page, which reads as follows:—

'We charge an annual rental for this class of rural service of \$12 to \$18 on party lines of ten subscribers per line, which pays for the exchange service only in the village or town where the switchboard is located.'

Is this annual rental of \$12 to \$18 the total amount of the rental of the ten subscribers, or is it the amount charged to each one of the ten subscribers?

Doubtless there are other classes of rural telephone systems throughout the States besides those mentioned in your valuable communication. Would it be too much trouble for you to refer me to any other sources of information regarding rural telephone systems?

Yours sincerely,

E. R. CONKLIN, Esq.,
Secretary and General Manager,
Inter-State Independent Telephone and Telegraph Co.,
Aurora, Ill., U.S.A.

WM. MULLOCK.

No. 24b.

INTER-STATE INDEPENDENT TELEPHONE AND TELEGRAPH
COMPANY.

AURORA, ILLS., April 22, 1905.

DEAR SIR,—I take pleasure in further serving you in the matter of supplying additional information regarding the inquiry of your favour of the 13th instant.

The annual rental for 'Rural service of \$12 to \$18 on party lines of ten subscribers per line' is the rental of the individual subscriber. The gross rental per line being \$120 and \$180 per year, respectively.

Again expressing further willingness to assist in any additional information which I am in a position to supply, I beg to remain,

Yours respectively,

Sir WM. MULLOCK,
Postmaster General,
Ottawa, Canada.

E. R. CONKLIN,
Secretary and General Manager.

APPENDIX No. 1

No. 25.

HESPELER, ONT., April 12, 1905.

The Hon. Sir WILLIAM MULOCK.

DEAR SIR,—About 1891 we formed a co-operative telephone company, calling it the Farmers' Alliance. We did not get a charter because in the beginning it was intended to serve only places which the Bell refused to consider. Though the latter's lines ran through Breslau, they would put no instrument in the village, which as a central point was so much desired. The farmers supplied poles and work, the rest of us the money, and we built in the neighbourhood of thirty miles, with about thirty instruments. Each person purchased his own instrument and kept it in repair. We used both Bell and Ness instruments and found no difference except in the price, the Ness being cheaper. We connected Preston, Hespeler, Breslau, Berlin, New Germany, Winterbourne, Bloomingdale, Bridgeport and intermediate points, and seeing the satisfaction of the service we tried to get to Galt and Guelph, but were excluded by the exclusive franchises of the Bell in those places. We had a central station at Hespeler, but we found it inconvenient to have two systems in a small town, and when the Bell approached us with a view of uniting our centrals, agreeing to give a good service, we acquiesced. This went along for some time but continued misunderstandings cropping up, the Bell proposed to purchase our lines.

In construction we had contracted a debt of about \$800, and were on the point of getting a charter allowing us to make rates and collect them, because for a number of years none of the subscribers paid anything. We were inexperienced and relied on promises and sold, and we have been sorry ever since. Since then, 1894, the rural telephone service in the county has been gradually getting less, and we of the county council thought there should be both a cheapening and extension, appointed a committee last January, which met a representative of the Bell last February and while he offered a \$15 rate for farmers, with five cents per call extra for Berlin and Waterloo, we thought it still too high. Yet since that time about fifty farmers have signed contracts showing that the farming community desires service of that kind even at a high rate. From our experience we know that the actual cost of management per instrument does not exceed \$5 per annum. In Waterloo we feel very strongly, that in the case of telephone service which is in its very nature a monopoly, we can't expect of a corporation to give any better rates than they are obliged to, and that the only satisfactory solution will be government ownership, or at least control. Thanking you for your query and wishing a speedy happy solution,

I remain, yours truly,

ANTHONY OCHS.

No. 25a.

OTTAWA, April, 14, 1905.

DEAR SIR,—I beg to thank you for your interesting and valuable letter of the 12th instant, which I had pleasure in submitting to the Telephone Committee this morning, and to inform you that the committee have decided to request your attendance to give evidence, which I hope it will be convenient for you to do.

Yours sincerely,

WM. MULOCK.

Dr. A. OCHS,
Hespeler, Ont.

No. 26.

THE OLD KENTUCKY TELEPHONE AND TELEGRAPH COMPANY, WINCHESTER, KY.

In reply to inquiry of March 28, 1905, the secretary-treasurer, Mr. J. W. Chambers reports as follows:

The Old Kentucky Telephone and Telegraph Company covers the counties of Clark and Montgomery and the two cities of Winchester and Mount Sterling. Their authorized capital is \$100,000, of which \$70,000 is paid up. The company has been in operation ten years. The bonded indebtedness is \$70,000, and the floating debt \$30,000. The population of territory served is 30,000. 1,350 telephones are in operation, 1,175 of which are residence and 175 business telephones. About 100 subscribers have both Bell and Independent telephones on the same premises. The cost of the local service is about \$75 per subscriber. The subscribers' lines are of iron, some of which are grounded and some metallic circuit. All lines are on poles. The system in use is 'Magneto.' The American Electric Telephone Company's Express Transfer switch-boards are in use. The subscribers' telephones comprise several types, any one of which is good, viz.: those of the American Telephone Company, Chicago; the Stromberg-Carlson Telephone Company, Rochester, N.Y.; the Dean Electric Company of Elyria, O. The company has about 400 farmers' telephones.

The rates charged are: residence, \$12 per annum; business, \$24 per annum, in the city.

Charges in the rural districts are on a movable scale, as follows:

A farmer having a direct metallic line for his own use pays the local residence rate of \$12 per annum and in addition thereto \$5 per mile, per annum, beyond the city limits.

Where there are several farmers on the same line, the extra mileage charge is divided and each farmer pays in addition thereto the \$12 per annum local residence rate.

The company has paid three per cent on the stock and five per cent per annum on the bonds. Three per cent is set aside for depreciation but an increase is contemplated.

The company permits the use of its lines free of charge to other independent companies who return the same privilege on the understanding that charges are made for the use of the long-distance lines.

The company has about 75 miles of toll lines, the cost of which is \$20 per mile of metallic circuit, not including poles.

The long-distance charges, up to 25 miles, are about 1 cent per mile. Beyond that distance, one-half to three-quarters of a cent per mile.

The Bell did not enter the territory until the Old Kentucky Company had developed the business. The Bell has now from 350 to 375 telephones, 250 to 275 of which are residence and 100 business telephones. The Bell rates are: residence \$12, business \$24 per annum. Party lines in the country, \$12.

The wages paid are: foremen \$2 per day, trouble-men \$40 per month, switch-board operators from \$15 to \$20 per month.

The cost of central switch-boards was about \$5 per line. Subscribers wall telephones \$8.50. Subscribers desk telephones \$10.50. Iron wire costs from \$3 to \$3.25 per mile.

Feet.	POLES.	
	Red Cedar.	Chestnut.
25..	\$1 75	\$1 25
30..	2 50	1 50
35..	3 50	1 75
40..	4 00	2 00
45..	6 00	3 50
50.. . . . .	....	6 00

APPENDIX No. 1

Cross-arms, 3½-inch by 4½-inch by 8 feet, delivered, 25 cents each.
 Insulators, \$12 per thousand.

The company has two central exchanges at Winchester and Mount Sterling. Within corporation limits, each subscriber has a separate wire. In the country party lines are used, with not more than six on a line.

On party lines the divided circuit system of ringing, which is simple and easy to keep in repair, is used.

A selective signalling system has been tried, but found slow and cumbersome and difficult to keep in good working order, in consequence of which it was abandoned.

An increase in the residence rate from \$12 to \$18 per annum is contemplated. Beyond 300 subscribers, a \$12 rate is not considered remunerative.

OLD KENTUCKY TELEPHONE AND TELEGRAPH COMPANY,
 WINCHESTER, Ky., April 14, 1905.

Sir WILLIAM MULOCK,
 Chairman Telephone Committee,
 Ottawa, Can.

DEAR SIR,—Your request for information relative to operation of our telephone company has just been received, and we will give you such information as may help you.

1. Old Kentucky Telephone and Telegraph Company. Our company covers the counties of Clark and Montgomery, as well as the two cities of Winchester and Mt. Sterling, the county seats of each county, respectively.

2. Authorized capital stock is \$100,000, of which about \$70,000 is paid up, and bonds to the amount of \$70,000 has also been issued. Besides that, we have a floating debt of about \$30,000.

3. About ten years.

4. About 30,000 people.

5. About 1,350.

6. _____

7. About 100.

8. About 1,175.

9. About 175.

10. About 75 miles.

11. About \$75 per subscriber.

12. Costs about \$20 per metallic mile for wire alone.

13. Iron, part grounded and rest metallic. Everything should be metallic for best service.

14. About 70

15. See 10.

16. All overhead.

17. Magneto.

18. We use American Electric Telephone Company's express transfer switch-boards, but have several type telephones, any one of which is good, viz.: American Electric Telephone Company, of Chicago, Ill., Stromberg-Carlson Telephone Company, of Rochester, N.Y., or Dean Electric Company, of Elyria, Ohio.

19. About 400.

20. We charge \$12 per year for residence service in city, \$24 per year for business in city, and we charge in the country on a movable scale basis, for instance, if a farmer lives 5 miles from the city limits and has a metallic line to himself, we charge \$5 per mile per year milage, to which we add our regular city residence rate of \$12 per year.

If there are several on the metallic line the mileage is divided between the number on the party line, but each one pays the \$12 per year besides.

21. For short distances, say up to 25 miles, we get about one cent per mile, but when we have longer lines we charge from ½c. to ¾c. per mile.

22. See 20.

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23. Three per cent on stock.
24. Five per cent on bonds.
25. About 3 per cent, but we will probably increase that amount, after our rates are raised. We think that our present charge for residences is too small and expect to raise city residences to \$18. A \$12 residence rate will pay up to about 300 telephones.
26. See 25.
27. We connect with other 'independent' companies, and under present conditions permit them to use our lines free of charge, while we use theirs free—this with understanding that charges are made between exchanges for toll use.
28. We occupied territory first. The Bell Company would not build an exchange till we developed the business.
29. About 350 or 375.
30. See (28).
31. See (28).
32. About 250 or 275.
33. About 100.
34. See (28).
35. \$12, residences; \$24, business and \$12 party lines, country.
36. Foreman, about \$2 per day; trouble men, \$40 per month. operators, from \$15 to \$20 per month.
37. (a) About \$5 per line.
- (c) \$8.50.
- (d) \$10.50.
- (e) Have none.
- (f) 14 galv. 3 $\frac{3}{8}$ B.B. iron, 14 B.B. iron $\frac{3}{8}$.
- (g) 25 feet red cedar, \$1.75; chestnut, \$1.25; 30 feet, red cedar, \$2.50; chestnut, \$1.50; 35 feet: red cedar, \$3.50, chestnut, \$1.75.; 40 feet: red cedar, \$4; chestnut, \$2; 45 feet: red cedar, \$6; chestnut, \$3.50; 50 feet: chestnut, \$6.
- (h) 3 $\frac{1}{2}$ x 4 $\frac{1}{2}$ x 8 feet delivered in car load lots at about 25 cents each.
- (i) Insulators, \$12 per M.
38. We have two central exchanges—one at Winchester and the other at Mount Sterling.
- In corporate limits of each place we give each subscriber a separate wire, but in country we have party lines with not more than six on a circuit.
- For party lines we use 'divided circuit' system of ringing, which is simple and easy to keep in repair.
- We tried a 'selected signalling' system, but found it too slow and cumbersome and too hard to keep in good working order, so abandoned its use.
- We trust that we have covered the ground as thoroughly as you deem necessary and that you may get some information that may be of service to you.
- Wishing Canada success in her undertakings, we remain,

Yours, &c.,

OLD KENTUCKY TELEPHONE AND TELEGRAPH COMPANY,

By J. W. CHAMBERS,
Secretary and Treasurer.

No. 27.

THE LOUISVILLE HOME TELEPHONE COMPANY, LOUISVILLE, KY.

In reply to inquiry of March 28, 1905, the President, Mr. John A. Armstrong, reports as follows:—

The Louisville Home Telephone Company operates in Louisville and Jefferson County, Kentucky, New Albany and Floyd County, Indiana, and Sellersburg, Clark County, Indiana.

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The amount of stock issued to date is \$1,310,000. Bonded indebtedness, \$1,430,000. The company has been operating three years. The population of territory served is 300,000. 9,100 telephones are in operation in three territories, comprising 7,700 direct lines, having one telephone each, of which 4,400 are in residences and 4,700 in business. The number of subscribers using both Bell and independent telephones on the same premises is between 3,000 and 3,500, largely residences.

The average cost of local plant is \$145 per subscriber, the lines being mostly metallic copper circuits, of which one half are in underground conduit. The system in use is a 'central energy,' manufactured by the Stromberg-Carlson Tel. Mfg. Co., of Rochester, N.Y.

The rates charged are, for business telephones within the city limits, \$48 per annum. Residences within one mile radius, \$24 per annum. Within two miles, \$30 per annum. Outside the two-mile radius but within the city limits, \$36 per annum.

The company has about 200 rural telephones, but this branch of the business has not been developed because of the heavy city business. The rates for farmers' service are regulated by mileage.

No dividends have been paid on the stock, but one is in prospect for the near future. Five per cent per annum has been paid on the bonds. Three to five per cent is set aside for depreciation, although from one to two per cent is considered ample. The amount of surplus, or reserve fund, on December 31 last was \$34,000.

The company interchanges service with any independent or anti-Bell company through the Independent Long-Distance Telephone and Telegraph Company, the local company getting 25 per cent on originating business, where clerks, &c., are furnished, the long-distance company reserving the right to put their own switchboard and clerks in at a lower percentage.

The number of Bell telephones before competition was about 3,800. At this date the Bell telephones are about 8,000, of which latter 4,600 are residence and 3,400 business telephones.

The Bell rates before competition were as under :—

Business.

Limited Service—

Six-station circuit, \$30 per annum and 3c. per each out-going call.

Four-station circuit, \$42 per annum, 60 calls per month; extra out-going calls 4c. each.

One telephone on line, \$60 per annum, allowing 60 calls per month; extra out-going calls, 5c. each.

Unlimited Service—

Four-station circuit, \$48 per annum.

Two-station circuit, \$78 per annum.

One telephone on line, \$96 per annum.

Extension telephones, \$18 per annum.

Residence.

Limited Service—

Six-station circuit, \$24 per annum and 2c. per outgoing call.

Four-station circuit, \$42 per annum, allowing 60 calls per month; extra out-going calls, 3c. each.

One telephone on the line, \$48 per annum, allowing 60 calls per month; extra out-going calls, 5c. each.

Unlimited Service—

Six-station circuit, \$30 per annum.

Two-station circuit, \$48 per annum.

One telephone on the line, \$60 per annum.

Extension telephones, \$18 per annum.

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Since the inception of the independent service in this territory, the rates of the Bell Company have been almost anything to get business. During the year 1902 and part of 1903 they installed several ten-party line telephones at the rate of \$12 per annum in residences. They also endeavoured to start ten-party business lines at \$30 per annum, but only put in fifty of them, and have since cut them out entirely.

The Bell Company here has over 66 per cent of its subscribers on party lines. They now charge \$90 per annum for one business telephone on a separate line, or \$48 per annum per telephone, with four telephones on the same line. When they think a subscriber must retain their service, they will not furnish a \$48 telephone, but insist on payment of the \$90 rate.

Their latest residence rates are : for one telephone on a line, \$36 per annum; for a number of telephones on the same line, \$24 per annum each.

Wages paid are : Foremen, \$3 per day; trouble-men, inspectors and wire-men, \$2.50 per day; switchboard operators, \$12 to \$30 per month.

The cost of the central switchboard, with 7,500 lines equipped and an ultimate capacity of 12,600 lines, was about \$150,000.

The subscribers wall telephones cost about \$10.50 each. The desk telephones the same.

Cost of poles, chestnut and cedar, ranges from 75c. to \$30 each. Cross-arms cost 25c. each.

The plant is divided into several departments, as follows:—

The cashier's department, which controls the book-keepers, collectors, &c.

The contracting department, which controls the putting in and taking out of telephones, the issuing of directory, &c.

The wire chief's department, which has control of the switchboard and clearing of trouble.

The operating department, which controls the operators at the switchboard.

The stenographic department, which takes care of the stenographic work and typewriting, filing of correspondence, &c.

The team department, which controls the stablemen, wagons, stock, &c.

The company owns no long-distance lines, but connects with those of the independent Long-Distance Telephone and Telegraph Company, the charges being about three-fifths of a cent per mile.

The company has thirteen directors, composed of leading business men in the city.

No. 27a.

LOUISVILLE, Ky., April 12, 1905.

Sir WILLIAM MULOCK,

Postmaster General and Chairman of Committee on Telephones,
Ottawa, Canada.

DEAR SIR,—In reply to your letter of March 28, 1905, which contains on the reverse side a number of questions, which we will now attempt to answer by number:—

1. The Louisville Home Telephone Company, operating in Louisville and Jefferson County, Ky.; New Albany and Floyd County, Indiana; and Sellersburg and Clark county, Ind.

2. Amount of stock issued to date is \$1,310,000; the bonded indebtedness is \$1,430,000.

3. Three years.

4. About 300,000 people.

5. Nine thousand one hundred telephones in operation in our three plants.

6. Seven thousand seven hundred direct lines, one telephone per line.

7. Between 3,000 and 3,500, largely residences.

8. About 4,400.

9. Four thousand seven hundred.

10. We own no long-distance lines.

11. Average cost per subscriber, of local plant, about \$145.

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12. We own no long-distance toll lines.
13. Metallic circuits, mostly copper.
14. Own no toll lines.
15. Own no toll lines.
16. About half and half.
17. Central energy.
18. Stromberg-Carlson Telephone Manufacturing Co., Rochester, N.Y.
19. We have about 200 at present. Have not as yet begun developing the rural territory, because of the heavy city business.
20. All business and professional telephones within the city limits, \$48 per annum. Residence telephones within one mile of the court-house, \$24 per annum. Beyond the mile limit and within two miles of the court-house, \$30 per annum. Outside the two mile radius to the city limits, \$36 per annum.
21. Long-distance company, with which our company connects, charges about $\frac{3}{4}$ of a cent per mile.
22. Our rates for such service are regulated by mileage.
23. No dividends have been paid as yet, but one in prospect for near future.
24. Five per cent interest paid on bonds per annum.
25. From 3 to 5 per cent, although from 1 to 2 per cent is, in our judgment, ample.
26. On December 31, 1904, was \$34,000.
27. We interchange service with any independent or anti-Bell company through our connection with the Independent Long-Distance Telephone and Telegraph Company, we getting 25 per cent on originating business where we furnish clerks, &c. The long-distance company reserving the privilege to put their own board and clerks in at a lower percentage.
28. About 3,800.
29. About 8,000 in the same territory covered by us.
- 30 and 31. About 3,800 telephones estimated.
32. About 4,600 residence telephones.
33. About 3,400 business telephones.
34. Bell rates before competition were as follows:—

<i>Business or Professional.</i>	Per Month.
Limited service (six-station circuit, three rings on same line), outward calls, 3c. each.	\$2 50
Limited service (four-station circuit, two rings on same line), 60 calls per month; extra calls, 4c. each.	3 50
Limited service (private circuit), 60 calls per month; extra, calls 5c. each.	5 00
Unlimited service (four-station circuit, two rings on same line)	4 00
Unlimited service (two-station circuit, one ring on same line).	6 50
Unlimited service (private circuit).	8 00
Extension.	1 50

<i>Residence.</i>	
Limited service (six-station circuit, three rings on same line), outward calls, 2c. each.	2 00
Limited service (four-station circuit, two rings on same line), 60 calls per month; extra calls, 3c. each.	3 50
Limited service (private circuit), 60 calls per month; extra calls, 5c. each.	4 00
Unlimited service (six-station circuit, three rings on same line).	2 50
Unlimited service (two-station circuit, one ring on same line)	4 00
Unlimited service (private circuit).	5 00
Extension set.	1 50

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35. Since the inception of the independent service in this territory, the rates of the Bell Company have been almost anything to get business. During the year 1902 and part of 1903, they installed several ten-party line telephones at the rate of \$1 per month in residences. They also endeavoured to start ten-party business lines at \$2.50 per month, but only put in fifty of them, and have since cut them out entirely. The Bell Company here has over 66 per cent of its subscribers on party lines. They now charge \$7.50 for an independent business line, or \$4 per month for four-party business line. When they think a subscriber must of necessity retain their service, they will not furnish them the \$4 service, but insist upon their paying the \$7.50 rate. Their latest rates on residence telephones, independent line, are \$3 per month net; party lines \$2 per month net.

36. Foremen, \$3 per day; trouble-men, inspectors and wire-men, \$2.50 per day; operators, from \$12 to \$30 per month.

37. (a) Our switchboard has an ultimate capacity of 12,600, with 7,500 lines equipped, which have cost to date, including test racks, &c., about \$150,000.

(b) We have no sub-exchange switchboards.

(c) Subscribers wall telephones about \$10.50 each.

(d) Subscribers desk telephones about \$10.50 each.

(e and f) We use so many different sizes of lead cable for underground and overhead work that it is impossible to give the cost of this material, as the prices vary so much with the fluctuation of the market.

(g) We use wooden poles, chestnut and cedar, and the prices range from 75 cents to \$30 each.

(h) We use yellow pine cross-arms, which cost about 25 cents each.

(i) Market prices, which vary.

(j) We use the McRoy clay works multiple duct, and this varies in price, so much per duct foot.

38. The plant is divided into several departments, as follows:—

The cashier's department, which controls the bookkeepers, collectors, &c.

The contracting department, which controls the putting in and taking out of telephones, the issuing of directory, &c.

The construction department, which has charge of the linemen, installers and equipment.

The wire chief's department, which has control of the switchboard and clearing of trouble.

The operating department, which controls the operators at the switchboard.

The stenographic department, which takes care of the stenographic work and type-writing, filing of correspondence, &c.

We have a team department, which has control over the stablemen, wagons, stock, &c. This about completes the organization.

We have 13 directors, composed of leading business men of the city.

Trusting this information will serve the purpose for which you desire it,

I am, yours truly,

JNO. A. ARMSTRONG,
President.

No. 28.

GLEN HURON, ONT., April 13, 1905.

The Hon. Sir WILLIAM MULOCK,
Chairman Telephone Committee,
Ottawa, Ont.

DEAR SIR,—I have been following with much interest the proceedings of the Telephone Committee, of which you are the chairman, and in common with the people here, am pleased to know that the matter has been taken up by the parliament of Canada.

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We have had our own little experience in telephone matters. Though not so great as many you are dealing with, yet it was of vital importance to the communities interested, and I beg to add our quota to the evidence you are receiving.

We had asked the Bell Telephone Company on several occasions to extend their lines to this place, and always met with a refusal. We then built a private line extending from Singhampton to Glen Huron station giving the people, though they had not contributed anything towards it, free service as far as it went. Nottawa and Duntroon to the north of us, Singhampton, McIntyre, Badgeros and Maple Valley to the south and west of us, being without either telegraph or telephone communication, with the exception of telegraph at Duntroon and Singhampton, the writer proposed a scheme to form a joint stock company with shares of \$10 each, to build a line from Collingwood connecting with the above-named places, and also to extend to Creemore via Dunedin later on. We proposed giving as cheap service over the whole line as possible, the object being convenience and not dividends. We had several meetings, and the people were in hearty sympathy with the project and everything went well until the Bell Telephone Company heard of it, who then sent, unasked, two men canvassing over the territory for weeks. The first asked large bonuses from each place, and in every instance but one were refused. When they could not block our scheme any other way, they immediately accepted a small bonus subscribed by the people of Duntroon and ran a loop into that place and a loop from Collingwood to the village of Nottawa without any bonus or consideration whatever, and unasked. As these two places were large subscribers to the proposed local line, and feeling that the latter would be largely deprived of patronage on account of the Bell having long-distance connection, we found it impossible to get their assistance, and the result was that the scheme fell through for the time, and the other points mentioned are still without a line.

As soon as the Bell company had the matter blocked, they immediately withdrew their canvassers, and I do not know of one being on the scene since.

I might add that the points left out in the cold are more anxious now than ever they were for telephone convenience, and would gladly co-operate with the government along the many lines being suggested by your committee.

As I do not think it necessary to go to Ottawa to give what evidence we have here, I have availed myself of your kind invitation to send in an outline of what occurred in this section. If necessary, I can have data, affidavits, &c., prepared and sent to you.

Hoping that what I have said may be of some benefit to you in your deliberations, and that you may find a suitable plan to relieve the people of this country of the iniquity of such a monopoly as we have been, and are now, up against.

I remain, your obedient servant,

W. H. HAMILTON.

No. 29.

SYNOPSIS OF LETTER OF APRIL 15, 1905, FROM J. H. MORROW, OF BRIGHTON, ONT., TO THE CHAIRMAN OF THE SELECT COMMITTEE ON TELEPHONES.

Mr. Morrow incloses invoices from the American Electric Telephone Company of Chicago for two complete telephone sets of modern type, including long-distance transmitters, showing the cost to be \$8.55 each f.o.b. Chicago.

Mr. Morrow states that the Grand Trunk Railway will not allow a telephone of the local system in the Brighton station.

He also suggests that Mr. Wm. Wade and Mr. Samuel Nesbitt, of Brighton, be called as witnesses.

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No. 30.

TO THE HONOURABLE THE BOARD OF RAILWAY COMMISSIONERS OF CANADA,
Ottawa, Ont.

May it please Your Lordships:—

The towns of Fort William and Port Arthur, in the province of Ontario, having constructed under due authority, a joint system of municipal telephones, hereby apply to your honourable board for an order, under section 193 of the Railway Act, 1903, upon the Canadian Pacific Railway Company, to provide for telephonic connection and communication with and within the respective stations of the company at both Fort William and Port Arthur, and that by such order such further directions be given as may be expedient according to law.

W. D. LIGHTHALL,

Attorney of the Towns of Fort William and Port Arthur.

MONTREAL, January 28, 1904.

BOARD OF RAILWAY COMMISSIONER.. FOR CANADA.

In the matter of the application on behalf of the towns of Fort William and Port Arthur for an order under section 193, providing for the instalment of municipal telephones on the premises of the Canadian Pacific Railway Company.

OTTAWA, March, 15th, 1904, 11 o'clock, a.m.

JUDGMENT OF THE HONOURABLE A. G. BLAIR, CHIEF COMMISSIONER.

This is an application by the municipality of Port Arthur under section 193 of the Railway Act for an order of this board granting leave to the municipality, which has organized a telephone system in the district, to enter the premises and stations of the Canadian Pacific Railway and place its telephones and make connections at the railway station and on the railway premises with the municipality's exchange.

On the hearing of the application the Canadian Pacific Railway and Bell Telephone Company severally appeared by counsel and objected upon grounds which will hereafter appear to the making of the order applied for.

Several questions of considerable importance have been raised by the contending parties, and as the application is the first which has been made under the 193rd clause of the new Act, and will in all probability be followed by others of a similar nature, it has been deemed advisable by the board that in rendering our judgment we should state our views somewhat fully upon the principal contentions which have been put forward in the case.

The applicants chiefly rely upon the provisions of the statute as entitling the municipality to be admitted to the stations and premises of the railway at Port Arthur, and to place and maintain their telephones thereon. They claim that the privilege should be granted without compensation to either the railway or telephone company by reason of any contractual arrangements existing between those two companies for the use of the Bell Company of the railway premises for telephone purposes to the exclusion of any other telephone system, and contend that the only right to compensation this board can properly recognize is in respect of the expenses reasonably incident to the placing, operating and maintaining the telephones of the applicants.

In opposing the application, Mr. Creelman, counsel for the Canadian Pacific Railway, produced a contract, which had been entered into on the first of May, 1902, and therefore before the Railway Act, 1903, was enacted, between that company and the Bell Company granting the latter company exclusive privileges of placing its telephones in the stations and on the premises of the railway company throughout its en-

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ture system, and wherever the Bell Company was established. The privilege was granted for a term of eight years, two of which years have elapsed.

It is alleged that the service performed by the Bell Company is pecuniarily and otherwise of great value to the railway company and its patrons. That the Bell Company system is most efficiently organized, that it gives a most excellent service and covers a large area in which no other telephone system exists. That such a service is required by the Canadian Pacific Railway and its patrons in order to the most efficient working of the railway and can be supplied by no other company, and that there would be no inducement to the Bell Company to give such a service if the railway company were to open its stations for telephonic purposes to competing parties.

The Bell Company, through its counsel, contended that the company had vested rights and interests by virtue of its exclusive contract, which would be injuriously affected if the order applied for were made, especially without just and proper compensation. That this board has no power or jurisdiction to make such order without awarding due compensation to the companies in respect of the rights and interests arising out of the contract. That the contract was a legal or valid contract, entire in its character and founded upon a valuable consideration, the essential feature of which is the exclusive privilege. That if the consideration failed, as it was contended would happen if the order applied for were made, the contract would be voidable at the option of the Bell Company, and that the duty devolves upon this board, while regarding public interests, of protecting private rights as well.

Mr. Lafleur, on behalf of the Bell Company, produced a somewhat detailed statement, the accuracy of which was not controverted by evidence, showing the financial results for a year of the operation of the contract as between the railway and the Bell Company, which is as follows:—

Results to the benefit of the Canadian Pacific Railway—

Passes and franks over Bell Company's long-distance lines, valued at.	\$ 18,297 00
Exchange service, 774 instruments free to railway company, valued at.	22,562 00
	<hr/>
	\$ 40,859 00

To the benefit of Bell Company—

Trips, annual and periodical passes over Canadian Pacific Railway, valued at.	\$ 22,258 00
Refunds.	200 00
	<hr/>
	\$ 22,458 00

This statement, it may be noted, makes no mention of what is to the company a very profitable feature of its exclusive privileges. I refer to the advantage the Bell Company enjoys over its competitors in obtaining subscribers, by being able to ensure connection with, by subscribers, to the stations and offices of the railway.

Both parties to the contract of the first of May declare themselves averse to its abrogation, or to any action by this board which may lead to its abrogation, and each professes to fear that to allow this application, unless subject to payment of compensation upon a large scale—so large, according to suggestions made during the argument, as to be tantamount to a refusal of the order—would operate to the serious disadvantage of the two companies.

Mr. Lighthall, for the applicants, in his general reply, contended that the claim for compensation based upon the contract of May 1, should not be recognized; that the extent of the Bell and railway companies' territory, which would be affected by an order for admission to the railway station at Port Arthur, is so trifling and the disturbance of the existing arrangement in that one locality would be so small and unimportant a disturbance, having regard to the extent and area of the Bell Company's field of opera-

tion, that it is not entitled to be seriously considered; that the agreement for an exclusive privilege is an agreement in restraint of trade and against public policy, and therefore void, and being void cannot rightly be considered as the basis of a claim by the Bell Company for compensation; and that so far as that company is concerned, it is not mentioned at all in section 193, and not being specially named, it has no rights which this board is bound to respect or recognize.

After having given the argument presented to us respecting the validity of the agreement of May 1 very careful consideration, I am unable to conclude that such agreement is not a legal and binding contract. The question as to whom a contract conferring exclusive privileges is void as being in restraint of trade and against public policy, has been quite recently judicially determined by the highest tribunal in the empire. As late as the year 1894 the House of Lords, on appeal from the Court of Appeal in England in the case of *Nordenfeldt vs. Maxim Gun Company*, 1894, app. cas. 535, after passing in review the leading decisions up to that date, laid down the principles which governed the determining the question in these words: 'That such a contract was valid so long as it was wider than was necessary for the protection of the company, nor injurious to the public interests.'

Lord Herschell quotes with approval the language of James, V.C., in the case of *Leather Cloth Co. vs. Lorsont*, who said:

'All the cases, when they come to be examined, seem to establish this principle—that all restraints upon trade are bad as being in violation of public policy, unless they are natural and not unreasonable for the protection of the parties in dealing legally with some subject matter of contract.'

With approval he also quotes from the judgment of Fry, J., in *Rousillon vs. Rousillon*, 14 Ch. D. 351; 49 L. J. Ch. 338, the following: 'I consider that the cases in which an unlimited prohibition has been spoken of as void, relate only to circumstances in which such a prohibition has been unreasonable.'

Lord Herschell also adopts the test laid down by Tindall, C.J., in a leading case: 'We do not see how a better test can be applied to the question whether reasonable or not, than by considering whether the restraint is such only as to afford a fair protection to the interests of the party in favour of whom it is given, and nor so large as to interfere with the interests of the public.'

Lord Watson says:—'It must not be forgotten that the community has a material interest in maintaining the rules of fair dealing between man and man. It suffers far greater injury from the infraction of these rules than from contracts in restraint of trade.'

For my own part I am very clearly of opinion that no violence is done to the canon laid down by the 'common law courts in affirming that a restraint which is absolutely necessary in order to protect a transaction which the law permits in the interests of the public ought to be regarded as reasonable and cannot in deference to political ideas be regarded as in contravention of public policy.'

'There is no reported case which I have been able to discover, says Lord Ashbourne, where a covenant in general restraint of trade, clearly reasonable in itself and only affording a fair protection to the parties, has been held to be void.'

Lords MacNachten and Morris both concur in this judgment; see this case also reported in 6 Eng. Rul. Cases at p. 430.

It appears to me that in applying these tests there is no room for doubt—that the contract in question is a natural one—that the Canadian Pacific Railway was entering into an arrangement with respect to its own property, an arrangement manifestly in its own interests and those of the public who were using its railway, and that the Bell Company secures such reasonable protection only as would alone justify it in contracting for such a service as it was undertaking to perform. The contract, I should say, therefore, when entered into, was a legal and binding contract, enforceable against either party by the other, and not void on the ground alleged by the applicants. There was no law then on the statute book whereby the railway company could be compelled to allow any telephone company to place its instruments and operate a telephone

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in its railway stations; and not being legal compulsion to permit any, the railway company would be entirely free and quite within its legal rights to determine the conditions upon which any should be admitted. If effect were given to applicants' contention that this contract is void as being restraint of trade, this Board would in my opinion, be not so much relieving trade from undue restriction, as placing unheard of restraints upon the freedom of contract.

We were much pressed during the argument by counsel for the applicants to recognize the analogy between telephone and telegraph companies and railway companies—his proposition being that a telegraph company has no power, in the absence of a special provision in its charter, to alienate the privileges granted to, nor to execute a valid lease of its franchises, and therefore he would have us informed that the railway company in this case could not be a valid contract to confer upon the Bell Company the exclusive privilege in respect of the telephone service over their entire railway system. I recognize that the analogy is very close as pointed out by applicants' counsel, between railway, telephone and telegraph companies, but I am not sure that I clearly perceive the relevancy of this contention to the question before us. Undoubtedly there is no implied power in any corporation to make a valid transfer of its franchises. There must be express authority to enable it to do so. But I do not see that the contract under consideration can be so described.

There is not wanting further very clear authority showing that a railway company may lawfully do precisely what the Canadian Pacific Railway Company has done in the present case, and showing, as well, that the contract conferring an exclusive privilege, identical with that of the Bell Company in the matter now before this Board, is not invalid as not being in restraint of trade. I refer to the case of the Canadian Pacific Railway Company. The Western Union Tel. Company reported in 17 Sup. Ct. Rep. p. 151.

In that case E. & N. A. R. Co., which in 1869 owned the line of railway from St. John, N.B., to the United States boundary, gave the W.U.T. Co. by a contract in writing, the exclusive right to erect and maintain its poles and telegraph lines, &c., on the lands of the railway company—after the C.P.R. acquired the control of the line of way, an attempt was made to construct a line of telegraph along the railway property. The W. U. Tel. Co. resisted the attempt and the validity of the W. U. Tel. Co.'s exclusive contract was attacked in the courts, upon the ground, among others, that it was a contract in restraint of trade and was void as being contrary to public policy. The case was carried on appeal to the Supt. Ct. of Canada. That court held that the agreement was not void as an agreement in restraint of trade or as being contrary to public policy.

It will be of interest to read an extract from the judgment of Ritchie, C. J., which was concurred in, on this branch of the case, by the whole court.

'If the railway company deems it in the interest of the company that there should be only one telegraph line on the right of way, why may they not give an exclusive right to a telegraph company to occupy the right of way, and prohibit other telegraph companies from interfering with such exclusive rights, except by consent of the company to whom the exclusive right is given? If the railway company can give a right at all, why may it not give an exclusive right? A telegraph along the line may be, and no doubt is, indispensable for the safe working of the road. The financial condition of the railway may render it impossible for it to work the telegraph line for itself, and assuming that no telegraph company could be found who would erect it without the exclusive privilege, and so be protected from competition, what law is there to prevent the railway company from securing the line by granting such an exclusive privilege? I know of none. I fail entirely to see how this creates a monopoly and prevents competition. It certainly prevents the erection of another telegraphic line on the roadway, but how does it prevent the erection of a line on either side of the track, if the parties can secure the privilege of doing so over adjoining lands? If they cannot do so, in what different position are they than if the railway had erected

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this line for their own exclusive use, and refused to grant the privilege to any person or company ?'

'That there was no monopoly is abundantly clear from the fact proved on the trial and admitted on the argument, that the Canadian Pacific Railway Company have, at this very time, built their line on the railway track, having their poles just beside the right of way between Vanceboro' and St. John, ranging in places from twenty-five to thirty feet from the track.'

'The argument that an exclusive right to erect a telegraph line along the line of railway is against public policy would seem to rest necessarily on this delusion, if it has any foundation at all, that the public generally have a right to erect telegraphic lines along and on the line of railroad, and therefore their exclusion of any such right may cripple and prevent competition, and tend to create monopolies; but as the public have clearly no such rights, as there is nothing to prevent telegraph lines from being contiguous to and parallel with railroads, provided the right of way is secured, how can it be said to cripple and prevent competition and tend to create monopolies any more than the erection of the line of telegraph unconnected with the railway by private individuals for their own exclusive use on a line they have procured at their own expense would prevent competition, on a line parallel or contiguous thereto? What is there to prevent the erection of a dozen different lines by a dozen different companies for their exclusive use respectively?'

Admitting, therefore, as I do without hesitation, the close analogy between telephone and telegraph companies, and admitting that, for the purposes of the argument, this analogy extends even to railways, it still remains, if the judgment of the Supreme Court of Canada and the judgment of the House of Lords in England be good law, which every tribunal administering the law in this country is bound to submit to and respect, that the Canadian Pacific Railway and Bell agreement is in law a good, valid and binding contract.

There is another reference, not cited as an authority, which may not be inappropriately mentioned in this connection. In the year 1870, the Canadian government entered into an agreement with the Montreal Telegraph Company for a telegraph service on the Intercolonial Railway, and one of the covenants in that agreement is in the following terms: 'The company, in consideration of the premises, shall have the exclusive right to construct and work a telegraph along the line of the Intercolonial Railway until such a time as the option of purchase is exercised by Her Majesty.' This contract is in effect a perpetual exclusive franchise, unless the government should buy out the telegraph company's line on the terms set forth in the agreement. A similar agreement of an exclusive character exists between the government and the W. U. Telegraph Company. Can it then be said with any plausibility that for thirty years contracts have been in actual operation between the government and these telegraph companies which were absolutely void, and which fact until to-day has remained undiscovered?

Having reached the conclusion that the contract before us is a valid one, and is not void or voidable upon any of the grounds assigned, our attention may not properly be directed to the new clause, 193, in the Railway Act, under which this application is made. The applicants press upon us this view: That parliament, by the clause has abolished the exclusive feature of the Bell contract; it is a thing of the past they say, and it can continue to exist in any locality only until the expiry of its term or until such a time as an application is made by some other telephone company to set the exclusive privilege aside, and when either of these events occur no damages can properly be allowed by the board by way of compensation for the taking away of such privilege. We have been compelled in view of this contention, to examine clause 193 with much care and ascertain, if we can, the true meaning and intent of parliament in enacting it. Does it mean, as is alleged, that parliament intended to strike at a legal and binding contract, under which valuable rights and interests had been acquired and were being enjoyed, the consideration for which, as the Bell Company say, was the expendi-

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ture of a considerable amount by their company, and take away their rights without awarding compensation in the usual manner? Such legislation, I am assured, would be contrary to the genius and spirit of British legislation, and in violation of the most elementary principles of right and justice. While the power of parliament is supreme, and in the exercise of the right of eminent domain, it may, and not infrequently does, authorize the compulsory taking of private property for public purposes, it has never been known to do so without making, what it deemed, due provision for recouping the owner his loss in respect of the property taken.

It is not too much to say that the Canadian Parliament has not done so in this instance.

So careful have the courts of the land been to safeguard private rights and property that the most stringent rules have been laid down for the interpretation of statutes which may affect such interests.

In 1893, in the *London and N.W.R. vs. Evans*, it was determined that rights, whether public or private, are not to be hampered, interfered with or taken away by mere implication.

'The Legislature must clearly and distinctly authorize it.'—1893, I Ch. 16.

In 1889, in *re Cuno*: 43 Ch. D. 17, Bowan, L.J., said: 'In the construction of statutes you must not construe words so as to take away rights which already existed before the statute was passed, unless you have plain words indicating that such was the intention of the legislature.'

In *Wells vs. London and Tilbury Railway Co.*, 1877, 5 Ch. D., p. 130, Lord Bramwell, L.J., lays down the rule:—

'The legislature never takes away the slightest private rights without providing compensation for it, and a general recital in an Act providing for the execution of public works that it is expedient that the works should be done, is never supposed to mean that in order to carry them out a man is to be deprived of his private rights without compensation.'

In *Morris vs. Mellin* (1827), 6 B. and C. 446, Bayley, J.:—

'In order to avoid any written instrument by positive enactment, the words of that enactment ought to be so clear and express as to leave no doubt of the intention of the legislature.'

In the United States, in which country British legislatures are not inferior in their solicitude for maintaining the sacredness of personal and private rights, it is part of the organic law which declares that private property shall not be taken for public use without just compensation. Nor do I believe that there is any country in the world, which has emerged from savagery, where this great principle is unrecognized.

If it were necessary to pursue the subject further in this direction, it might be remarked that the object of the applicants being to secure access to the railway station, so that subscribers to their company may be able to make inquiries about train arrivals, freight and kindred matters, the company could easily secure this concession by locating an office convenient to the railway station, and its office agent could easily and promptly obtain the information desired and communicate with the subscribers seeking it. The applicant company will need, it is presumed, to employ a person to attend the 'phone in the railway station if a connection with the station is made, or else pay the Canadian Pacific Railway Company for employing some one to do so, which would mean precisely the same thing. The expense would be much the same; therefore (if that is an element to be weighed in the case), whether the company had its office convenient to the station or used the station agent's office.

It will seem to follow that no serious question of monopoly can arise where the sole question is shall the telephone company's agent cross the street and make the inquiries of the station officials, or be so located inside the building of the railway company that he may put his question from the inside. There is nothing to prevent as many telephone companies as may be in operation in any locality having easy, quick and quite convenient access to the railway station in the same manner.

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If it be said that the Bell Company has a monopoly, the question may be fairly asked, 'What does its monopoly consist of?' Certainly not of the telephone business. There is nothing to prevent telephone companies from being established in any locality where a company having means sufficient for the purpose may choose to locate. The extent of the monopoly, so far as affects the present application, is the right to have its 'phone in the railway station on railway premises.

The only difference between the Bell Company and any other company is that the railway company's agent may be reached directly by subscribers' 'phone, other companies not having a 'phone in the station may reach him indirectly by their agent most conveniently located. There is, therefore, no monopoly of the business of telephony; there is no monopoly of the information which the railway officials have to furnish for the general public; there will be no material difference in the expense of maintaining the telephone company's agent outside the railway station and maintaining him, so that, so far as I can discover, the general interests of the public are not prejudicially affected.

Looking at the clause in question in the light of the authorities I have above quoted, there is only one construction which can be put upon its language, and that is that the order, if made, must take account of any and all lawful rights and interests which will be injuriously affected by such order, and award compensation to the party or parties whose interests are affected upon such terms.

If the clause had made provision for the award of compensation limited to the construction, operation and maintenance of the new service, I doubt if the board could have properly made an order in this case at all. The omission to provide protection by the statute for all persons having existing rights which would be injured or destroyed by acting on the clause had there been such omission would, I incline to believe, have warranted the inference that the statute was intended to apply only when the parties interested were confined to the railway and the applicants.

We are relieved, happily, from any such difficulty by the plain language of the Act itself, which seems to contemplate and provide for two distinct kinds of compensation, in terms which appear to me to be free from doubt. 'The board,' the section reads, 'may order the company to provide for such connection upon terms as to compensation, &c.,' and then immediately following it deals with a class of claims for compensation, namely, such as might or would arise from the construction, operation and maintenance of the connection.

I read the Act as imposing upon the board the duty of granting an order in the case before us, although I do not say that the word 'may,' in the eighth line of the section, must in all cases be read as if the word 'shall' had been used. We believe the board is invested with a discretion to be exercised in each case, with due regard to the object and purpose of the Act on the one hand, and the conditions and circumstances surrounding the application on the other. Instances may not infrequently occur when neither the public interests nor convenience would be served by granting an order.

Coming now to the question of compensation: While I do not think the board should name a sum or definitely determine the principles which will govern it in arriving at the amount of compensation, without giving all parties an opportunity of being heard, it will be convenient and desirable, perhaps, for parties to be informed as to the way in which the minds of the commission are tending on this phase of the subject.

Speaking for myself, I think we should preserve an open mind until we have again heard the parties who may desire to be heard, but I incline to the view that this is not an instance which will call for the imposition of onerous terms. I hold the opinion that the Bell agreement is what is known to the courts as an entire and indivisible contract. The exclusive privilege granted the Bell Company is the essential consideration upon which the contract, on the part of the Bell Company, is founded. I believe there would not have been the same inducement to the Bell Company to make the expenditures and render the service it has done if this element in their contract had been wanting. I think, also, that a failure to maintain intact the exclusive feature of the

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agreement, as to a part of the Bell Company's territory, though such failure may be due solely to the intervention of parliament, is, at least, a partial failure in the performance of the contract, sufficient to entitle the Bell Company to have the contract nullified.

It does not follow, however, that because the contract is entire, and may be nullified, that either party will consider it to its interests that the existing arrangement should be terminated in its entirety, nor do I regard it as probable, in view of the profitable and satisfactory character of the service, that it will be disturbed to an extent beyond what may be necessary to give effect to such order as the board may make. Any actual pecuniary loss which may be shown will result to either the railway or Bell Company by reason of our order I think we should be disposed to consider. Beyond that as at present advised, I do not think we ought to do, as respects this branch of the question of compensation.

I think, therefore, our decision should be to make the order under clause 193, granting leave to the Port Arthur municipality to connect, operate and maintain its telephone system within the passenger and freight stations of the Canadian Pacific Railway Company at Port Arthur, upon terms as to compensation for any actual pecuniary loss the Bell Company and the Canadian Pacific Railway Company shall satisfy us they or either of them will sustain by or subsequent upon the interference with the existing contractual rights of the parties, and also such charges and expenses as may be occasioned by the construction, operation and maintenance of the connection in the stations at Port Arthur of the telephones of the municipality; and in the meanwhile, pending the fixing and adjusting of the amounts, if any, awarded, the issue of the order by the board should be suspended.

When the Board next met, the Chief Commissioner recalled to the recollection of the parties that during the hearing of case No. 6 application of Port Arthur, he had stated that the case then appeared to him to be one which might be proper to refer by way of special case, to the Supreme Court of Canada, and now said that he wished to say for the Board that if the parties in this case, or either of them, desired, the Board would facilitate their obtaining the opinion of the Supreme Court on the Board's decision, and would be pleased to refer the matter, in the manner suggested, to the court, if either of the parties so wished.

March 22nd, 1904. Note.—Neither of the parties has requested, up to the present time, that any reference to the court be made.

JUDGMENT OF THE HON. M. E. BERNIER, DEPUTY COMMISSIONER.

I concur to a certain extent with the views expressed by the President of the Board, but I cannot reach the same conclusion. I am free to admit that under the common law the agreement between the Canadian Pacific Railway and the Bell Telephone Company is valid, but while its validity cannot be questioned by this Board, I am not ready to draw the conclusion, that, because of its validity, any other corporation, either telegraph or telephone, is precluded from having access to railway, freight and passenger stations.

I have no notes, because I thought the Chief of the Board and myself might agree. For that reason I have not made a special study of the question in order to give elaborately my interpretation of the law.

I do not want to infringe upon the rights of the Chief of the Board.

By section 10 of the Act it is enacted that not less than two commissioners shall attend at the hearing of every case, and the Chief Commissioner, when present, shall preside and his opinion upon any question which, in the opinion of the commissioners is a question of law, shall prevail.

But sub-section (b) of clause 23 at line 4, speaking of the powers of the Board, says:— 'And shall have jurisdiction to hear and determine all matters whether of law or of fact.' Without having any desire to contradict the well prepared judgment

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of the Chief of the Commission I intend to take advantage of that clause, if I am right, and express my own views.

I have already said it is the common law and it is the law in the province of Quebec, that any agreement between parties, which is not against public interest, is a binding and legal one. I admit, as I have stated, that this contract is binding between the corporations which are parties interested in it, but I cannot concur in the conclusion of the Chief of the Board, that because it is binding the public must suffer the consequences.

I have now to invoke clause 193, which seems to me to have given to the Board powers which did not exist before.

I have followed the argument of the Chief, but I think if I may be permitted to say so, the conclusion he had drawn is going too far, that is, in saying that in every case compensation for the infringement of the agreement should be determined.

I am of the opinion that the intervention of the Board cannot set aside the agreement between the two corporations as long as it is not against public interest, but supposing the Bell Telephone Company, by reason of an agreement passed for the sake of mutual advantage to the companies concerned, using that privilege, should prevent or preclude a village or town of any telephone communication would it be in accordance with clause 193 ?

In order to express that more clearly; just suppose that in one of those remote villages the Bell Telephone Company was not willing, on account of the expense, or for some other reasons, to place a telephone in the station of the Canadian Pacific Railway, and if another local or municipal telephone company was willing to build a line, then the Bell Company or the Canadian Pacific Railway Company might step in and say, we have an agreement, you cannot reach the station, even although the Bell Company is not willing to install a telephonic system.

I am willing to admit that compensation may be given under certain circumstances, and if I read well the language of the Act it seems to me very plain that this is left, in case of non-agreement between those interested, entirely in the hands of the Board of Commissioners.

I will cite again, though it has been already referred to, clause 193: 'Whenever any municipality, corporation or incorporated company has authority to construct, operate and maintain a telephonic system in any district, and is desirous of obtaining a telephonic connection or communication with or within any station or premises of the company, in such districts, and cannot agree with the company with respect thereto, such municipality, corporation or incorporated company may apply to the board for leave therefor, and the board may order the company to provide for such connection or communication upon such terms as to compensation as the board deems just and expedient, and may order and direct how, when and where, by whom and upon what terms and conditions such telephonic connection or communication shall be constructed, operated and maintained.'

No agreement was made between the municipal telephone companies and the Canadian Pacific Railway. It is not my duty to inquire whose fault it is. I take the case as it is before us. The municipal corporations ask from the board authority to reach the stations of the Canadian Pacific Railway, and I understood from a question which I put the other day, that the aim of the corporations was to have a telephone in the passenger and freight stations. I am not discussing now the objections which were raised with regard to access to elevators. That may be another question, because, to a certain extent, these may be regarded as private property. But I have always considered that railway stations (passenger and freight) were to a certain extent for the use of the general public having to deal with railways.

The chief has stated, or suggested rather, in part of his elaborate remarks, that a building might be erected for the municipal telephone company near the station of the railway company. If there was no other remedy, that would be one which might be worse or equal to the evil. The public really want access to the stations, not by way of transmission through somebody who may misunderstand orders. When you correspond

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with a person you want to know you are dealing with a responsible party. If you speak to somebody not being responsible, transmitting verbally what you intended to say, or what you wished to be done, errors would often occur, yet nobody would be responsible. It has frequently happened to me, also to many others, that we use the telephone from our own homes for the purpose of transmitting our messages by telephonic communication to telegraph offices. Messages transmitted in that way in my own town are received by both the Canadian Pacific and the Great North-Western Telegraph Companies. Therefore, I cannot concur in the remarks of my learned colleague with regard to the mode which might be adopted by municipal telephone corporations to reach railway stations. I interpret the law, perhaps, in its wider sense. I think this clause was introduced into the Act, not only for the benefit of railway, telegraph or telephone corporations, but for the benefit of the general public, and until my judgment or interpretation of that clause is reversed by a higher tribunal, that is the interpretation that I will give to that section.

My conclusions are that : I admit that the contract is valid and binding between the corporations which took part in it. It is binding to a certain extent towards a certain class of the public, and I will cite one instance. If, for instance, a bogus company were to be organized just for the purpose of causing damage or trouble to the company by way of introducing a short line which might have one or two or three subscribers, I would certainly in that case refuse to grant an order. But, it seems, in the present case a whole village is concerned, having a service, if I am not mistaken, of over 300 subscribers. Am I correct?

Hon. Mr. BLAIR.—Oh, yes.

Mr. COOK.—Nearly 400.

Hon. Mr. BERNIER.—So you see the public interest in that sense.

I therefore concur in the part of the judgment of my learned colleague which says that the order should go for permission to introduce the wires and telephones in the buildings of the Canadian Pacific Railway, that is to say, the freight and passenger stations in the towns of Fort William and Port Arthur. With regard to the compensation, that will have to be determined later on. I am not willing nor ready now to carry the principle by way of stating that the Canadian Pacific Railway or any other railway corporation is entitled, *ipso facto*, to compensation for damages, leaving that to be determined after hearing the case which may be presented by the Canadian Pacific Railway or any other railway company in support of damages.

For these reasons, I will be ready to hear and consider the question of compensation, not because of the fact that there is no agreement, but from the fact that nobody should take advantage of another party without giving compensation, if due.

JUDGMENT BY DR. JAMES MILLS, M.A., COMMISSIONER.

DR. MILLS.—After considering the evidence and arguments in this case, I regret to say that I am unable to concur in all the conclusions at which the chief commissioner has arrived. Until yesterday morning I was of the opinion that I should simply vote non-concurrence in the argument and conclusion regarding compensation. Finally, however, I decided that it would perhaps be better for me to present even a hastily prepared statement for my reasons for taking the position which I have decided to take rather than simply vote in silence.

The issue in the case, so far as it has been heard, is evidently a question of law. Hence the opinion of my learned colleague, the chief commissioner, must prevail and be taken as deciding what the order of the court shall be. This is manifest from section 10 of the Railway Act, 3 Edward VII., c. 58; and on such a question it may be considered presumptuous for a layman to differ from so eminent and distinguished a lawyer as the chief commissioner.

Nevertheless, I feel in duty bound to explain very briefly how it is that I have failed to reach the same conclusion as that reached by the chief commissioner.

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In the citations set forth in the judgment of the chief commissioner, Lord Herschel quotes with approval the language of James V.C., who said that all restraints upon trade are bad unless they are natural and not unreasonable; also, with approval from a judgment of Fry, J., that unlimited prohibition is bad and consequently void, only when it is unreasonable; and Lord Herschell then says that a restraint upon trade is not unreasonable when it fulfils two conditions: first, that it affords only a fair protection to the party in whose interest it is imposed; second, that it is not so large as to interfere with the interests of the public. Lord Watson says that a restraint which is absolutely necessary to protect a transaction which the law permits in the interests of the public ought to be regarded as reasonable.

The statement of Lord Watson agrees with the judgment of Lord Herschell; but two questions arise when we come to apply it to the telephone case now *subjudice*:

First, was the agreement between the Canadian Pacific Railway and the Bell Telephone Company made 'in the interests of the public?' Was it not rather for the convenience of the railway and the benefit of the telephone company,—the public being incidentally benefited to a limited extent, while, by the terms of the agreement—in accordance with the avowed intention of the contracting parties—it was undoubtedly and materially restricted in its trade and business operations? It seems that a railway, under present conditions, cannot be successfully operated without the telegraph—the telegraph and the railway go together—but the telephone is quite different; it is a great convenience to a railway; it saves time and labour for the company, but it adds very little to the efficiency of the service as far as the public is concerned. Hence I maintain that the agreement in question was made, not in 'the interests of the public,' but for the benefit of the contracting parties, and for the express purpose of restraining and restricting the public from engaging in the telephone business, however much it might benefit them in their business transactions.

Second.—Are the exclusive privileges to the telephone company and the consequent restraint upon public business 'absolutely necessary to protect' the Bell Telephone Company in doing business with the Canadian Pacific Railway? It will scarcely be contended that Lord Watson meant such a protection as would create a monopoly, unless it could be clearly shown that the monopoly so created was in the public interest and so intended; and for the ordinary protection which a company requires to enable it to carry on a successful business under a system of free competition, surely an exclusive privilege such as that given in this agreement is not necessary; much less is it 'absolutely necessary' for the purpose.

Hence I conclude that this exclusive privilege, with its consequent restraints upon the public in their business transactions is not 'reasonable' in the sense intended by Lord Herschell or Lord Watson.

In the judgment of Chief Justice Ritchie, *re* the telegraph case quoted, that the gist of the argument appears to be that the restraint placed upon trade by the argument referred to in that case did not create a monopoly and so was not against public policy, because, notwithstanding the exclusive privilege given to the telegraph company, effective and successful competition was still possible, that a competing telegraph line could be successfully run on either side of the right of way of the railroad, or lines on both sides, which line or lines would practically serve the same purpose and accomplish the same objects as if they were on the right of way, but such successful competition, I submit, is not possible in the means of gaining access to the stations of a railway for telephone service; and hence I conclude that this telephone case is not covered by the judgment of Chief Justice Ritchie.

Further, it is shown that the Dominion government has made contracts with telegraph companies, giving privileges similar to that in the case covered by the judgment of Chief Justice Ritchie; but for the reason stated above, these cases do not assist us in reaching a conclusion in the telephone case. They are different; they do not apply; and they cannot be taken as establishing the 'reasonableness' of the exclusive privilege given in the telephone agreement.

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In all these cases, however, one thing is clear, viz.: that the fundamental and guiding principle is the public interest, and that no restraint upon trade or restriction upon legitimate business in any part of the country should be regarded as reasonable and in harmony with public policy, unless it can be clearly shown that it does not interfere or tend to interfere with rights and interests of the public in that locality.

It may be said that an exclusive privilege, such as that in the telephone agreement, does not interfere with the public interest, because the public will be better served by a strong, well-equipped organization such as the Bell Telephone Company, than it would be served if free competition were allowed. That may or may not be so. One thing we know, viz., that this is the argument of all monopolists. We also know that, generally speaking, the people are the best judges of their own interests; and, on a well-established principle of government in free countries, they should be allowed to decide such questions for themselves—whether to depend wholly on an organization such as the Bell Telephone Company, or to establish a municipal system of telephones for their own use.

It is also said that when this agreement was entered into there was nothing in the law to prevent it, and therefore it should be regarded as a natural and reasonable agreement under the common law of the country. If there was nothing in the law to prevent it then, there is nothing in the law to prevent it now; so at the expiration of this agreement, a new agreement may be entered into and the prohibition against municipal and other competing telephone systems made perpetual, unless under terms of compensation, which, in large towns and cities, will be virtually prohibitive; and who will venture to say that such a condition of things will be in the public interest?

So, taking the law as set forth in the judgment of the Chief Commissioner, and considering all the facts of the case, I am forced to the conclusion that the exclusive privilege in the agreement of the Bell Telephone Company and the Canadian Pacific Railway Company aims at creating a monopoly, is intended to prevent competition in the telephone business, interferes with the public interest, is against public policy, and as a consequence debars the contracting parties in the agreement from all claims for compensation against the municipality of Port Arthur, or any other municipality which, with the consent and approval of the Board of Railway Commissioners, may install telephones at its own expense in the stations of the Canadian Pacific Railway Company, upon payment of reasonable compensation for use of the premises occupied and the expenses of operating their telephones in the said stations.

No. 31.

GRAND VALLEY, April 14, 1905.

Sir WM. MULOCK,
Chairman, Select Committee on Telephones,
Ottawa, Ont.

Sir,—In your reports I do not see any system arranged and worked as ours is, so that a few words regarding the operation and management may be of interest.

A line thirteen miles long runs through the township of East Luther and ends in Grand Valley, a village of 900, the market place for said township.

A co-operative association was formed having shares of \$10 each, and this stock was subscribed by people in the village and the township to the amount of about \$1,400, each subscriber taking from one to four shares. Having more money subscribed than was necessary, we only called for 60 per cent.

A telephone was put in a convenient rural residence about every two miles, and any one wishing to use the line goes in and pays 15 cents for a talk. The time is not limited for the conversation. Messenger service is charged according to distance, usually 5 cents and 10 cents; or if a farmer two or three miles away is wanted it may be 25 or 50 cents. That is mutually arranged before the messenger goes.

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The farmers were anxious to have the 'phone, so that we do not pay for the operation of it.

Reports from each office are sent in at the end of each month. We have blank form reports, one of which I will inclose.

A dividend is declared at the end of each year according to the business of the year, and each year it has been 20 per cent of paid-up capital.

Our cost of running the line is thus almost nothing, as there has only been one break during the last year.

We have no one who has had any experience with telephones yet. In the three years there has been no complication that has not been remedied by an ordinary mechanic.

We are using No. 17 series 'phone, manufactured by the Chicago Telephone Supply Co. of Elkhart, Indiana, and they have given us good satisfaction.

We are connected with another company who has a line on the same plan 14 miles; also two others having 5 and 15 miles respectively.

The Amaranth Telephone Company with 5 miles of line are building an additional 17 miles now, and connection is made here by means of a 3-line switch-board, to Grand Valley, the head office.

Lines of short distance will be built across the township, but in series only a limited number can be put on, as it complicates the selective rings. In rural districts switch-boards work all right to lessen the phones in series, but of course if the farmer's wife is not at home that cuts off a certain district from the market town.

The farmers would not be without the line now at any cost.

Any other information regarding the working of our line will be cheerfully given. Encourage building of rural lines, then the government might give us connection with the large commercial centres.

Yours truly,

G. I. CAMPBELL,
President, East Luther Telephone Co.

No. 32 (abridged).

THE YORKTON NORTH-WEST ELECTRIC CO., LIMITED,
YORKTON, ASSA., April 17, 1905.

To the Postmaster General,
Ottawa.

SIR,—The following is in answer to yours of March 28 (although it bears the impression of having been posted from the House of Commons on April 10).

I first began installations of farmers' telephones about five years ago. It was at first very difficult to convince the farmer that the telephone was just as essential to his success as the latest agricultural implements, good roads, or any other improvements. To many of those who have not yet telephone connection it is still sometimes hard to bring conviction, but my experience is that once it is installed it is there to stay, in fact many subscribers have informed me that they would not be without it if it cost many times as much as it does now. The great drawback, however, is lack of capital. The average farmer is still struggling to get into an independent position, and is really not in a position to take enough shares in the company to run the line into his farm. We have now about 130 miles of farmers' lines. There is no doubt we were a little premature in running out these lines so far, but as soon as capital is subscribed its ultimate success is assured. Not a day passes but one or more farmers come trying to prevail upon us to give them connection, but unless they are very near our existing lines we are not yet in a position to comply with their request. At present we have two lines each over 60 miles long and are easily and satisfactorily working 30 'phones on each line, but to enable us to do this we install nothing but the best bridging 'phones.

You will readily understand that as our local system has been working over six years, that in those comparatively early days independent manufacturers were few and

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those few in a small way of doing business; there were then no standard instruments and even those were of a very crude nature to what they are now, and then again the independent manufacturers have gone on improving these every day since. Our system started with 24 subscribers, among whom Dr. Cash, M.P., was one, and just as the demand increased provision was made for new subscribers; again just as the different parts of 'phones were improved these replaced our obsolete parts. This, by the way, is to show how hard it would be to answer some of your questions, and if answered, how unfair it would be to compare the cost of this installation with a new one. Again, I am myself a practical man and all the separate parts of our whole plant have been purchased from so many different manufacturers and assembled here by my own hands.

I am enclosing specification and drawings (which are practically the same as the Canadian patent granted me) of the local system that we have installed here. As to its working and the general satisfaction that it gives, I would advise you to call in Dr. Cash. Any further information that you might wish for I will only be too pleased to give on request.

Yours truly,

THOS. PAUL.

No. 33.

STROMBERG-CARLSON TELEPHONE MANUFACTURING Co.,
ROCHESTER, N.Y., April 21, 1905.

The Hon. W. MULLOCK,

Postmaster General and Chairman Select Telephone Committee,
Ottawa, Ont.

MY DEAR SIR,—We have the honour of acknowledging the receipt of your communication under date of April 6, addressed to our Chicago office, which has been forwarded to this office for attention.

We have before us a number of the various press comments on the telephone situation in your country, and are very pleased, indeed, to lend you any assistance possible in acquiring an accurate knowledge of the telephone situation as it exists in the States.

There is, probably, no industry in the United States which has made such rapid development as the independent telephone industry, there having been less than one hundred thousand dollars invested in this industry in 1895, and variously estimated from two hundred and fifty to three hundred and fifty million dollars at this time. It is quite difficult to compile reliable statistics touching upon this subject, by reason of this rapid and enormous growth.

Until recent years the independent movement developed along, what you might say, individual lines, each company organizing, building and operating without reference to its neighbour; but in recent years the necessity of closer relations has led to the organization of a number of long-distance, toll-line companies, connecting the various local companies, so that in certain parts of this country to-day the independents are able to give a long-distance service for a distance considerably exceeding one thousand miles; as, for instance, it is possible to carry on a conversation from Kansas City, Mo., to Pittsburg, Pa., a distance of something over one thousand miles, over independent lines, all of which has been accomplished in less than ten years.

We assume that it would be interesting to your Committee to know that in this country there are practically two telephone systems operating in a majority of the towns and cities. The only large cities which are not now connected with independent service in the United States are New York, Boston, Washington, New Orleans, Detroit, Milwaukee, Denver, San Francisco and Portland, Ore. In many of the cities mentioned, franchises have been granted by the municipalities; companies have been organized, and many of these will have exchanges completed and in operation within the next three or four years. The two systems mentioned are composed of, generally, the Independent and the Bell; the independent companies usually being made

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up of local capital organized as a regular corporation, and may include but a single city or town, or even a number of counties; the Bell Telephone Company is always a branch of the American Bell Telephone Company, with headquarters at Boston, and in every case the sub-licensee company are absolutely controlled by the parent or American Bell Telephone Company, they owning, at least, 51 per cent of the capital stock of all. These sub-companies usually cover an entire State, and in some cases three or four States; but in every case they are compelled by the parent company to pay a rental of from two dollars and a half to three dollars per year for each transmitter and receiver in service. Their methods are usually the methods of all monopolies, and their competition easily met by the local or independent companies.

The American Bell Telephone Company are the owners of the entire long-distance telephone system of the United States, and which operates in conjunction with all of the Bell sub-licensees and makes contracts with only such companies.

The independents, as stated before, are usually organized by local people and the capital composed of local capital; and in certain areas certain independent toll-line companies have been organized, who make exclusive toll-line connecting contracts only with independent operating companies. The consideration and rules covering these connections vary largely, but the most favoured plan is a certain percentage allowed by the long-distance company to the local company on all tariff tolls originating with that exchange, the said exchange handling all incoming business without cost to the long-distance company. This percentage or commission ranges from 20 to 50 per cent of the gross tolls originating from each station.

The independent long-distance companies in this country have succeeded in forming what is known in the Central States as the 'Toll-Line Conference Committee.' This committee is composed of a number of long-distance companies, covering practically all of Pennsylvania, Western New York, Ohio, Kentucky, Michigan, Indiana, Illinois and Missouri. They have succeeded in standardizing methods of construction and apparatus used until the service is superior to that rendered by competitors.

Until recent years the rural communities received no consideration whatever at the hands of the monopoly, or the Bell Telephone Company; but when the independents came into the field, some of the newly-organized independent companies were wise enough to consider their demands and extended lines into the country, furnishing service to these districts at reasonable rates; the lines usually extending not to exceed eight miles from the nearest exchange, and were usually metallic lines with not less than ten or more than fifteen upon a line, employing what is known as a 'bridging telephone.' The operation of this line was by means of a series of code signals, being one, two, three, and so on, rings, which, of course, limited the number of instruments which could be used on the line practically, by reason of the multiplicity of signals after a certain number had been installed. There are some objections raised, occasionally, to this system, viz.: that there is no secrecy in the conversation held; but it is found that farming communities, as a general rule, do not object to this feature of the farm line, and it has, therefore, been generally adopted in this country and is today considered standard rural telephone practice. As stated before, in many cases the local companies build these lines and furnish the telephones, charging the farmer for such service from \$12 to \$24 per year, according to the locality and the length of the line from the central office. In other communities, the farmer builds the line up to the city limits, furnishes his own telephone and maintains the line and telephone, paying the local company for switching and exchange service a fee of from \$3 to \$8 per annum, according to the number of telephones upon the line. In other cases, the entire community are connected with a mutual system. This includes not only the farm lines, but the central office and local exchange as well. These exchanges are usually built and operated upon the co-operative or mutual plan, that is, each subscriber to the exchange is a shareholder in the company, paying for such share a certain amount of money, ranging from \$30 to \$60, according to the locality and the character of the exchange which the company build. These companies are not as popular as they were some years ago, as it has been found that the telephone business has developed so

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rapidly, and that there are so many people who demand telephone service, yet are not desirous of being stockholders in the company, that this plan frequently operated against the normal development of the enterprise.

In the early stages of the independent telephone development, a number of mistakes were made by introducing inferior apparatus and cheap construction. These errors have, no doubt, proven very beneficial to the independent companies, for the reason that to-day the character of the construction is superior to that of the opposition, and it is universally conceded by the general public that the independent telephone service throughout the country generally is far superior to that of the Bell Telephone Company.

A remarkable development has taken place in the rural telephone service in the States in the last three years, until to-day it is almost a necessity for a successful farmer to have a telephone in his residence. Considerable literature has been published from time to time touching upon this subject. Our company, as a manufacturing company, have done considerable along these lines. Inasmuch as this is one of the branches of this industry to which your committee are giving especial attention, we have the pleasure of inclosing you, under separate cover, several circulars which we regularly send to the farmers upon request, free of post.

We note with very great interest your request that we supply you with a list of companies, co-operative associations or private individuals who have installed our systems. We are a little bit inclined to believe that you do not quite appreciate the extent to which this business has developed in this country or the quantity of goods which we have sold in our history, when making this request. However, we will be glad to enumerate herewith a few of the large companies to whom we have furnished apparatus, and if in your judgment it would be of service to the furtherance of your ends to have a complete list of all of the companies in the United States to whom we have furnished apparatus, and you will advise us, we will certainly be very glad indeed to furnish same. It would probably take us a week or ten days to compile this data and have it ready.

The following exchanges are all what is known as 'full central energy' systems, employing either lamp or visual signal, multiple or transfer switchboards. There is no effort made however, to enumerate these according to size or locality. (Here follow the names of 86 towns in which exchanges have been installed.

Minneapolis and St. Paul, Minn.	Streator, Ills.	Moberly, Mo.
Duluth, Minn.	Sycamore, Ills.	Geneva, Neb.
Des Moines, Iowa.	Red Key, Ind.	Youngstown, Ohio.
Kansas City, Mo.	Winchester, Ind.	Aurora, Ills.
Boise, Idaho.	Anamosa, Iowa.	Springfield, Ills.
Seattle, Wash.	Atlantic, Iowa.	Elgin, Ills.
Fremont, Neb.	Clinton, Iowa.	Peoria, Ills.
Camden, Ark.	Dennison, Iowa.	Bedford, Ind.
Birmingham, Ala.	La Porte City, Iowa.	Kokomo, Ind.
New Decatur, Ala.	Marengo, Iowa.	Delphi, Ind.
Ft. Smith, Ark.	Oskaloosa, Iowa.	Ft. Wayne, Ind.
Waco, Tex.	Ottumwa, Iowa.	Frankfort, Ind.
San Antonio, Tex.	Red Oak, Iowa.	Greensburg, Ind.
Paris, Tex.	Shenandoah, Iowa.	Le Grange, Ind.
Beaumont, Tex.	Great Bend, Kan.	Noblesville, Ind.
Whitney, Tex.	Marion, Kan.	North Vernon, Ind.
West, Tex.	Olatha, Kan.	Toledo, Ohio.
Orange, Tex.	Bowling Green, Ky.	Warren, Ohio.
Salt Lake City, Utah.	Henderson, Ky.	Wauseon, Ohio.
Ogden, Utah.	Lexington, Ky.	New Philadelphia, Ohio.
Memphis, Tenn.	Louisville, Ky.	Delaware, Ohio.
Chicago, Ills.	Albany, Ind.	Greenville, Ohio.
Kankarkee, Ills.	Owensboro, Ky.	Akron, Ohio.
Lincoln, Ills.	Alpena, Mich.	Bridgeport, Ohio.
Pittsfield, Ills.	Benton Harbor, Mich.	Cadiz, Ohio.
Princeton, Ills.	Mankato, Minn.	Circleville, Ohio.
Rochelle, Ills.	New Prague, Minn.	Jamestown, N.Y.
Rutland, Ills.	Hannibal, Mo.	Rochester, N.Y.
	Liberty, Mo.	Utica, N.Y.

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The rates prevailing in the independent exchanges vary according to the size of the city. These rates average from \$90 per annum for a single business and \$72 for a single residence, down to as low as \$24 for a residence and \$36 for business in cities of 200,000 and over. In cities of from 50,000 to 200,000 the rates range from \$20 and \$36 to \$42 for residence and \$60 for business. In exchanges in cities having a population of under 25,000 the rates vary from \$24 and \$40 for residence and business rates down to as low as \$12 and \$18 for residence and business per annum respectively.

The independent development, in many cases, has reached a telephone to every ten of the population, and in one or two cases it has reached even a greater development than this. The average, perhaps, would run in the neighbourhood of one telephone to every twelve or fifteen persons.

The cost to build such exchanges will vary from \$60 per station for a 500-line exchange up to \$200 per station for a 12,000-line exchange. This estimate, of course, is based upon the switchboard, power plant and all central office equipment, the underground conduit, underground and aerial cable, toll lines, telephone instruments, &c.—or, in other words, a complete telephone exchange equipment.

It should also be borne in mind, in estimating the cost of construction of a telephone exchange and the cost of operation, that the larger the exchange the greater the cost per station to construct, and the greater the expense per subscriber to operate, as the number of calls per day depends largely upon the number of subscribers in the system.

We sincerely trust that we have been able to give you such information as will be of service to your honourable body, and assure you that we will be pleased to serve you at any time you will call upon us.

Yours very truly,
STROMBERG-CARLSON TEL. MFG. CO.,
Per J. W. STIGER.

No. 33a.

April 25, 1905.

SIR,—I have the honour to acknowledge the receipt of your favour of the 21st instant, and on behalf of the Select Committee on Telephone Systems, beg to tender you sincere thanks for your courtesy and kindness in furnishing the valuable information contained therein.

I am, Sir,

Yours faithfully,

WM. MULOCK,
Postmaster General, and Chairman of Committee.

J. W. STIGER, Esq.,

The Stromberg-Carlson Telephone Manufacturing Co.,
Rochester, N.Y.

No. 34.

THE UNION OF CANADIAN MUNICIPALITIES.

MONTREAL, April 27, 1905.

HON. SIR WILLIAM MULOCK, K.C., K.C.M.G.,
Postmaster General, Ottawa.

DEAR SIR,—By this mail I send you all replies received to date from municipalities in reply to the circular regarding telephones issued in the March number of the *Canadian Municipal Journal*.

APPENDIX No. 1

It appears to be a general impression that it was not necessary to answer these questions in all cases, in view of the petitions already signed by municipalities which were issued by the city of Toronto; and also in view of the resolutions which have been unanimously passed by the various conventions of the union after discussion, as shown in its annual reports, copies of which have heretofore been sent you. If anything more were necessary, I am able to say that the general sentiment of municipal men through the country, particularly of those who have paid attention to the question, is unanimously against the telephone powers which infringe on local control of streets and franchises as being bases upon a very bad principle, and is also nearly unanimous in favour of government ownership of long-distance telephone lines, and local control of local telephone franchises in municipalities of any size. Of course control does not necessarily imply municipal ownership, a subject on which there is more difference of opinion.

There is a very widespread conviction, based upon which appears to me to be solid ground of fact, that the Bell Company's rates are far higher than they ought to be. If my own inquiries into the matter are of any use, and I may say I have followed it without any prejudice, weighing many statements, and much published matter on both sides, I consider that the progress of the use of the telephone as a home comfort among the mass of our people is immensely retarded by the present virtually monopoly, although the business service in the largest circles appear to be comparatively courteous and prompt, especially under the pressure of recent criticism. But in our climate and with the isolating conditions of our winters, and of our thinly settled country, every possible effort ought to be made by parliament to spread facilities for cheap and easy telephone communication. It appears to me that the matter is one not only of great advantage, but of justice to our more struggling citizens. And few things would be better for the advancement of the country than if it could be said of Canada, as it is everywhere said of Sweden, and can also be said of parts of the Western States, that the isolation of the farm is abolished, and good telephones placed within reach of the means of every class of household.

As to the effect on the Bell Company, I do not think they would need really suffer any loss, inasmuch as they could do a splendid business by securing in fair competition long-term franchises from the principal cities and towns, a system I frequently advised them in the most friendly manner to voluntarily adjust themselves.

Trusting that the present remarks will not be found out of place connected with a subject of so wide and deep importance to our people.

I am, dear Sir,

Yours very respectfully,

W. D. LIGHTHALL,
Hon. Sec. Treas, U.C.M.

No. 35.

CANADIAN MANUFACTURERS' ASSOCIATION.

TORONTO, April 27, 1905.

Sir WILLIAM MULOCK,
Postmaster General, Ottawa.

DEAR SIR,—At the meeting of the executive council of this association held on the 20th inst., I was directed to communicate with you, and to state that while this association has not yet given expression to its views upon the subject of government control of Canadian telegraph and telephone systems, that this subject was one of great importance, and that the association appreciated the action of the Dominion government

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in investigating the whole question thoroughly, with a view to improving the conditions.

Submitting their view upon this matter for your consideration, I have the honour to be,

Your obedient servant,

R. J. YOUNG,
Secretary.

P.S.—A copy of this letter is also being sent to the Right Honourable Sir Wilfrid Laurier.

No. 36.

PHILADELPHIA, April 28, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General.
Ottawa, Canada.

DEAR SIR,—Replying to yours of the 28th ultimo, I beg to state that in general, there are three or four good systems of telephones and switchboards built in this country, to wit :

Kellogg Switchboard and Supply Co., Chicago, Illinois.

American Electric Telephone Co., Chicago, Illinois.

Stromberg-Carlson Telephone Manufacturing Co., Rochester, N.Y.

These are three of the most prominent ones.

In regard to the service: it is generally conceded that the independent companies give the best local service and have more telephones in the United States than the Bell companies have. The Bell companies being all under one management, probably give better long-distance service, especially between far distant points. We have no municipal or government plants here.

We know very little of the rural telephone business, except that it is not generally profitable to the operating company; the best earnings are made in the larger centres of population.

In regard to the questions on the back of your communication: I shall endeavour to answer them to the best of my ability, taking them consecutively.

Yours truly,

C. E. WILSON.

No. 37.

THE BOARD OF TRADE OF THE CITY OF GUELPH,
SECRETARY'S OFFICE, GUELPH, CANADA, April 26, 1905.

The Hon. Sir WILLIAM MULOCK,
Ottawa, Ont.

DEAR SIR,—I have the honour to enclose you a certified copy of a resolution relating to the Bell Telephone Co., passed by the Guelph Board of Trade at its last meeting and directed to be forwarded to you.

And I have the honour to be, sir,

Yours very truly,

JAMES WATT,
Secretary G. B. of T.

APPENDIX No. 1

GUELPH BOARD OF TRADE.

Moved by J. W. Lyon,
Seconded by R. Simpson.

THAT WHEREAS the contract existing between the city and the Bell Telephone Company expires on July 1, 1905, and it is not expedient that the City of Guelph should renew the existing contract or make any other contract with the Bell Company for the following reasons:—

First.—The House of Commons, by a Committee, are enquiring into all facts relative to telephone ownership, operation and services; it is therefore inexpedient that the City of Guelph bind itself with any new bargain with the Bell Company pending the report of this Committee, and the action of the Government to follow. A statement has been made before this Committee that Canada and the United States are paying twice as much for telephone service as any other country in the world.

Second.—The towns of Port Arthur and Fort William have for two years owned and operated a municipal telephone system successfully, the rate being \$12 for house telephones and \$24 for business telephones per annum. We are informed that for the year 1904 the Port Arthur system earned a profit over and above working expenses, interest and sinking fund of some \$400. We understand that Peterborough has refused to renew their contract with the Bell Company, and have granted a franchise to a rival company on much more advantageous terms; that Brantford and Ottawa are agitating the question, refusing to re-contract with the Bell Company, and we believe it is wise for us to be in a position to take advantage of their experiences and results, it being evident that a contract with the Bell Company would be a serious handicap to our free action in the matter.

Third.—The whole system of ownership and operation of telephones is now in an unsettled or transition state, with a distinct leaning towards Government ownership and operation, at least of the long-distance lines, coupled with government or municipal ownership or operation of city service.

THEREFORE, for the above and other reasons, we put ourselves on record as strongly opposed to any new contract being entered into between the City of Guelph and the Bell Telephone Company under present conditions. This Board is also on record in favour of government ownership and operation of the long-distance telephone lines, coupled either with government or municipal ownership and control of city services. Further, that a copy of the resolution be sent to Sir William Mulock, Postmaster General of Canada, and chairman of the House of Commons Committee investigating the telephone service.

Certified a true copy.

JAMES WATT,
Secretary Guelph Board of Trade.

Guelph, April 26, 1905.

No. 38.

SELECT COMMITTEE ON TELEPHONE SYSTEMS.

Synopsis of letters received by the Chairman of the Committee from the following:—

The Globe Automatic Telephone Co., Chicago.—Explains automatic system suitable for party-line working in rural districts, at a cost of \$15 for telephone instrument and \$11 per line for switches. Has sold instruments to about 200 exchanges in United States, and will send partial list of these.

The Automatic Electric Co., Chicago.—Forwards descriptive matter and other booklets relating to the 'Strowger' automatic system. Gives list of 19 towns where it is

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installed, aggregating 48,710 telephones, this being only a partial list. Cost of telephones and switches : 25 stations, \$40 per station; 50 to 100, \$36; 500 to 2,000, \$32.50; 2,000 to 5,000, \$35, f.o.b. Chicago. In exchanges over 100 storage batteries and charging machines are required at additional cost.

Edward C. Morris, Brown's Nurseries, Ontario.—Two years ago the community were desirous to have a rural system. The writer spoke to the 'Bell' manager, and obtaining no encouragement, proceeded to organize a company. In two months \$3,000 was subscribed. The Bell, hearing this, then offered to put in system at \$15 per 'phone per annum. Prior to this, tolls were charged everywhere. Finally the Bell proposition was accepted on condition that free communication was given to Welland. The district now has a first-class service, with nearly one hundred subscribers. Had the government controlled the long-distance wires the people would have preferred their own local system. The writer believes rural telephones a great convenience.

A. A. Bruneau, M.P.—Gives information regarding establishment of system at Sorel, Que., by Merchants' Telephone Co., Montreal, and failure of that company to carry out agreement to provide service between Sorel and Montreal by reason of the refusal of the Grand Trunk Railway to permit a cable to be carried across Victoria Bridge. The writer states he wrote the Grand Trunk Railway on the subject, their reply being that the Bell forbade them to grant this facility. The Merchants Company sold their Sorel interests to La Cie St. Laurent. Suggests that Hon. Jules Allard, Minister of Colonization, Quebec; the president, Mr. Courchesne, secretary-treasurer, and Mr. J. E. Beaubien, be summoned by the committee. Bell service at Sorel is excellent, but long-distance charges high.

The New Ottawa County Telephone Co.—Giving information regarding telephone system.

The Eastern Illinois Telephone Co.—Giving information regarding telephone system.

D. Hibner, Berlin, Ont.—Writer is a member of committee on the telephone question in county of Waterloo, of which Dr. Ochs is chairman. Expresses hope that long-distance lines will belong to government, and thinks would be well if whole system, particularly Bell, were in government's hands.

The T. and A. Selective Call Co., Geneseo, Ill.—Explains selective system, which enables subscribers on party lines to call the central office, and *vice versa*, without ringing other telephones on the same line, and to call other stations on the same line without attracting the attention of the operator of the central office. In communicating between stations on the same line, however, code signals are used, and all bells ring, as in the ordinary farmers' line system. Incloses a number of testimonials, among others one from the Kewaunee Home Telephone Co., Kewaunee, Ill., in which the manager states that upwards of forty telephones can be operated on one line successfully, and besides this advantage the system eliminates the much-abused practice of listening on the wire by parties not interested.

A. J. Vernier, Manager, the Eastern Illinois Independent Telephone Company, Kankarkee, Ill.—Stating that the writer is interested in several independent companies in Ohio, Indiana and Illinois, all of which are a success and paying as much as 3 per cent quarterly. Believes the people of each county or groups of two or three counties should own and operate their own system, thereby getting the benefit of their own telephoning. By so doing, the service is much improved, and more service is provided for less money. Will be pleased to furnish any other information that we ask him.

APPENDIX No. 1

No. 39.—abridged.

GRAFTON, KINGS Co., N.S., April 28, 1905.

Sir WILLIAM MULOCK,
Postmaster General, Ottawa, Ont.

DEAR SIR,—Being part owner and manager of a farmers' telephone line, I am much interested in this matter. The collection of dues for telephone service is of much importance. Being postmaster and general storekeeper here for a number of years, I think it will not be a difficult thing to add to the post office duties the collection of these dues. I keep the central office here for the telephone, so a 'central' on a small scale can be made at each post office. Where it is not practical to handle these collections, the post office on either side could take in their share of the work. I would suggest that these dues be paid quarterly, as small subscribers would not miss a small payment so much. In our company we charge \$10 a year and have nearly eighty subscribers. If we can at any time assist you, our services will be at your command.

Yours very truly,

FARMERS TELEPHONE CO.,
Per THOMAS LAWSON.
STOFFVILLE, ONT., May 1, 1905.

No. 40.

PETER CHRISTIE, M.P.,
Grand Union Hotel, Ottawa.

DEAR SIR,—In reference to the conversation we had on Friday last *re* our local telephone line, would like to say: We have in all about fifty 'phones in operation, and we connect and co-operate with two other local lines that have as many or more 'phones. We cover quite thoroughly the greater part of three townships, and we are all extending our lines. To those desiring to rent 'phones from us we make a three years' contract at a rate of \$15 per year for business houses, and \$12 per year for residences. For these amounts we give subscribers the full use of all the lines, without further cost. We have not been able to place a 'phone in any railway station yet. We found it necessary to place a guy-post on the grounds belonging to the Grand Trunk Railway, and though it caused us a great deal of inconvenience, they made us take it out.

Before starting to organize our association, we asked the Bell Company for terms, and they asked us as nearly as I can tell, three times as much to give us a service as we had to pay to build our own. We would, with them, have had to pay for the use of the line in nearly all cases after that. What we would like would be trunk lines that we could attach to and get long-distance connection at a fair price, and have access to the railway stations in our district.

We have put in a first-class equipment all through, using nothing but the best long-distance instruments in every case.

There is another thing that might easily be done for such associations. There are always some of the members that have more capital to invest or spare for such enterprises, and the only way, or best way, to arrange for funds is to organize as an incorporated company and allow those willing, to take stock in the concern.

As it is now, the cost of incorporation is quite an item in comparison to the amount usually needed for a local company. Some simple and cheap plan of incorporation might be devised, such as is in use for cheese-manufacturing companies.

There is no mistaking the fact that rural telephone lines are of the greatest convenience to the country people, and that they will go farther to remove the inconveniences of country life than any institution now in existence, excepting the railways and the daily mail.

Our company is very much interested in the work of the committee now investigating, and we are pleased with the non-partisan way in which every member is doing his utmost to come to a proper conclusion in the premises.

Very truly yours,

ROBERT MILLER.

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No. 41.

JORDAN, ONT., May 3, 1905.

To the Honourable

Sir WILLIAM MULOCK,

Chairman of Select Committee on Telephone Systems,
Ottawa.

DEAR SIR,—I am instructed by the Municipal Council of the Township of Louth, in the County of Lincoln, to forward to you a copy of a resolution passed on the 1st inst. I herewith enclose such copy.

Yours truly,

M. A. BALL,

Clerk, Tp. of Louth.

Resolution No. 2.

COUNCIL CHAMBER, JORDAN, May 1, 1905.

Moved by Camby Wismer,
Seconded by Stewart Randall.

That whereas this council views with approval the increasing public sentiment in favour of the acquisition and operation of all the telephone lines in the Dominion of Canada by the Government thereof ;

Be it therefore resolved, that this council convey to the Honourable Sir William Mulock, Chairman of Select Committee on Telephone Systems, their sincere approval of such acquisition and operation of said telephone lines.

E. W. FRY,

*Reeve.***No. 42.**

HOUSE OF COMMONS,

OTTAWA, May 2, 1905.

Hon. Sir WILLIAM MULOCK,

Postmaster General, Ottawa.

DEAR SIR WILLIAM,—Your esteemed favour of the 20th instant *re* Special Committee on Telephone Question reached me during my absence from the city. An early reply was therefore impossible.

You ask me to inform the Committee as to the telephone facilities at present enjoyed by the people of my constituency, and what improvements, if any, may be considered desirable. In reply, I desire to state that I think the telephone facilities of the city of Winnipeg meet fairly well the requirements of the people. As to the future of the telephone business in Canada, I am strongly of the opinion that the whole system should be nationalized. Government control of the long-distance telephones is a step in the right direction, but I do not think it goes far enough. It should, I think, embrace the whole telephone business of Canada. Government control of long-distance telephones and private control in cities and towns will lead to confusion, unless common laws are passed making uniform the methods of management in all cities and towns. The telephone business is essentially a monopoly, even to a greater extent than post office business, and I take the ground that a business that is a natural monopoly should be controlled by the Government. If, for instance, encouragement was given to establish another telephone system in the city of Winnipeg, the expense and confusion would be infinitely greater than anything the people now suffer under monopoly.

I therefore think the time is as ripe to-day as it will be any time in the future for the complete nationalization of the entire telephone business of Canada.

Yours truly,

D. W. BOLE.

APPENDIX No. 1

No. 43.

HOUSE OF COMMONS, DEPUTY SPEAKER'S CHAMBERS,
OTTAWA, April 21, 1905.

DEAR SIR,—In answer to your letter of the 20th instant, I beg to state that there is no public telephone in operation in Bonaventure County. There has been some talk of extending the Bellechasse system along the Intercolonial, through a portion of Bonaventure County, as far as Campbellton, N.B.

The Atlantic and Lake Superior Railway Company operating from Métapédia to New Carlisle, a distance of one hundred miles, owns and operates a private line, for railway purposes.

The necessity of a telephone service has long been felt, and I hope it may not be long before a system is established.

Yours truly,

CHARLES MARCIL.

Hon. Sir WILLIAM MULOCK,
Chairman Select Committee on Telephones,
House of Commons.

No. 44.

HOUSE OF COMMONS,
OTTAWA, April 26, 1905.

Sir WILLIAM MULOCK,
Ottawa.

DEAR SIR,—In reply to your kind letter of the 20th instant, about telephone question, I beg to tell you that the places in my constituency, St. Hyacinthe, Que., not yet advantaged with telephone system are St. Jude, St. Barnabé, St. Damase, Lapresentation, St. Thomas d'Aquin, and I think Ste. Madeleine, and if the Government could do something to bring the company to put the telephone in those places, it would be a good thing. St. Damase and Lapresentation are just requesting telephones.

Yours truly,

A. M. BEAUPARLANT, M.P.

No. 45.

AMERICAN ELECTRIC TELEPHONE COMPANY,
CHICAGO, May 5, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
House of Commons,
Ottawa, Can.

DEAR SIR,—With further reference to your communication of the 28th ult., will say that we are to-day forwarding you, under separate cover, copies of all our catalogue bulletins at present in print. These bulletins illustrate and describe very thoroughly the equipment upon which you require information. In addition to this, we are mailing you our price-list, covering Bulletin No. 18, which will give you the quotations desired on rural apparatus.

With regard to cost of rural telephone systems, will say that small exchanges should be constructed at a cost of approximately \$55 per station, while a good copper metallic toll-line, with 30 ft. 6 in. poles, would cost in the neighbourhood of \$200 per mile. The cost of maintaining such systems, as nearly as we can ascertain, is in the neighbourhood of \$9 per station per year for exchange systems. A rural station would cost you in the neighbourhood of \$6.50, exclusive of depreciation and taxation.

Trusting this information will be of some benefit, and soliciting your further inquiries, we beg to remain

Yours very truly,

AMERICAN ELECTRIC TELEPHONE CO.,
Per J. M. EMBANKS.

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No. 46.

AMERICAN ELECTRIC TELEPHONE COMPANY.

CHICAGO, May 4, 1905.

WILLIAM MULOCK, Postmaster General,
Chairman Select Committee on Telephone Systems,
Ottawa, Canada.

DEAR SIR,—Replying to your favour of the 28th ult., it will give us pleasure to give you all the information in our power in reference to the telephone situation, as we find it in this country, and especially in reference to the various types of apparatus used on farmers' party lines.

We will compile this information for you at the earliest possible date. In the meantime, for your information, will state that the Bell Company in this country is leasing its very best transmitter and receiver at 50 cents per year each to small companies which they term 'sub-licensee companies.' We make a transmitter of the same type and which by various tests we find superior to theirs. We sell the long distance transmitter outright for \$1.50 each, and the receiver with cord at \$1.25 each.

We are prepared to show that our apparatus is more modern. We can find that the Bell Company has made very little improvement in its talking sets. In fact, they are using the same type of apparatus which they first put in use many years ago, without any apparent improvement.

Yours very truly,
AMERICAN ELECTRIC TELEPHONE COMPANY,
Per P. C. BURNS, *President*.

No. 47.

THE BELL TELEPHONE COMPANY OF CANADA, LTD.

WINCHESTER AGENCY, May 5, 1905.

ANDREW BRÖDER, Esq., M.P.
House of Commons, Ottawa.

DEAR SIR,—In reply to your letter of the 20th ult., I have pleasure in complying with your request for information on telephone matters in Dundas county.

We touch practically every village and hamlet in the county. The following list comprises most of the points served in Dundas: Bouck's Hill, Chesterville, Cass Bridge, Dundela, Hallville, Inkerman, Iroquois, Morrisburg, Mountain Station, Morewood, Melvin Settlement, Maple Ridge, Ormond, Reid's Mills, South Mountain, Winchester, Winchester Springs.

At this village we give unlimited service within the following boundaries:—

Winchester Springs, 5 miles; Cass Bridge, 2½ miles; Maple Ridge, 2 miles; Melvin Settlement, 6 miles; Ormond, 4 miles; Vernon (in the County of Carleton) 8 miles. Subscribers at these points have free service between each other, and with the subscribers at Winchester.

Our rates are \$15 and \$20. The general public is served from any of the points named.

The work is now under way of extending this free service to Dalmeny post office, which is distant 11 miles, and is also in the County of Carleton. There are also other extensions of a similar nature now under consideration.

Yours truly,
WM. GARDNER,
Local Manager, Winchester.

APPENDIX No. 1

No. 48.

THE TELEPHONE COMPANY OF PRINCE EDWARD ISLAND, LTD.
CHARLOTTETOWN, P.E.I., April 29, 1905.

SIR WM. MULOCK,
Ottawa, Ont.

DEAR SIR,—In accordance with your favours of March 28, and April 11 last, I am enclosing herewith answers to the list of questions supplied by you.

I am also enclosing a map of Prince Edward Island showing the company's lines, toll offices and exchanges, correct to March 1, 1905. If there is any further information that we can supply either by letter or personally, we shall be most happy to do so.

Yours respectfully,

W. A. WINFIELD,

General Manager.

No. 48a.

The company has been in operation since 1885. Has a capital stock issue of \$56,700. No bonds. Population of the Island is 103,259. Number of telephones on March 1 was 530, of which 420 are direct lines, having one telephone.

The number of business telephones is : Charlottetown, 205 ; Summerside, 32 ; other points, 40. Residence : Charlottetown, 130 ; Summerside, 6 ; other points, 5. In addition to these, there are nearly 100 toll offices throughout the Island.

Subscribers' circuits in Charlottetown and Summerside are part metallic, but largely common return. In smaller places all are single grounded circuits. The system is 'Magneto,' the equipment being principally 'Bell,' 'Kellogg' and 'Holtzer-Cabot.'

The rates are: Charlottetown—separate lines, \$45 per annum, business and residence; two-party lines : business, \$30, residence, \$20 ; Summerside—business, \$20 ; residence, \$15; other places, business or residence, \$15; with special rates for party lines, larger subscribers, &c.

Rates for farmers' lines are \$15, but have no subscribers of this class.

The company has the following long-distance plant:—434½ miles poles and 547½ miles wire, all circuits being single grounded.

Long-distance rates are : 10 miles, 15 cents; over 10 miles, 25 cents, for five minutes' conversation or twenty-word message. Subscribers are entitled to 20 per cent discount on these rates.

Cost of building the long-distance lines, with 25-foot cedar poles, No. 12 iron wire, costs all the way up to \$125 per mile, depending on the cost of poles.

The company pays a dividend of 6 per cent per annum. Sets aside 10 per cent per annum for depreciation. Has no surplus, except unexpended accident and depreciation fund.

There is no competition. The 'Bell' Company have always acted with the greatest consideration and have given every possible advice and assistance, particularly on technical matters, placing their information and experience at our service.

We find a good demand for telephone service in Charlottetown, and as the business grows, we improve the plant. A few years ago, the system was changed from grounded to 'common return,' and now we are beginning to provide full metallic circuits, and we expect later on to install a central energy multiple switch-board.

Our present board is a Kellogg express. We do not, as a rule, meet with objections to our Charlottetown rates, though there are, of course, people who will demand lower rates, no matter what basis they were upon. We do not find our rates any too high, commensurate with first-class service.

The element of depreciation is a very heavy one, especially in exchanges, as work can never be left up until it is worn out. Reconstruction has frequently to be under-

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taken every two or three years, owing to growth and extensions making different arrangements desirable.

With regard to apparatus, depreciation is also heavy, owing to its becoming obsolete. While instruments at present in service may be very satisfactory, the moment a new instrument is introduced, every one wants it, resulting either in friction with subscribers, or in acceding to their wishes as far as possible, resulting in a large amount of older apparatus being taken out of service.

Outside of Charlottetown, we have very little demand for residence telephones, the people seeming to consider the telephone an expensive luxury, although we consider our rates are reasonable.

Regarding farmers' lines, we have canvassed the most promising sections of the country, without results.

Last fall, we canvassed the 'New London' district. This district (one of the best in Prince Edward Island) is without railway facilities. We offered a circuit, consisting of three branches, totalling about 25 miles of line; also, connection with 'Kensington,' the shipping point, a place with a population of nearly 1,000 people. We also offered to provide connection with railway station, post office, doctors and any other subscribers we might get there; also, our usual discount of 20 per cent on all long-distance business sent by them, or by any one whom they might let use their telephones. They would also save all 'messenger service' charges, which they now pay when being sent for.

We were unable to close a single contract in all this territory, though some four or five people said they might take an instrument, if we got enough. Our rates quoted were \$15 per annum (best bridging 'phones, with 2,500 ohm ringers, solid back transmitters and bi-polar receivers), and we wished to secure 20 subscribers, exclusive of Kensington.

We do not find the \$15 rate profitable in rural districts. We usually have to pay a considerable amount for switching, and telephones have to be inspected three times per annum, besides when in trouble; necessitating travelling expenses, horse-hire and man's time. We sometimes have to send a man 100 miles on one trouble.

If we could get subscribers so closely located that we could afford to keep one man and an expert operator within a reasonable district, it would be better; but we have been unable to interest the rural residents so far, on our present rates basis, though we have been assured we might get a fair number at \$5 per annum.

However, every one desires to have a toll office nearby, and although we already have about 100 toll offices on Prince Edward Island, we are frequently in receipt of requests for extensions. When sufficient business can be obtained to make it pay, such offices are established. Otherwise, we cannot be expected to provide service, unless, as in the case of some points, we receive some assistance from the provincial government. We have quite a number of such toll offices, which were strongly agitated for, which only take in from \$2 to \$25 gross receipts per annum.

We inclose herewith a small map (to scale) of Prince Edward Island, showing all our toll offices and exchanges (exclusive of rural subscribers). You will note by this that Prince Edward Island is well covered by lines, many toll offices being five miles, or less, apart.

A company cannot be expected to give as cheap a service as by co-operation, for in the latter case a subscriber will do his own repairing, when he can, and put up with inconveniences and poor service, which quite naturally he will not tolerate from a company which undertakes to keep his instrument in operation.

Travelling expenses are a large item, and usually cost companies who, as the people express it, 'are well able to stand it,' high.

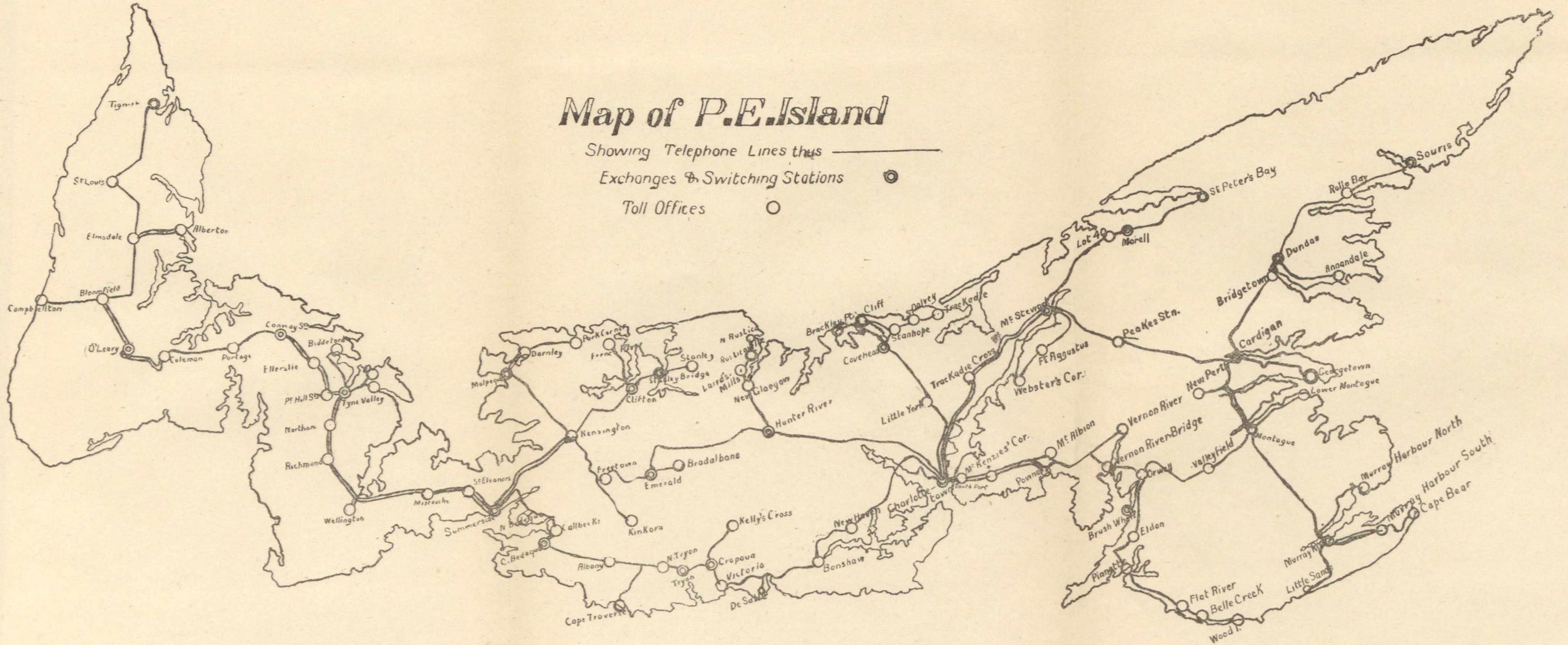
But there is no doubt that a company can, in the long run, give a far superior service to that which can be provided by individuals, especially when, as always occurs sooner or later, troubles crop up, or sleet, lightning, or such like things, damage the lines and instruments.

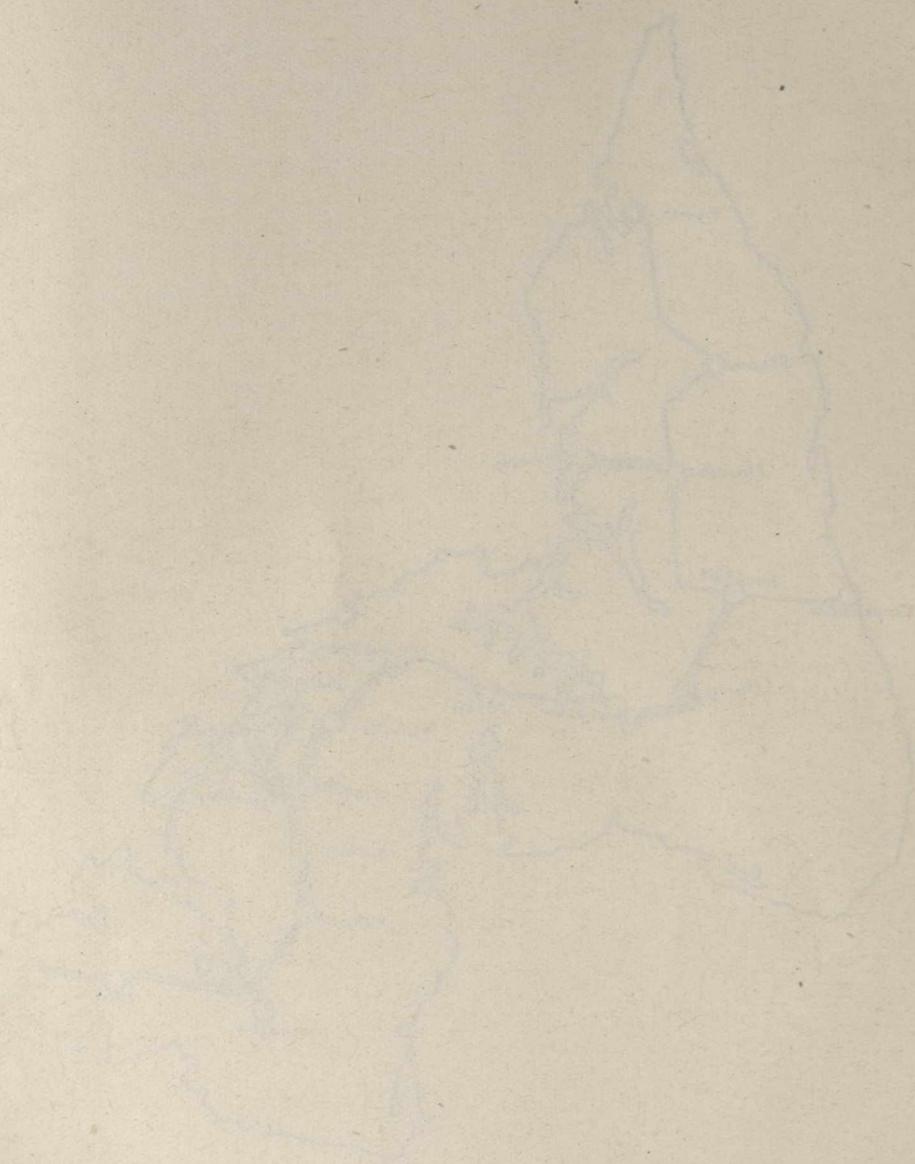
Map of P.E. Island

Showing Telephone Lines thus ————

Exchanges & Switching Stations

Toll Offices





APPENDIX No. 1

No. 49.

Sir WILLIAM MULOCK, THE ALBANY AND VALES MILL TELEPHONE COMPANY,
Ottawa, Canada. ALBANY, OHIO, April 29, 1905.

SIR,—In compliance with your request of March 28 ult., I herewith inclose my answers to your queries.

Our investment on a small scale has been very profitable to us, but I think it would be better for the masses here if towns and cities would own their own telephone rights and property, and encourage the people to build lines all through the rural districts, and meet these lines at the corporate limits, giving free exchange of service.

A farmer can build and maintain a line cheaper than can a company.

This is contrary to our practice, but experience has taught me that the statement is true.

The construction and maintenance of rural lines is very simple, and can be done within the reach of all.

Very truly,

S. D. WEBB.

No. 50.

Sir WM. MULOCK, LA CIE DE TÉLÉPHONE DE KAMOURASKA,
Chairman of Select Committee on Telephone Systems. FRASERVILLE, QUE., May 8, 1905.

SIR,—We have the pleasure of acknowledging receipt of your inquiry of 28th last, and take pleasure in giving you herewith the information requested.

You will please remark that our company has only two years' existence, and that the results obtained to this date in rural districts are quite satisfactory, allowing us to entertain fair prospects for future.

Our report represents the work of only two seasons' construction, with limited capital, while covering a relatively large district. We must also mention that our lines are in part parallel with other independent companies, namely: The Fraserville Power Company and the Bellechasse Telephone Company. As for the Bell Company, we have obtained an interchange of service over their lines, which is, we think, saying enough about the general construction and operation of our system.

In order to obtain efficient service in these districts, we have adopted two separate metallic circuits, one iron for local business, the other copper for long-distance communications. We have experienced sufficient advantages to justify the first extra cost of this kind of construction.

Respectfully yours,

LA COMPAGNIE DE TELEPHONE DE KAMOURASKA.

No. 51.

Sir WM. MULOCK, VIRGINIA, ONT., April 5, 1905.
Ottawa.

DEAR SIR,—Reports of the proceedings of Committee *re* Telephone Systems to hand, for which I am thankful.

I trust that when said Committee will have completed their labours that a remedy will be forthcoming for conditions such as at present exist in this part of Georgina township in old North York.

What I refer to is that while a telephone line owned by the Bell Company passes up through one township right past the door of our post office, and while our postmaster Mr. Evans, has repeatedly endeavoured to get them to put an instrument in his store, even offering to do so at his own expense, providing he be allowed free use of the line for his private business, but apparently they are deaf to all requests or inducements, and the residents of this section have to go either to Sutton or Pepperlaw when they wish to use the 'phone, and these points, as you are aware, are nine miles apart.

The council of Georgina township, when this line was building, tried to get an office at Virginia so that the farmers might derive some benefit in return for the privilege that the telephone company were getting by being allowed to plant their poles along

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the roadway, but in the deal we found out that while they could go along our highway, plant their poles just where they pleased, slash and cut trees, and leave the brush to rot just where it fell, *that we could stand by and look on.*

Their last proposition to the people of Virginia is that if we purchase the wire to stretch along the poles from Sutton, that they will put it up and then we pay just as much to use the 'phone as if they built it entirely at their own expense. Truly they are a beneficent corporation.

I might add that when this line was put up, it was a branch of The Victoria Telephone Company's line, but was soon gobbled up by the Bell Company.

I just give you these particulars so that you may more fully see the necessity for devising some scheme whereby farmers situated as we are may secure telephone privileges without having to go on our knees to soulless corporations, and then having to comply with any whim or condition that they may see fit to dictate.

Yours truly,

DONALD EGO,

Clerk, Township of Georgina.

No. 51a.

OTTAWA, May 9, 1905.

DEAR SIR,—I have the honour to acknowledge the receipt of your letter of the 5th instant with reference to the telephone conditions at Virginia, and can only express the hope that the inquiry which the Parliamentary Committee is conducting in regard to the whole telephone question may result in the amelioration of the existing grievances, existing not only at Virginia, but in very many parts of Canada.

Yours sincerely,

DONALD EGO, Esq.,

Clerk of the Township of Georgina,
Virginia, Ont.

WM. MULOCK.

No. 52.

SYNOPSIS OF CORRESPONDENCE RECEIVED.

From Andrew J. Taylor, Toronto, stating that Alexander Taylor, now living at 690 Spadina avenue, Toronto, built up a telephone system in Edmonton, Strathcona, Prince Albert and other places in the Northwest, and owing to the 'Bell' entering the field, was compelled to sell his system to the municipality of Edmonton. States that he can give much valuable information.

No. 53.

From W. H. Ferguson, secretary, Real Estate Owners' Association, London, Ont., communicating resolution passed by the association commending the work of the committee and favouring municipal and government ownership of telephones.

No. 54.

From Dr. D. W. Ross, Florenceville, N.B., stating that while Canadian Pacific Railway agents answer the 'New Brunswick' telephone promptly, some of them do not answer the 'Independent' telephone at all, claiming that it is not their work to do so.

No. 55.

Synopsis of letter from the Antigonish and Sherbrooke Telephone Company of Nova Scotia, to C. F. McIsaac, M.P.:—

The company has a capitalization of \$10,000—\$9,000 paid up; 160 miles of line in operation, mostly rural; iron grounded circuits costing \$50 per mile without instruments. Has 59 residence and 29 business 'phones. Rural lines have public 'phones; tolls collected by subscribers. Rates charged are: partial line, residence, \$15; business, \$18 to \$20. Whole line, residence, \$18; business, \$25. Few special lines at \$30. Sub-

APPENDIX No. 1

scribers to partial line pay half rates beyond their limits (three exchanges). Toll rates vary from 10 cents to 50 cents, according to distance.

The company connects with the Nova Scotia Telephone Company at Antigonish, our subscribers paying 5 cents for each conversation, in addition thereto the long-distance rates to points beyond. The company will not allow us to connect the county asylum, 1½ miles out of Antigonish, on our line. They also prohibit us to run lines to Jones' river, Swan river, or any place along their line, although they have no 'phones at these points. The Nova Scotia Company has also refused to give connection elsewhere than at Antigonish and threatened to cut that connection; also if we extend our lines far beyond the present limits, their manager stating that 'they did not intend to let us grow too big.' They wished us to sign a contract limiting our territory, which we have declined to do. As a condition of connection with the Nova Scotia company, we are compelled to use 'Bell' instruments costing from \$19 to \$25 each.

We use native poles 20 to 25 feet long. As an inducement to build, we received free poles and free labour in many places. Will extend some thirty miles further this spring to Port Dufferin in Halifax County.

'The directors of this company humbly suggest that the government enable small struggling companies such as this one, which is trying to accommodate the public, to get connections with other companies in such places as will best accommodate the said public.'

No. 56.

To Sir WILLIAM MULOCK,
Chairman Telephone Committee,
House of Commons.

SENATE CHAMBER, May 12, 1905.

DEAR SIR WILLIAM,—In the evidence I gave yesterday to your Committee, I neglected to state the extent of our long line system in New Brunswick, if of interest. I now inclose it.

Yours truly,

FRED. P. THOMPSON.

MEMO.

Long-distance lines of the New Brunswick Telephone Company (Limited) consist of the following:—

771	miles	of cedar pole lines, upon which poles are installed.
840	"	copper metallic No. 12 standard wire.
473	"	iron " No. 9 "
32	"	" " single No. 9 "

F. P. THOMPSON.

No. 57.

Postmaster General,
Ottawa, Canada.

THE BLACK RIVER TELEPHONE CO.,
LORAIN, O., May 9, 1905.

DEAR SIR,—In reply to your letter of March 28, we wish to make the following statement:—

We have issued \$100,000 worth of stock and have a bonded indebtedness of \$75,000. Our company has been operating since 1894, in a territory increasing from 10 to now nearly 30,000 people. At the present time we have 1,800 telephones in operation, 1,200 of which are residence telephones and the remaining 600 business telephones. We have no long-distance lines of our own, but make all long-distance connections over the United States Telephone Company lines. We have the Sterling electric equipment, central

energy; our subscribers' circuits are of iron and copper metallic, and we have one mile of underground cable. Our rates are as follows : \$12 for four party line selective ringing telephones, and \$20 for main line residence telephones, \$18 for four party line selective ringing telephones for business, \$24 for two party line selective ringing telephones for business, and \$30 for main line telephones for business. Our rates for rural service are \$15 for four party lines. We pay a dividend of 6 per cent on our stock and 5 per cent interest on our bonds. We set aside 20 per cent of our gross receipts for depreciation, and use all of our surplus for new work. The Bell Telephone Company had 16 telephones here before competition, and they still have those for long-distance work. We pay our superintendent \$110 a month, our wire chief and trouble men \$70 and \$65 respectively, and our operators from \$18 to \$25 a month. Hoping this information will prove satisfactory,

We remain, yours very truly,
 THE BLACK RIVER TELEGRAPH CO.

No. 58.

The following excerpt from the Indianapolis *News*, April 8, 1905, was received from the Citizens' Telephone Company, Columbus, Ind. :—

INTERESTING TELEPHONE INFORMATION.

What Happens when the People and not a Monopoly Control the Telephone Situation.

The independent telephones of Indiana number	166,255
The annual exchange rentals for these telephones amount to	\$3,048,885
The same number of telephones, at the rates charged by the monopoly, before the independent movement began, would cost the people of Indiana annually	7,275,300

The independent telephones, therefore, save the people of Indiana to-day :

Annually	\$4,226,415
Quarterly	1,056,603
Monthly	352,201
Weekly	88,050
Daily	12,578

Besides all this the independent movement has covered the field.

In the Reign of Monopoly there were only 7,000 telephones in the State of Indiana, or one for every 350 of population, and not one in the house of a farmer.

Now there are 166,255 independent telephones, or one for every 16 of population, and 30,000 of them in the houses of farmers.

The new Long-distance Telephone Company has, upon its own lines, within a radius of 50 miles of Indianapolis, 61,286 subscribers, who use no other than independent telephones.

The Indianapolis Telephone Company has 11,591 subscribers in Marion County. Of these, 9,905 use no other telephone.

During the quarter ending March 31, 1905, the company added new subscribers as follows :—

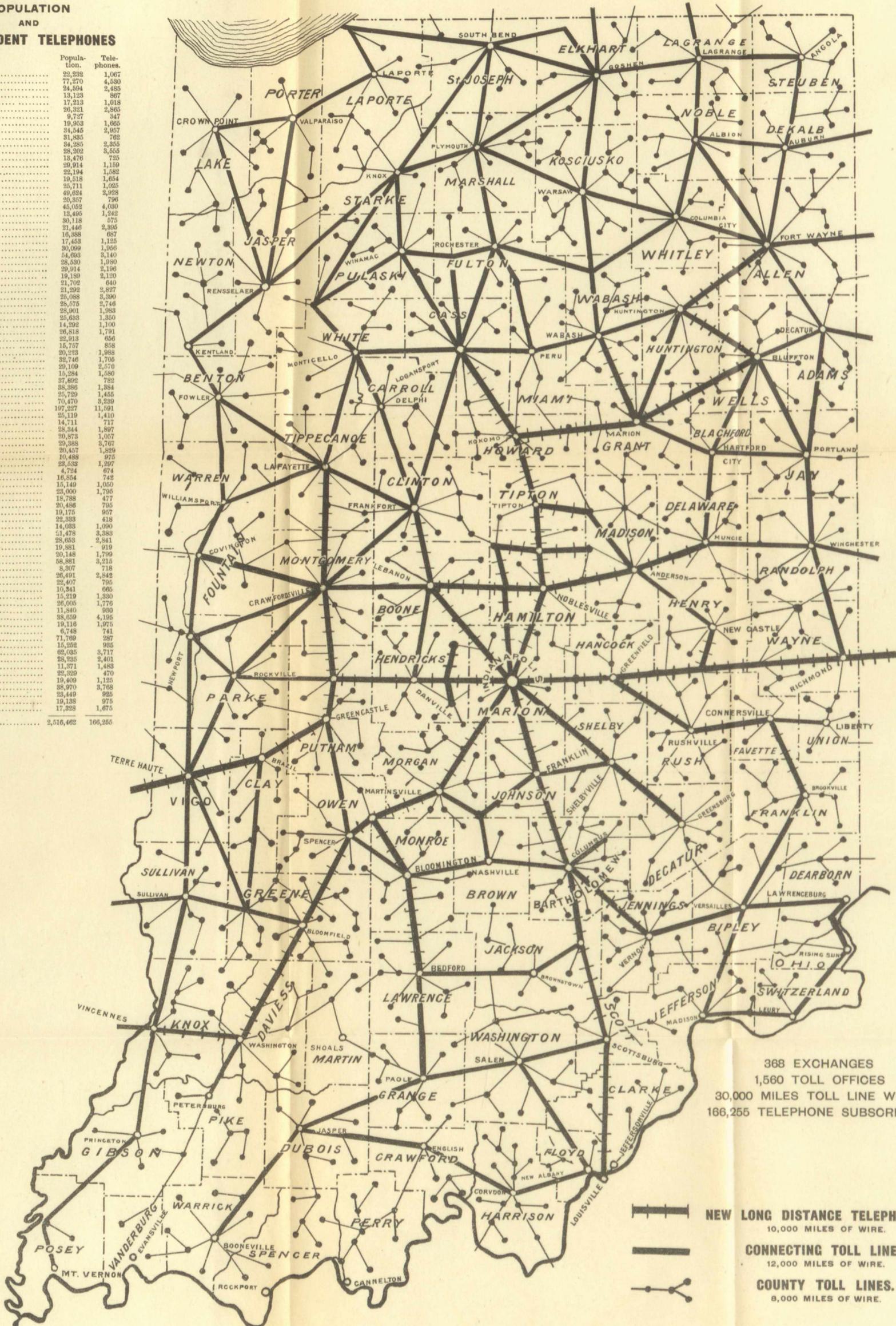
January	353
February	362
March	345

A gain for the quarter of 1,060 subscribers.
 A greater increase than for any corresponding period.

INDEPENDENT TELEPHONE TOLL LINES OF INDIANA. 1905.

POPULATION AND INDEPENDENT TELEPHONES

Counry.	Popula- tion.	Tele- phones.
Adams	22,232	1,067
Allen	77,270	4,530
Bartholomew	24,594	2,485
Benton	13,123	867
Blackford	17,213	1,018
Boone	26,321	2,865
Brown	9,727	347
Carroll	19,953	1,665
Cass	34,545	2,957
Clark	31,835	762
Clay	24,285	2,355
Clinton	28,202	3,555
Crawford	13,476	725
Daviess	29,914	1,159
Dearborn	22,194	1,382
Decatur	19,518	1,654
Dekalb	25,711	1,025
Delaware	49,024	2,928
Dubois	20,357	796
Elkhart	45,052	4,030
Fayette	13,495	1,242
Floyd	30,118	675
Fountain	21,446	2,300
Franklin	16,388	857
Fulton	17,453	1,125
Gibson	30,099	1,956
Grant	54,093	3,140
Greene	28,530	1,930
Hamilton	29,914	2,196
Hancock	19,189	2,120
Harrison	21,702	840
Hendricks	21,292	2,827
Henry	25,088	3,390
Howard	25,575	2,746
Huntington	25,901	1,983
Jackson	25,633	1,350
Jasper	14,292	1,100
Jay	26,518	1,791
Jefferson	22,913	656
Jennings	15,717	858
Johnson	20,223	1,988
Knox	32,746	1,705
Kosciusko	29,109	2,570
Lagrange	15,284	1,530
Lake	37,892	732
Laporte	38,386	1,384
Lawrence	25,729	1,455
Madison	70,470	3,239
Marion	107,227	11,591
Marshall	25,119	1,410
Martin	14,711	717
Miami	25,344	1,897
Monroe	25,573	1,037
Montgomery	29,388	3,767
Morgan	20,457	1,329
Newton	10,488	975
Noble	25,533	1,297
Ohio	4,724	674
Orange	16,854	742
Owen	15,149	1,050
Parke	22,000	1,795
Perry	18,788	477
Pike	20,486	795
Porter	19,175	957
Posey	22,333	418
Pulaski	14,033	1,090
Putnam	51,478	3,383
Randolph	28,653	2,841
Ripley	19,581	919
Rush	20,148	1,799
St. Joseph	58,881	3,215
Scott	8,307	718
Shelby	26,491	2,842
Spencer	22,407	795
Starke	10,341	665
Steuben	15,219	1,330
Sullivan	26,005	1,776
Switzerland	11,540	930
Tipton	38,639	4,195
Union	19,116	1,975
Vanderburg	6,748	741
Vermillion	71,769	287
Vigo	15,292	985
Vincennes	62,085	3,717
Wabash	22,225	2,401
Warren	11,371	1,483
Warrick	22,399	470
Washington	19,409	1,125
Wayne	88,970	3,768
Wells	23,449	925
White	19,138	975
Whitley	17,328	1,675
Totals	2,516,462	166,255



368 EXCHANGES
1,560 TOLL OFFICES
30,000 MILES TOLL LINE WIRES
166,255 TELEPHONE SUBSCRIBERS

NEW LONG DISTANCE TELEPHONE CO.
10,000 MILES OF WIRE.
CONNECTING TOLL LINES.
12,000 MILES OF WIRE.
COUNTY TOLL LINES.
8,000 MILES OF WIRE.

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No. 59.

CUMBERLAND TELEPHONE AND TELEGRAPH COMPANY.

NASHVILLE, TENN., MAY 11, 1905

SIR WILLIAM MULOCK,

Postmaster General and Chairman Select Committee on Telephone Systems,
Ottawa, Canada.

DEAR SIR,—Replying to your communication of the 1st instant, have to say that the Cumberland Telephone and Telegraph Company operates local exchanges and long-distance telephone circuits throughout the entire state of Louisiana, Tennessee, Mississippi and Kentucky, and the southern portions of the state of Illinois and Indiana. It has an investment of above \$15,000,000, and an outstanding capital of \$13,500,000.

The company was chartered and has been operating since 1883. The population of the territory served is about 7,000,000. The number of telephones in operation is about 130,000. We operate Bell telephones exclusively. Besides our long-distance lines we operate over four hundred telephone exchanges in different cities and towns.

Our switchboards, for the most part, are made in our own general shops at Nashville.

We pay special attention to the extension of farmers lines and have various propositions which we submit for their consideration. One is where the farmers club together and desire and prefer to build and own their own lines, we connect with them at the corporation limits and charge them for connection and service \$2 per year per telephone box. This entitles them to unlimited service to the exchange where they connect, just as our other subscribers receive.

This company has competition in about seventy-five towns, most of them small towns.

We have in many cases during the past ten years, due to the evolution of the business, been able to reduce the rates to our customers, and in the larger cities where the growth of the exchanges has been heavy and where the cost of operating is necessarily increased in proportion to the growth of the exchanges, we have been able to continue to serve at the old rates without making any advances.

Yours truly,

LELAND HUME,
Assistant General Manager.

No. 60.

THE SANDUSKY TELEPHONE COMPANY.

SANDUSKY, OHIO, May 13, 1905.

CHAIRMAN,

Select Committee on Telephone Systems,
Ottawa, Canada.

DEAR SIR,—We beg to acknowledge receipt of your favour of the 1st instant, requesting information on telephone service as applied in this locality.

We are attaching hereto a little folder showing the telephonic 'status quo' in Ohio. This, we believe, will be of considerably more value to you, than a complete answer to all of your questions.

This company is a quasi public corporation, incorporated under the laws of Ohio by private individuals residing in this locality. We have some 75 or 80 stockholders.

We know of no municipally-owned telephone property in the United States and do not believe that municipal ownership in other forms of public service can be re-

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garded as altogether successful, for the reason that it is difficult to keep out corruption.

Telephone facilities in rural districts are becoming more and more popular. There is, however, considerable difficulty in securing rates to justify the extension of lines for great distances outside of municipalities; the average farmer having no conception of the cost of construction, operation, or maintenance, nor of the benefits accruing to him from the use of the telephone. Where there is competition, the rural service greatly strengthens the local company, giving it a hold upon its subscribers that is very difficult for competition to break. So far the rural service with this company at a rate of \$18 per subscriber for ten party line service, distance not to exceed five miles from the exchange, has been moderately profitable.

Trusting this will be satisfactory, we are

Very truly yours,

THE SANDUSKY TELEPHONE COMPANY,

By Carl C. Curtis, Manager.

DISTRICT (Counties.)	EXCHANGE.		TOLL STATIONS		TELEPHONE.		STOCKHOLDERS	
	Independ-ent.	Bell.	Independ-ent	Bell.	Independ-ent	Bell.	Independ-ent	Bell.
No. 1— Trumbull, Lake, Geauga, Medina, Lorain, Erie, Huron, Cuyahoga, Ashtabula.	79	23	168	107	37,006	23,174	2,890	None.
No. 2— Columbiana, Carroll, Jefferson, Ma- honing, Portoge, Summit, Stark, Tuscarawas.	101	34	183	102	22,769	10,810	1,430	None.
No. 3— Coshocton, Belmont, Athens, Guern- sey, Gallia, Munroe, Morgan, Meigs, Noble, Perry, Washington, Mus- kingdum.	103	14	236	84	19,770	7,464	4,666	None.
No. 4— Pickway, Fayette, Vinton, Jackson, Scioto, Lawrence, Pike, Adams, Highland, Clinton, Ross.	44	20	174	80	12,214	4,389	500	None.
No. 5— Butler, Clermont, Preble Warren.	33	7	91	41	6,904	2,338	437	None.
No. 6— Green, Montgomery, Clark, Logan, Champaign, Shelby, Darke, Mian a, Madison.	63	15	174	112	24,020	11,381	1,488	None.
No. 7— Marion, Wyandotte, Hancock, Put- nam, Paulding, Van Wert, Mercer, Allen, Auglaise, Harding.	69	8	86	76	20,081	6,139	2,024	None.
No. 8— Defiance, Fulton, Lucas, Henry, Ottawa, Sandusky, Seneca, Wil- liams, Wood.	69	21	176	80	23,114	6,085	2,130	None.
No. 9— Ashland, Crawford, Deleware, Frank- lin, Fairfield, Hocking, Holmes, Knox, Licking, Richland, Union, Wayne, Morrow.	109	15	164	71	30,739	12,599	1,464	None.
Hamilton County.	None.	Un- kn'wn	None.	Un- kn'wn	None.	20,000	None.	400
Totals	670	157	1,452	753	196,617	104,379	17,029	400

There are in Ohio a few holding a single share of stock in the Bell companies, simply to enable them to qualify as directors.

No. 61.

CLEVELAND, OHIO, May 5, 1905.

Select Committee on Telephones,
House of Commons,
Ottawa.

HONOURABLE SIRS,—This company produces two distinct types of telephone apparatus: Magneto (local battery and hand generators at exchange and subscriber stations), and Central Energy (power generators and storage batteries at exchange only.) The Magneto type is used for small village exchanges and invariably in rural service.

Its simplicity admits of repairs by the unskilled, and the Magneto generator is the surest signalling device on long lines loaded with a number of telephones and exposed to the elements. A result can be obtained, such as it is, with a line in an indifferent condition; for it gives forth a 70 volts-alternating current, very penetrating, while the central energy is less than 35 volts direct current. The action of the hand generator rings the bells of others on the line, or, if the line is connected with an exchange, it throws a shutter, exposing the line number, on the simple principle of an annunciator drop.

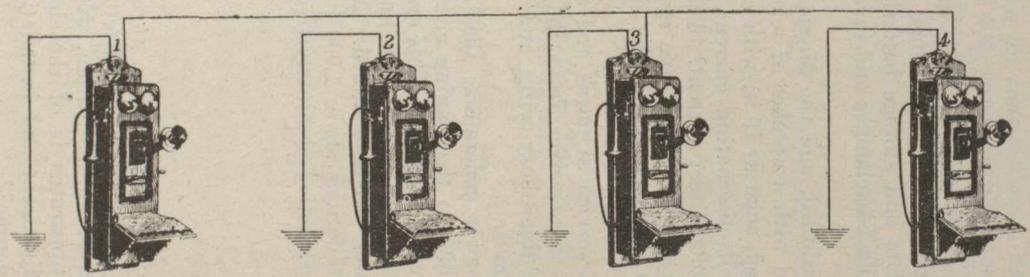
Central Energy systems facilitate speed of service in towns and cities; the subscriber signals exchange by simply removing the receiver from the hook and the operator has more complete supervision of the line—busy wires and termination of conversations, by a system of electric light signals.

Signalling current is thrown to line by power generators; the talking circuits are from storage battery used also as an auxiliary to the ringing circuits in case of break down or when the original source of power is dormant. This system should be employed for economy of maintenance, in installations above 450 line, in a radius of three miles, if a cheap and sure outside power can be obtained. An independent gas engine power plant will be justified in installations above 1,000 lines. It is not recommended for rural lines as it requires a construction absolutely free from ground, and its inaccessibility to competent inspectors.

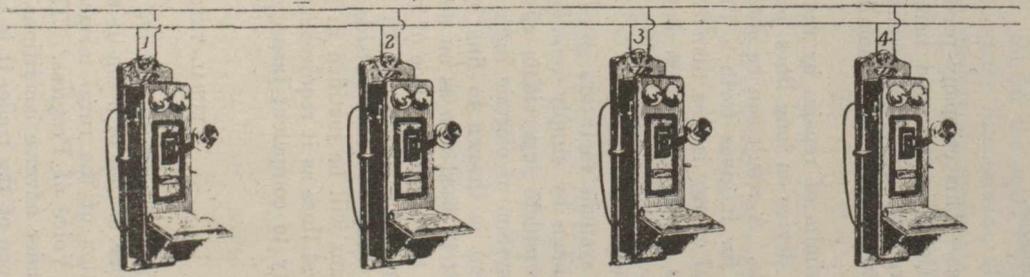
RURAL TELEPHONY.

Telephones in farm communities have usually started by a farmer building a line from his own home to that of a son-in-law. Others saw the advantage and joined them. An appreciation of the rural telephone, as an institution, will be found in the pamphlet, 'The Voice of Progress.' The apparatus is of the simplest type, to admit of working under adverse conditions, adjustment and installation by the unskilled—in the parlance of the trade, it is 'fool proof.'

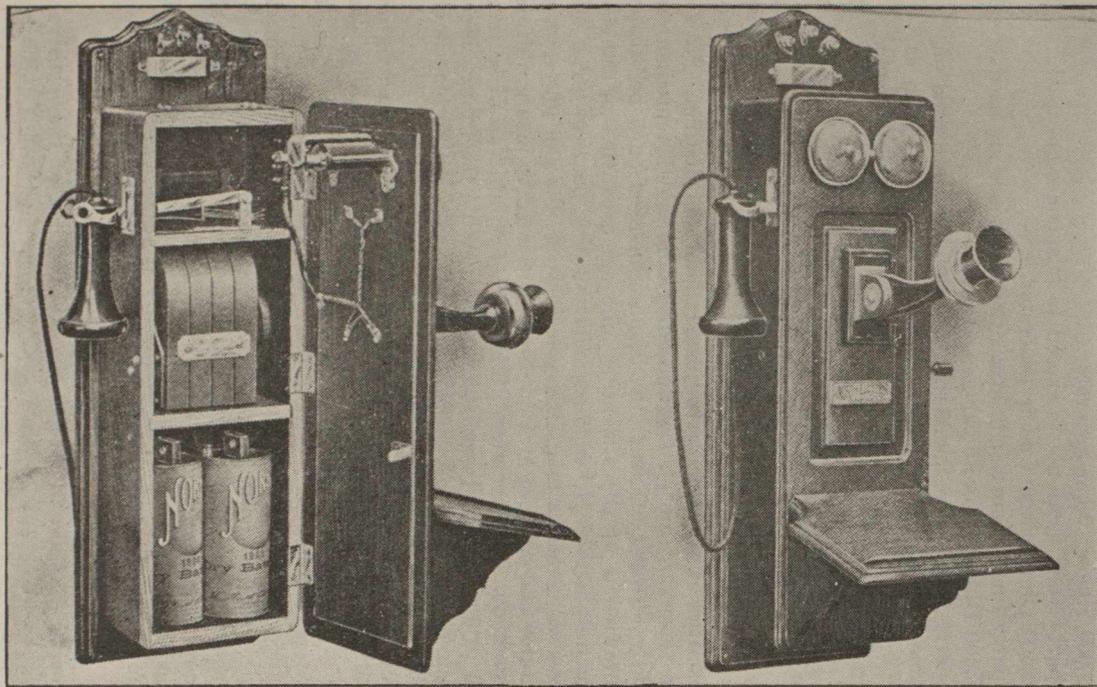
Farm lines are usually heavily loaded—sometimes as high as fifty instruments on a circuit. In such cases it is necessary that all ringer coils be wound to exactly the same resistance, and the generator have sufficient capacity (number of bars in the magnets) to operate all ringers. Type 'K' is the one produced by this company for the character of service. Below is the various capacities with their price, followed by a detailed description.



GROUNDING CIRCUIT, ONE WIRE.



METALLIC CIRCUIT, TWO WIRES.



TYPE "K" OPEN

TYPE "K" CLOSED

No. 32, 1,000 Ohm. ringer; 4-bar generator.	
For party lines where not to exceed 15 telephones are used..	\$10 47
No. 42, 1,600 Ohm. ringer; 4-bar generator.	
For party lines where not to exceed 20 telephones are used..	10 94
No. 52, 1,000 Ohm. ringer; 5-bar generator.	
For party lines where not to exceed 30 telephones are used..	11 25
No. 62, 1,600 Ohm. ringer; 5-bar generator.	
For party lines where not to exceed 40 telephones are used..	11 72
No. 72, 2,000 ringer; 5-bar generator.	
For party lines where not to exceed 45 telephones are used..	12 03
No. 82, 2,500 Ohm. ringer; 5-bar generator.	
For party lines where not to exceed 50 telephones are used..	12 19
No. 92, 3,500 Ohm. ringer; 5-bar generator.	
For party lines where more than 50 telephones are used on one line, or where the character of the line is such as to require the use of the most powerful telephone obtainable	12 50

It will, of course, be understood that the length of line has some influence upon the number of telephones which can be used on it.

DESCRIPTION.

The transmitter is permanently adjusted; loud and distinct. No side tones (foreign noises in the room), no phonograph-like twang, but a reproduction of the voice.

Permanently-adjusted receiver; the diaphragm rests on a bell-shaped metal shell and is not thrown out of adjustment by unequal expansion or contraction of hard rubber and magnet metal. No exposed metal binding posts to break off or shock the user—the cords last twice as long. Easy to inspect—the cap unscrews by hand.

The generator magnets are of a quality and treated to insure uniformity and permanency of magnetism. The armature is laminated; (built up in sections) for higher efficiency both in quantity and quality of power. Wide face, tough brass gear wheels with special cut teeth—they run smooth and noiseless. An automatic shunt (switch) throws the generator on the line.

The ringer is independent of the cabinet and is not affected by unequal expansion or contraction of wood and metal. The magnets are machine wound with silk insulated fine copper wire. The armature adjustment is by means of one screw with an ordinary wrench.

German silver hook switch springs mounted in a hard rubber block and riveted pure platinum contacts—the only metal corrosion and spark oxidization proof.

The exterior nickel plated metal parts will not tarnish and the cabinet wood is quartered oak or walnut and given a rich rub finish.

The cheapest on the market costs about two dollars less—this is saved in one trip to town for repairs.

LINE CONSTRUCTION.

The following diagram illustrates the best method of line construction :—

COST OF CONSTRUCTION.

In most cases, farmers furnish all labour and native poles for line construction. The following estimates will be found conservative :—

One mile, 30 poles per mile, not including labour or poles, 1BB galvanized iron wire No. 12, bracket construction.	\$ 8 41
Two wires, bracket construction	16 82
Cross arm construction, one wire	20 05
Additional wire	7 88

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For detailed prices and description, see pages 8 and 9, of 'Telephones in Farm Life.'

One mile, 30 poles per mile; including all poles, material and labour, bracket construction	\$74 81
Additional wire	17 50
Cross-arm construction	86 45
Materials for installing individual instruments, average..	1 00
Labour, average	0 78

For detailed prices and illustrated construction methods see pages 19 to 29, 'The Rural Telephone.'

CUT-IN STATIONS.

On heavily-loaded rural lines, an equal division is frequently made to reduce the amount of ringing. For this a cut-in station is used—a semblance of exchange.

They are screwed to the wall above or convenient to an ordinary type 'K' telephone. By the shifting of the key, either side of the line is connected with the cut-in station. With the key in a normal condition the two lines are connected. By the auxiliary ringer it is impossible to divide the line as to leave either side without a ringing terminus.

Cost, averaged, according to the winding of the ringer, governed by the number of instruments on the line, \$4.80.

SMALL EXCHANGES.

Like the rural post office, the rural telephone exchange is a centre, and located usually at a cross-road store. In place of the cumbersome wall cabinet exchanges, a switching station is now used, up to 20 lines. They are made of exactly the same material as our large switchboards, in 5, 10 and 20-line units, encased in enameled cast iron boxes and screwed to the wall convenient to an ordinary type 'K' telephone.

Frequently an auxiliary cord and plug equipment is installed with a switching station, provided with ringing keys (levers in front of each cord pair that throw ringing current to line), listening keys (levers that throw operators' receiver and transmitter to any line), clearing out drops (indicating when conversations are terminated), and night bell and switch, forming in every way a complete exchange.

COST OF SWITCHING STATION.

For 5 lines	\$19 98
For 10 lines	36 00
For 20 lines	67 50
Auxiliary plug and cord equipment	33 75

Detailed description in Bulletin 26.

DESK CABINET SWITCH-BOARDS.

Desk cabinet switch-boards are installed almost universally 100 line ultimate capacity with enough drops and jacks for immediate needs. The board is wired complete with all plugs, ringing and listening keys.

For detailed description see 'Modern Methods.'

Cost, 50 drops installed, wired complete with all cords, plugs and ringing and listening keys	\$ 227 50
Additional jacks in strips of 10	7 50
Additional drops in strips of 10	20 00
Labour installing, in strips of 10, both drops and jacks	2 50

AUTOMATIC RINGING.

The labour is frequently so great in ringing subscribers on boards of 100 line capacity that a Warner Pole Changer is used. This changer is operated by two cells of Gordon battery and supplied with current from a chain of dry batteries of 60 cells. Its function is simply to transform the direct current naturally given out by the batteries to an alternating current like that produced by an ordinary hand generator.

Cost, including cabinet and batteries, \$45.

TOLL LINES.

Where it is desired to separate the toll lines from the regular switchboard, switching stations are used as described on page 7 of this letter. They are screwed to the cabinet or to the wall at a convenient point.

BRIDGING TELEPHONES WITH SPECIAL DEVICES.

The following special telephones of the bridging type of the same general design as type 'K,' described on page 3 of this letter :—

Type 'K,' with grounding key.—A simple device for ringing each other on the same line without signalling exchange. By depressing a key, the exchange is signalled without ringing parties on the same line. Described, Bulletin 28. For cost add 25 cents to regular price of type 'K.'

'North's Type 'K' with Silent Ringer.—Another simple device for toll party lines, or where for any reason it is desired that exchange record the subscriber calls. Exchange is signalled without ringing other subscribers' bells on the same line. Can be used on party line with ordinary telephones, thus admitting of an inexpensive classification of toll and full service subscribers. Described in Bulletin 28. For cost add \$1.25.

'North's Type 'K,' Selective 1, 2, 3, or Party Ringer.—Still another simple device, enabling exchange to call one of 2, 3 or 4 parties on the same line without ringing the other. The subscribers do not ring each other in calling exchange. Reduces the ringing on heavily-loaded party lines. For instance, if there are 12 telephones on a line, it is reduced one-half by a two-party system; three-fourths by a four-party system. For cost add \$2 for two parties, and \$2.50 for four parties.

'North's Type 'K,' with Condenser.—For ringing through on a party line with one or more receivers off the hook. For cost add \$1.50.

GENERAL POLICY.

The North Electric Company has built its extended and growing business among rural companies by a liberal policy. Every product is sold on an unconditional and unlimited time guarantee—should defects appear, they are made right without cost or quibble. We never ask any questions regarding the responsibility of a broken part. If a farmer breaks a ringer in trying to adjust it, we send him another and leave the payment to his conscience.

No device is offered for sale until it is known to be out of the experimental stage. Even after it is tested in our own laboratory as far as it can be carried, it is then sent to some of our operating company friends and used under all conditions and classes of service.

We are not mere assemblers of parts, but makers from raw material—we give the purchaser the cost maker's profit. The plant is on an economical basis, and like all large concerns, the individual profits are small—we depend on the annual volume for a net result.

It is possible to enlarge any of our switchboards by adding units like a sectional book-case. All parts are interchangeable. They are milled and bored in jigs—ac-

APPENDIX No. 1

curately to a thousandth of an inch. To own these jigs requires an outlay so large that it is warranted only where switchboard and telephone parts are made in large lots. We carry a large stock on hand of these parts and they are shipped out on request by first express. Most manufacturers do not keep a supply on hand. They make a few telephone and switchboard parts at a time and change patterns frequently. To keep a stock of parts on hand, representing every change, would tie up a fortune of practical idleness. Then when you get the parts, blacksmithing and machine work is necessary; for where the parts are made by hand without jigs it is impossible to produce exact duplicates.

The devices produced by this company in the evolution of years have reached the simplicity that their adjustments are practically permanent.

Respectfully,

THE NORTH ELECTRIC COMPANY,
By DAVID GIBSON.

No. 62.

Extract from a letter of Thomas Begley, of Egerton, Ont., to Mr. Thomas Martin, M.P. :—

'Thanking you for the copy of the evidence, but you will note on page 291 that the printer made a big mistake in saying the line cost \$200 per mile; that should read to cost about \$67 or \$68 per mile.'

Mr. Begley's evidence, as printed :—

By Mr. Burrows :

Q. What do you find the cost to be of putting up a mile of line, speaking generally ?—A. Generally ?

Q. Yes.—A. Well, in ours I think it was \$200 and some odd it cost us for about 23 miles altogether.

As desired to be corrected by Mr. Begley :

Q. What do you find the cost to be of putting up a mile of line, speaking generally ?—A. Generally ?

Q. Yes.—A. Well, in ours I think it was \$67 or \$68 per mile.

No. 63.

HOUSE OF COMMONS,

OTTAWA, May 15, 1905.

MY DEAR SIR WILLIAM,—When I received your recent letter asking me to let the Special Committee appointed to inquire into the subject of telephones have particular information with regard to the telephone service in my constituency, I communicated at once with the mayors of the more important towns in West Assiniboia on the subject. The first reply I have received is from Mr. W. R. Abbott, mayor of Maple Creek, which I attach herewith.

Very sincerely yours,

WALTER SCOTT.

SIR WILLIAM MULOCK,
Chairman Special Telephone Committee,
Ottawa.

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No. 63a.

MAPLE CREEK, N.W.T., May 10, 1905.

WALTER SCOTT, Esq., M.P.,
(West Assiniboia)—Ottawa.

MY DEAR SIR,—In reply to your letter of May 6, 1905, *re* telephone facilities in West Assiniboia generally and town of Maple Creek and district surrounding, would say: *

This town and district has not yet enjoyed such facilities, yet look forward to the time when such will be within their reach.

Why should not the Dominion of Canada through the Post Office Department operate the whole telephone system of the country for general good, and as a commencement erect and operate such, in what is at present known, as the North-west; there is not a doubt that such would be a paying proposition for the department pre-
sided over by Sir William Mullock.

If such is not at present advisable, every encouragement should be given to municipalities, town and county, to erect and operate, keeping in view that sometime they would become part of a national system.

No franchise should be given to any company unless subject to local authority of municipalities in which erected in regards to erection, rates, &c.

If such franchise has been already granted, such should be amended so as to bring them under such control at least in the many districts in the North-west and other portions of Canada, where up to the present no steps have been taken to give such facilities by erection or otherwise.

But above all national ownership and operation is desirable.

Yours respectfully,

W. R. ABBOTT,
Mayor.

No. 64.

HOUSE OF COMMONS,
OTTAWA, May 15, 1905.

DEAR SIR WILLIAM,—Referring to your letter of the 20th ult., asking for information relative to telephone investigation, I wish to state that after waiting for several years for the Nova Scotia Telephone Company to build a branch line into my constituency, the people in the county of Antigonish and in the municipality of St. Marys took the matter up themselves and formed a joint stock company and commenced the construction of an independent line which joins the main line of the Nova Scotia Telephone Company at the town of Antigonish. This company is called the Antigonish and Sherbrooke Telephone Company, Limited. Permit me to quote an abstract from the last yearly statement made to the shareholders of this company by the secretary, Mr. James R. MacDonald. It is as follows:

'The company has now in operation 170 miles of telephone lines, with 83 telephones, including two instruments ordered and daily expected, and there is a constant demand, both for the extension of their lines, and for the installment of more instruments in the territory already covered. The yearly rentals of the above 83 telephones aggregate \$1,500 and the long-distance tolls earned will at a low estimate (based on the experience of the past months) bring the company's income, even without any extension beyond its present capacity, up to \$1,800 a year. It is proposed to put \$500 a year to the credit of a sinking fund, and it is estimated that \$500 more will cover the ordinary yearly expenses of the company, leaving a surplus (besides sinking fund) of \$800 a year. The capital already expended is about \$7,000. The earning capacity is therefore very good.'

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There is a proposed and probable extension for this spring from Marie Joseph to Port Dufferin, 26 miles, and a possible extension from Goshen to Isaac's Harbour, about 30 miles. These two connections would give at a low estimate 40 telephones, which added to those already in operation, would increase the company's income very much.'

I may point out that while this line is owned by a joint stock company the farmers residing in certain districts along the line contributed the poles and I am informed that in many cases erected them free, and in this way assisted the company in the construction of the line. The ordinary rate charged to householders is \$18 per year and the lessee is permitted to collect rates from the parties in the vicinity using the 'phone.

I may further point out that the Nova Scotia Telephone Company, which has a practical monopoly in eastern Nova Scotia, at first declined to connect with the Antigonish and Sherbrooke Telephone Company, at Antigonish or send forward their messages, and finally on complying imposed the condition that the new company would agree not to build along the western shore in the direction of Halifax, beyond Sheet Harbour, for a period of three years.

I submit that the attitude of the Nova Scotia Telephone Company, in regard to this matter shows the necessity for legislation to compel existing telephone companies under proper regulations, to connect with new branch lines and transmit their messages. I may further add that the whole of the eastern municipality of my constituency is still without telephone connection and any arrangements by which the same could be extended to the important fishing and inland districts of eastern Guysborough, would be very acceptable.

I remain, yours truly,

J. H. SINCLAIR.

No. 65.

HOUSE OF COMMONS,

OTTAWA, May 12, 1905.

Sir WILLIAM MULOCK,
Postmaster General,
Ottawa.

DEAR SIR WILLIAM.—Your esteemed favour of the 27th ultimo, asking that I inform the committee as to telephone facilities at present enjoyed by the people of the county of Annapolis, received.

In reply would say that fifteen years ago a line was established to connect Torbrook iron ore mines with Middleton and Margaretsville, and it proved so convenient, and was such an accommodation to the people of this section, that a company was formed called the Valley Telephone Company, and the line extended westerly to Digby, connecting with the Yarmouth Amalgamated Telephone Company, also eastwardly to Hansport, 135 miles, connecting with the Nova Scotia Telephone Company and with the Central Telephone Company. The trunk line of the Valley Telephone Company carries two circuits, one metallic and one iron ground, return built on cedar poles fitted with four-pin cross-arms and cost about \$250 (two hundred and fifty dollars) per mile. There is about 250 miles of side lines running over the mountain to villages which might properly be called trunk lines, as they connect these places with the main lines.

The Valley Telephone Company system is divided into twelve circuits or exchanges, viz. :—

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Digby, with	87 telephones.
Bear River, with	18 "
Annapolis, with	68 "
Granville Ferry, with	30 "
Bridgetown, with	64 "
Lawrencetown, with	26 "
Middleton, with	100 "
Berwick, with	28 "
Port Williams, with	32 "
Canning, with	45 "
Kentville, with	97 "
Wolfville, with	98 "
A total of	693 "

There are 25 telephones in the railway stations from which there is no revenue. The company charge its patrons for telephones in residence, \$15 per year; telephones in business offices, \$20 per year; telephones, long-distance desk, \$25 per year. About 333 are in residences and balance in business places.

The capital stock of the company is \$45,225, and a large amount of revenue has been expended on reconstruction and betterments to the line, so as to give the patrons an efficient and up-to-date service. It connects direct with the Nova Scotia Telephone and have an agreement by which this company receive, transmit and deliver messages with the Nova Scotia Telephone Company, charging the Valley Telephone Company same rates as its Windsor subscribers, less 5 cents, making rate from Hantsport to Halifax 20 cents, Hantsport to Windsor, 10 cents. The Valley Telephone Company charge to and from Berwick and points thereof, 15 cents; points west thereof, 20 cents. Neither parties are to compete with each other within the Territory occupied by each other respectively, nor make connection with any telephone companies or corporations offering any competition with the Nova Scotia or Valley Telephone Company, also with Yarmouth Amalgamated, West Port and Digby, and the Central Company, with whom this company connect direct.

The company has since its inception paid a dividend of 7 per cent until last year, when the dividend was reduced to 6 per cent, and the rest account, which the company had borrowed for reconstruction, was charged to that account.

The following is the last years' statement of the business of the company.

THIRTEENTH ANNUAL STATEMENT OF VALLEY TELEPHONE COMPANY, LTD., DECEMBER 31, 1904.

Assets.—

By cost of exchange and plant	\$ 67,733 29
“ real estate and fittings	3,391 87
“ amt. accident reserve in building sect.	1,972 23
“ bills receivable	116 10
Cash on hand and in bank	1,672 96

Liabilities.—

To stockholders capital stock	\$ 46,225 00
“ supplies on hand, 1903	1,171 37
“ loan on head office buildings	2,500 00
“ amount spent on reconstruction to January, 1904	17,218 67
“ accident reserve fund	1,972 23
“ depreciation account, 1904	3,272 23
“ net profits for year	2,526 95
	<hr/>
	\$ 74,886 45
	<hr/>
	\$ 74,886 45

APPENDIX No. 1

Cash accounts.—

To balance on hand, January, 1904.	\$ 1,772 54	
" cash received from rentals, 1904.	7,745 45	
" cash received from tolls, 1904.	4,234 06	
" cash received from capital stock, 1904.	5,325 00	
" cash received from prem. on stock, 10%	532 86	
" loan on buildings.	2,500 00	
" stores sold	15 80	
	<hr/>	\$ 22,125 65
" by dividend paid February, 1904.		\$ 2,863 00
" amount paid for head office and alterations.		3,391 87
" amount paid on construction account.		3,641 91
" goods in stock for construction.		978 25
" amount of reconstruction account.		3,272 23
" amount of expenses, maintenance of line.		5,938 58
" stores in stock for expenses account.		241 75
" bills receivable.		116 10
" amount of balance in bank and on hand.		1,672 96
		<hr/>
		\$ 22,125 65

Revenue account for the year 1904.—

To cash received from rentals.	\$ 7,745 45	
" cash received from tolls.	4,234 06	
	<hr/>	\$ 11,979 51
By expense account, maintenance of line.		\$ 6,180 33
" reconstruction account.		3,272 23
" balance net profits for year.		2,526 95
		<hr/>
		\$ 11,979 51
To balance net profits for year.	\$ 2,526 95	
By balance for 1904, payable February, 1905.		\$ 2,567 07

I believe that the people in the counties of Kings and Annapolis, served by the Valley Telephone Company, are fairly well satisfied with the accommodation and service they receive, but, I am afraid that the company will not be able to continue same rates to its patrons as in the past, and will have to ask its patrons and the government of Nova Scotia to permit them to increase their rates as the expense of material and management, &c., are increasing rapidly.

I am, dear sir,
 Yours most obedient,
 S. W. W. PICKUP.

No. 66.

SOUTHPORT, P.E.I., May 9, 1905.

SIR WILLIAM MULOCK,
 Chairman Telephone Committee,

DEAR SIR,—Concerning telephone communication in Prince Edward Island. (1.) The company collect very promptly, but a broken wire may remain in that state for days. (2.) Rates are very high; answers as well as messages to be paid. (3.) Very reluctant to build new lines unless handsome guarantees are assured. Example: When asked to build a line nine miles long, running through four or five splendid settlements—not one mile of woodland, and when half a dozen private 'phones were assured—the company only laughed and said, 'You will need to buy the 400 poles at \$2 each and have them put in position and then we will stretch the wire and collect pro-

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ceeds.' (4.) A monopoly subsidized by government exists and we wish this state of affairs to cease so that competition and cheaper 'phones may be possible.

Yours very truly,

GEORGE F. DEWAR.

SUMMARY OF LETTERS RECEIVED.

No. 67.

From Dr. Ross, Union Telephone Company of New Brunswick, inclosing list of 42 questions which writers suggests should be submitted to the New Brunswick Telephone Company, bearing upon discrimination in rates, giving of free service and the refusal of the station agent at Florenceville to answer calls received over the Union Telephone Company's system.

No. 68.

Letter from Dr. Ross stating that his company have 46 subscribers who are not connected with the New Brunswick Company's exchange, instead of three, as reported by Senator Thompson.

No. 69.

From Mechanicsburg Telephone Company, Ohio, replying to questions and stating that they have 700 telephones and population of 5,500. Four hundred and fifty are rural subscribers at \$1 per month. Company earns 8 per cent dividend. Have 125 miles of toll lines carrying from two to twenty wires; ten farmers are connected on a line. The manager and one troubleman keep the line in good shape. The writer considers with good construction and instruments, two men could take care of 1,000 telephones nicely. Salary account for 1904, including operators, was \$2,688.

No. 70.

From Leaf River and Egan Mutual Telephone Company, replying to questions. The company has 71 telephones in a population of 1,000; 25 being farmers. Each subscriber is a shareholder, paying \$30, three subscribers to the mile required for rural lines. The subscriber pays 50 cents per month, 40 cents going to the central office and 10 cents held as a reserve fund. This nets \$85.20 per year, which, with \$120 toll receipts, makes a total of \$205.20 per annum to pay \$153.90 running expenses. Twenty-five cents extra per month gives subscribers free communication to all points in Ogle county and all the neighbouring counties may be reached for a toll of 15 cents.

No. 71.

From the Cumberland Telephone and Telegraph Company, of Nashville, Tenn., stating that they operate 'Bell' 'phones exclusively in Louisiana, Tennessee, Mississippi, Kentucky and southern portions of Illinois and Indiana. Investment, \$15,000,000; outstanding capital, \$13,500,000. Have 130,000 'phones in population of 7,000,000. Company pays special attention to farmers' lines, and where farmers prefer to build their own lines, connect them at the corporation limits, giving them unlimited service to one exchange for \$2 per telephone per year.

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No. 72.

THE THOUSAND ISLANDS RAILWAY COMPANY.

GEO. TAYLOR, M.P.,
House of Commons,
Ottawa.

GANANOQUE, ONT., May 15, 1905.

DEAR SIR,—Referring to your letter of April 26, regarding my opinion as to the telephone service in Gananoque, we have continued service here with the exception of one or two hours on Sunday, our telephones are kept in excellent repair, by men who call once each week, and if we have any trouble all we have to do is to advise the local manager and he at once has a man sent to fix the line. I have read with great interest the reports you have been sending me, and personally, my opinion is that the municipality could not give one-quarter the service we are now enjoying from the Bell Telephone Company. Their rates here are one year for business or residence, \$25 per year, or three years' lease, \$20 per year, for business or residence.

Yours truly,

E. R. CHAPMAN.

No. 73.

THE ANTIGONISH AND SHERBROOKE TELEPHONE COMPANY,
LIMITED.

HEAD OFFICE, SHERBROOKE, N.S., May 13, 1905.

SIR WILLIAM MULOCK K.C.M.G.,
Postmaster General and Chairman Select Committee on Telephones,
Ottawa.

DEAR SIR,—I have the honour of replying to yours of the 1st instant, requesting answers to a long list of questions inclosed. Our directors had this matter before them last week, and the full particulars, as far as we could give them, were sent to Mr. McIsaac, M.P., for Antigonish, by the Rev. M. M. Doyle. I also wrote our representative, Mr. Sinclair. Both of those gentlemen are well acquainted with our system, and the territory through which it operates. We did not commence operations until late in May of 1904, and many of your questions we could not answer, but we find that our farmers and fishermen in isolated sections are very anxious to have the line come as near to them as possible. I inclose a statement I sent out with our last call, which may be of some service. The Nova Scotia Telephone Company wish and have restricted us to certain territory, and we are practically bound to them by having to purchase our telephones, switchboards, &c., from them, in order to get connections with their systems for long-distance work. If we have not already furnished all information necessary we will endeavour to answer any further questions you may ask.

I have the honour to be, sir,
Your obedient servant,

JAMES R. MACDONALD,
Secretary.

No. 73a.

STATEMENT.

The company has now in operation 170 miles of telephone lines, with 83 telephones, including two instruments ordered and daily expected, and there is a constant demand, both for the extension of their lines, and for the instalment of more instruments in the territory already covered. The yearly rentals of the above 83 telephones aggregate \$1,500, and the long-distance tolls earned will at a low estimate (based on the

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experience of the past months) bring the company's income, even without any extension beyond its present capacity, up to \$1,800 a year. It is proposed to put \$500 a year to the credit of a sinking fund, and it is estimated that \$500 more will cover the ordinary yearly expenses of the company, leaving a surplus (besides sinking fund) of \$800 a year. The capital already expended is about \$7,000. The earning capacity is therefore very good.

There is a proposed and probable extension for this spring from Marie Joseph to Port Dufferin, 26 miles, and a possible extension from Goshen to Isaac's Harbour, about 30 miles. These two connections would give at a low estimate 40 telephones, which added to those already in operation would increase the company's income very much.

Yours truly,

JAMES R. MACDONALD,
Secretary.

No. 74.

FLORENCEVILLE, N.B., May 13, 1905.

SIR WILLIAM MULOCK,
Chairman Telephone Committee,
Ottawa, Ont.

DEAR SIR,—From the newspaper report I see that Senator Thompson states that he has about completed an 'amicable arrangement' with Senator Baird on the difficulties between the Union and New Brunswick Telephone Companies. In my own evidence before the committee I tried to be fair as possible and to bring up nothing but well known facts. Since Senator Thompson has referred to the proposed 'amicable arrangement,' I wish to state to the committee that the gist of the proposed 'amicable arrangement' is that the Union Telephone Company agrees to pay the New Brunswick Telephone Company the sum of \$100 each year for the privilege of allowing the Union Telephone Company to install their 'phones in the Woodstock station. This may be a very 'amicable arrangement,' still the Union Telephone Company does not consider it an 'amicable arrangement' and only considered it at all as a means of improving the Woodstock automatic service.

Referring also to the reason that the Union Company are not connected by switch with the New Brunswick Company, he says the Union Company refuses. The New Brunswick Telephone Company made it a condition of allowing us to connect with them at Woodstock, that *the Union Company close all their offices in Woodstock.* The Union Company did not consider this a fair proposition. The Union Company has documentary proof of both of the above statements. The offer was submitted to the shareholders' meeting and was unanimously rejected.

Yours truly,

THE UNION TELEPHONE COMPANY, LIMITED
Per D. W. Ross, *Secretary.*

No. 75.

FLORENCEVILLE, N.B., May 13, 1905.

SIR WILLIAM MULOCK,
Chairman Telephone Committee,
Ottawa, Ont.

DEAR SIR,—In reply to your letter of the 10th instant. I beg to say that before July 1, 1903, independent telephone companies would generally get a 'phone installed in the railway station through the influence of some large shipper. The Union Telephone Company before July 1, 1903, had 'phones installed in the following Canadian Pacific Railway stations:—Hartland, Florenceville, Bath, Andover and Grand Falls.

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The 'phones were installed in the above places by the Union Telephone Company without any expense to the Canadian Pacific Railway and were installed there for the benefit of our patrons. The Canadian Pacific Railway Company's station agent at those places used the 'phone on their local circuit free of all charge and they are a great convenience to the station agent and to the people. Since July 1, 1903, the Union Telephone has not been able to have any 'phone installed in the Canadian Pacific Railway station. In July or August, 1903, the Union Telephone Company applied to the Canadian Pacific Railway for permission to install a 'phone at Bristol station and received a letter refusing consent. And as the Union Company were at the same time trying to get 'phones into the Woodstock station they concluded that the agreement which the Canadian Pacific Railway had with the New Brunswick Company must be an exclusive one. Now the agents all answer very well except one place. All the agents make more or less claim that it is not their place to answer the independent 'phone. In November, 1903, the New Brunswick Telephone Company installed a 'phone in Florenceville station. The Union Telephone Company had a 'phone installed in Florenceville station ever since 1901. Soon after the New Brunswick 'phone was installed in Florenceville station the Union 'phone was not answered very well but it did not get so very bad until January or February 1, 1905, when the agent at Florenceville told our president Dr. F. M. Brown that he would not answer the Union Telephone call unless he was paid for so doing by the Union Company. Our president told him that he thought where the Union Telephone Company placed the 'phone there free of charge to the Canadian Pacific Railway and their agents used it on the local circuits freely, that he should answer it as a part of his duties to the public; that it was an agent's duty to answer all reasonable questions on railway business through the station wicket and that it was just as much the agents duty to answer the same questions over the telephone. Now since that time the Canadian Pacific Railway agent at Florenceville has stated to different parties that he would not answer the Union Company's 'phone. Since last January it is only once in a great while that he has answered at all. People have come to the Union line to get Florenceville station and after repeated ringing could not, and have then gone to the New Brunswick Telephone Company's office and found that they were answered at once, promptly.

On the day I started for Ottawa I waited in the Florenceville station one hour for the train. During that time the Union Telephone called a number of times and although there were two agents in the office neither of them answered the Union 'phone at all. During the same hour the New Brunswick 'phone rang twice and each time the agents answered the first call. There can be no plainer case of discrimination. There are two agents there at Florenceville and during this hour they were both in the office and could have answered if they chose. It is common knowledge around Florenceville that the Canadian Pacific Railway agent at Florenceville station does not answer the Union 'phone but will answer the New Brunswick 'phone promptly. Every one here knows this. Our president, Dr. F. M. Brown has had more to do with this phase of the question than I have myself. I do not think there are any other places where both 'phones are installed unless it is at Grand Falls, but I have received no complaints about discrimination from our people at Grand Falls. If you wish to know why the Canadian Pacific Railway agent at Florenceville will not answer the independent 'phone, you might summon him, his name is A. B. Gaines.

In any legislation about admitting the independent 'phone into a railway station unless it is clearly expressed in the law about whose duty it is to answer the 'phone and that there shall be no discrimination all legislation would be useless. A little consideration will show all members of the committee that to simply introduce the independent 'phone into the railway station will not be sufficient. The proposed legislation must also provide that the independent 'phone be answered promptly by the station agent and without any discrimination. Discrimination is a very hard matter to prove as shippers and others having business with the Canadian Pacific Railway and its agents do not care to put themselves on record in any permanent form. They will

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complain verbally but do not seem to care to put anything in writing or to publicly state their complaint.

Yours truly,

D. W. ROSS,

*Secretary.***No. 76.**

To the Honourable the Members of the Select Committee, appointed to inquire into the various Public Telephone Systems in Operation in Canada and Elsewhere :

GENTLEMEN,—The Board of Trade of the Town of Woodstock, New Brunswick, desire, through a committee appointed for that purpose, to lay before your honourable body some facts in connection with the telephone service in the town of Woodstock and to express the opinion that the citizens of the town of Woodstock require that the Union Telephone Company, who have an exchange in said town, be permitted to place their instruments in the freight and passenger depots of the Canadian Pacific Railway Company, which permission has been denied them by the said railway company. The committee also wish to correct some of the statements made by Senator Thompson, of the New Brunswick Telephone Company, as it has been reported, and to state that the price of the New Brunswick telephones to new subscribers for some years before the advent of the Union Telephone Company in Woodstock, was fifteen dollars for each instrument, whether a subscriber took one or more instruments, and further, that the service was by a number of 'phones on one line, just the same then as now. The service rendered by the New Brunswick Telephone Company has been much improved since the Union Telephone Company have commenced doing business in Woodstock, but in our opinion the service rendered by the Union Telephone Company is superior to that of the New Brunswick Telephone Company even now.

We wish it distinctly understood that nothing in the above shall be construed as implying that the committee have any desire to find fault with the local employees of either company, but what we do desire to emphasize is that the system in use by the Union Telephone Company is very much superior to that of the New Brunswick Telephone Company.

Dated this thirteenth day of May, A.D., 1905.

Respectfully submitted,

R. E. HOLYOKE,
J. T. GARDEN,
WILLIAM DIBBLEE.

Committee of the Board of Trade of the Town of Woodstock.

No. 77.

HOUSE OF COMMONS,
OTTAWA, May 18, 1905.

Sir WILLIAM MULOCK,
Chairman Special Telephone Committee,
House of Commons, Ottawa.

MY DEAR SIR WILLIAM,—I forward to you herewith a communication from Mayor F. G. Forster, of Medicine Hat, N.W.T., on the subject of telephones in relation to Medicine Hat and district.

Very sincerely yours,

WALTER SCOTT.

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No. 77a.

THE MAYOR'S OFFICE,
MEDICINE HAT, May 13, 1905.

WALTER SCOTT, M.P., Ottawa.

DEAR SCOTT,—Replying to yours of the 6th, *re* telephones. The system in operation here is the Bell Company telephone. The system is entirely local, with no outside connection. The rates are : Business, \$32; household, \$20. The town would like to see the government take over the telephone business. There was talk at one time of the town putting in a system on municipal ownership lines.

A rural system, connecting Dunmore, Irvine, Josephsburg, Woolchester and country points, with Medicine Hat, would be a great advantage, and would pay.

Yours truly,

F. G. FORSTER, *Mayor*.

No. 78.

BLAKESBURG TELEPHONE AND TELEGRAPH COMPANY.
(Incorporated.)

BLAKESBURG, IOWA, May 15, 1905.

To the Select Committee on Telephones,
Ottawa, Canada.

MESSRS,—Enclosed you will find your queries of March 28th answered briefly.

Will say that we find that the farmers are allowed to build and own their own lines; that they avail themselves of telephone privileges, whereas if they had to pay the prices that a company would have to charge them, very few would take hold.

They build their own lines generally by a company of about sixteen. They can generally get to the central in 8 miles. Each then furnished about 16 poles ($\frac{1}{2}$ mile) of burr or white oak poles 18 feet long with 4 inch top peeled and set in the ground about 3 $\frac{1}{2}$ feet (with brackets and insulator and a wire purchased by the company). They use No. 12 BB or telephone steel wire, which costs them about \$6 to \$10 per mile, and they put it up themselves. This makes it cost them in cash from \$3 to \$5 each. the poles they cut from their own timber.

The 'phones are 1,600 ohm. ringers, bridging, and cost them installed, with extra Victor lightning arrester, switch, and ground rod, with covered wire about 20 feet from house, all equipped in first class shape, \$16 each.

It is wonderful how the farmers have taken hold of this matter the last three years. They pay central \$3 per year for furnishing them the town and switching them on to other country lines and they also get switched on the toll lines by paying the customary toll rates.

Enclosed find one of our blank contracts for rural service.

Any further information will be cheerfully furnished.

Truly,

BLAKESBURG TELEPHONE AND TELEGRAPH CO.,

HERMAN SNOW, *President*.

No. 78a.

CONTRACT FOR CONNECTION WITH RURAL TELEPHONE LINES.

It is hereby agreed by and between the Blakesburg Telephone and Telegraph Co., of Blakesburg, Iowa, first party and
of County, Iowa, a voluntary association, second party, that in consideration of three dollars per annum, payable semi-annually in advance for each

and every member or subscriber of second party's company or association first party agrees to grant second party the right and privilege of making and maintaining connection with the line of first party at the corporate limits of Blakesburg in order to give the members of second party's company or association connection therewith and use of the lines connecting with first party's switch board. It is agreed that second party shall be responsible directly to first party for the payment of said three dollars per annum for each and every member of second party. And should other persons become members of second party's company or association, then second party shall pay for such member for the time in any one year that he has been such member.

In consideration of said sum of three dollars per annum, second party shall have the right and privilege of using all lines connected with first party's switch board operated by first party, not including toll lines.

It is further agreed that second party shall be responsible to first party for all toll service and toll charges for each of its members or subscribers at the customary rate for such toll service and shall make settlement for all toll service at the beginning of the month next following such service.

It is agreed and understood that during the period of this contract second party shall not make connection with any other rural line or other system of telephone except that of first party.

This contract shall continue in force for the period of five years from the date of its execution, and second party shall at any time on request of the secretary or other officer of first party furnish first party a complete list of the names of all members or subscribers. In case second party does not pay said rental of three dollars per year promptly for each of its members or subscribers, first party shall have the option of declaring this contract forfeited and to disconnect from the line of second party on giving ten days' notice of intention to do so.

Witness our hands by the authorized officers and agents of the parties hereto this day of, 190

. Pres. }
. Sec'y } Telephone Company.

. Pres. } Blakesburg Telephone and
. Sec'y } Telegraph Company.

No. 79.

E. J. HARRIS, Mayor.
J. W. PATTISON, Secretary-treasurer.

NEEPAWA, MAN., March 28, 1905.

JOHN CRAWFORD, Esq., M.P.,
Ottawa.

DEAR SIR,—Your letter of 22nd inst. to hand. The town of Neepawa commenced to operate its own telephone and electric light system on January 1, 1900. The systems are to a certain extent run together, the same pole line being used as far as possible for both purposes, the linemen also distributing their services where required. Our telephone plant, which is metallic circuit, when installed cost \$8,000. We had 100 subscribers, but the capacity of our switchboard was 150 'phones. We ran along with this plant until the beginning of 1904. Our switchboard being by this time overtaxed, it was decided to put in a larger board of 250 drops. Also it was found advisable to cable our lines running direct from the central office to certain points of distribution. We also purchased some of the latest and most up-to-date 'phones, and otherwise placed our system in first class repair, entailing an additional expenditure of some \$5,000, making total capital invested, \$13,000. Up to the time of making the changes

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to our plant the system had been paying fairly well, our receipts on a capital expenditure of \$8,000 being for the year 1901, \$1,794; 1902, \$2,125 and 1903, \$2,140, and last year on an investment of \$13,000 our receipts were \$2,330. We have still 80 more 'phones to put in. Our charges are \$10 per annum for domestic and \$20 for commercial. Our receipts are sufficient to cover all expenditures on account of operating at the present rate, but I want to point out to you that at these rates there is a considerable saving to the people over the rates charged by the Bell Telephone Company. We not only run on a paying basis, but we save to the people \$6 per year on each 'phone, which would on the number of 'phones now installed (170) effect a saving to the rate-payers of \$1,020 per annum.

The power to conduct this undertaking as a municipal work is conferred by Cap. 121 of R.S.M.; section 29 refers to town of Neepawa. If the Dominion government in course of time saw the advisability of building and controlling the trunk lines so that municipalities could connect with them, municipal ownership would be made very much more valuable, and would relieve the people of a very large outlay which at present finds its way into the hands of the Bell Telephone Company. The saving we effect to the people by our municipal 'phone will give one an idea of the enormous saving which might be effected by the government control of trunk lines.

I inclose herewith a copy of the Auditor's Report for 1904. You will find it pretty complete, and by reference to page 19 you will find a statement of our electric light and telephone operations from the first starting of the plant, January 1, 1900. We have paid all interest, cost of operation, sinking fund alone not having been provided, but this we expect to do readily from now on. We have a surplus of assets to the credit of operating account of \$1,612, but apart from any surplus the amount saved annually to the people by municipal ownership of these franchises is more than would be required for sinking fund, but the latter we expect to provide also.

Yours truly,

JAMES W. PATTISON,
Sec'y-treas.

No. 79a.

TOWN OF NEEPAWA.

STATEMENT of Electric Light and Telephone Operating Account from January 1, 1900.

Receipts to December 31, 1904.

Cash receipts, 1900	\$ 4,474 04
" 1901	7,238 91
" 1902	8,797 58
" 1903	9,085 91
" 1904	11,251 71
	<hr/>
Total cash receipts.	\$40,848 15
	<hr/>

Assets.

Wood on hand (470 cords)	\$1,645 00
Electric light arrears.	290 96
Telephone arrears.	275 74
Earnings for December.	1,213 13
	<hr/>
	\$44,272 98

Expenditure.

Cash expenditure, 1900..	\$ 5,437 77
“ 1901..	5,776 22
“ 1902..	7,665 34
“ 1903..	10,163 68
“ 1904..	13,542 69
	42,585 70

Liabilities.

Amount due PoLson Iron Works..	74 70
Surplus..	1,612 58
	\$44,272 98

NOTE.—All interest has been paid. The sinking fund alone has not yet been provided.

No. 80.

QUEEN ANN'S CHAMBERS, BROADWAY, WESTMINSTER,
LONDON, S.W., May 6, 1905.

Sir WILLIAM MULOCK,
Select Committee on Telephones,
Ottawa, Canada.

SIR,—I was in due receipt of your letter, date March 30, 1905, but owing to great preoccupation, have not had leisure to reply to it hitherto. I have now pleasure in replying cursorily. In a week or two the accounts of the local authorities I have mentioned will be out, except Glasgow, which is not due until after May 31, and when this occurs I shall have pleasure in writing you again with the results.

Several years ago I came to the decided opinion that telephone systems are best developed when in the hands of persons who understand local requirements. The requirements of various towns and cities, even of the same size, are frequently different, and this is truer still of small towns and villages. It therefore follows that a hard and fast system, such as is apt to be set up by a central authority, does not meet the wants of all places. In Germany the telephone system is in the hands of the Imperial Government, and the whole of it, with the exception of Bavaria, Wurtemberg and Baden, is managed from Berlin. The same rates and the same regulations apply to all places of all sizes, irrespective of location, so that no variation is possible to meet local characteristics. The ill-effects of this have been brought out prominently in Schleswig-Holstein, which, of course, is part of the German Empire, although geographically it is a portion of the peninsula of Jutland, the northern part of which belongs to Denmark. The telephone development of the German portion of the peninsula has been very slow and is decidedly behind, the number of exchanges being small and the number of subscribers to them far below the average for the sizes of the communities. This is owing to the fact that everything is managed from Berlin. On the other side of the frontier, in Denmark, a very different state of affairs exists. There every village has its telephone exchange, and there also every village is connected by trunk wires with the others, that telephone communication may be said to be universal. The rates charged are very much lower than on the German side of the frontier. This different state of affairs is due to the fact that the Danish towns and villages are managed locally, either by their own town councils or by little companies which are formed to operate in a particular district. The great difference on the two sides of the frontier led the Chamber of Commerce of Flensburg, which is the principal town on the Schleswig-Holstein side, to petition the German Government on the subject.

During the last few years several local authorities in Great Britain have taken up telephone work, such as the corporations of Glasgow, Hull, Portsmouth, Brighton and

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Swansea, and the states of Guernsey. These authorities have been working under license from the Postmaster General, and have all started telephone exchanges, which have grown with great rapidity and which are in a flourishing condition. In all these places, except in Guernsey, they have to compete with the National Telephone Company, which may be compared with the American Bell Telephone Company in America. The effect as regards numbers of telephones has been startling. The Island of Guernsey, which has only a population of 40,300, possesses 1,400 telephone stations, or one to every twenty-nine inhabitants, and the number continues to grow. In fact, Guernsey is the best telephoned area in the United Kingdom. Glasgow possesses something like 25,000 or 28,000 telephones, whereas, before the corporation began to compete the number was only 5,000. The population of Glasgow is approximately the same as that of Liverpool and Manchester, but these last two cities, which are in the hands of the National Telephone Company exclusively, have only some 9,000 or 10,000 telephones each. Similar great development has attended the opening of the municipal exchanges in the other towns I have mentioned. The town councils naturally know what the citizens require in the way of telephone facilities, and are able to meet these wants more accurately and more intelligently than a company working from London. In other countries, such as Sweden and Norway, a much greater development in telephony has occurred than in Great Britain, owing to the fact that in both these countries, as in Denmark, telephony has been for a good many years in the hands of local concerns, sometimes town councils and sometimes companies. But the principle of local administration has been adhered to in both cases. Sweden, Norway and Denmark have more telephones in proportion to their populations than any other European country.

When we turn to countries in which the management is centralized, as in Germany, France, Austria, Belgium, Spain and Portugal, we find that the results are far more satisfactory, and that the development of telephony is slower. My views, therefore, run counter to the establishment of any one central authority in Canada, unless the drawbacks which surely attend on centralization can be modified or neutralized by the appointment of local advisory committees possessing a voice in the rules and regulations under which telephones are administered in their several districts.

I do not think that the conditions which prevail in Quebec agree at all with those which would have to be met, say in Halifax or Toronto. Each of these cities unquestionably possesses its own particular requirements, and these could not be met by a central authority at Ottawa unless controlled, as I have suggested, by local committees. I am in consequence of my experience, opposed to the acquisition of all the British telephones by the post offices, as I am sure that the officials in London would not work with the advisory committees or with the Chambers of Commerce, and I doubt seriously whether the transfer of the telephones to the state would produce any better results than are now obtained under the National Telephone Company and the municipalities.

I am addressing to you under another cover a copy of a paper which I read at the Ipswich meeting of the British Association some years ago, in which the results of local control as compared with centralized control are set forth in a striking manner. Since this paper was read there has been no occasion to modify my opinion, and I still adhere to it as strongly as ever.

I have the honour to be, sir,

Yours very faithfully,

A. R. BENNETT.

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No. 81.

BEDFORD, N.S., May 10, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
Chairman Select Committee on Telephone Systems.

SIR,—I have your letter of the 1st instant, asking for information regarding the Hammond's Plains Telephone Company, and I have the honour to give you the following information:—

The company is a very small one and only operates over a very limited territory. I am a practising physician in this village, Bedford. We have had here telephone connection for several years with the Nova Scotia Telephone Company, but all the outlying districts in which I practice, covering a radius of about fifteen miles from here, have never until recently had any telephone service. Some of these rural parts have a daily and others a tri-weekly mail. About three years ago I approached the Nova Scotia Telephone Company and asked them to extend their lines to some of those places. They said there was not business enough to warrant them to build lines up to their standard of construction, but they, the (N. S. Company), suggested that we build these lines ourselves and they would give us connection at Bedford with their system. I went all through these rural districts and saw the people, and succeeded in getting enough money subscribed to build and equip nearly twenty-five miles of line; we started from my office here in Bedford with two main lines in two directions, and as we got away from the village we branched off in other directions, so that we have all or nearly all the outlying rural districts connected with my office. I have a switchboard here and make connections with the Nova Scotia Telephone Company, for any point in its system or its connections. Our little local company has been a success and is satisfactory in every way, our subscribers are all farmers, coopers, country store keepers, and small mill owners. We bought all our building material from the Nova Scotia Telephone Company. We have twenty-three miles of line, eighteen subscribers, (sixteen residence telephones and two shop telephones) and cover a territory that is served by eight post offices. The total cost of building and equipping the twenty-three miles of line was about \$1,200. We charge subscribers \$5 per year for a telephone. This gives them free service over the local line. The toll rate over the local line is ten cents for non-subscribers. When connection is made with the Nova Scotia Company the toll rate is ten cents plus the Nova Scotia Company rate for subscribers and non-subscribers. We pay five per cent dividend to those who subscribed the money to build the line (last year ten per cent), and we are able to place from ten per cent to twelve per cent each year at rest as a reserve fund. This after paying all expenses. The country people are delighted with the service, and they really have a much better service than they would have had if the large company had built a line or lines to these places as I asked them to do at first.

If there is any other information which I can give you I should be very glad to do so.

I am, sir,

Yours faithfully,

A. McD. MORTON, M.D.

No. 82.

FREDERICK S. DICKSON, President. J. B. RHODES, Secretary and General Manager.
SHERMAN M. GRANGER, Vice-President. R. W. JUDD, Treasurer.

THE ZANESVILLE TELEPHONE AND TELEGRAPH COMPANY.

ZANESVILLE, Ohio, May 23, 1905.

Sir WILLIAM MULOCK, Postmaster General,
Ottawa, Ontario.

DEAR SIR,—I have your favour of the 1st instant and note same carefully. I regret that I have not at this time facilities for answering in detail all of the questions included in your circular.

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For your information I will say, however, that four years ago, when we began building our telephone system in Muskingum county, the Bell Company was operating about 750 telephones in the county. They had never developed service in the rural districts and in fact absolutely refused to furnish telephone service to the farmers.

We began building our plant in 1901 and during the short period of time we have been operating our plant have very thoroughly developed not only the cities and villages, but the rural districts within Muskingum county.

The Bell Company charged \$48 for a business telephone on individual line, and \$36 for a residence 'phone. Our rates were established at \$33 and \$18 respectively. For the above prices a subscriber may have free service with more than double the number of subscribers formerly reached by the Bell Company, and for a 10 cent toll rate can talk to any town or toll station within the county.

We have at the present time connections with more than 1,150 farm line subscribers in their homes.

Good service at reasonable rates has caused our list of subscribers to increase steadily, and at the present time every line on our switchboard at this point is in use, and we are just completing arrangements for a party line service, which will enable us to take care of at least 1,000 additional subscribers.

Our rate for a two party business 'phone will be \$24 per year, and for a four party line residence 'phone \$12 per year.

Our earnings are sufficient to pay from six to seven per cent interest on our capitalization.

For further information concerning the various telephone plants in Ohio, I would suggest that you write to Mr. C. Y. McVey, general manager, Federal Telephone Company, Cleveland, Ohio, who has charge of a number of extensive plants within this state.

With kindest regards, and best wishes for the success of the movement in Canada, I am,

Yours very truly,
 THE ZANESVILLE T. & T. COMPANY,
 By J. B. RHODES,
 General Manager.

No. 83.

EDWARD P. BAIRD,
 President and Treasurer.

WILLIAM T. BAIRD,
 Vice-President.

BAIRD MANUFACTURING COMPANY.

24 MICHIGAN STREET,
 CHICAGO, ILL., May 24, 1905.

Select Committee on Telephone Systems,
 Ottawa, Canada.

SIR WILLIAM MULOCK, Chairman.

DEAR SIR,—Inclosed find copy of our booklet describing our Secret Service Telephone System, which we promised to send you in a previous letter. We are also sending you under separate cover $\frac{1}{2}$ dozen copies of the same booklet.

As you will find described in the booklet, our Secret Service System not only gives the selective ringing and lockout but all locked out patrons have the privilege of giving in an emergency call without interfering with the conversation of parties using the line or being able to listen in. This we consider an important feature as it gives the locked out patron the privilege of calling the operator when a physician is wanted, or the fire department or for any other special reason.

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As you will see by the testimonials in the booklet, our system has demonstrated itself a complete and unqualified success.

We are almost daily receiving repeat orders from old customers, which is the most satisfactory and practical testimonial that can be given as to the merits of our system.

If at any time your committee would like to have us send one of our salesmen with a complete system for demonstration we will be pleased to do so, and are confident you will be delighted with its workings.

Meanwhile, any further information you may desire we will be pleased to furnish. Awaiting your pleasure, we are,

Yours truly,

BAIRD MANUFACTURING COMPANY,

E. P. BAIRD,

President.

No. 84.

WM. KELLOCK, B.A., ADVOCATE, SOLICITOR, NOTARY, ETC.,
WEYBURN, ASSA., May 10, 1905.

R. S. LAKE, Esq., M.P.,
House of Commons, Ottawa.

Re Telephone Inquiry.

DEAR SIR,—I am in receipt of your favour of the 5th inst., inquiring about the telephone system in our district, and in reply beg to state that the system in use here is a local one and owned by a private company organized under the Companies' Act. The system at present is only in use throughout the town of Weyburn, but will be extended to Regina and Minneapolis during the next two years. It is giving every satisfaction to all the parties who are using it. It is in use by all the business men in town, and the rates of charges are \$1.50 for private residences and \$2 for business purposes per month. I shall be pleased to give you whatever further information you may require in the matter.

Yours truly,

WM. KELLOCK,

Mayor, Weyburn.

No. 85.

REGINA BOARD OF TRADE.

REGINA, N.W.T., May 19, 1905.

WALTER SCOTT, Esq., M.P.,
House of Commons,
Ottawa, Ont.

DEAR SIR,—I have been requested by the mayor of Regina and by the chairman of the Business Men's Committee of the Board of Trade, to answer your letter addressed to the mayor, dated the 6th instant. Your letter has reference to evidence to be submitted to a special committee of parliament which is at present inquiring into the subject of telephones.

So far as Regina city is concerned the telephonic service is good, that is the local service, though the general impression is that it might be cheaper. We pay \$20 a year for telephones in private houses, \$35 in places of business and \$38 a year for desk telephones.

The general feeling here is that we ought to have a long-distance service, we have always been promised this, but the promise has not so far been fulfilled. It would be a great boon to a growing place like this, even the farmers in the district are asking for telephones to their settlements, and indeed steps were recently taken to ex-

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tend the Private Telephone Company that at present operates between Craven and Lumsden to different settlements and to Regina. The sum of \$1,500 was guaranteed in Tregarva alone, and although the Bell Telephone Company propose to run lines to the district indicated, yet the fear is that the charges will be high.

I will merely add that the feeling in favour of government ownership and operation is very strong and has quite obliterated the desire for municipal ownership, which would be inconsistent with long distance telephones beyond city limits or town limits, and would be certain to lead to complications.

I am, dear Mr. Scott,
Yours truly,

WM. TRANT,
Secretary.

No. 86.

RESOLUTION OF THE OWEN SOUND BOARD OF TRADE.

That, Whereas owing to the rapid growth of the Dominion of Canada the use of telephones is becoming more and more an absolute necessity in commercial business and every day life;

And That, Whereas, it has been elicited from witnesses examined by the Select Committee of the House of Commons relating to telephone systems that local co-operative telephone systems have been sufficiently tried to establish their feasibility, and the fact that the advantages of telephone service may be greatly extended at rates and on conditions much more favourable to subscribers than those at present exacted;

And That, Whereas, the United States, England and other European nations have been giving careful consideration to the question of government ownership of telephones, and it is expected that such a policy will be generally adopted by these countries;

And That, Whereas, the Board of Trade for the town of Owen Sound is heartily in accord with the principle of government telephone ownership;

Now therefore, be it resolved that in the opinion of this board the time is opportune for the Dominion Government to assume the ownership and control of all telephone systems and lines in the Dominion of Canada, and that a copy of this resolution be forwarded to our representative, W. P. Telford, Esq., M.P.

BEN. ALLEN,
President.
DAVID F. RITCHIE,
Secretary.

OWEN SOUND, ONT., May 19, 1905.

No. 87.

NORTHERN INDIANA TELEPHONE ASSOCIATION,
OFFICE: HOME TELEPHONE BUILDING,
FORT WAYNE, IND., May 24, 1905.

Sir Wm. Mulock, K.C.M.G.,
Ottawa, Canada.

DEAR SIR,—Answering your inquiry under date of May 22, relative to telephone systems, &c., beg to say that the number of independent telephones in the state of Indiana is 175,000, the number of the Bell approximately 30,000; the Independent Company began operation in this state ten years ago, the Bell Company twenty-five years ago.

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In the cities mostly common battery plants have been installed, the country districts using the magnetic system; most of the larger cities have rural lines extending out about eight to ten miles, beyond these points service is furnished to the farming districts by securing some central point and installing a small switchboard to which the country lines from the territory round-about centre, and a special circuit is supplied from this switchboard to the next largest city, and service is rendered in the latter case on a nominal toll basis. Where the rural lines connect directly with the switchboard, in the larger cities it is done on a rental basis at a price averaging \$1.50 per subscriber, with six to twelve telephones on one line, in accordance to the distance, seldom exceeding two subscribers to the mile.

Although formerly railway companies objected to the placing of telephones in their waiting rooms, the condition does not now exist, and independent telephones can be found in the waiting rooms at nearly every railway station.

Trusting that this covers the information desired, and with the assurance of being at your service on any other points, if more information in detail would be of value, I am,

Yours very truly,

WM. L. MOELLERING,
President.

No. 88.

THE HOME TELEPHONE COMPANY.

PLATTSBURG, OHIO, May 24, 1905.

Hon Sir WM. MULOCK, K.C.M.G.,
Postmaster General, Ottawa.

DEAR SIR,—In reply to your inquiries concerning our telephone system, I have written briefly on the inclosed list.

Our plant is small, but owing to the fact that we are operating one of the first automatic boards installed in this state (1901), and that our country lines from the start, four years ago, have been equipped with selective ringing lock-out telephones made under the patents of N. E. Norstrom, we have received many inquiries and many visits from telephone men in this and neighbouring states. It is perhaps the only plant whose country lines are all equipped in this manner, and we are giving to our rural subscribers an ideal service. The apparatus is now manufactured by the Baird Manufacturing Company of Chicago. Their printed advertising matter will probably give you the desired information concerning it. It does all they claim for it. The first cost of the subscriber's station is about \$6 more than where a common bridging instrument is used; the operating expenses are a little more and the rental should be higher. Owing to competition we have not charged an increased rental, but we have almost driven the opposition company out of our territory. As your committee is especially interested in rural telephone systems, I will be pleased to answer any further inquiries that you may make.

Yours truly,

CARLTON HENRY,
Secretary and Manager.

APPENDIX No. 1

No. 89.

THE NEW BRUNSWICK TELEPHONE CO., LIMITED.

Head Office.

FREDERICTON, N.B., May 25, 1905.

The Hon. Sir WILLIAM MULOCK,
Chairman of Select Committee on Telephone Systems,
Ottawa, Ont.

MY DEAR SIR,—In your report of the proceedings I find in Appendix 'A' under No. 76, a communication from a committee of the Board of Trade of the town of Woodstock signed R. E. Holyoke, J. T. Garden, William Dibblee, in which reference is made to my having stated that the prices of our instruments was \$15 for a single instrument and \$25 for two instruments. The communication states that in that respect I was wrong. That our company had charged \$15 for each instrument, whether a subscriber took one or more instruments.

I am inclosing you at this time some several leases selected from those filed in the office for services rendered to our subscribers in the city of Woodstock, as follows:—

Woodstock, Feb. 1st, 1893, Garden Brothers, 3 instruments at \$35.

Woodstock, April 1st, 1894, John McLaughlan, 2 instruments at \$25.

Woodstock, May 1st, 1896, George Anderson, 2 instruments at \$25.

Woodstock, Feb. 1st, 1897, Woodstock Carriage Co., 2 instruments at \$25.

Woodstock, Aug. 1st, 1901, F. B. Carvell, 2 instruments at \$25.

The above rates had not been changed before the advent of the Union Telephone Company in the town of Woodstock, 1905.

The leases will confirm the statement that I made to the Committee as being absolutely correct in reference to the rates.

I am quite sure that the committee of the Board of Trade has no desire to misrepresent these facts and it was simply inadvertently done.

Yours very truly,

FRED. P. THOMPSON,
Managing Director.

No. 90.

QUEEN ANNE'S CHAMBERS,
BROADWAY, WESTMINSTER,
LONDON, S.W., May 16, 1905.

Sir WILLIAM MULOCK,
Select Committee on Telephones,
Ottawa, Canada.

SIR,—Referring further to your letter dated March 30, I find that in my reply of the 6th instant I did not say anything about your inquiry as to telephony in rural districts. Practically nothing has been done in this direction in this country. Many villages have now telephone exchanges through which it is possible for farmers to obtain telephonic communication by means of either direct lines to the exchange or by becoming subscribers to a party line. In each case they have to pay the usual tariff, the same as shopkeepers and manufacturers would do in similar circumstances. Of course, distances in Great Britain are much shorter than in Canada, and the same occasion for dealing specially with these calls does not arise. By referring to the pamphlet which I had the honour to inclose with my letter of the 6th instant, you will see that the late Major-General Webber proposed a special system of rural telephones for Suffolk as far back as 1896. But nothing ever came of this practically, and such of the Suffolk farmers who possess telephones to-day do so under the conditions applicable to other classes.

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I expect shortly to be in a position to forward you copies of the municipal telephone accounts for the year ending March 31 last. In the meantime, I inclose those of the Guernsey telephone system, as their financial year ends December 31.

I have the honour to be, sir,

Yours very faithfully,

A. R. BENNETT,

No. 91.

THE BELL TELEPHONE COMPANY OF CANADA, LTD.,
MANAGER ONTARIO DEPARTMENT,
HAMILTON, May 29, 1905.

ADAM ZIMMERMAN, Esq., M.P.,
Ottawa.

DEAR SIR,—My attention has been drawn to a remark which you made in committee the other day in reference to the rates charged by this company to their Hamilton subscribers as compared with the rates charged Ottawa subscribers and, as reported in the papers at any rate. I think you were under the impression that the company had not dealt fairly with the Hamilton people.

I personally attended to the making of the contract with the city council here, and therefore am in a position to explain it to you and you will see that we were perfectly fair in every way.

Perhaps you do not know that we have for some years here given subscribers a rate both at offices and houses of \$25 a year and 2c. per call. This was originally intended for dwelling houses, where the instrument was to be installed more for the sake of protection than anything else, and for small stores like corner groceries, and cabmen, &c., where their own calling rate was very small and most of the calls came to them from other people, and the rate saved these people a good deal of money. The agreement with the city contemplated extending these cheap rates, and we are now putting in houses on party lines (we have the privilege of putting four houses on a line, but rarely put more than two) for \$20 a year, and we give them with this one hundred calls a month free. We also take places of business in the same way with two on a line for \$35 a year, with one hundred calls a month. To make a long story short, I offered the committee that if they would give up these cheap rates and allow us to confine ourselves entirely to a flat rate for unlimited service for offices, anywhere within the city limits, of \$45, and a flat rate for houses of \$25, I would recommend the company to accept this. They refused to do this, as there were already before this agreement was made, I think, about 240 subscribers at the lower rates, and they did not think these people would like to give them up. Therefore, of course, as some of the subscribers would be paying only \$20 we could not afford to allow the largest users to get off for less than \$30 for their houses, and that is the reason of the present arrangement, which I think was just as fair to the city as the one we made in Ottawa. At any rate, I am sure you will do us the justice to explain, if the matter comes before you again, that if there was any difference between the two it was not our fault. I might add that there were also some minor advantages in the Hamilton contract to the city and the subscribers, which I think are not in the Ottawa contract.

Yours truly,

HUGH L. BAKER,

Manager.

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No. 92.

HOUSE OF COMMONS,

OTTAWA, May 17, 1905.

Sir WM. MULOCK,
Postmaster General, &c.,
Ottawa.

DEAR SIR WILLIAM,—In reply to your communication of April 20, in reference to the telephone facilities at present enjoyed by the people of the riding of Thunder Bay and Rainy River.

The first telephone service established in that riding was in the town of Port Arthur, and was established by your humble servant. At that time the Bell Telephone Company claimed the right of erecting poles independently of the municipal authority. They had refused to put in a system at Port Arthur, stating that when they found the conditions suitable they would do so, and that in the meantime they had a patent on the telephone and nobody else could interfere.

I found a Toronto company willing to sell telephones, and I purchased the necessary number for putting in a system, that company giving me assurance that the Bell people could not prevent its operation. No sooner had I started to put in a system than the Bell people also, a few weeks later, started to put in a system. I then extended the Port Arthur Telephone Company (which company I had formed) system to Fort William, the adjoining town, about six miles distant. A month or so later the Bell Company extended their system to Fort William. After receiving from the Bell Company a number of threatening letters to bring action for damages for infringement on their patent rights, I had the case referred here to the Minister of Customs and showed clearly that they were not manufactured in Canada, but that their telephones were coming from the United States. The ruling of the commissioner was in our favour and against the Bell Company, so we were then relieved from that class of difficulty. The Bell Company then gave their telephones free to the customers, and the Port Arthur Company did likewise for two or three years. About this time the Bell Company made an offer to purchase the local company and their offer was accepted, and we went out of the telephone business with a heavy loss.

As soon as the Bell Company had control of the local company the price of telephones went up to \$35 or \$40. I am not quite certain of the price, but they were very high. That condition of things existed until about two years ago, when the municipalities of Port Arthur and Fort William mutually agreed that they would install municipal systems in each town and that they would afford to each other equal facilities in each town over the respective lines. The systems have been installed and work exceedingly well. The citizens get a telephone service now for about one-half of what they had to pay formerly, and have a much better and more extended service.

The only difficulty experienced is that the Canadian Pacific Railway—and I think the Canadian Northern Railway also—do not take the municipal 'phones into their railway station offices. The Canadian Northern, however, has a municipal 'phone in its up-town office, and by that means communication with it is, I think, quite satisfactory.

The Bell Company is now again furnishing free 'phones to those who will use them, but notwithstanding this, 95 per cent of the 'phones in use in both towns are the municipal 'phones. The Bell Company is really furnishing little or no service in either towns, and have been compelled to take their 'phones out, notwithstanding the offer of their free use.

There is no long-distance service in that section of the country, and the success of the municipal 'phones is quite complete.

The Bell Company has a telephone service at Rat Portage and Keewatin.

These are the only telephone services of any consequence in the riding of Thunder Bay and Rainy River.

Yours truly,

JAMES CONMEE,

Per O.H.

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No. 93.

NEW YORK LIFE BUILDING, 11 PLACE D'ARMES,
MONTREAL, May 23, 1905.

Hon. Sir WM. MULOCK,
President Telephone Inquiry Committee,
Ottawa, Ont.

SIR,—I have followed with much interest the work of the committee upon telephone operation in Canada, the more so as for my part, I have had numerous reasons for complaint against the Bell telephone service in Montreal. I regret that I was away during the examination of Mr. Sise. Perhaps this gentleman could have given some explanation upon the following point. The statute 2 Edw. VII., ch. 41, sec. 2, says: 'Upon the application of any person. . . . the company shall with all reasonable despatch furnish telephones of the latest improved design then in use by the company in the locality, and telephone service for premises. . . . upon tender or payment of the lawful rate semi-annually in advance.'

Now, the Bell Company claims that the best instrument is what they call the long-distance telephone, but the company does not furnish this instrument, as it is obliged to do, for the ordinary subscription price, but it charges for it \$5 extra per annum.

The company may say that this is the legal rate, but it seems to me that since it must furnish only one kind of instrument, that is the best, it cannot have two sets of rates.

More than that, the employees of the company absolutely refuse to accept subscriptions for the Blake, or ordinary telephone, for service in the east exchange in Montreal, where the subscription price for residences was formerly \$30, but they require that the subscriber should take the long-distance instrument and that he should pay \$35.

This is only a few of the numerous abuses to which the Bell Company is subjecting the public, and for which, I trust, the committee will find a remedy.

I remain, sir, your obedient servant,

EMILE JOSEPH.

No. 94.

MICHIGAN INDEPENDENT TELEPHONE ASSOCIATION,
GRAND RAPIDS, MICHIGAN, May 25, 1905.

Sir WM. MULOCK, K.C.M.G.,
Postmaster General,
Ottawa, Ontario.

DEAR SIR,—Yours of the 22nd at hand. The telephonic condition in the state of Michigan is comparatively analysed as follows:—

In 1896, previous to competition and the initial independent movement, the Bell Company had in this state about 13,000 telephones in the two peninsulas. Its rates in cities like Grand Rapids were \$40 and up for residence 'phones, and \$50 and up for business 'phones. Here it had less than 1,500 'phones in service. Toll line rates in the state, never less than 25c. for any service, averaged about one cent a mile. Most of the service was given with grounded circuits or common return, with what are known as Blake transmitters.

With the inception of the independent movement a radical change in rates ensued. In this city the Citizens' Telephone Company, of which I am secretary, charges \$36 a year for business 'phones and \$24 a year for residence 'phones, where the prices formerly stated ranged from \$50 to \$115 on business and \$40 to \$65 for residence 'phones. Long-distance rates on the independent system are running at about one-half cent per mile for day service, with about a 60 per cent fee on sums in excess of twenty-five cents for night service. The service now is almost invariably full metallic, the transmitters being of what is termed the granular carbon or long-distance type. The independents claim to have nearly 70,000 telephones in the lower peninsula of Michigan, with several

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thousand in the upper peninsula. The Bell Company's report as of date January 1 last, claims 66,000 telephones in the state. In many cases Bell rates are lower than the independents—they are \$6 a year lower than both varieties of service in this city. The explanation of the service above indicated hardly gives a clear idea of its value. The fact that the Citizens' Company has in this city 6,550 telephones in service, while the Bell Company has considerably less than 3,000 does not so well tell the story as the fact that there are scores of hamlets and small towns enjoying service now which formerly had none, and that there are thousands of rural 'phones in farm houses where formerly there were not one thousand in the entire state; and villages formerly provided with a single toll 'phone, a toll station, now enjoy complete exchange service with from thirty or forty to several hundred 'phones. The character of construction and the type of service has improved in almost the same ratio as the service has expanded.

In rural districts there are three types of service. One is straight commercial service, built by some corporation connected with some nearby village or town exchange. Such exchange affords long-distance connections, of course, and the service is of the best quality. There are usually from six to ten subscribers on one party line and the rates vary from \$10 to \$20 a year, dependent upon the cost of construction and distance of service. The second type is a sort of combination, a co-operative line or lines built by the farmers themselves, entering some near exchange in the most desirable village or town, and rates, which we usually call switching charges, running from \$3 to \$6 per instrument. The third type of service is purely co-operative, built and owned by farmers, managed by them, with switchboards or switching stations located at intervals in some farmer's or other residence, and operated upon an expense sharing basis. While this type is not wholly desirable in its concrete results, it is inexpensive in its construction and maintenance, and, as its patrons aver, 'better than walking.' These co-operative exchanges frequently, nay generally, secure connection with commercial companies obtaining long-distance service. Infrequently such long-distance connections are made with the Bell Company.

The matter to which you allude relative to railroad service perhaps can be explained in this way. Some years ago in anticipation of the independent movement and probably with a view to defeating it or crippling it, the Bell Company entered into five year contracts with several of the railroad companies in the state to furnish exclusive telephone service to such companies. The thought being that a telephone company which could not furnish railroad service would be so seriously handicapped that it could not long be maintained. Not all of the railroad companies entered into such an arrangement. The independent movement, backed by the people themselves, grew so rapidly that various expedients in avoidance of the contracts mentioned were resorted to and most of the railroads soon had a dual of service. Some, however, did not. Their objection latterly has been on this theory. A telephone in a railway office must be answered by an intelligent clerk, a man who can earn a fair wage. In a way two telephones means two clerks, and for that reason a considerable increase of expense. However, in a general way the attitude of the railroads is changing and the independents are getting about as much of that sort of service as the Bell Company. In this city the Citizens' Company has substantially all of the railroad companies in its service.

Trusting that these answers meet the points desired, and promising further information if at any time you would like it, we are,

Very Sincerely,

E. B. FISHER,
President.

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No. 95.

ORANGE AND SUSSEX COUNTY INDEPENDENT TELEPHONE ASSOCIATION.

NEWBURGH, N.Y., May 26, 1905.

Sir WILLIAM MULOCK,
Postmaster General,
Ottawa, Canada.

DEAR SIR,—Your communication as chairman of Select Committee on Telephone Systems for Canada, has been received by us and in answer would say that in this section of the country, the companies have in no case experienced any difficulties from placing the independent telephones in railway companies' passenger and freight depots.

In a few instances these instruments have been placed at no charge to the railway companies, more of a convenience to the public, and in other cases the railroad companies pay the regular rates for them.

It has come to the writer's knowledge in some extremely few cases that railroad companies have made some objection to having the independent telephone placed in their offices, but this has been occasioned only by strong influence of the Bell Company through railroad under officials who were friendly with local Bell officials. The writer finds that in nearly all the railroad passenger and freight depots in this vicinity have both Bell and Independent Telephones, and in some cases the Independent only, this would apply to smaller towns and villages.

Yours truly,
GEO. G. OTIS.

No. 96.

DECATUR COUNTY INDEPENDENT TELEPHONE COMPANY.

GREENSBURG, IND., May 26, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General,
Ottawa, Ont.

DEAR SIR,—We have the honour to reply to your list of questions as fully as the information at hand will permit. Our system operates in Decatur County, Indiana, and have been in existence four years. The amount of stock issued is \$29,000, and we have a bonded indebtedness of \$27,000. The population of the territory served is 20,000, and total number of telephones in operation 1,435, of which 816 are rural subscribers and 620 are direct one station lines. The number of residence telephones is 1,282 and business 153. 210 subscribers have also the Bell telephone at the same address. The average cost, per subscriber, of the local plant is \$62.50, the lines being iron wire, metallic circuits. The construction is pole throughout. The system is central energy, the central office equipment and telephones being manufactured by the Stromberg-Carlson Manufacturing Company, Rochester, N.Y. The rates charged per annum are: stockholders, business, \$18; residence, \$9.60; non-stockholders, business, \$24; residence, \$15. The same rates, respectively, for rural. Six per cent interest is paid on bonds, and balance of profits are used in extending plant.

The system interchanges service with the New Long-Distance Telephone Company of Indiana, through which we are in communication with 141 telephone companies in the state of Illinois, 1,503 in Indiana, representing over 160,000 subscribers, 206 points in Illinois, 406 in Kentucky, 247 in Missouri and 2,552 in Ohio, for which privilege we receive 25 per cent of all tolls originating at this office or its sub-stations.

The number of 'Bell' telephones in our territory before competition is not known, but the number at this date is 285, of which 241 are residence, and 44 business.

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The 'Bell' rates before competition were, business, \$36 and \$42; residence, \$30, per annum. At this date they are, business, \$24; and residence, \$6 per annum.

The wages paid are: foreman, \$2 per day; troublemen, \$45 to \$55 per month; electrician, \$85 per month; and operators \$3 to \$6 per month, according to efficiency and length of service.

The cost of construction material is as follows:—

Central office equipment, \$500 per 100 lines, equipped by manufacturers; \$361.15, equipped by ourselves.

Subscribers wall telephones, central energy, \$9; selective, for party lines, \$13.

Subscribers desk telephones, \$9.50.

Poles, from 90 cents to \$9.05, the latter for 45 feet, 7-inch tops.

Cross-arms, 6 pin, 12½ cents, 10 pin, 21 cents.

Insulators, \$12.50 per M.

The system operates 213 miles of long-distance lines, which are iron wire, metallic circuits. The cost per mile of single wire is, \$21.80.

The charges per conversation over the long-distance lines are ten cents within the county. It is impossible to give rates beyond, as long-distance connections cover many states.

We are a stock company—stock limited to \$30,000, divided into 1,200 shares at \$25 each, sale to one person limited to four shares. At the present time we have 959 stockholders—our stock is all sold with the exception of 200. Each stockholder purchases his telephone of the company at actual cost of instrument and cost of installation, and in consideration thereof receives a rate of 80 cents per month for residence and \$1.50 for business houses.

Our authorized bonded indebtedness is \$30,000. \$28,000 was sold and \$2,000 reserved. The bonds bear 6 per cent per annum interest, payable semi-annually. They run for fifteen years, \$2,000 payable annually.

Our income from all sources is about \$20,000 per annum at this time, and our running expenses at last estimate about 50 per cent of receipts.

The company was organized for the purpose of giving our people cheaper telephone service than the Bell Company and we made preparations to accommodate 300 subscribers, believing that would be our limit, but our growth has been phenomenal and we now have over 800 telephones on farms and over 600 in the city—and the end is not yet in sight.

Where parties in the country wish a line built to them they are required to take out stock sufficient to cover construction at the rate of \$100 per mile.

We have answered your questions as best we could with the data at hand and sincerely trust it may serve your purpose.

Very truly yours,

DECATUR COUNTY INDEPENDENT TELEPHONE COMPANY.

GEO. H. DUNN,
Secretary.

No. 97.

CLERK'S OFFICE,

VILLAGE OF GRAND VALLEY, ONT., June 5th, 1905.

Sir WM. MULOCK,
Chairman Special Telephone Committee,
House of Commons,
Ottawa.

DEAR SIR,—Replying to yours of 29th May *re* telephones, the system in operation here is the Bell Company telephone, with full connection outside. The rates are \$15,

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house or business, or \$25 metallic service. There are about forty subscribers, who have also free connection with Waldemar, a small village three miles distant.

Two rural lines, the East Luther Telephone Company, and the Amaranth Telephone Association, have their head office here. The first-mentioned company's wire runs northerly, about 13 miles, with offices at Chatters' Corners, Legatt, Colbeck, Monticello and Wesley, and connects at Wesley with the Central Telephone Company, whose line runs to Shelburne, with offices at Keldon and Jessopville.

The Amaranth Telephone Association line runs to Bowling Green, a distance of five miles, and this past month they have extended their wires southerly about 10 miles to Orton, with intervening offices at Taylor's Corners, Price's Corners and Marsville.

The rural lines are a great advantage, as connections can be made from any point on one line to any point on either of the others, and to show that they are liberally patronized, the East Luther Company has paid a dividend of 20 per cent on the amount paid up on stock, yearly, since its erection.

The present Bell system meets the present requirements of the village, giving good service, but we consider long-distance rates high in comparison with local 'phone rates.

The present facilities for inter-communication with the rural districts are poor, as they have no connection with the Bell, especially is this so with parties on the rural lines wishing communications with outside centres.

We would suggest that the government take over the trunk lines and give rural lines connection with large commercial centres.

These are the views of the council.

Yours truly,

WM. MCINTYRE,

Clerk of the Village of Grand Valley.

No. 98.

TOWN CLERK'S OFFICE, ORANGEVILLE, Ont., June 6, 1905.

Sir WILLIAM MULOCK,
Chairman Select Committee on Telephone Systems,
Ottawa, Ont.

HON. SIR,—Your letter of the 2nd inst., was submitted by me to the Town Council of the town of Orangeville at its meeting held last night. The following resolution was passed by the council: 'That this council considers that it would be to the best interests of the country for the government to take over and manage the long-distance telephone lines and that the clerk forward a copy of this resolution to Sir William Mulock.'

There are 104 telephones in use in this town. The rate for business telephones is \$20 per year and for residence telephones \$15 per year. The service here is satisfactory enough, but if the government would take over the trunk lines it is likely that a local system would be established here, much cheaper rates secured and a larger number of subscribers obtained.

I have the honour to be, sir, your obedient servant,

A. A. HUGHSON,

Town Clerk,

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No. 99.

CORPORATION OF THE TOWN OF SUDBURY.

Office of
S. FOURNIER,
Clerk and Treasurer.

SUDBURY, Ont., June 6, 1905.

Sir W. MULOCK,
Chairman Select Committee on Telephone Systems,
Ottawa.

SIR,—In reply to your inquiry of the 2nd instant, I am instructed by the council to say:—

That the Bell Telephone Company is doing business at Sudbury and Copper Cliff, the two places being connected. The subscribers have the privilege of the two exchanges for \$25 business and \$20 residence 'phones per year. There are about 150 subscribers altogether. The service for day and night is good, but we have no long-distance communication, as the towns east to Pembroke and west to Sault Ste. Marie are not connected by a through line. This cannot be remedied before some time, unless the government could get the C.P.R. Co. and the Telephone Co., 'Bell' to have a telephone wire or more strung up on the C.P.R. telegraph poles in order to hasten the long-distance communications between Sudbury and the rest of the province, or by the government obtaining the control of the telephone systems of the country and making the necessary connections between the principal centres and towns in the country.

I have the honour to be your obedient servant,

S. FOURNIER,
Clerk,

No. 100.

MUNICIPALITY OF THE TOWN OF SIMCOE.

OFFICE OF THE TOWN CLERK,
SIMCOE, Ont., June 7, 1905.

To the Hon. WILLIAM MULOCK,
Ottawa.

SIR,—In answer to your request of May 30, *re* telephones, I have been ordered to give what information you require, and transmit a resolution passed by the council at their regular meeting on the 5th instant.

We use only the Bell system, who have 114 subscribers, and all-night service, and gives satisfaction as far as I can hear, the prices, \$20 for one 'phone, and \$35 for two to the same person, and being a central switching station for a large district, the best of service for long-distance is attained, they have connected all the small places in the county, which has proved a great convenience to Simcoe, being the county town, and have given us a good fire alarm service at a very reasonable cost, the central service both as to long-distance and local is very satisfactory, having three operators. The all-night service has been in operation for something over a year, there has been some complaints as to the price of long-distance rates, but on comparison it was found to be fairly satisfactory.

I am, sir, yours faithfully,

W. C. McCALL,
Town Clerk,

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No. 100a.

Resolution No. 3.

COUNCIL CHAMBER,

SIMCOE, Ont., June 5, 1905.

Moved by George J. Ryerse, seconded by Charles Mason, That the municipal council of the town of Simcoe recommends, the full ownership and operation of all telephone lines by the Dominion government, and that the clerk be requested to reply to all necessary questions in connection with the communication from the Hon. William Mulock.

ROBERT E. GUNTON,

Mayor.

No. 101.

BRIGHTON, Ont., June 5, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,

Chairman Select Committee on Telephone Systems.

SIR,—In reference to your letter of May 29, asking for information regarding different telephone systems, &c., within this municipality. The Bell Telephone has an agency here and have 23 subscribers. They charge \$15 a year for both business and resident 'phones, and \$30 a year for desk 'phones; the instruments in use in most cases are not satisfactory for long-distance conversations, that is over 25 or 30 miles, but answer very well for local conversations.

We also have the Wade Telephone Company, whose lines run north into the country and cover 50 miles altogether, they have only four subscribers in town, their 'phones are not suitable either, for long-distance, their charge is \$10 a year with no extra charge for conversations on any part of the system. They have a central office here, but no connection with the Bell Telephone or any other trunk lines and are therefore under a great disadvantage.

We also have within the municipality about 30 independent 'phones, most of which were made by the American Telephone Company of Chicago, and are the best 'phones in use here for local conversations, and, as far as they have been tried, for long distance. They cost about \$10 each complete, that is with batteries, arrestors and switch. They have no central office, but nearly every one who owns an Independent 'phone, has expressed the desire to be connected with a central exchange if they could also have a connection with the Grand Trunk station. Plans have been under way for some time with a view of forming an independent company, and will be completed as soon as the Railway Commission dispose of the question of compensation.

This council, like many other councils, believe it will be of the greatest advantage and convenience to the public if the government would take over the trunk lines and the different municipalities the local lines and operate them in connection, with uniform rates and no discriminations.

As to the rural telephone systems, they have passed the experimental stage, and are found to be good paying investments if run properly, a great boon to the farmers who have them and would be much more so if they could get connections with the main trunk lines, but so far, owing to the opposition of the Bell Company who control most of the trunk lines, they have been unable to do so.

Yours truly,

TOM C. LOCKWOOD,

Clerk.

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No. 102.

MAYOR'S OFFICE,
OWEN SOUND, ONT., June 3, 1905.Sir WILLIAM MULOCK,
Chairman of the Select Committee on Telephone Systems,
House of Commons,
Ottawa, Ont.

DEAR SIR,—In reply to your letter of May 29, in reference to the telephone systems in our town, I might say that our ratepayers in a body are in favour of government control of the telephone systems. The Bell Company have about 350 subscribers in this town and the merchant pays \$25 per year, and if he also puts one in his residence it costs him \$20, but otherwise the rate is \$25.

I do not think the people complain so much about the price, although they would be quite willing to have them cheaper, but what they do complain about the Bell Company is them having the power to dig up our beautiful streets and boulevards, just when and where they choose, after all the trouble and expense we have gone to in beautifying our town.

Although I say it myself, we have the cleanest, finest and most beautiful streets of any town in Canada, and just as we have them completed these people come along and dig up wherever they choose, and it seems according to their franchise they have the power to do so. Last year we threatened to call out the firemen and turn the hose on them, but we found out we would only be getting into trouble by so doing.

Hoping this information will be of value to you,

I remain yours faithfully,

MATT. DUNCAN,
Mayor.

No. 103.

HOUSE OF COMMONS,
OTTAWA, June 8, 1905.Hon. Sir WILLIAM MULOCK,
Chairman, Telephone Committee,

SIR,—In response to your communication regarding the telephone facilities in county which I represent, I beg to say that Mr. J. E. Valois, Mayor of Lachute, writes me as follows:—

'The service gives satisfaction, but the rate charged, namely: \$20 per year which is paid for telephone service within our corporation limits, is too high considering the extent of business we do in our town. We have to pay, moreover, according to distance, the regular rates charged by the company when connections are made with out-of-town 'phones.'

I have also a letter from Mr. Matthew J. Strong, Mayor of Mille Isles, in which he says:

'We have no improvements to suggest regarding our telephone service because we have not any. If you could induce the Bell Telephone Company to extend their line from St. Jerome to Mille Isles we would consider it a great favour.'

It certainly would be a great benefit to counties like Argenteuil if more telephone lines were built through the farming sections and there seems to be no reason why such lines would not pay a reasonable rate on the capital invested.

Respectfully yours,

GEORGE H. PERLEY.

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No. 104.

LANGTON, ONT., June 9, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
 Postmaster General,
 Ottawa, Ont.,

SIR,—In reply to your inquiry regarding telephones, I am sorry to have to inform you that there is not a single telephone in our township, the nearest one being at Courtland (lately installed) seven miles from here. In a conversation with the members of our municipal council at our last meeting, I stated that I had received a number of reports of the inquiries of the Select Committee on Telephone systems and stated that it was contemplated by the Dominion Parliament to place the 'phones in the post offices and have them under the control (to a certain extent) of the municipalities and the council were unanimous in the opinion that the scheme would be very advantageous. We are very much in need of a telephone service here and would welcome any scheme that would give us, at a reasonable expense, telephonic communication with other places. We also need an express office here.

Your humble servant,

C. B. ELLISON, P.M.,
Clerk and Treasurer.

No. 105.

SHIRE HALL, BELLEVILLE, ONT., June 12, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
 Postmaster General, &c.,
 Ottawa.

DEAR SIR,—Your circular letter, dated June 2, 1905, in respect to telephone systems in operation in Canada, came to me on the 8th instant, and I placed it before the Hastings county council then in session.

We have no system of telephones in this county, except the Bell system; but a company is now being formed to erect a local system within this county, and the county is favourable to it. After considering your said letter the county council last week by resolution recommended:—

'That such legislation should be enacted as would oblige controllers of the main telephone lines throughout the Dominion to give reasonable facilities to local companies to connect with and have the use of the same.'

Your obedient servant,

WM. R. AYLESWORTH,
County Clerk.

No. 106.

MUNICIPALITY OF STRATHCLAIR,
 ELPHINSTONE, MAN., June 7, 1905.

The Honourable
 The Chairman,
 Select Committee on Telephone Systems,
 Ottawa.

SIR,—I have the honour to receive your letter of 3rd instant. The telephonic conditions of our district are as meagre as they can well be. There is no telephone of any kind within this municipality, nor in those of our neighbours, and we begin to feel the lack of these facilities. With two lines of rail running east and west through our midst (the N.W. branch of C.P.R. and a newly constructed portion of the C.N.R.

APPENDIX No. 1

system), the want of communication with markets, station houses, stores, doctors, &c., is most irksome, vexatious and wasteful of time—a social condition in fact that is altogether out of date in a prosperous, populous and progressive community, as ours is. Regarding the question of the controlling and administering power in any system that may be inaugurated, we prefer the Dominion Government.

I have the honour to be, sir,

Your most obedient servant,

H. T. MORTON.

No. 107.

(Translation.)

BATISCAN, P.Q., June 9, 1905.

Sir WILLIAM MULOCK,
Postmaster General, Ottawa.

HONOURABLE AND DEAR SIR,—We have the honour to acknowledge receipt of your letter of the 2nd instant, and in reply: the Bell is the only telephone line established in our locality at the present time, with few subscribers, who are charged about \$20 per 'phone per year, and moreover they have to pay extra every time they use the 'phone. This kind of service and charges thereof is considered exorbitant to a superlative degree, and not available to our rural population. However, we hope to be more reasonably dealt by, soon, both with respect to rates and facilities. An independent local company is just now being organized, with the object of establishing a service throughout all the parishes of our county, at reasonable fixed charges, and within the reach of all classes.

We are of opinion that the government should control and operate, as owner thereof, all the telephone systems, but failing this, legislation should be enacted to protect the independent telephone companies, chiefly those which are not under contract with the Bell Company, because these are the companies which render real service to the rural population of our district.

We are of opinion also that a law should be passed permitting independent telephone companies to install 'phones in the railway stations, so as to facilitate communication with the interior part of the county. We have seven or eight parishes whose people are often obliged to drive to the railway stations to transact their business. Our County Telephone line will link together, from a telephony service point of view, all the parishes of the county as far as here, but it is not free to install its 'phone in the Canadian Pacific Railway station of Batiscan, judging by a similar occurrence which happened a few stations from here.

Again, we strongly assert, and repeatedly so, that although we have had a Bell Telephone service for many years, it does not give satisfaction owing to its exorbitant rates and the lack of particular communication with the interior part of the county, which the company repeatedly refuses to grant us.

The Bell Telephone, which has been established here for many years, has only eight or nine subscribers, when it ought to have 150, according to our opinion.

These, dear Minister, are our opinions on this question, all of which we respectfully offer to your consideration.

Yours truly,

HECTOR HARDY,
Secretary-Treasurer.

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No. 108.

(Translation.)

STE. LOUISE, P.Q., June 10, 1905.

Honourable Sir WILLIAM MULOCK,
Chairman Select Committee on Telephone Systems,
Ottawa.

HONOURABLE AND DEAR SIR,—In reply to your circular letter of inquiry addressed to me concerning telephone systems in our locality, I beg to say that the county of L'Islet is served by four companies, namely: The Bell, the Kamouraska, the Bellechasse and the St. Pamphile. The first of these has its terminus at L'Islet East where it joins with the Kamouraska, whose line extends from L'Islet to Kamouraska. The main line runs along the bank of the River St. Lawrence.

The Bellechasse Company's line extends from Campbellton through the counties of Loibinière, Beauce and Megantic; its main line runs at an average distance of three miles from the river in L'Islet county.

The St. Pamphile Company owns a line which extends from St. Aubert as far as the American frontier, a distance of 36 miles.

All these companies' lines furnish an excellent service. The rates charged by the Kamouraska Company are \$20 for business 'phones and \$13 for residence 'phones. This includes a full telephone service without extra charge on the line which extends from L'Islet to Rivière du Loup, a distance of 87 miles. Subscribers, however, must pay extra for long-distance calls where messages are conveyed to another circuit. For instance, a three-minute conversation from Ste. Louise to Quebec will require an extra charge of 50c., 25 of which is paid to the Bell and 25 to the Kamouraska. These rates are considered too high.

From \$10 to \$25 per 'phone, according to the extent of services rendered, is charged to subscribers by the Bellechasse Company, with free connection with the Kamouraska circuit. For long-distance messages from Fraserville to Quebec—a five-minute conversation—25c. is charged.

The St. Pamphile Company charges 15c. on all its circuit for a three-minute conversation to those who are not subscribers. The rate per year to subscribers is \$5 on all its circuit.

This is about all the information which I can furnish respecting telephone service in our county. Hoping it will be of some use,

I have honour to be, Mr. Chairman, yours very truly,

JOS. ED. CARON.

No. 109.

WM. H. HARRIS, B.A., LL.D.,
Barrister, Solicitor, Notary Public.

PORT PERRY, Ont., June 7, 1905.

Sir WILLIAM MULOCK, Esq., K.C.M.G.,
Chairman of Select Committee on Telephone Systems,
House of Commons, Ottawa, Ont.

DEAR SIR,—I am instructed by the Port Perry Municipal Council in answer to your letter dated June 2nd, in reference to the telephone service in this neighbourhood, to say:

That the Bell Telephone system operates here and have about forty 'phones and two rural 'phones. They charge \$20 for business 'phones and \$15 for house 'phones for local connections. Their system, as far as it goes, works fairly well, but they do not connect us sufficiently with the surrounding neighbourhood, in consequence of which

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all the village doctors have installed their own 'phones, having probably 100 miles of line, which the citizens can use on paying 25c. per call.

These lines are, however, very poorly installed and the service is therefore poor.

This council is of the opinion that it would be an immense advantage to Canada, and certainly to this particular neighbourhood, if the telephone system was taken over by the government and run in connection with the Post Office Department.

The council desires me to send you their thanks for the reports of the evidence taken before your committee.

Yours truly,

WM. H. HARRIS,
Clerk.

No. 110.

(Translation.)

ARTHABASKAVILLE, P.Q., June 10, 1905.

Sir WILLIAM MULOCK,
Chairman Special Committee on Telephone Systems,
Ottawa.

DEAR SIR WILLIAM MULOCK,—I have the honour to acknowledge receipt of your letter of the 2nd instant. The telephone companies doing business in the county of Arthabaska are: (1) the Bell Telephone Company, (2) the Godbout Telephone, (3) the Fournier Telephone, (4) the Bélanger Telephone, (5) the Provencher Telephone.

The Bell Company gives night and day, also week day and Sunday service on its circuit. We pay \$15 for a 'phone in Arthabaska with privilege of telephony in the towns of Arthabaska and Victoriaville without extra charge, but for telephony to adjoining places we pay 15 cents for a three-minute message. We pay 50 cents for a message to Montreal and one-half this rate if calls are made after six o'clock in the evening.

The four other companies, mentioned above, have their circuit exchanges among them, and by paying \$15 per year for a Godbout 'phone we obtain connection with the other companies, and we have no extra charge to pay for service to all places on their system.

But we are unable to speak to Montreal and Quebec. They are simply local lines and owing to the current being turned on at night for light it is somewhat difficult to receive a message and be heard.

I have the honour to be, your obedient servant,

L. LAVERGNE,
Secretary-Treasurer, County Council, Arthabaska.

No. 111.

COUNTY CLERK'S OFFICE,

ST. THOMAS, June 12, 1905.

The Hon. Sir WM. MULOCK,
Ottawa, Ont.

DEAR SIR,—Your communication of the 2nd instant, requesting information *re* telephone services, was laid before the Elgin County Council at their last session. I am instructed to inform you that the council is in favour of government ownership and operation of main telephone lines, and also local services where private operation is not satisfactory.

Yours truly,

K. W. MCKAY,
County Clerk.

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No. 112.

MUNICIPALITY OF BURLEIGH AND ANSTRUTHER,

CLERK'S OFFICE,

APSLEY, ONT., June 12, 1905.

Sir WM. MULOCK,

Chairman Select Committee on Telephone Systems.

DEAR SIR,—In reply to your circular of inquiry, I may say we have no telephone system in this municipality nearer than Burleigh Falls, twenty miles distant. About five years since an effort was made to induce the Bell Telephone Company to extend their line to this place, and as an inducement a bonus of \$100, free poles delivered along the route, and free quarters and service for two years in the post office building was offered, but declined. Again last winter an effort was made to obtain a service but without avail. I understand a private company is being organized at Lakefield to build a line from Burleigh Falls to Mount Julian and Apsley, connecting with the Bell Company at the former place. As we have only a tri-weekly mail, the necessity of such service is obvious, Peterboro' being the county town and all our trade and business being done through there or Lakefield.

I am, yours, &c.,

ALEX. BELL, M.D.,

Clerk.

No. 113.

CITY HALL, MONTREAL, June 13, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,

Ottawa.

SIR,—I have the honour to transmit to you, herewith, copy of a resolution adopted on the 12th instant, by the council of the city of Montreal, in connection with telephone service.

I have the honour to be, sir, your most obedient servant,

RENE BAUSET,

Asst. City Clerk.

Extract from the minutes of the city council of Montreal, monthly meeting, held on Monday, June 12, 1905:

Submitted and read the following report of the Special Committee on Legislation, anent the letter of the Select Committee on Telephone Systems.

The Special Committee on Legislation respectfully report that they have considered the communication, dated May 28, 1905, from the chairman of the Select Committee on Telephone Systems, Ottawa, inviting the city to transmit any suggestions or recommendations anent the telephone service in Montreal.

Inasmuch as the city, through its legal representatives, has already submitted to the honourable Select Committee of the House of Commons its representations in this connection, your committee recommend that the communication now before the council be filed of record and that a reply be sent accordingly.

The whole respectfully submitted.

S. D. Vallières, L. A. Lavallée, L. A. Lapointe, H. B. Ames, F. E. Nelson,
A. J. H. St. Denis, E. Larivière, T. Bastien, W. J. Proulx, L. Payette,
G. DeSerres, J. C. E. Levy.

On motion of Ald. Sadler, seconded by Ald. Larivière, it was resolved that said report be received and adopted.

(Certified) RENE BAUSET,

Asst. City Clerk.

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SYNOPSIS OF LETTERS RECEIVED FROM CLERKS OF CITIES, TOWNS, VILLAGES, TOWNSHIPS AND COUNTY COUNCILS, BUT NOT PRINTED IN *EXTENSO*.

No. 114.

MUNICIPALITY OF DRESDEN, ONT.

Bell service appears to satisfy requirements of public fairly well. Rural facilities limited. Forty subscribers at rate of \$15 each, which some consider too high.

No. 115.

BRANDON, MAN.

Hear little complaint regarding service. 420 subscribers at rates of \$20 and \$30. Bell Telephone Company.

No. 116.

WOODVILLE, ONT.

Nothing to complain of, but think toll rate of 15c. for short distance might be reduced. At times have long waits owing to want of an extra line.

No. 117.

MAGOG, P.Q.

Bell service satisfactory, but rates 40 to 50 per cent too high.

No. 118.

HENSALL, ONT.

The Bell Telephone Company opened exchange two months ago and have 20 subscribers at \$20 per annum. Long-distance charges too high and not enough wires to handle the business.

No. 119.

BOWMANVILLE, ONT.

Bell gives fairly good satisfaction. Have 124 subscribers at \$15, or \$20 with long-distance equipment. Long-distance rates considered excessive. Poles very unsightly; think wires should be placed underground in condensed part of town.

No. 120.

HUNTINGDON, QUE.

Bell Company gives fairly good satisfaction; rate \$15, which includes radius of 5 miles. Several farmers have 'phones at \$16 per annum.

No. 121.

NEW LISKEARD, ONT.

Two local lines, the Haileybury & Cobalt Company and the Temiscaming Company, the latter in course of construction. Rates, \$20 business and \$12 residence. The Temiscaming and Northern Ontario Railway is building telephone line from North Bay to New Liskeard.

No. 122.

COOKSHIRE, QUE.

Two companies, the Bell and Canadian, in township; both susceptible to improvement. Have no night service, which is often urgently wanted.

No. 123.

TILBURY, ONT.

Service satisfactory, except no rural connection. Council does not favour granting monopoly to telephone companies.

No. 124.

COUNTY OF STANSTEAD, P.Q.

Bell have 100 subscribers at \$15 per annum. Service excellent. People's Telephone Company have 300 subscribers at \$15. Service very faulty.

No. 125.

BERTHIER, P.Q.

Bell have 12 telephones at \$15 and four at \$25, with long-distance equipment, which is all the accommodation in eight municipalities. Rates too high considering that service is inadequate. Long distance rates also too high.

No. 126.

ST. EMILIE DE LOTBINÈRE, P.Q.

Have one system, the Bellechasse Company. Two telephones in parish, one being in office of Sir H. G. Joli de Lotbinière. Long distance rates 15c. to \$1.50. Line inferior; service unsatisfactory.

No. 127.

ST. CONSTANT, P.Q.

Bell pay station only. No subscribers as rates of company are too high. Quoted rate, \$20 for residence, \$25 for business. If C.P.R. and G.T.R. stations and each end of parish had pay stations greater facilities would ensue if rates were moderate.

No. 128.

VANKLEEK HILL.

Bell has 38 subscribers at \$20. Service satisfactory.

No. 129.

TOWNSHIP OF WEST HAWKESBURY.

Only two telephones in township, connected with Hawkesbury exchange.

No. 130.

TOWNSHIP OF LEEDS AND LANSDOWNE.

The North American Telegraph and Telephone Company only system. Some years ago a local company built lines from Lansdowne to Rockport, but combined action of Grand Trunk in refusing railway connection, and N. A. Co. in paralleling lines crushed out local line.

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No. 131.

MINNEDOSA, MAN.

Bell service fair while it is working, but no service on nights, Sundays or holidays. Rates, \$25 business, \$15 residence. Long-distance fair, but occasionally lines to other points not in working order. No rural connection.

No. 132.

POINT DU LAC, P.Q.

No service. Bell requires 25 subscribers at \$25 each or an annual guarantee of \$200 by the municipality, although village comprises only forty houses. St. Maurice Telephone Company operates here, but having no long-distance its usefulness is limited.

No. 133.

BURNT RIVER, ONT.

No service. Very great need of one; nearest doctor Fenelon Falls, 12 miles distant. Have asked Bell to build line from Fenelon Falls to Kinmount, but they refuse. If writer had means would build line to Fenelon Falls as there is a good deal of business for such a service.

No. 134.

SAULT STE. MARIE, ONT.

Bell have 425 subscribers at rates of \$20 for business and \$15 for residence; \$5 additional for long-distance equipment. Service satisfactory to council.

No. 135.

TOWNSHIP OF CLARENCE, ONT.

Bell have few 'phones which appear to work with perfect harmony.

No. 136.

BIRTLE, MAN.

Privately owned system. Operating for ten months. Giving satisfaction.

No. 137.

NO SERVICE AT THE FOLLOWING:

Village of Labelle, P.Q.

Municipalities Joli, Minerve, P.Q.

Municipalities Odanah, Man., Minto, Man., Shoal Lake, Man.

Parham, Hinchinbrook Township, Ont.

Township of Strong, Ont.

Chapleau, Algoma District, Ontario.

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LETTERS RECEIVED FROM OTHER SOURCES.

No. 138.

(Translation.)

THE MONTREAL CHAMBER OF COMMERCE,

OFFICE, 83 ST. JAMES ST.,

MONTREAL, 3rd June, 1905.

To the Honourable
The Postmaster General,
Ottawa.

DEAR MINISTER,—In accordance with the wishes of the council of the Montreal Chamber of Commerce, I have the honour to forward to you a copy of a resolution which was adopted at a meeting held the 31st ultimo, *re* nationalizing of telephones.

Respectfully hoping that you will accept the assurance of our deepest interest,

I am, &c.,

JOSEPH HAYNES,
Secretary.

No. 138a.

(Translation.)

THE MONTREAL CHAMBER OF COMMERCE.

Meeting of Council, Wednesday, 31st May, 1905.

Presided by Mr. H. A. A. Brault, chairman.

Nationalizing of Telephones.

It was moved by Mr. D. Parizeau, and carried unanimously:—

‘Whereas, this Chamber of Commerce has supported the request for the nationalizing of telephones;

‘Whereas, parliament is discussing at the present time this question and also the rates charged by the telephone companies;

‘This chamber congratulates the Honourable the Postmaster General for the general inquiry on the subject, and said chamber is confident that parliament will use every endeavour to protect the citizens in this important matter.’

{	SEAL.	}
	CHAMBER OF COMMERCE,	
	Founded in	
	1887.	
	DISTRICT OF MONTREAL.	

JOSEPH HAYNES,
Secretary.

No. 139.

BOARD OF TRADE,

STRATFORD, ONT., June 5, 1905.

Hon. Sir WILLIAM MULOCK,
Postmaster General,
Ottawa, Ont.

DEAR SIR,—I beg to inclose you herewith copy of resolution passed by the Stratford Board of Trade *re* government ownership of telephone and telegraph lines which may be useful to the Special Committee who has telephone matters in consideration.

Yours truly,
J. STEELE,
Secretary.

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No. 139a.

The following is a copy of a resolution passed by the Stratford Board of Trade at a meeting held on June 2nd, 1905:—

Whereas, it is desirable and necessary that the telephone service should be under one management and ownership in order to avoid the inconvenience and expense of two or more systems, and to ensure the full benefits of a cheap and effective service, and

Whereas, for similar reasons the telegraph service should be under like, management, and

Whereas, both the telephone and telegraph services are public utilities that are necessary to the commercial and domestic life of the whole people, and should be furnished to them at the lowest possible cost,

It is resolved, That the Dominion government be urged to take the necessary steps to place the complete telephone service, long-distance as well as local, and also the telegraph service, for the entire Dominion, under government control and management; that the time is opportune for such action, which should be taken immediately before the situation is further complicated by the rapid growth of the Dominion, and the establishment of other companies, and that a copy of this resolution be forwarded to the Postmaster General.

Certified,

J. STEELE,
Secretary.

No. 140.

HEAD OFFICE, TORONTO. BRANCH OFFICES IN TORONTO, MONTREAL, VANCOUVER, HALIFAX
AND QUEBEC.

CANADIAN MANUFACTURERS ASSOCIATION.

(Incorporated.)

HEAD OFFICE, TORONTO, June 12, 1905.

The Rt. Hon. Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General, Ottawa.

DEAR SIR,—I beg to acknowledge your favour of June 6, advising of the appointment of a committee to inquire into the various telephone systems in operation, and asking for the views of the association upon this important question.

I beg to inform you that your letter was received with appreciation by the Parliamentary Committee of our association at the meeting held this afternoon, and I have been directed to forward copies of the same to the different branches of the association, and ask for an expression of their views. When these are received a report will be prepared and forwarded to you.

Thanking you for this opportunity, I beg to remain,

Yours very truly,

J. F. M. STEWART,
Assistant Secretary.

No. 141.

THE SUPREME COURT, INDEPENDENT ORDER OF FORESTERS.

TORONTO, CANADA, June 10, 1905.

A. ZIMMERMAN, Esq., M.P.,
Acting Chairman, Select Committee on Telephone Systems,
Ottawa, Ont.

DEAR SIR,—Upon my return from Minnesota, where I have been for the last week, I received your letter of the 6th instant, advising me that you had received the news-

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paper clippings that I had forwarded to Sir William Mulock some few days ago *re* telephones. I might just say that I was stopping in Pipeston, in south-west Minnesota while absent, and found that the telephone system there was a local one, and all that was paid for house telephones was \$12 a year, office telephones being a little higher, and I found also that they readily got telephone communication through the Bell system outside. I found a similar state of affairs in Grand Valley, Minnesota, and I presume other towns and cities are the same throughout that state.

I trust that your committee will be successful in getting the public some relief from the present Bell Telephone monopoly.

I am, yours sincerely

JOHN A. MCGILLIVRAY.

No. 142.

Subject.—Contract with Richelieu and Ontario Navigation Company.

THE BELL TELEPHONE COMPANY OF CANADA, (LIMITED.)

PRESIDENT'S OFFICE, MONTREAL, May 31, 1905.

WALTER TODD, Esq.,
Secretary, Telephone Committee,
House of Commons, Ottawa, Ont.

DEAR MR. TODD,—I have just learned that it will be necessary for me to correct a statement I made, when I said that we had no contract with the Richelieu and Ontario Navigation Company. I was informed at the office that the contract had expired, but the clerks in going through so many, made an error in regard to this contract, which had not expired at the time I testified, but has since expired. We have to-day no contract with the R. & O. Company.

Will you please communicate this to the committee in order that the record may be correct.

Yours truly,

C. F. SISE,
President.

No. 143.

T. B. RIDER & SON, GENERAL MERCHANTS.

FITCH BAY, QUE., May 26, 1905.

MY DEAR MR. MULOCK,—Just note telephone inquiry is bringing out some interesting information *re* the Bell Telephone Company's method. Of course it is hard pulling to get anything from them or their interior methods. Will give you a bit of telephone history made near here. A few years ago a telephone company, known as 'The Citizens' Telephone Company,' with head office at Waterloo, Shefford Co., P.Q., was started to give local service, giving farmers on party lines a rate of \$10 yearly. The Bell Company started in on a war of extermination through competition in rates, offering at \$10 the whole district of Bedford. Comprising the counties of Shefford, Brome and Mississquoi, giving free connection. In consequence the Citizens' went to the wall. After stifling their principal competitor, the Bell advanced price from \$15 to \$25, giving subscribers connection only to and with their connecting central. Won't make rates any longer for district of Bedford.

I know a farming section in Brome county where some eight or ten farmers had Bell 'phones under \$10 rate; now only two remain under new rates. Mr. Parmelee, M.P., can give further details. Best wishes,

T. B. RIDER.

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No. 144.

THE INDEPENDENT TELEPHONE ASSOCIATION OF WISCONSIN.

JANESVILLE, WIS., June 2, 1905.

Sir WILLIAM MULOCK,

Chairman Select Committee on Telephone Systems,
Ottawa.

DEAR SIR,—Your favour of the 22nd is at hand. We have in the state of Wisconsin some 300 independent telephone companies, having more than 40,000 subscribers. Over 10,000 of said subscribers are farmers. The construction of rural lines is being extended very rapidly. We find farmers to be our most stable subscribers. It was always the policy of the American Bell Telephone Company to discourage the building of rural lines. Now that company is making efforts in that direction, but the independent companies are so far ahead that their efforts are futile.

The statement made to your committee that American railway companies will admit but one telephone to their offices, is utterly false. Of the hundreds of independent telephone exchanges in the state of Wisconsin, I am sure there is not one but that has a telephone in the railway station. The Bell Telephone Company has 70 exchanges in the state, while the independents have nearly 300.

I shall be pleased to give you any further information you may desire and I suggest that you send a committee to Chicago to attend the National-Interstate telephone convention, to be held on June 20 and 21.

Yours truly,

RICHARD VALENTINE,

President.

No. 145.

PEKIN, ILLINOIS, June 9, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,

Ottawa, Canada.

DEAR SIR,—I am in receipt of your favour of May 22, 1905, and note your desire for information in this territory, regarding telephone conditions. More particularly regarding facilities in rural districts. Telephonic conditions will be viewed more particularly from a stand point of independents as we term those telephone interests which work in harmony and in opposition to the 'Bell' interests. The independent interests have made rapid strides in development, particularly in exchanges, and are rapidly building long-distance toll lines to connect in numerous exchanges, which now largely outnumber the Bell Company in numbers of exchanges and 'phones.

Rural lines have been well developed under two methods, first by companies owning exchanges, building out into rural districts, the rates charged for such service ranges from \$15 to \$20 per telephone per annum, on a basis of three 'phones per mile.

Another method which seems quite popular is for rural neighbourhoods to build their own lines to a city's limit and contract with the company owning the city exchange for city service, by the company picking up the rural line at the city limits and maintaining the line within the city limits for a rate equal to one-half the city's residence rate per 'phone per annum.

The railroads in our state, to the best of my knowledge, do not permit any telephone lines on their right of way, being prevented, even should they so desire, by previous contracts with the Western Union Telegraph Company, which prohibits competitive lines on the right of way.

We do experience trouble in getting railway companies in some instances to subscribe for telephones in their depots and offices, but we endeavour by such ex-

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cellent service to build up our exchanges in point of numbers, that they must, in order to satisfy their patrons.

I am, &c.,

GEO. H. GLASS,

President Central Illinois Independent Telephone Association.

No. 146.

MORGANTOWN, Pa., June 7, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,

Postmaster General and Chairman Committee Telephone Systems,
Ottawa, Canada.

SIR,—Your communication of May 18th to the Conestoga Telephone and Telegraph Company was received, but as I was away it was held for my consideration.

I inclose herewith a list of answers to the questions asked which I have compiled from our records, and trust that they may be of some use to you in making your investigation.

Ours is essentially a rural line, but has grown beyond anything we contemplated originally. Several farmers got together to get a line to the village of Morgantown. Others asked to join, until the mutual company was merged into a stock company with the capital fixed at \$5,000.

In other sections farmers heard of it and wanted connections and if they were willing to take stock enough to cover expenses the line was extended. Each section wanted connection with some other business centre, and so we finally got to Birdsboro, with the idea of a line to Reading, the county seat of Berks.

We had not intended the line as a money making investment in the usual sense of the word. If it paid expenses and had a surplus to keep it in repair our people were satisfied, but as the same operating expenses would cover twice the telephones on the same wires we found it had every prospect of a paying investment.

There is no doubt about it now, but the point I wish to make is, to get a successful rural line the stock must be placed with as many individuals as possible and local interest aroused. If every one who has a 'phone feels he is personally interested in the company the line will get along with less than half the trouble or expense of a line owned and operated in the usual way.

This is especially so in getting a right of way in a new territory. We have gone across meadows, along line fences, or in any other place we want to make a short cut, just because the owner was interested and saw that it was to his own interest to save expense for the company. This being the case, there is a big saving in the original cost, and should anything go wrong the subscriber has more patience than if he had no interest in the welfare of the company, and is often of great assistance in time of need.

In this section this seems to be the ideal way. If the farmers are interested, the towns will fall in line, but an outside corporation coming in will be put to all expense possible, and will have to charge according, with consequently smaller list of subscribers and poorer service.

Very respectfully yours,

H. B. BEST.

Supt. Conestoga Tel. and Tele. Co.

No. 146a.

The Conestoga Telephone and Telegraph Company operates in a portion of Berks, Lancaster and Chester counties.

Five thousand dollars of stock issued. No preferred stock or no bonds. We are about increasing our capital stock to \$15,000.

APPENDIX No. 1

Established four years in August.

With the exception of Birdsboro (2,264) our lines merely pass the following places, the population of which was evidently computed from the families getting mail at the post office and not actual residence in the village:

Morgantown, 264; Joanna, 286; Geigertown, 378; Beckersville, 320; Monocacy, 107; Douglassville, 735.

One hundred and eighty-two telephones in operation.

Not over three or four have direct lines with one telephone.

Perhaps three (bank, railroad station and rolling mill) have the Bell telephone as well as ours.

Toll lines calculated at 31 miles.

Our lines have cost us nearly \$40 per subscriber. This includes everything. The company originally started by farmers getting together and putting up their own line, which cost \$3.30 each for the original twenty-seven subscribers. They furnished 17 poles each and did the work free. The \$3.30 paid for the wire and insulators.

We calculate that \$16 will pay for a pair of steel wires with either pins or brackets, using No. 12B.B. quality, or \$38 for a No. 12 hard drawn copper wires per mile. The work of putting this on the poles will vary according to conditions, but we think \$4 is a fair average.

We use full metallic circuits all together. Copper in town, or in places subject to the action of coal gas as along the railroad, steel wire in the country, and especially at points where extra strength is required.

We have no separate pole lines for toll work, but in several instances rent space from the railroad company at \$8 per mile.

All overhead construction.

Magneto bridging system exclusively.

We have experimented with various instruments, but we have settled on the telephones made by the Connecticut Telephone and Electric Company, of Mereden, Conn., as being the best suited for our work. The parts are readily interchangeable, the whole instrument very simple, and so far we have not seen the equal in all round good qualities.

We have a switchboard made by the Ericsson Tel. Co. for our heaviest work, and for less important points use the Conn. Tel. and Electric board, merely on account of the price. The Ericsson is more compact and much faster, but is expensive.

Fifty-one actual farmers connected to system.

Our rates are twelve dollars per annum for residence or farm; \$18 for business. Free service over our entire line.

Long-distance rates are according to the connecting line, but figures based on actual air line mileage, as given by the Eastern Traffic Association of Philadelphia.

No dividends have been paid so far, but are in position to pay at any time.

Depreciation optional with the directors, but it is understood it is not to be less than 10 per cent of the earnings.

All earnings to date, the exact figures of which I am not able to give at present.

We exchange calls with three other companies at four points. The Bell companies have absolutely refused to give us a connection unless we use their instruments, which must be rented from them at about \$5 per year.

We connect with the United Tel. & Telg. Co., The Consolidated Tel. Companies of Pennsylvania, and the Enterprise Tel. Co. The rate is fixed as stated in question 21, but short calls average about 5 cents for every exchange the message passes.

When we first entered Elverson there were five Bell telephones. All were offered reduced rates, but four went out. Two pay-stations have since been located in the village.

At Birdsboro' there were seven Bell telephones until we came. By putting on a force of canvassers and offering six months service free, the number was raised to fifteen. They have taken some out since, and the present number is not known exactly.

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Information on these questions is hard to obtain. The truth could only be known by making a personal canvass of those whom the Bell people claim as subscribers. Twenty would surely cover every Bell telephone now in the territory covered by us, pay-stations and all, and it might be twice as many as there are.

Bell rates before competition were: Residence, \$72 per year; business, \$110.

Bell rates at this date are: Residence, \$12 per annum; business, \$18 on party lines, or automatic board. No free service except individual line.

Wages paid are: Outside staff, 20 cents an hour and expenses; operators (girls), \$15 per month. They are expected to be in position to answer a call from 6 a.m. to 9.30 p.m., but actual business hours are much less. We pay two for service, but they arrange with each other as to the hours.

Cost of equipment and material is as follows:—

Ericsson indicator board, wired for two hundred lines, but with only fifty 1,600 ohm. jacks installed, \$300. This board has fifteen sets of keys and cords, night bell, line pilots, test keys and hand generator.

Connecticut board, same winding drops, but of fifty capacity only, with twenty drops installed, \$90.

We use the American Electric Fuse Company make of arrestors and racks, costing from ten cents a line up.

\$10.25 for Conn. No. 14 C. wall telephones, complete with batteries.

\$11.25 for type "A" desk telephones, complete, as above.

Roelings No. 12 B.B. steel double gal. wire, $3\frac{3}{8}$ c. per lb., delivered, less 2 per cent ten days.

No. 10 H.D. copper cost us, last lot, $15\frac{1}{2}$ c. per lb. Have bought as low as $12\frac{1}{2}$ c.

25-ft. chestnut poles, 7 in. top, from 90c. in the woods to \$1.50 to \$2 delivered at the hole.

Ten-foot, ten-pin yellow pine cross-arms, two coats creosote, 38c., delivered from South Carolina to our station.

Six-foot, six-pin arms, similar to above, 22c. each.

$\frac{5}{8}$ x 11-in. gal. bolts, \$5.35 per 100, f.o.b., Philadelphia.

28-in. gal. braces, 28c. per pair, f.o.b., Philadelphia.

$1\frac{1}{2}$ x 9-in. locust pins, \$10 per M., f.o.b., Philadelphia.

No. 9 Hemingway insulators, \$12 per M., f.o.b., Muncie, Ind.

We avoid cable as much as possible, and for substitute bunch rubber-covered weather-proof twin copper wire, and either hang to a messenger wire, or run in a wooden box, or gal. iron conductor pipe. This costs about two cents a foot, per pair, but does not have to be fused, or require especial care in handling.

We generally contract digging holes, and find 20 cents a hole about the average cost in this section.

We also contract raising the poles, one of our stockholders having invented a portable derrick by which one man can handle the standard pole with cross-arms and all on, and put it in the hole. Two horses are used to move the derrick and two men generally go with it. They charge us eight or ten cents for putting a pole in the hole, according to situation, and have a record for a day's work of a pole every four minutes. Our other hands then tramp the dirt in at 12 cents an hour. We have tried raising by hand and find it averages six men twenty minutes to put a standard pole in the ground.

No. 147. THE CUYAHOGA TELEPHONE COMPANY.

ELECTRIC BUILDING,

CLEVELAND, O., June 6, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,

Postmaster General and Chairman, Select Committee on Telephones,
Ottawa, Canada.

DEAR SIR,—It gives me great pleasure to be able to furnish you with a list of the data requested by your committee, although it is not possible for us, at this time, to answer the last two questions.

APPENDIX No. 1

No. 1. The Cuyahoga Telephone Company, Cleveland, Ohio. Operating in Cuyahoga County.

No. 2. \$1,500,000 common stock. \$763,250 preferred stock. \$2,265,000 bonds.

No. 3. The company has been operating five years.

No. 4. Population of territory served, approximately 500,000.

No. 5. Number of telephones in operation May 1st, 16,501. June 1st, about 17,100.

No. 6. Number of direct lines having one telephone per line, 5,400.

No. 7. No data at hand. Probably about 8,000 have telephones of both systems.

No. 8. Number of residence telephones, 7,249 May 1st, 1905.

No. 9. Number of business telephones, 9,252 May 1st, 1905.

No. 10. This company has no long-distance lines. About 20 miles of toll lines.

No. 11. Average cost per subscriber, local plant, approximately \$200. Includes cost of two exchange buildings.

No. 12. This company has no long-distance lines.

No. 13. Subscribers' circuits are of copper; all metallic.

No. 14. This company has about 20 miles of toll pole lines.

No. 15. See No. 12.

No. 16. Construction is about 63 per cent underground and 37 per cent aerial.

No. 17. Type of system about 94 per cent central energy and 6 per cent magneto.

No. 18. Central equipment and subscriber's telephones were supplied by Kellogg Switchboard and Supply Company, Dean Electric Company, North Electric Company and American Electric Telephone Company. About 90 per cent manufactured by Kellogg Switchboard and Supply Company.

No. 19. About 575 farmers connected with our system.

No. 20. For rates charged for local service, see attached schedule marked "Exhibit A."

No. 21. Rates charged for long-distance toll service based on $\frac{3}{4}$ c. per mile; figured to the nearest multiple of 5c.

No. 22. Rates charged farmers for unlimited service same as for other subscribers; for service with other subscribers in same exchange with which the farmer is connected, \$18 per year, five on a line, and an additional charge of 5c. toll is charged for messages to other exchanges of the Cuyahoga Telephone Company.

No. 23. Dividends are being paid on preferred stock only, at this time.

No. 24. 5 per cent interest paid on bonds.

No. 25. A 10 per cent depreciation is set aside on tools, furniture, fixtures, etc. Depreciation on telephone plant being taken care of by proper maintenance. Any part deteriorated or destroyed is promptly replaced and the expense charged to maintenance. This is true of equipment as well as other construction.

No. 26. \$91,000 surplus.

No. 27. An interchange of service is had with the United States Telephone Company, which company operates independent long-distance lines in Ohio and adjoining states. The United States Company takes care of all operating, maintenance and billing, and the Cuyahoga Company does the collecting only, and receives 15 per cent of the out-going messages.

No. 28. There were 3,800 Bell telephones in this territory before competition.

No. 29. Number of Bell telephones at this time approximately 19,000.

No. 30. Number of Bell residence telephones before competition approximately 800.

No. 31. Number of Bell business telephones before competition approximately 3,000.

No. 32. Number of Bell residence telephones at this time 10,200.

No. 33. Number of Bell business telephones at this time 8,800.

No. 34. Bell rates before competition \$120 for business, and \$84 for residence.

No. 35. Bell rates at this time: see schedule attached, marked 'Exhibit B.'

No. 36. Wages for foremen, \$3 for eight hours; troublemen, \$65 per month; general inspectors, \$70 to \$80 per month; wiremen, \$2.50 and linemen \$2.50 per day,

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eight hours; operators from \$18 to \$30 per month; operating monitors, \$30 to \$35 per month; assistant chief operator, \$45 per month; chief operator, \$60 per month.

We also received your letter sent to the Collinwood Home Telephone Company, Collinwood, Ohio. The latter company was absorbed by the Cuyahoga Telephone Company January 1, 1905. Therefore its statistics are contained in the above.

Yours very truly,

O. F. FRENCH,
General Manager.

No. 147a,

THE CUYAHOGA TELEPHONE COMPANY.

(Independent).

HERE ARE OUR FOUR CARDINAL POINTS.

1. Local Ownership—A Cleveland company for Cleveland people.
2. Good Service—Made so by the best machinery and the most competent employees.
3. Fair Rates—From \$21 for the limited user, to \$72 for those who use the telephone most.
4. Honest Wages—We pay standard wages. Then, too, every employee receives a share in the net profits of the business, in addition to salary.

THESE ARE OUR RATES.

(Quarterly).

Unlimited Service.

	Business.	Residence.
1 Party..	\$18	\$12 00
2 Party..	13 50	9 00
4 Party..	9 00	6 00

Desk extension, \$8 per annum for business, \$6 for residence.
Extension Bell, \$3 per annum.

Measured Service.

	Business.	Residence.
1 Party..	\$13 50 (375 calls)	\$9 75 (250 calls)
4 Party..	7 50 (250 calls)	5 25 (150 calls)

No charge for incoming calls.

Extra Name Service.

(Yearly).

Business....	\$10	Residence....	\$5	Agents....	\$3
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Partners and officers free for four names.

You will notice that we publish all our rates, not a portion only, and all users pay the same rate for the same service. Our aim is to do a big business by being fair.

TELEPHONE.

Bell's book for January, 1904, had 14,442 names.
January 1905 book had 15,040 names. Increase, 598 names. Less than 50 a month.
Cuyahoga book for March, 1904, had 8,300 names.

APPENDIX No. 1

December book had 12,194 names. Increase for nine months, 3,894 names. Nearly 433 a month.

Cuyahoga's new book shows still more names. Count for yourself.

Who's doing the business?

Who's going to do it?

Are you in the book?

Have you wires enough?

No. 147b,

THE CLEVELAND TELEPHONE COMPANY (BELL),

SCHEDULE OF RATES EFFECTIVE JANUARY 1, 1905.

(Subject to change without notice.)

	Number Calls Quarterly.	Rate per Quarter.	Rebate if paid in full at the Company's of- fice during first month of quarter.
		\$ cts.	\$ cts.
MEASURED SERVICE.			
Business—			
1 party line	300	15 00	1 50
2 "	225	12 00	1 50
Residence—			
1 party line	200	11 25	1 50
2 "	150	9 00	1 50
4 "	150	7 50	1 50
Excess calls—3 cents each.			
Discount, if paid during first month of succeeding quarter, and amounting to—			
100 or more per quarter, 16 $\frac{2}{3}$ per cent.			
500 " " 33 $\frac{1}{3}$ "			
1,000 " " 50 "			
FLAT RATES.			
Business—			
1 party line		21 00	
Residence—			
1 party line		13 50	1 50
2 "		10 50	1 50
Extension set, desk standard		3 00	
Extension set, wall style		1 50	
MEASURED SERVICE.			
Private Branch Exchange—			
Trunk lines, each		10 50	1 50
Switchboard and 700 calls		15 00	
Inside stations, each		3 00	
Generator line, $\frac{1}{2}$ mile or less		6 00	
FLAT RATE.			
Private Branch Exchange—			
Trunk lines, each		30 00	
Switchboard		9 00	
Inside stations, each		3 00	
Generator line, $\frac{1}{2}$ mile or less		6 00	

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No. 148.

UNION CARBIDE COMPANY.

Sault Ste. Marie Works.

SAULT STE. MARIE, Mich., June 5, 1905.

Sir WILLIAM MULOCK, Postmaster General,
Chairman Select Committee on Telephone Systems,
Ottawa, Ontario.

DEAR SIR,—I wish to acknowledge your inquiry of May 30th in regard to our telephone system which we have in use at this plant.

It is the system known as the 'Automatic Electric' and has a central station system with automatic central so that no operator is required. The system is adaptable for a small or a large number of 'phones, and is in use, not only in places similar to ours, but in comparatively large cities.

Our system is comprised of a switch-board for twenty-five 'phones, but at present we are using only fifteen.

I looked very thoroughly into the different systems of intercommunicating telephones before deciding on this kind, and I found that although this system was first-class and the 'phones more expensive than some of the other systems, yet, on the whole, it was the cheapest for our particular use.

Most of the intercommunicating systems on the market require a separate wire from every 'phone on the system to every other 'phone, besides a ground connection, and where the 'phones are distributed over a considerable area the expense of wiring amounts to a very considerable item.

Our plant is very extensive and some of the 'phones are nearly a half-mile apart, and, therefore, the simple wiring, two wires and a ground to each 'phone, which this system uses, makes it very desirable.

I am inclosing a descriptive pamphlet covering this system which goes considerably into detail and which, I think, you will find interesting.

The system which we have installed has been in use over two years, and we are very much pleased with its operation. The telephones are first-class and the talking qualities are excellent. It requires very little attention of any kind to keep it in good condition. It is operated by a bank of small storage batteries and about the only attention the system needs is what is required to charge the batteries about once a week, which is accomplished by throwing a switch and turning on the current for a period of a few hours, which does not in any way interfere with the use of the telephones.

In short, our experience is that the claims that the manufacturers have made for their telephones are entirely fulfilled.

There are a number of towns and cities which have adopted this system and if you are contemplating a city 'phone service I would recommend that you correspond with some of the cities where it has been tried. Grand Rapids, Michigan, started using this system about a year ago and the addresses of other cities can be obtained from the manufacturers.

If I can be of any further service to you in this connection, I hope you will feel free to call upon me.

Very truly,

I. R. EDMANDS,
Superintendent.

APPENDIX No. 1

No. 149.

OFFICE OF THE ENGINEER-IN-CHIEF, GENERAL POST OFFICE (WEST.)
LONDON, E C., June 2, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General and Chairman of the Select Committee on Telephone Systems.
Ottawa.

SIR,—I beg leave to acknowledge the receipt of your letter of the 1st of May, in which you ask for certain information in relation to the telephone service in the United Kingdom. The details relating to my department are being prepared, and they will be forwarded to you through the secretary, together with the traffic and other details dealt with by other branches.

I am, sir, yours faithfully,

I. GAVEY.

No. 150.

J. H. DICKSON, GENERAL MERCHANT.

DREW STATION, P.O., Ont., April 12, 1905.

T. MARTIN, Esq., M.P.,
Ottawa.

DEAR SIR,—I see by the newspapers Sir Wm. Mulock is making a move *re* telephone service. As you know the telephone wires go right past my store and the post office here, and we tried to get telephone service but the only condition which we could get it was either to get five men to go twenty dollars each or guarantee the company a revenue of one hundred dollars per year, which we think is altogether too much and would be very glad if Sir Wm. Mulock would buy out the whole business and give the country a reasonably cheap telephone service, and I believe the country at large irrespective of party, would support him or the government in doing so.

I am, sir, very truly yours,

J. H. DICKSON.

No. 151.

TOWN HALL, HULL, Eng., June 1, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General,
House of Commons,
Ottawa, Canada.

SIR,—I beg to acknowledge the receipt of your letter of the 3rd ultimo, and, as desired, I send you herewith replies to the various queries which accompanied the same. I also send a short account of the opening of the Hull Corporation Exchange System on the 28th November last.

I am, sir, yours faithfully,

E. LAVERACK,
Town Clerk.

No. 151a.

REPLIES TO QUERIES.

Hull had a population of 240,259 last census.

The term of the Postmaster General's license is from August 8, 1902, to December 31, 1911.

There are four switch-rooms. The Central, with 1,151 subscribers. Hessele, 21

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subscribers. Beverley, 8 subscribers. Cottingham, 9 subscribers. The two latter exchanges have only just been brought into operation.

The number of telephones working is 1,460.

The number of residence telephones is 306.

The number of business telephones is 883.

There are no party lines.

There are 160 extension telephones.

The tariff is: Business telephones, £6-6-0 (\$30.70) per annum for the first, £5-15-0 (\$28) for the second. Residence telephones, £5 (\$24.35). Extension telephones, £1 (\$4.87).

Measured rates: £3 (\$14.61), and one penny (2 cents) per call. These charges cover service anywhere within the licensed area. The service is continuous. The charge to non-subscribers is one penny (2 cents) per conversation of five minutes.

The long-distance charges are roughly, 3d per 25 miles to any point within the United Kingdom.

The lines are metallic circuit, copper underground, bronze overhead.

All lines are underground, except the spur into the subscriber's office from the distributing point.

£30,000 (\$146,100) has been the capital outlay to date.

The system has only been working six months. Print of the accounts to March 31 last sent herewith.

Three and a half per cent interest is paid on capital.

Two and three-quarter per cent is provided for sinking fund.

About £30 (\$146.10) is paid, per annum, for way-leave privileges.

The wages paid per week are: Foreman, 35s (\$8.53); instrument men 25s (\$6.09) to 30s (\$7.31); wiremen 25s. (\$6.09) to 28s. (\$6.84); operators from 7s. (\$1.70) to £1 (4.87).

The central switchboard cost £3,000 (\$14,610). Present capacity 2,000 lines, ultimate capacity 5,000 lines.

The sub-exchange switchboards cost £55 (\$267.85) each.

Subscribers' wall telephones cost 48s (\$11.71) each.

Subscribers' desk telephones cost 50s (\$12.18) each.

The price of other material is: Wire £90 (\$438.30) to £95 (\$462.65) per-ton of 2,240 pounds. Cross-arms 1s 6d (36 cents) each. Insulators and pins 6d (12 cents) each. Duct pipe for cables 9d. (18 cents) per foot.

We cannot give actual figures, but National Telephone Company's directory shows roughly 3,300 subscribers, both before we started competition and now. Practically the whole of our subscribers were once subscribers to their system, but have now left and their list has been kept up by supplying party lines for the sum of 25s (\$6.09) per annum.

We have local inter-communication with National Telephone Company's subscribers, and also through the government trunk lines to any other system in the kingdom.

We cannot give the exact number of subscribers using both systems, but it is almost negligible.

Toll charges are collected by means of monthly accounts.

No. 151b.

OPENING OF THE HULL (ENGLAND) CORPORATION TELEPHONE SYSTEM, ON NOVEMBER 28TH, 1904.

The object of the Hull corporation in establishing a municipal telephone service was two-fold—1st, to provide a much cheaper service, and so place telephones within the reach of a larger number of users, and, 2nd, to introduce a more efficient service.

APPENDIX No. 1

The question was first considered by the city council in the latter part of 1899, prior to which it was well known that considerable dissatisfaction prevailed, not only in Hull, but throughout the country, at the excessive cost and notorious inefficiency of the existing telephone service, the result of which was that parliament had been induced to take the matter up, and had passed an Act (the Telegraph Act, 1899) enabling municipalities in the public interest to establish and work competitive telephone service in their own telephone areas.

Upon the passing of this Act, a petition was presented to the city council by shipowners, merchants, and traders, bearing upwards of 800 signatures, urging the corporation to establish a municipal service in Hull, and on the 9th November, 1899, the council appointed a special committee to consider and report as to the desirability of doing so.

In order to ascertain the cost for which a municipal service could be provided, the committee consulted the well-known telephone engineer, Mr. A. R. Bennett, M.I.E.E., and after a careful inquiry, came to the conclusion, in November, 1900, that the establishment of such a service was desirable, and their conclusion was adopted by the council. Before taking any steps, however, to carry the resolution into effect, a circular was issued to, and a canvass made of likely subscribers, so as to make certain that a sufficient number of persons were prepared to avail themselves of a corporation service at the rates offered, the result of which was in every way satisfactory. Resolutions in favour of the scheme were also passed by the Hull Chamber of Commerce, the Hull Guardian Society, the Hull Chamber of Trades, and other trading bodies.

The corporation applied to the Postmaster General for the necessary license, which was opposed by the National Telephone Company, but, notwithstanding such opposition, the license was granted in August, 1902.

The corporation were anxious to avoid, if possible, the cost of laying down a duplicate telephone system, and, accordingly, negotiations were entered into with the existing company, with a view to the corporation acquiring the company's system, in Hull, but as the lowest price required would have precluded the corporation giving a cheaper service, no satisfactory arrangement for purchase could be made.

Negotiations for purchase having failed, the corporation then endeavoured to arrange with the company for a substantial reduction of their rates, on condition that the corporation did not enter into competition, but they were unable to induce the company to agree to such rates as would have been acceptable.

The negotiations above referred to extended over a considerable period, and have delayed the carrying out of the work, but the corporation felt they would not be justified in going to the cost of laying down a duplicate system until they had exhausted every effort to avoid it by obtaining, if possible, satisfactory terms from the existing company. One important result, however, of the negotiations with the company must be mentioned, viz., that an arrangement was made by which the corporation subscribers have free inter-communication with the subscribers of the National Telephone Company, both in Hull and in other towns.

Tenders for the construction of the system were obtained and proved to be less than the engineer's estimate. The corporation had on their hands, a building known as the Trippett Baths, which were being closed through their becoming obsolete. This building with alterations, was admirably adapted for, and has been utilized as the central exchange, a course which has had the advantage of utilizing property, which was a charge on the rates.

The best of plant and equipment having been advertised for, first class firms secured the contracts.

Application was made to the local government board for their sanction to borrow £43,202 for carrying out the work, and after a local inquiry, the sanction was given. Mr. Thos. Holme was appointed manager, and the work of construction commenced in the middle of January of the present year, and has been carried on without

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interruption. The alteration of the baths has been carried out under the city architect, 19 miles of trenching have been excavated in the streets, wherein has been laid 35 miles of stoneware ducts, which contain 4,910 miles of copper wire. All lines in the city are laid underground, with the exception of those brought up and distributed to subscribers in the particular neighbourhood. The central exchange switchboard, with its quarter of a million soldered joints, is of the latest pattern, with all modern improvements, and has accommodation for 2,000 subscribers, which can be extended to an ultimate capacity of 5,000. Sections are set apart for inter-communication and for trunk lines. The system which is a silent one, is invaluable particularly for trunk line messages to other towns, a very important matter for the city. An exchange has been opened in Hessle, one at Cottingham will be open in a few days, and one at Beverley shortly. The area assigned to the corporation by their license is the same as that of the National Telephone Company. The whole of the construction has been carried out in the course of the present year.

City and County of Kingston-upon-Hull, England (Hull Municipal Telephone System). Telephones Fund from April 1, 1904 to March 31, 1905. (Central Exchange, Wincolmlee, opened November, 1904).

EXPENDITURE.

	Payments to March 31, 1904			Payments this year.			Total Pay- ments to March 31, 1904		
	£	s.	d.	£	s.	d.	£	s.	d.
To Exchange									
Buildings.....	718	1	6	1,045	7	6	1,763	9	0
Switchboards, fittings, &c.....	4	19	4	2,872	10	9	2,877	10	1
	£	723	0	£	2,917	18	£	4,640	19
Underground construction ...	91	5	11	12,691	7	0	12,782	12	11
Overhead construction.....	162	6	6	5,131	18	3	5,294	4	9
Instruments construction.....				5,189	2	3	5,189	2	3
Charges and furnishing.....	26	0	5	380	10	0	406	10	5
Salaries, wages and commis- sion.....	114	2	4	1,728	6	3	1,842	8	7
Printing and stationery.....	5	19	1	56	14	9	62	13	10
Rents, rates and taxes.....	0	7	4	151	0	0	151	7	4
	£	1,123	2	£	29,246	16	£	30,369	19
		5		9			2		

CAPITAL ACCOUNT.

INCOME.

	£ s. d.		
By Hull Savings Bank on account of loan.....	29,000	0	0
Balance.....	1,369	19	2
	£	30,369	19
		2	

REVENUE ACCOUNT.

	EXPENDITURE.		
	£	s.	d.
To Exchange repairs and maintenance.....			9 15 2
Overhead			31 4 3
Instruments			27 7 5
Charges, &c.....			143 2 1
Salaries.....	£	132	1 8
Wages, office.....		53	2 1
Wages, operators.....		250	1 8
			435 5 5
Printing and stationery.....			63 15 7
Rents, rates and taxes.....			46 0 5
Petty expenses.....			37 0 0
Royalty.....			121 1 8
	£	914	12 0
Balance to net revenue account.....		347	4 11
	£	1,261	16 11

INCOME.

	£ s. d.			£ s. d.		
By Exchange rentals.....	4,364	15	0			
Less—Due in advance.....	3,205	6	9			
				1,159	8	3
Terminal fees.....				0	9	2
Sales.....				0	4	11
Private line rentals.....	£	140	15 0			
Less—Due in advance.....		98	12 1			
				42	2	11
Public telephones.....				3	16	9
Local tolls.....				45	2	11
Trunk fees and telegrams.....				10	12	0
				£	1,261	16 11

NET REVENUE ACCOUNT.

EXPENDITURE.	£ s. d.	INCOME.	£ s. d.
To interest on loan accrued due.....	420 9 5	By balance brought from revenue account.....	347 4 11
		Balance carried to year 1905-6.....	73 4 6
	£ 420 9 5		£ 420 9 5

BALANCE SHEET.

DR.	BALANCE SHEET.		CR.
LIABILITIES.	£ s. d.	ASSETS.	£ s. d.
Hull savings bank.....	29,000 0 0	Exchange buildings, switchboard and fittings.....	4,640 19 1
Sundry subscribers—		Underground construction ..	12,782 12 11
Rentals unexpired—		Overhead construction.....	5,294 4 9
Amount due for year.....£ 4,505 10 0		Instruments.....	5,189 2 3
Less amount due for five months to March		Charges.....	406 10 5
31, 1905.....	1,201 11 2	Salaries, wages and commission ..	1,842 8 7
	3,303 18 10	Printing and stationery.....	62 13 10
Sundry creditors.....	978 8 9	Rents, rates and taxes.....	151 7 4
			£ 30,369 19 2
		Sundry debtors on capital account.....	83 2 0
		Sundry subscribers accounts outstanding.....	660 19 5
		Bank of England ..	1,773 2 10
		Royalties unexpired.....	321 19 8
		Net revenue account.....	73 4 6
	£ 33,282 7 7		£ 33,282 7 7

APPENDIX No. 1

No. 152.

STATES TELEPHONE DEPARTMENT, CLIFTON, GUERNSEY.

May 19, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General,
Ottawa, Canada.

SIR,—In reply to your letter of the 3rd instant, enclosing list of questions for the information of the committee appointed to inquire into questions of various telephone systems in operation, I have the honour to enclose herewith, answers to the various questions together with balance sheet for 1904, list of subscribers and map of the island all of which I trust the committee will find useful.

I have the honour to be, sir,

Yours faithfully,

F. B. MAINGUY, Major General,
President States Telephone Council.

No. 152a.

Guernsey, Channel Islands. Population of the island, 40,300.

Term of licenses from Postmaster General, December 31, 1897, to December 31, 1911.

NUMBER OF TELEPHONES, APRIL 30, 1905.

Switchrooms.	Number of Direct Lines to Exchange.	Number of Public Telephones.	Number of Extensions.	Number of Junctions.
St. Peter Port.....	618	18	83	21
St. Sampson's.....	176	9	23	12
Castel.....	105	6	5	9
St. Peter Wood.....	44	3	2	5
St. Martin's.....	139	8	1	9
Braye Road.....	71	2	1	6
St. Saviours.....	19	2	.....	2
	1,172	48	115	64

Tariff A.....	970
“ B.....	91
“ C.....	110
Free (parish churches).....	1
Public telephones.....	48
Service.....	6
Extensions.....	115
Private.....	20
Sundries.....	16
Junctions.....	32
	<hr/> 1,409

No party lines in connection with system.

Number of inside and outside extension telephones, 115.

Tariff of charges is as follows:—

A.—£1. 10. 0. (\$7.31) per annum (payable half yearly in advance) with a toll of 1d. (2 cents) per outward call (payable quarterly) until 250 calls in any one quarter is reached, after which, for the remainder of the quarter, the charge is at the rate of 1d. for five calls.

B.—£2. 5 0. (\$10.96) per annum (payable half-yearly in advance) with a toll of $\frac{1}{2}$ d. (1 cent) per outward call (payable quarterly) until 1,320 calls in any one year is reached, after which for the remainder of the year, the charge is at the rate of 1d. for five calls.

C.—£5 (\$24.35) per annum (payable in advance) to cover 3,200 outward calls in any one year, after which for the remainder of the year, the charge is at the rate of 1d. (2 cents) for five calls.

The charges for extension instruments are:—15s. (\$3.66) per annum for wall pattern if inside same building as exchange instrument, 3s. 6d. (88 cents) extra for table set in lieu of wall.

These charges cover the whole island.

The Telephone Exchange System is open night and day (including Sunday.) Connections between the hours of 11 p.m. and 5 a.m. from 1st April until 30th September, and 11 p.m. and 6 a.m. from 1st October until 31st March, there is an extra charge of 5d. (10 cents) for each attendant called up.

The charge to non-subscribers is 1d. (2 cents) per call not exceeding five minutes duration. No trunk lines, outside the island, the tariff charges stated above cover communication over the whole island. We use Magneto generator for ringing purposes on the ring through system. Distinct button for signalling when conversation is finished. Hand combination listening and speaking instrument (granular carbon transmitters) lightning arrestor, mounted on porcelain base fitted with carbon arrestors, high voltage fuse coils, and fuse wires, the lightning arrestor is generally fixed where the metallic circuit enters the building.

Our lines are metallic circuit, bronze wire.

The system is one-quarter underground and three-quarters overhead.

The capital invested is £26,475 (\$128,933) to December 31, 1904.

Revenue per annum, £4,546 (\$22,139.)

Total expenditure per annum £3,503 (\$17,060) including 10 per cent post office royalty, £432 (\$2,104.)

Interest paid on capital, £758 (\$3,691.)

Surplus last year, £284 (\$1,383.)

The sinking fund and depreciation is 5 per cent, being 2 per cent for sinking fund and 3 per cent for depreciation. The latter we consider adequate as replacements and repairs are charged to revenue and it has been found that the plant can thus be always kept in an efficient state.

The total cost for way leave privileges is 21s. (\$5.12) per annum. State property is largely utilized. Private property owners recognize the benefits of the telephone system, which really belongs to the people, and is worked for their benefit, and readily grant practically free wayleave.

Wages paid per week:—Foremen, 32s. (\$7.80); instrument men, 25s. (\$6.09); wiremen, 24s. (\$5.85); operators, commencing at 6s. (\$1.47), with annual increase of 1s. (25c) per week; manager, £260 (\$1,266) per annum, with free house, &c.

The cost of the central exchange equipment was £1,300 (\$6,331) for 900 lines. Ultimate capacity, 3,000.

Test jacks and lightning arrestors extra, 1s. 9d. (42c.) per metallic circuit.

Cost of sub-exchange switchboards £1 (\$4.87) per metallic circuit, including lightning arrestors and test jacks.

APPENDIX No. 1

COST OF OTHER MATERIAL IS AS FOLLOWS:

Wall telephones £2-12-0 (\$12.68). Table telephones £2-18-0 (\$14.15). Wire 10½d (21½ cents) to 11d (22 cents) per pound.

Poles, 22' creosoted wood.	17s 6d	(\$4.27)
" 24' "	18s 6d	(\$4.52)
" 28' "	22s 0d	(\$5.35)
" 36' "	36s 0d	(\$8.78)
" 30' "	25s 0d	(\$6.09)
" 40' "	49s 0d	(\$10.71)

Cross-arms, oak, 8-wire, 2s 4d (58 cents).

Cross-arms, oak, 6-wire, 1s 10d (44 cents).

Insulators complete with bolts 6d (12 cents) to 7d (14 cents) each.

No ducts or pipes used. Lead covered cable protected by two wrappings of steel tape being used throughout.

The States Telephone system is the only established system in the island.

Toll accounts are rendered quarterly, and payable at the head office.

A list of subscribers, together with copy of balance sheet for 1904 is sent herewith, and from these you will be able to glean that this system is supported by all classes of the community, and public telephones are liberally scattered throughout the island, as will be seen from small map which is also sent herewith. The balance sheet shows that notwithstanding the low charges the department is able to make a profit after meeting all charges. One heavy expense is that of 10 per cent post office royalty charged on the gross exchange line revenue, amounting in 1904 to £432 (\$2,104).

The extent and popularity of the system is no doubt partly due to the efficiency of the system. The ring through system, which is the one in use, enables subscribers to call each other without disturbing the operator. The method of signalling when a connection is finished is by pressing a distinct button attached to each instrument, which operates a special ring-off indicator at the switchroom.

* The post office facilities mentioned on page 1 of the list are freely taken advantage of by subscribers in all parts of the island, and the little notes mentioned on page 55 of subscribers' list are worthy of notice, showing that the department endeavours to make the telephone as useful to the community as possible, and to keep up-to-date.

F. B. MAINGUY,
Major-General.

POST OFFICE CONNECTION, No. 77.

The post office, St. Peter-Port has been connected with the telephone exchange to enable subscribers to

(1) Telephone telegrams for the purpose of being transmitted over the post office telegraphs to any part of the United Kingdom. The service may be extended to other countries by special arrangements with the States Telephone Department.

(2) Dictate messages for the purpose of being written down and forwarded as letters, ordinary or express.

(3) Engaging the services of post offices special messengers.

(4) To enable the subscribers to have telegrams, which may arrive for them, telephoned to their offices or houses by the post office, special arrangements must be made for this.

This service will be available to subscribers in all parts of the island. In many cases it should prove of great value, as instead of depending on their local post office,

*Post office facilities referred to on page 1 of Guernsey Telephone Directory.

4-5 EDWARD VII., A. 1905

with its limited hours of service, the head post office, at St. Peter-Port, can be communicated with from 7 a.m. to 10 p.m. on week-days, and from 8 a.m. to 10 a.m., and 5 p.m. to 6 p.m. on Sundays. Subscribers in distant parts of the island can catch the outgoing mails by telephoning messages to be posted as letters up to the time of closing, 9 a.m., and 9.25 late fee.

Subscribers wishing to use this service must communicate with the States Telephone Department, which will notify the post office accordingly. To cover expenses of book-keeping, an additional fee of one half-penny will be charged on all communications to or from the post office. Accounts for cost of telegrams, postage on letters, hire of messengers and the additional half-penny fees, will be collected monthly, as a general rule, but the department reserves the right to demand payment at any time, and to refuse further connections to subscribers whose payments are in arrear.

All charges payable to the post office will be in British currency.

Subscribers desirous of making use of the post office connection will please apply to the manager, States' Telephone Office, Clifton, for a special form.

NOTICE.

The central office is informed of the signalling of the mail steamers. Subscribers wishing to learn of their approach can obtain the information from the operator.

Subscribers can also ascertain Greenwich time from the central office at any hour of the day.

The charge in each case is the usual call charge, viz.: 1d. on tariff 'A,' and $\frac{1}{2}$ d. on tariff 'B.'

King Edward Sanatorium (Tel. No. 1799). For the comfort of patients and the convenience of their friends portable telephones have been installed and so arranged in the various wards that communication can be established with the general exchange system.

*Notes referred to on page 55 of Guernsey Subscriber's Directory.

GUERNSEY STATES TELEPHONE DEPARTMENT.

BALANCE SHEET, REVENUE STATEMENT AND STATISTICS FOR THE YEAR ENDING DECEMBER 31, 1904.

(Seventh Year of Working.)

President—Major-General F. B. MAINGUY, R. E. Consulting Engineer—A. R. BENNETT, M.I.E.E., Queen Anne's Chambers, Westminster, London, S.W. Manager and Engineer—ROBERT McLEAN, Clifton St., Peter-Port, Guernsey.

LIABILITIES.		ASSETS.	
	£	s.	d.
To Capital account—Advances from States	27,587	0	0
Reserve account for depreciation and capital sinking fund	£ 3,830	9	5
Add amount carried to this fund for the year	1,256	0	5
	5,086	9	10
Reserve account for contingencies, being the balance of profit and loss account to December 31, 1903	£ 397	2	5
Add net profit for the year ending December 31, 1904	284	14	0
Sundry creditors, viz. :—	681	16	5
On royalty account	£ 58	7	5
For expenses and generally	9	16	1
	68	3	6
	£ 33,423	9	9
By Construction account, viz. :—			
1. Land and buildings	£ 2,885	5	10
2. Works completed and in course of construction	23,590	5	3
	26,475	11	1
Stores on hand	£ 747	15	5
Tools on hand	112	19	3
Stationery on hand	8	5	6
	869	0	2
Office furniture	112	2	3
Sundry debtors	£ 251	11	1
" for calls one quarter to December 31, 1904	423	17	4
	675	8	5
Guernsey 3 p.c. states bonds, at cost	2,700	0	0
Cash at bankers on deposit account	£ 2,450	11	0
" current account	140	0	11
Cash in hand	0	15	11
	2,591	7	10
	£ 33,423	9	9

Adopted by the council,

F. B. MAINGUY, President.

We hereby certify that all our requirements as auditors have been complied with, and we report that we have audited the above balance sheet and annexed revenue account, and in our opinion they are properly drawn up so as to exhibit a true and correct view of the affairs of the telephone department on December 31, 1904.

G. N. READ, SON & Co., Chartered Accountants.

19 Smith Street, Guernsey. London Office: 44 Gresham Street, E.C.
January 13, 1905.

STATES OF GUERNSEY TELEPHONE DEPARTMENT.

STATISTICS TO DECEMBER 31, 1904.

APPENDIX No. 1

Description.	From July 28 to Dec. 31, 1898	1899.	1900.	1901.	1902.	1903.	1904.	Increase for 12 months.
Number of subscribers' lines	217	423	606	770	937	1,044	1,162	118
" extension lines	10	21	32	41	61	91	119	28
" private lines	2	5	6	14	15	19	22	3
" public telephones	9	20	26	34	37	40	49	9
" sundry lines	3	3	3	15	16	16	16	.....
" service lines	3	3	5	6	6	6	6	.....
" free lines .....	.....	.....	1	1	1	1	1	.....
" junction lines	7	14	16	22	24	29	32	3
" switchrooms	3	6	7	8	8	8	7	1 dec.
" poles	255	773	916	1,062	1,130	1,165	1,231	66
" standards on roofs	9	11	9	9	8	8	7	1 dec.
" fixtures to buildings	275	742	1,000	1,241	1,528	1,722	1,989	267
" underground cables	3	9	11	13	14	17	18	1
" " distributors	6	18	22	22	29	32	34	2
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	
* Mileage of metallic circuit wire, overhead	146 $\frac{1}{2}$	293 $\frac{1}{2}$	423	581	710	827	943 $\frac{3}{4}$	116 m.
" " underground	2 $\frac{1}{2}$	62 $\frac{1}{4}$	132	140 $\frac{1}{2}$	232 $\frac{3}{4}$	318 $\frac{3}{4}$	325 $\frac{3}{4}$	7 m.
" " leading in cables	5 $\frac{3}{4}$	9 $\frac{3}{4}$	16	18	20	24	28	3
" " from outside .....	.....	.....	.....	490 y	1,609 y	1,660 y	1,622 y	1,722 y
Mileage of wires to subscribers' instruments	1 $\frac{1}{8}$	2 $\frac{1}{2}$	4	6 $\frac{3}{4}$	10	12	15	3 m.
" metallic circuit wire, from cables to switchrooms	1	1 $\frac{3}{4}$	3 $\frac{1}{4}$	4	116 y	996 y	996 y	880 y
Average number of subscribers' and public telephone connections per day (excluding Sunday)	146	449	804	1,170	1,658	2,113	2,331	218
Average number of connections per subscriber per day (excluding Sunday)	·8	1·25	1·4	2·	1·6	1·9	2·	·1
Average number of connections per public telephone per day (excluding Sunday)	1·8	3·4	3·5	4·4	4·8	5·1	5·	1 dec.
Total number of subscribers' and public telephone calls in the year	23,172	143,530	257,138	379,342	533,039	679,989	746,398	66,409
Total number of telegrams, express and ordinary letters telephoned to post office .....	.....	.....	From August 10. 363	2,373	4,070	4,346	5,165	799
Number of subscribers on tariff 'A' (£1 10s. per annum and 1 d. per call)	181	383	559	678	814	898	985	87

APPENDIX "A"

Number of subscribers on tariff 'B' (£2 5s. and $\frac{1}{2}$ d. per call).	19	19	23	53	71	75	82	7
Number of subscribers on tariff 'C' (£5 per annum and 3,200 calls without further payment).....	17	21	24	39	52	71	95	24
Employees—								
Consulting engineer	1	1	1	1	1	1	1	.....
Manager and resident engineer .....	.....	.....	1	1	1	1	1	.....
Clerks	1	1	1	2	2	2	2	.....
Inspectors	2	4	4	6	5	6	6	.....
Operators (female).....	6	12	13	15	17	19	22	3
" (male).....	2	2	3	3	2	2	3	1
Foremen	2	2	2	2	2	2	2	.....
Linesmen (permanent), labourers, &c.....	12	11	14	13	12	12	12	.....

* The mileage of single wire is double this.

F. B. MAINGUY,
President.

APPENDIX No. 1

No. 153.

15 DEY STREET, NEW YORK, June 5th, 1905.

The Chairman,
Select Committee on Telephone Systems,
Ottawa.

SIR,—I have pleasure in forwarding a statement which contains the information the Committee wanted regarding number of telephones in London.

I think you will find the other figures in the statement also of interest.

Yours sincerely,

HERBERT LAWS WEBB

No. 153a.

TELEPHONES IN GREAT BRITAIN.

December 31, 1904.

	<i>Stations.</i>
National Telephone Company.....	315,829
Post Office London System.....	22,181
Post Office Provincial Systems (approximately).....	8,000
Municipal Systems (including Guernsey).....	19,188
	<hr/>
Total.....	365,198
	<hr/> <hr/>

Gain for 1904.

National Telephone Company.....	38,240
Post Office London System.....	7,880
Post Office Provincial Systems (approximately).....	1,700
Municipal Systems (including Guernsey).....	4,845
	<hr/>
Total....	52,665
	<hr/> <hr/>

Telephones in London.

National Telephone Company.....	71,417
Post Office.....	22,181
	<hr/>
Total....	93,598
	<hr/> <hr/>

Gain in London for 1904.

National Telephone Company.....	8,836
Post Office.....	7,880
	<hr/>
Total.....	16,716
	<hr/> <hr/>

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Note by the Acting Chairman.

The above statement shows the percentage of increase based on the total number of telephones operated by each system to be as follows:—

In Great Britain.

	<i>Per cent.</i>
National Telephone Company.....	12'11
Post Office London System.....	35
Post Office Provincial Systems.....	21'25
Municipal Systems (including Guernsey).....	24'68

In London.

National Telephone Company.....	12'37
Post Office.....	35

No. 154.

GENERAL TELEPHONE COMPANY,

STOCKHOLM, May 29, 1905.

SIR WILLIAM MULOCK,
Chairman of Select Committee on Telephone Systems,
Ottawa, Canada.

DEAR SIR,—Director Cedergren being at present abroad has not been able to answer your letter of the 1st instant, and I therefore beg to give you inclosed informations and I hope that it will be of some interest for you.

I am, dear sir,

Yours truly,

CARL HALLEN.

No. 154a.

The system operates in Stockholm and vicinity up to 70 kilometres (about 45 miles); the population of Stockholm at the beginning of 1905 was 318,398; there are two telephone systems of which one belongs to the Swedish State, and the other to the Stockholm Allmanna (Stockholm General Telephone Co.) and the Stockholm Bell Telefonaktiebolag (Stockholm Bell Telephone Company.) The information given is regarding the systems of the two companies only. The number of subscribers on January 1st, 1905 was 37,445, of which 31,685 were inside and 5,760 outside the city limits. Within Stockholm there are seven exchanges, the largest having a capacity of 20,000 lines. Outside the city there are 151 exchanges. Number of direct lines with one telephone in the city, 28,030, and number of extension lines, 3,541. Subscribers do not purchase instruments, the companies own the whole plant. Subscribers do not pay the cost of their lines, but some pay an entrance fee. (Fees and annual rates are published in subjoined reports.) Annual rate covers use of telephone within the city and a radius of 70 kilometres (about 45 miles). Exchanges are open day and night and Sundays. Country exchanges as shown in reports. Charge to non-subscribers for local conversations is 10 ore (2½ cents). All subscribers can converse over whole of 70 kilometre radius without any toll charge. All lines are metallic circuit. The aerial lines in Stockholm are bronze 1 m.m.; outside Stockholm iron 3 m.m. or copper 2 m.m.

Sixty-four per cent of lines are underground.

The long distance lines outside 70 kilometres radius from Stockholm belong exclusively to the State. No inter-traffic is arranged between our system net and the system of the State (Rikstelefon).

APPENDIX No. 1

In Stockholm and within the 70 kilometres radius there has been competition between the State and the companies for 16 years.

CARL HALLEN.

Stockholm, the 29th of May, 1905.

No. 154b.

(Translation.)

ANNUAL REPORT OF THE STOCKHOLM GENERAL TELEPHONE CO. FOR 1904.

Stockholm General Telephone Co.:—

As has been reported at the annual meeting of managers for 1904, the arrangement for purchase and exchange made by one of the Stockholm Telephone Companies with the Government Telephone Department on February 9 of the same year, has fallen through, on account of the decision of parliament, made on April 30, 1904; and thereby the agreement for resuming cooperation between the companies and the government has been cancelled. Consequently a most unsatisfactory condition of affairs exists for the telephone-using public, through all direct connection having ceased with the Government Telephone Bureau, the number of whose subscribers on December 31, 1904, amounted to 74,798; while the subscribers to the other telephone companies mentioned above were, on the same date, 37,445, and have increased on January 15, 1904, to 37,893. The public, therefore, desire that this unfortunate condition of affairs may be remedied. This desire has been specially expressed by the Stockholm Real Estate Owners' Union, to both the telephone systems in question. In replying to this appeal the telephone companies in question have expressed their willingness to enter into any arrangement with the Royal Telegraph Department which may not infringe the rights of either company.

The General Telephone Company has made an arrangement to install a double-wire system in place of the old single wire in its establishments in Moscow and Warsaw. This arrangement was to be carried out in Moscow in December, 1904, and in Warsaw in July 1, 1905. This work has, in the meantime, been so urgently carried on that even at the end of last September the new buildings of the company were completed in both cities, so that messages could be sent, and wires connected with the new central stations, which were opened and inaugurated, the station in Moscow on November 12, and the one in Warsaw on November 16, 1904. A number of representatives were present from the General Telephone Company, the Swedish-Danish-Russian Telephone Company, and the Cedergren Telephone Company, as well as a large number of prominent people who had been invited.

At the end of the year the number of subscribers in Moscow was 7,744, and in Warsaw, 4,901. This number is much in excess of what was expected when the telephone arrangements were proposed. This condition of affairs is all the more remarkable from the fact that the present war in the east has necessarily seriously interfered with the increase of subscribers.

After the announcement that the director of the company, H. S. Cedergren, was prepared to donate \$37,500 to form a general telephone pension fund, the managers of the company, at their business meeting on May 28, 1904, decided that 500 shares at par should be transferred to this fund, and the management authorized to transfer the same. The amount was paid in, and the shares transferred, shortly after the meeting was held.

During the year 1904, the increase in the number of subscribers to the General Telephone Company and the Bell Telephone Company was 2,685, which is somewhat greater than during 1903. The number of new telephone instruments set up by the company during 1904, was 6,003. As during the year 3,318 subscribers have ceased,

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in consequence of removal, death and other causes, the number of subscribers at the close of the year was 37,445, as against 34,760 at the beginning of the year; as shown by the following list:—

	Within Stockholm	Outside Stockholm	Total.
Telephone with direct connection limited to General Telephone Company's system	6,535	140	6,675
Telephone with direct, but unlimited connection with both the systems of the "General" and "Bell" companies	9,219		9,219
Telephone with connection to country stations		5,055	5,055
Extension and side-telephones	3,541	565	4,106
Telephone with connection to railways exchange station	83		83
" " to Police exchange station	31		31
Total number of subscribers to General Telephone Co.	19,409	5,760	25,169
Telephones within Stockholm with restricted right of use (Bell Company)	12,276		12,276
Number for both Companies. Total	31,685	5,760	37,445

The number of subscribers during the months of 1904 is as follows:—

Number of subscribers on 15th

1904.	Within Stockholm.	Outside of Stockholm.	Total.	Number of Telephonists in Stockholm.
January	29,433	5,390	34,823	421
February	29,553	5,400	34,953	420
March	29,550	5,410	34,960	423
April	29,740	5,442	35,182	430
May	29,818	5,489	35,307	450
June	29,845	5,538	35,383	456
July	29,853	5,587	35,440	448
August	29,832	5,597	35,429	443
September	29,970	5,609	35,579	444
October	30,237	5,670	35,907	429
November	30,775	5,708	36,483	438
December	31,370	5,722	37,092	450

During the year two new exchange stations have been set up outside Stockholm, viz., in Resarö and in Storängen; whereas, the exchange stations in Faringe and Ofver-Järna have been removed. In consequence of this, the number of exchange stations, outside Stockholm, remained the same at the end of the year, viz., 152.

The length of wires in the General Telephone Company at the end of 1904 was as follows:—

	Kilometres.
Inside Stockholm	42,309'01
Outside Stockholm	15,172'27
Total	57,481'28

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These 42,309'01 kilometres inside Stockholm are classified thus:—

	Kilometres.
Overhead wires	4,196'01
Underground wires	35,698'28
Overhead connections	2,196'03
Sub-marine cable connections	218'45
	42,309'01

The wires inside Stockholm on December 31, 1904, are classified thus:—

<i>In use.</i>	Kilometres.	<i>In reserve.</i>	Kilometres.
Overhead wires	2,841'85	Overhead wires	1,354'40
Underground wires	20,533'48	Underground wires	15,164'80
Overhead connections	2,146'03	Overhead connections	50
Sub-marine cables	156'14	Sub-marine cables	62'31
	Total 25,677'50		Total 16,631'51

Of the subscribers' wires and connection wires leading from the central stations in Stockholm, 16,910 kil. were in use, and 15,890 kil. in reserve. Outside of Stockholm connections to sea cables were 132,68 kil.

Note.—1 Kilometre=1,093'6 yards, or about $\frac{2}{3}$ of a mile.

1. The number of employees was as follows:—

	JANUARY 1, 1904.			DECEMBER 31, 1904.		
	Men.	Girls.	Total.	Men.	Girls.	Total.
Employees in counting office		9	9		9	9
" in business bureau	7	13	20	6	20	26
" in central stations	2	16	18	2	16	18
" for maintenance of wires	1	8	9	1	8	9
" for making new connections	7		7	8		8
" outside city	2		2	2		2
" in Russia	8		8	8		8
Telephone operators in central offices		342	342		363	363
Foremen on line work	13		13	13		13
Employees to set up telephones	11		11	15		15
" on the wires	90		90	114		114
Inspectors and repairers	46		46	47		47
Employees on cables and on underground wires	8		8	12		12
Storekeepers	4		4	5		5
Engineers and firemen	4		4	4		4
Watchmen and errand boys	21		21	16		16
Electric workers	26	3	29	21	3	24
Employees in repair shops	17		17	16		16
Totals	267	391	658	290	419	709

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The result of the company's business for 1904 is shown by the following abstract of profit and loss account:—

PROFIT AND LOSS ACCOUNT.

(Note—One Kroner=26·8 cents),

	§	Kr.		§	Kr.
Rents	33 531 00	134,124 23	Income, after deducting expenses of upkeep . . .	184,989 00	739,957 40
Wages to managers and other employees	5,954 00	23,814 79	Profit from private work and materials sold . . .	8,988 00	35,955 32
Taxes	10,608 00	42,430 08	Dividends from foreign shares	67,788 00	271,155 07
Building and improvements	21 367 00	85,469 54	Profits from property rented	525 00	2,105 76
Carried over to Sinking Fund 2 p.c. of the value of Company's plant . . .	38,214 00	152,857 42	Profit from Insurance Fund	745 00	2,982 41
Net profit for year	175,899 00	703,598 44	Profit from Accident Insurance Fund	1,167 00	4,669 00
			Sinking funds for re-building, &c.	21,371 00	85,469 54
	285,573 00	1,142,294 50		285,573 00	1,142,294 50

As on the foregoing year, 2 per cent of the company's profits have been carried over to the sinking fund; and from this fund the costs have been defrayed of the new buildings erected during the year. The following table shows the assets and liabilities of the company on December 31, 1904:—

Assets.

Cash on hand and in bank	\$ 1,187	4,746 79 kr.
Telephone plant in Stockholm	1,374,191	5,496,765 05 kr.
Country wires	595,395	2,381,581 62 kr.
Tools and furniture, &c.	26,844	107,379 50 kr.
Materials	45,229	180,918 78 kr.
Real estate and machinery	329,125	1,316,500 00 kr.
Foreign shares	901,138	3,604,552 00 kr.
Expenses for buildings in Moscow and Warsaw	339,849	1,359,399 49 kr.
Obligations	7,736	30,947 00 kr.
Various demands	819,140	3,276,562 34 kr.
	\$4,439,834	17,759,352 57 kr.

Liabilities.

Capital in shares	\$ 712,500	2,850,000 00 kr.
Building and property fund	750,000	3,000,000 00 kr.
Reserve fund	125,000	500,000 00 kr.
Reserved for company's future disposal	141,089	564,356 96 kr.
Employees gratuity fund	10,000	40,000 00 kr.
Fire insurance fund	7,500	30,000 00 kr.
Accident insurance fund	7,500	30,000 00 kr.
Sinking funds	110,790	443,163 69 kr.
Instalment loans	160,000	640,000 00 kr.
Mortgage loans	267,318	1,069,273 20 kr.
Various persons (individuals)	1,032,734	4,130,938 79 kr.
Goods supplied	939,229	3,756,917 49 kr.
Unused profits	275	1,104 00 kr.
Net profit	175,899	703,598 44 kr.
	\$4,439,834	17,759,352 57 kr.

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The profits for the year have therefore been as shown: (\$175,899)—703,598 44 kr.

They have been applied as follows:—

Shareholders, \$6 or 24 kr. per share.	\$ 57,000	228,000 00 kr.
Reserve fund.	17,750	71,000 00 kr.
Building and property fund.	37,500	150,000 00 kr.
Fund set aside at the disposal of the company.	63,649	254,598 44 kr.
	<hr/>	
	\$175,899	703,598 44 kr.

If these proposals are approved of, the company's funds stand thus:—

Capital in shares.	\$ 712,500	2,850,000 00 kr.
Building and property fund.	787,500	3,150,000 00 kr.
Reserve fund.	142,750	571,000 00 kr.
Reserve fund for future disposal.	204,738	818,955 40 kr.
Employees gratuity fund.	10,000	40,000 00 kr.
Fire insurance fund.	7,500	30,000 00 kr.
Accident insurance fund.	7,500	30,000 00 kr.
	<hr/>	
	\$1,872,488	7,489,955 40 kr.

Besides this there has been set aside for the sinking fund. \$110,790 443,163 69 kr.

F. W. H. PEGELOW,
W. MONTELIUS,
VIKTOR KLEMMING,
H. T. CEDERGREN,
B. HASSELBERG.

No. 154c.

(TRANSLATION.)

ANNUAL REPORT MADE BY THE MANAGERS AND AUDIT DEPARTMENT OF THE STOCKHOLM BELL TELEPHONE COMPANY.

1904.

BELL TELEPHONE COMPANY:

In presenting the yearly report for 1904, the managers have the satisfaction of being able to state, that the telephone business of the company has increased remarkably; and also that the economic results of the business have been, in the very highest degree, satisfactory.

The increase in the number of subscribers during the year has been 795, as against 779 during 1903, and 731 during 1902. At the same time, as shown by the balance account given below, the receipts, which amounted to 113,601.14 kr. (\$28,400) for 1903, have increased to 123,343.58 kr. (\$30,836) for 1904.

In the previous reports, the managers have already made a statement regarding the negotiations, which, since the former agreement for common use of wires with the Government Telegraph Bureau has been cancelled, have been carried on with the Government Bureau, regarding arrangements for co-operation. Since the proposal for selling the whole plant of the company was rejected by the resolution of parliament in 1902, owing to the firm demand made by the telegraph managers that co-operation between the wires should be free, and negotiations being made thereafter on the basis that the district should be equally divided between the three companies—an agreement of purchase and exchange was entered upon, on February 9, 1904, according to which the company should sell to the telegraph management the plant owned by it within the city, inside the bridges, as well as in Södermalm and Kungsholmen; and also that there-

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after free co-operation should be arranged for between the company's subscribers in the other districts of the city, and the government telephone wires. The agreement in question was approved of by the King, but was vetoed by the parliament, April 30, 1904.

As the owner of the real estate in Kungsholmen, where the central station was located, refused to abide by the terms of the lease, we have just concluded a new agreement with him for 10 years; and it is our intention during the present year to enlarge this central station by installing the requisite number of new switch-boards. The other central stations of the company have also to be enlarged.

Through improved arrangements in receiving and connecting the charges for subscribers have been somewhat decreased.

During 1904 the company has made connections for 2,196 new subscribers; whereas former subscribers to the number of 1,401 have ceased, through transfers, to the General Telephone Company, through change of residence, death, and other causes. Notwithstanding this, however, the number of subscribers at the end of the year was 12,276, as compared with 11,481 at the beginning of 1904. Details are shown by the following list:—

Name of Station.	Number of Subscribers, Dec. 31, 1904.			Total.
	\$9.65	\$12.06	Con- nec- tion.	
Brunkeberg.....	2,358	386	14	2,738
Kungsholmen.....	824	68	3	895
Maria, Ersta, Tanto.....	1,957	227	14	2,198
Storkyrkan.....	294	74	6	374
Vasa.....	1,887	124	3	2,014
Ostermalm.....	3,819	227	11	4,057
Total.....	11,139	1,086	51	12,276

During the various months of the year, the number of subscribers has been as follows.—

1904.	Number of Subscribers on Dec. 15.						Total.
	Brunkeberg.	Kungs- holmen.	Maria Ersta Tanto.	Stor- kyrkan.	Vasa.	Ostermalm.	
January.....	2,629	783	1,972	362	1,780	4,004	11,530
February.....	2,636	795	1,997	358	1,804	4,012	11,602
March.....	2,642	799	2,003	361	1,810	4,009	11,624
April.....	2,646	797	2,011	363	1,823	4,007	11,647
May.....	2,606	801	2,019	365	1,809	3,977	11,577
June.....	2,585	801	2,025	358	1,806	3,959	11,534
July.....	2,541	803	2,003	356	1,785	3,957	11,445
August.....	2,530	802	2,007	359	1,797	3,916	11,411
September.....	2,553	808	2,026	360	1,824	3,927	11,498
October.....	2,516	814	2,036	359	1,855	3,962	11,542
November.....	2,590	842	2,099	364	1,914	3,971	11,780
December.....	2,703	888	2,167	375	1,987	4,058	12,178

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The length of the company's wires was on December 31, 1904:—

	Kilometres.
Subscribers' lines	9,468.39
Connecting lines	667.35
Total	10,135.74

The above 10,135.74 kilometres are classified thus:—

	Kilometres.
Overhead wires	1,083.65
Underground wires	7,829.82
Overhead wire connections	1,222.27
Total	10,135.74

(NOTE.—A kilometre equals about $\frac{5}{8}$ of one English mile.)

There were in the employ of the company at the close of the year 135 hands, as against 132 at the commencement of the year, as shown by the following table:—

	Jan. 1, 1904.			Dec. 31, 1904.		
	Men.	Girls.	Total.	Men.	Girls.	Total.
Employees in the Telephone Bureau	1	2	3	1	2	3
" Cash Department		5	5		5	5
" at the Central Stations, (including 5 managers)		95	95		99	99
Employees for setting up instruments, repairing, and station-workers	11		11	9		9
Employees in the work-shops	7		7	5		5
Watchmen, and errand-boys	11		11	12		12
Total	30	102	132	27	106	133

In the accounts for 1904, the necessary deductions have been made for claims, and a small amount has been carried over to the sinking fund. After allowing for this, the company's balance account on December 31, 1904, shows the following assets and liabilities:—

(NOTE.—1 kroner = 26.8 cents.)

Assets.

Telephone establishments	\$605,943	2,423,773 07 kr.
Furniture and goods	3,134	12,535 24 kr.
Instruments	5,043	20,171 93 kr.
Material	1,122	4,488 42 kr.
Foreign shares	5,000	20,000 00 kr.
Detail business (miscellaneous)	1,336	5,343 87 kr.
Tools	451	1,805 95 kr.
Cash	325	1,301 96 kr.
Scandinavian Credit Stock Company	2,576	10,302 06 kr.
Various accounts	5,711	22,842 84 kr.
	\$630,641	2,522,565 34 kr.

Liabilities.

Industry Credit Stock Co.	\$ 14,800	59,200 00 kr.
Various debts.	42,189	168,756 47 kr.
Bonds.	162,500	650,000 00 kr.
Acceptances.	20,250	80,999 91 kr.
Taxes.	114	454 50 kr.
Unredeemed profits.	142	570 00 kr.
Sick fund	64	255 04 kr.
Shareholders' holdings—		
Capital in shares	250,000	1,000,000 00 kr.
Reserve fund	25,000	100,000 00 kr.
Sinking fund.	49,557	198,229 25 kr.
Reserve account (rental reserve)	35,189	140,756 59 kr.
The year's net profit.	30,836	123,343 58 kr.
	\$630,641	2,522,565 34 kr.

The profit and loss account for 1904 is as follows:—

	\$	Kr.		\$	Kr.
Rents	10,412 00	41,646 17	Income after deducting upkeep and working expenses	52,252 00	209,008 52
Wages	3,094 00	12,378 25			
Taxes	2,171 00	8,684 96	Profit from private work, and material sold.	115 00	460 18
Sinking fund.	5,854 00	23,415 74			
Net profit for year.	30,836 00	123,343 58			
	52,367 00	209,468 70		52,367 00	209,468 70

Concerning the year's net profit, the management has to report that it has been applied as follows:—

\$16.08 (60 kr.) per share to the shareholders, i.e.	\$15,000	60,000 00 kr.
Carried over to reserve fund.	15,836	63,343 58 kr.
	\$30,836	123,343 58 kr.

W. MONTELIUS,
EMIL. EGNELL,
H. T. CEDERGREN,
CARL HALLÉN.

STOCKHOLM, March 24, 1905.

No. 154d.

(TRANSLATION.)

STATEMENT regarding the terms of subscription in the Stockholm General Telephone Joint Stock Company, and the Stockholm Bell Telephone Joint Stock Company.

Note.—Kroner=26:8c.; Kilometre=about $\frac{5}{8}$ English mile; Metre= $3\frac{1}{4}$ feet.

The Stockholm General Telephone Joint Stock Company furnishes service within Stockholm, and the surrounding district, extending to a distance of 70 kilometres from the centre of Stockholm. The Bell Telephone Company furnishes service only within Stockholm. The General Telephone Company furnishes unlimited service within

APPENDIX No. 1

Stockholm. The Bell Telephone Company furnishes measured service only. As different facilities for subscribers are given by each company, there is no competition in canvassing for subscribers, therefore the common use of both telephones has been arranged for. The companies' plants are therefore to be regarded as *one* telephone system; and the subscribers to the same comprised, on October 1, 1903, 33,227; i.e., 27,968 within the city of Stockholm, and 5,259 within the above mentioned district outside of Stockholm.

TERMS FOR SUBSCRIBERS.

I. Charges within the city of Stockholm :—

A.

General Telephone Company subscription, with unrestricted right of use over the company's entire system:

Instrument with direct communication to central, 80 kr. (\$21.44).

Instrument with direct communication, combined with another, 60 kr. (\$16.08).

By paying a yearly sum of 100 kr. (\$26.80) without entrance fee, direct communication with the Central is obtained, with unrestricted right of use, to all the subscribers to the Bell Telephone Company, for the 45 kr. (\$12.06) business telephone, as well as the 36 kr. (\$9.65) house telephone. (*For particulars see below.)

Such instruments are termed 'Star' telephones, and are designated in the directory with large type, with a 'star' before the number.

Subscribers who pay 80 kr. (\$21.44), or 60 kr. (\$16.08) yearly, have also to pay a separate entrance fee of 50 kr. (\$13.40) once for all, or 10 kr. (\$2.68) yearly for five years. This entrance fee, however, is not required, if the connection has been already made, or if the instrument is installed in the customer's residence.

Connection to the same residence, without entrance fee, yearly payment, 30 kr. (\$8.04).

Connection to another residence, if wire does not exceed 500 metres, 40 kr. (\$10.72).

This last does not include entrance fee of 25 kr. (\$6.70) once for all.

For longer connections than 500 metres, an entrance fee of 25 kr. (\$6.70) is required, as also a yearly payment of 10 kr. (\$2.68) for each additional length of wire exceeding a half kilometre.

Note.—Connections are made only between instruments belonging to the same subscriber, and situated in the same district.

B.

Bell Telephone Company. Subscription, with restricted right of use:—

Business telephone, with direct communication, 45 kr. (\$12.06).

This does not include entrance fee of 10 kr. (\$2.68) once for all.

If an instrument of an older type is installed, no entrance fee is required.

House telephone, with direct communication, 36 kr. (\$9.65).

This does not include entrance fee, according to terms above stated, for business telephone.

The subscriber has unrestricted right of communication with all the 'Star' subscribers of the General Telephone Company, as well as 100 free calls, during each 3 months, with the subscribers to the Bell Company. For further calls, a payment of 10 öres (2½c.) is required.

No payment is required for any incoming call to the subscriber's telephone.

All the subscribers to both companies, in Stockholm, have the right without extra charge, to communicate with all the country subscribers, each in turn, according to the time that the call is made. When a call of this kind is made, with right of precedence,

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a charge of 10 öres ($2\frac{1}{2}$ c.) is required for every period of 3 minutes, for such 'urgent calls.'

II. Charges for points outside of Stockholm—General Telephone Company:—

A.

Subscription for points outside:—

Telephone with direct connection, and unrestricted free use, over the company's whole system, and without entrance fee, yearly subscription 50 kr. (\$13.40).

Telephone, with direct connection, and unrestricted right of use, in the same district; and right to 100 free calls, every 3 months, to subscribers living outside of specified district; with 10 öres ($2\frac{1}{2}$ c.) charge for each additional call, together with entrance fee of 10 kr. (\$2.68) once for all.

Yearly payment, 36 kr. (\$9.65).

Telephone with direct connection, and unrestricted right of use, within district; and 10 öres ($2\frac{1}{2}$ c.) charge for each call made to subscribers living outside specified district, together with entrance fee of 10 kr. (\$2.65), once for all, 25 kr. (\$6.70).

Telephone connection to any point, yearly 20 kr. (\$5.36).

Besides this, an entrance fee of 10 kr. (\$2.68) is required, if connecting wire does not exceed 100 metres. For longer connections the entrance fee is regulated according to length of wire.

B.

Subscription for country residences:—

Telephone with direct connection to nearest connecting station, situated in district, yearly 50 kr. (\$13.40).

Besides this, the subscriber must either himself pay charges for making connections at above mentioned station, or for this purpose pay a yearly sum of 15 kr. (\$4.02) to the company. The entrance fee is 10 kr. (\$2.68) if the wire to connecting station does not exceed 1 kilometre. If the wire is larger than this, the entrance fee is required, and 40 kr. (\$10.72) for wire over and above 1 kilometre.

Telephone connection, yearly 30 kr. (\$8.04).

Besides this, an entrance fee is required, according to the rules that apply for points outside of Stockholm. Charges for 'urgent calls' are the same as for subscribers living in Stockholm.

All the company's subscribers have the right to telephone from their residences, telegrams and telephone messages, to a 'telegram bureau' installed by the General Telephone Company for this purpose. Telegrams are forwarded by messenger to the telegraph station without any charges other than the usual telegram rates. Telephone messages sent in to the 'telegram bureau' are written down and forwarded by bicycle-messenger to the address given, with a charge of 25 öres ($6\frac{1}{2}$ cents) for each message of not more than 10 words, the address not included. For longer messages, a charge of 5 öres (1 cent) is made for each additional word. Telegrams sent to the company's 'bureau' addressed to subscribers are telephoned to subscribers, without any charges being made.

Since the ceasing of direct connection with the government telephone wires, the company has installed an 'exchange bureau,' where, by a payment of öres 10 ($2\frac{1}{2}$ cents) for each call, telephone communications are transferred to government wires.

STOCKHOLM GENERAL TELEPHONE JOINT STOCK CO.

STOCKHOLM BELL TELEPHONE JOINT STOCK CO.

STOCKHOLM, October 19, 1903.

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No. 155.

(TRANSLATION.)

THE ITALIAN GENERAL TELEPHONE AND ELECTRIC WORK CO.

Head Office in Rome, with Agencies in Rome, Bologna, Catania, Florence, Genoa, Livorno, Messina, Naples, Palermo and Venice.

Capital, 5,609,100 Lire (\$1,121,820), all expended.

ROME, June 6, 1905.

Sir WILLIAM MULOCK, K.C.M.G.

HONOURABLE SIR,—In answer to your esteemed favour of May 1, we beg to inclose herewith our answers to your interrogations.

Please note that our figures are approximate.

Hoping that you will favour us with a copy of the general statistics which will be drawn up by your committee,

We beg to remain,
Yours very sincerely,

ITALIAN GEN. TEL. AND ELECTRIC WORK CO.

No. 155a.

ANSWERS TO QUESTIONS OF THE GOVERNMENT COMMITTEE OF CANADA.

The company owns and controls the rights of the telephone in the following cities and adjacent communes: Bologna, Catania, Florence, Genoa, San Remo, Oneglia and Port Maurice, Livorno, Messina, Naples, Palermo, Rome, Venice, Mestre.

The approximate population is as follows: Bologna, 170,000; Catania, 150,000; Florence, 210,000; Genoa, 250,000; Livorno, 100,000; Messina, 160,000; Naples, 550,000; Palermo, 360,000; Rome, 480,000; Venice, 160,000.

The company owns and operates its whole plant.

Subscribers: Bologna, 650; Catania, 230; Florence, 1,600; Genoa, 2,400; Livorno, 350; Messina, 310; Naples, 1,200; Palermo, 550; Rome, 4,900; Venice, 1,100.

The above were the numbers on January 1, 1905.

In each city there is only one central office, to which all the subscribers are connected.

The number of direct lines coincide with the number of the subscribers.

About 10 per cent of the subscribers have outside extension telephones.

About 10 per cent of the subscribers have inside extension telephones.

The subscribers do not purchase their instruments or pay for the cost of the lines.

The subscriptions are different in the various cities, and vary from a minimum of 120 lire (\$23.16) to a maximum of 200 lire (\$38.60) within the radius of three kilometres (2 miles). For longer distances an additional 6 lire (\$1.16) per annum is paid for every 200 metres (620 feet). These rates apply to business and residence telephones. 100 lire (\$19.30) per annum is charged for outside extension telephones. 30 lire (\$5.79) per annum is charged for inside extension telephones. Measured service is not in force.

The average radius of connection is from 2 kilometres (1½ miles) to a maximum of 20 kilometres (12½ miles).

There is no entrance fee, but there is paid by way of compensation for this, a sum of about 40 lire (\$7.72) for setting up the instrument.

The service is continuous, day and night, and also on Sundays and holidays.

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The charges for local conversations at the public offices are from 10 centimes (2 cents) to 15 centimes (3 cents) per call.

The long distance charges vary greatly according to distance. The time allowed for conversation is 3 minutes.

Over the long distance lines, which belong to the government, the greatest distance reached is 1,700 kilometres (1062½ miles).

The telephone apparatus used are those of the Kellogg Company and the Antwerp Telephone and Electrical Works.

City lines are of bronze, of 1.25 m.m. Those of the country are of steel, of 2 m.m. There are single and metallic circuits.

The proportion of overhead and underground work varies a good deal between both. About one-third is underground.

The total amount expended for the whole plant has been 9,700,000 lire (\$1,940,000).

The revenue for the past year was about 2,200,000 lire (\$440,000).

The total expenditure for maintenance and operating expenses, not including depreciation, was 1,200,000 lire (\$240,000).

The profit depends greatly on the amount set aside for the sinking fund. In any case, this amount is always high, and consequently the profits are small. During the past year 6 per cent was paid to the preferred shares, and 4 per cent to the other shares.

The rate of wages is as follows: Managers and foremen, from 5,000 lire (\$965) to 18,000 lire (\$3,474) yearly. Instrument men and wire men from 1,000 lire (\$193) to 2,000 lire (\$386) yearly. Switchboard operators, from 720 lire (\$138.96) to 1,500 lire (\$289.50) yearly.

The cost of the material is according to the normal rates, and varies somewhat; so that we find it difficult to give a detailed answer to this question.

The long distance lines belong, for the most part, to the government, and are controlled by us only to a very small degree.

Simultaneous telegraph and telephone wires do not exist. The government has decided to use the system of Brunè and Turchi.

The long distance lines are solely of metallic circuit, and are of bronze. The gauge is 4 m.m., and for the longest wires 5 m.m.

The private companies are responsible to the government for the collection of long distance charges, and are obliged to collect and pay them in.

A competitive system exists in Rome. This is a system with less than 500 subscribers. We do not think that it has any effect on the charges and service.

We have no special system. The calling system is magneto. The multiple switchboards are vertical and horizontal—these last are of the Siemens type. The intercommunicating central wires are of our own special type. For the smaller exchanges we use the Standard switchboard of 100 numbers. All the inside wires are of double metallic circuit.

APPENDIX No. 1

No. 156.

(TRANSLATION.)

THE ITALIAN GENERAL TELEPHONE AND ELECTRIC WORK COMPANY.

Head Office and Central Administration in Rome.

Capital, 5,609,100 lire (\$1,121,820). All invested.

Bologna, June 13, 1905.

The Honourable
Select Parliamentary Committee for Telephones,
Ottawa, Canada.

We have the honour to acknowledge receipt of your esteemed letter of May 1, 1905, to which we respond by stating that we herewith inclose the answers to the questions contained in your above mentioned letter.

We remain yours,
With the highest esteem,

THE ITALIAN GENERAL TELEPHONE AND ELECTRIC WORK CO.

Bologna has a population of 147,898. The telephone system is owned and operated by the Italian General Telephone and Electric Company.

The company has in Bologna 697 subscribers and 732 instruments.

The service is continuous, including Sundays.

The charges per annum are various, viz.:—

Up to 1 kilometre from the central office.....	140 lire (\$27.02)
“ 2 “ “	170 “ (\$32.81)
“ 3 “ “	200 “ (\$38.60)

For longer distances, and for every 200 metres or fraction thereof, 6 lire (\$1.16)

In the adjacent districts, up to 4 kilometres from the central office, the above charges are required.

Within a radius comprising 4 to 9 kilometres... 240 lire (\$46.32)

Within a radius comprising 9 kilometres to the
end of the line 280 lire (54.04)

The following are the long distance charges:—

	Kil.	(Miles.)	Lire.	(Cents.)	
From Bologna to Rome.....	499	310	2.00	40	for 3 minutes' conversation.
“ Naples . . .	748	464½	2.00	40	“
“ Florence ...	133	82½	1.00	20	“
“ Prato. . . .	103	64	1.50	30	“
“ Pistorio ...	99	61½	1.50	30	“
“ Lucca. . . .	144	89½	2.00	40	“
“ Pisa... . . .	211	131	2.00	40	“
“ Livorno ...	230	143	2.00	40	“
“ Ferrara ...	47	29	0.50	10	“
“ Padua.	123	76½	1.00	20	“
“ Venice	160	99½	1.00	20	“
“ Greviso	190	118	1.50	30	“
“ Mussa P. . .	250	155¼	2.50	50	“

Subscribers' instruments are magneto, with bi-polar receivers and granular carbon transmitters of the 'Kellogg,' 'Solid-back,' and 'Grünenwald' types; the batteries are 'Leclanche,' with agglomerate blocks.

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The subscribers' lines are of double and single wire, the greater part being of single wire. Inside the city they are of bronze, of 1.40 m.m. In the country they are of steel, of 2 m.m.

Length of lines overhead.	107,100 kil.
Length of lines underground.	8,000 kil.

The long distance lines are partly owned by the Italian government and partly by the company. These lines are entirely of metallic circuit, of 2, 3 and 4 m.m., and are of bronze wire.

The usual time allowed for long distance conversations is three minutes; the longest time allowed, six minutes.

ITALIAN GENERAL TELEPHONE AND ELECTRIC WORK CO.

No. 157.

OTTAWA, ONT., June 15, 1905.

Sir WILLIAM MULOCK,
Postmaster General, Pres. Tel. Committee,
Ottawa, Ont.

HONOURABLE SIR,—In answer to your esteemed favour on the telegraph and telephone communication in my county, I have the honour to state that all the Saguenay district and part of Chicoutimi is served by the government telegraph system as far as Belle Isle.

As to telephone, there are three companies now dealing in my district:

1st. The Chicoutimi Electric Company, which operates town and seven parishes in the vicinity.

2nd. The Co-operative Telephone Company of Lake St. John and Chicoutimi, which operates in the whole Lake St. John district and in Chicoutimi town and three parishes in the vicinity.

3rd. The Roberval Telephone Company, which operates in Roberval only, but is in complete connection with the Co-operative one No. 2.

The two systems of Roberval and Chicoutimi are the two oldest ones; but their rates being too high (\$25 a year) for the general community, in 1895, I organized with the principal farmers and business men in the different parishes the Co-operative system, which covers the whole district now.

This company does not sell telephones, and shareholders only can have them; the number of these increasing every year, every farmer or merchant who wants to have a 'phone has it now.

The company possess now 189 miles of main lines, operating 214 'phone boxes controlled by 21 switchboards, the whole cost of it being \$8,000.

The Roberval Company controls about 80 boxes worked by one switchboard, connected to the Co-operative system.

The average price of the Co-operative boxes is \$40 each, including the cost of all the constructions.

Every shareholder has free access to any 'phone at any place of the system and their families from home have the same privilege. The rate for the public is 15 cents per three minutes conversation.

The company raises once a year on the shareholders the amount necessary for the maintenance and repairs, which amounts from \$3 to \$5 a year, so that the cost to the shareholders is equal to this amount plus the interest on the capital, viz.: \$40, less the revenue paid by the public.

The rates charged by Roberval Company are \$25 per year.

APPENDIX No. 1

The rates charged by Chicoutimi Company are \$15 per year in Chicoutimi town, plus extra charges for calls outside of the town, and in other places \$12.50 without any extras.

This company controls about 150 boxes in the town and the different parishes in the surrounding of Chicoutimi town.

On account of misunderstanding on the rates between this company and the Co-operative system there is no communication at all between the two companies; railway companies allow every company access to their stations.

I am president of the Co-operative system since its organization.

My experience in telephone business is that in rural places, to make it popular, rates ought to be very low; and those generally asked by all speculative companies are exorbitant.

I believe that the government general management will be a first-class policy, and if it is not possible now all the long-distance lines should be in the government hands, giving to any local company access to these at the same charge; delivering so the public of the hard monopoly now exercised by some important firms.

I inclose a map explaining the exact position in my district.

I have the honour to be, sir,

Yours truly,

JOS. GIRARD.

No. 158.

MINK COVE, DIGBY COUNTY, N.S.

Sir WILLIAM MULOCK,

Ottawa, Ont.

I received your letter and papers of inquiry concerning telephone systems. The Westport and Digby telephone line, I now represent, was organized by a company in 1888, stock issued \$2,000. The company ran the line 15 years. The government laid two cables, one across Grand Passage, the other across Petite Passage. The one at Petite Passage was carried away several times, vessels dragging down upon it, catching it with their anchors and cutting it away. The government at last refused, or at least did not put another down. It remained without a cable for a long while; the company ran heavily in debt and they sold out to me 'personally.' I repaired the line and put a new cable down; the line then was forty miles iron wire, from Digby to Westport. I also ran an extra wire of copper from Sandy Cove to Westport, a distance of 20 miles, exclusive of the two passages which were cabled with a one-core cable—that made half the distance from Digby to Westport copper. The other 20 miles of iron wire, I connected with by-lines for business purposes. I do about all the work myself excepting the repairing of instruments, which I send away to manufacturers. The poles I furnish (nearly) all myself. Other material I buy mostly in Montreal.

The system operates in Digby county. The population of the territory served is 5,000, and total number of telephones in operation 40, of which 14 are direct one-station lines. The number of residence telephones is 14, business 12. The system is magneto, the central office equipment being manufactured by the Fisk, Newhall Telephone Manufacturing Company, of Chicago, Ill., and the subscribers' telephones by the 'Bell' Company, Couch & Seeley, Boston, and John Starr & Co., Halifax. The rates charged per annum are, business \$15, residence \$10. The system interchanges service with the Valley Telephone Company, the Yarmouth Amalgamated Telephone Company, and the Western Union Telegraph Company.

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The system operates 40 miles of long-distance lines. The charges for conversations over the long distance lines are 20c. per message, exclusive of delivery, and 15c. per message when connecting on other lines, in addition to the usual tariff of the connecting companies.

Yours truly,

SAMUEL GIDNEY,
Owner and Manager, Westport and Digby Telephone Line.

No. 159.

ESTABLISHED 1882.

HELDERLEIGH FRUIT FARMS AND NURSERIES.

E. D. SMITH, *Proprietor.*

WINONA, ONT., June 12, 1905.

Mr. A. ZIMMERMAN,
Acting Chairman of Telephone Committee,
Ottawa, Ont.

DEAR SIR,—Your favour to hand with regard to private telephone system. We started one here in the neighbourhood a great many years ago. I have not the date by me but should say at least fifteen years ago. The private system was being rapidly extended, but before it had become a strong competitor to the Bell Company, that company, through its agents, made us what we considered a fair proposal, to drop our system and go in with them. The terms were \$15 per 'phone per annum. If the user of the 'phone required a line longer than half a mile he was required to pay double or allow another party to go on the same line. This system is in operation to-day. The rates have been gradually raised, however, until now they are \$20 instead of \$15.

The patrons of the Bell Company have little to complain of except the service is not continued on after eight o'clock in the evening or before eight o'clock in the morning, but of course everybody felt they were being imposed upon when the Bell Company raised the rate above \$15, feeling that if they could afford to continue the business at \$15 each when only a few 'phones were in operation, they should better be able to do it now when almost every fruit-grower and farmer has a 'phone in his house.

Your truly,

E. D. SMITH.

No. 160.

NORTHERN ALUMINUM COMPANY, LTD.

SHAWINIGAN FALLS, P.Q., CANADA.

MAIN OFFICE,
PITTSBURG, PA., U.S.A.
CLEVELAND OFFICE,
GARFIELD B'L'D'G,
J. A. RUTHERFORD,
MANAGER.

CLEVELAND, O., May 29, 1905.

ADAM ZIMMERMAN, M.P.,
Acting Chairman Select Committee on Telephone Systems,
Ottawa, Canada.

MY DEAR ADAM,—I wrote you on Saturday a short letter relative to the telephone information which you asked for.

APPENDIX No. 1

Answering your first question relative to the extent of the long-distance facilities afforded by the independent companies here and the names of the companies operating the several companies, would state, that I inclose, herewith, a letter head showing the names of the different toll lines or long-distance lines over which the independent companies operate.

There is connection by the independent system from Cleveland as far east as Syracuse; as far north as Grand Rapids, and south-east to Charleston and Wheeling, W. Va., south-west to St. Louis and to Kansas City, although the Kansas City line is not yet in complete operation, but up to the present time conversations have been had between Cleveland and Kansas City.

Relative to the rules and regulations between the long-distance and the local companies, I inclose, herewith, a form of contract from which you will obtain considerable information, and would state further that the rates are made on the basis of an air-line distance, that is to say, if the route of a long-distance line is of a triangular or rectangular shape, the rate is made not on the basis of these shapes, but on the basis of an air-line distance between the different points. If there is any further information which you think I can give you, kindly advise me.

Yours truly,

J. A. RUTHERFORD.

No. 160a.

(Copy of Letter-head.)

- S. P. SHEERIN, President.
- J. D. POWERS, Vice-President.
- JAS. B. HOGE, Secretary.
- C. MARQUARD FORSTER, Treas.
- H. B. SALE, Ass't Sec'y.
- M. H. CLAPP, Consulting Engineer.

CONFERENCE COMMITTEE OF INDEPENDENT LONG-DISTANCE TELEPHONE ASSOCIATION.

MEMBERS :

- PITTSBURG & ALLEGHENY TELEPHONE CO.
J. G. SPLANE, Pittsburg, Pa.
- INDEPENDENT LONG DISTANCE TEL. & TELG. CO.
COL. J. D. POWERS, Louisville, Ky.
- NEW LONG DISTANCE TELEPHONE CO.
S. P. SHEERIN, Indianapolis, Ind.

MEMBERS :

- KINLOCH LONG DISTANCE TELEPHONE CO.
C. MARQUARD FORSTER, St. Louis, Mo.
- UNITED STATES TELEPHONE CO.
JAS. B. HOGE, Cleveland, O.
- KANSAS CITY LONG DISTANCE TELEPHONE CO.
O. C. SNIDER, Kansas City, Mo.

No. 160b.

COPY OF TELEPHONE TOLL CONTRACT.

THIS AGREEMENT, entered into by and between THE UNITED STATES TELEPHONE COMPANY, of Cleveland, Ohio, a corporation organized and doing business under the laws of the State of Ohio, first party, and the TELEPHONE COMPANY, of second party.

WITNESSETH: THAT WHEREAS, the first party is organized for the purpose, among others, of building and maintaining telephone toll lines, and proposes to connect principal points in Ohio as soon as practicable, by means of first-class, full metallic, copper lines, and arrange for the interchange of business with independent or opposition exchanges or toll lines in said state, and if desirable and practicable, extend such service beyond said state of Ohio, under such arrangement as will be advantageous.

Now, THEREFORE, the parties hereto, for themselves, their successors and assigns, in consideration of the mutual promises herein made, covenant and agree as follows, to wit:—

First. The first party agrees to build or maintain a telephone line or lines to the corporate limits of the
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.and thence upon the poles of second party, to its exchange or central office at
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for the purposes herein specified.

Second. The second party hereby grants to said first party a license to use the top cross-arm of second party's poles within the corporate limits of said city or village of
.
upon which to string and maintain its toll line wires, which said second party hereby agrees to keep clear, free from obstructions, and in good working order, within the corporate limits of

.
and furnish such material as may be necessary for the repair thereof, at actual cost, to be paid by first party, and second party hereby grants a license to said first party to connect with the telephone exchange or system of second party through its switchboards, so that an interchange of business may at all times be carried on between said parties. Such connection to be completed on or before the
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It being understood and agreed that the lines of both parties hereto shall be so operated that service may be given from all lines owned, controlled or connected with, the lines of either of the parties hereto, over the lines of the other and its connections. And said parties agree not to enter into any contract with any other person, firm or corporation, whereby any of the rights, privileges or advantages herein acquired by either party, may be impaired, except as provided in paragraph (4) hereof.

Third. The apparatus used by second party in connection with the lines of first party, shall be of such character and efficiency as to afford facilities for first-class service at all times, and first party hereby reserves the right to refuse to receive or transmit messages from or to any connecting line or apparatus when service rendered thereby is not reasonably efficient.

Fourth. First party agrees to transmit all messages destined to points on the lines of second party not reached by its own system of wires, to and over the lines owned or controlled by said second party. It being further agreed and understood that where a point on the line of second party is also reached by another independent or opposition line or lines, said first party hereby agrees to distribute the business destined for such common point as equally as practicable between second party and such other independent or opposition line or lines, but said first party reserves the right to transmit all business destined to such common point over such line or lines as will enable first party to render the best service. And the second party in consideration of the benefits to be derived by it or him from the toll service herein provided to be furnished by first party, agrees to transmit all business to points not now reached by its or his own line or lines, over the lines of first party. The plan hereto attached

APPENDIX No. 1

shows the existing lines of the second party, and the points now reached thereby, and is hereby made a part of this contract.

Fifth. Each party hereto agrees to receive from the other, all messages destined to points within its territory or on connecting lines, which may be delivered to it by the other party hereto, subject to all the conditions herein contained.

Sixth. It is agreed and understood that where a message originates at an exchange or other point upon the lines of second party, for transmission thence over the lines of first party, the second party shall receive twenty-five (25) per cent of all toll charged for such message by the first party, and its connecting lines, other than those of second party, over which the same may be transmitted, as full compensation for its services in connection therewith, and shall account for and remit the balance to first party on or before the tenth day of each month for the next preceding calendar month. Provided that the amount which second party shall receive shall not exceed twelve and one-half (12½) cents for any one message of not exceeding five (5) minutes duration. And second party further agrees to make a daily report of all joint business transacted, to first party, on blanks furnished by it for that purpose.

Seventh. It is further understood and agreed that, in the division of tolls charged for interchanged business, passing in part over the toll lines of both parties hereto, each party shall receive a share of the total toll charged, for each message in proportion to the ratio existing between the land air line distance, from the point of origin to the point of transfer and the land air line distance from the point of transfer to the point of destination, and in fixing the toll charge for any message the mileage shall be taken and deemed to be the land air line distance between the terminal points of such message, and unless otherwise agreed the charge shall be not to exceed two-thirds of one cent per mile, for not exceeding five (5) minutes' conversation, excess time to be charged for and divided, as provided in paragraphs six (6) and seven (7) hereof.

Eighth. It is further understood and agreed, that at all competitive points (that is points reached by lines in competition with either of the parties to this agreement), where the competing rate is lower than the joint rate of the parties hereto, as provided in paragraph seven (7) hereof, such competitive rate shall be met by each party hereto, bearing a share of the reduction necessary to meet such rate, in proportion to the ratio existing between the whole land air line distance from the competitive point to the junction point, and from the junction point to the originating or terminating point of such message, and the toll charge for such message shall be computed on the regular standard base rate of first party, as provided in paragraph seven (7) hereof.

Ninth. It is further agreed and understood that second party will receive and deliver to the proper parties all messages destined to points on its lines and delivered to it over the lines of the first party, without compensation therefor, except its proportion, if any, of the total toll charge for such message, as provided in paragraph seven (7) hereof and except also when a messenger is necessary, in which case the actual cost of such messenger service shall be paid to second party by first party. And second party agrees to connect the wires of first party for the purpose of transmitting messages from the lines of first party to points beyond the exchange or lines of second party, without compensation therefor, except its proportion, if any, of the total toll charge for such message as provided in paragraph seven (7) hereof.

Tenth. It is further agreed that if first party finds it desirable or necessary from the amount of business, or the nature of the service, to establish a separate switchboard in the exchange of second party, and employ an additional operator or operators, that it shall have the privilege of so doing, in which case the division of toll charges shall be as follows: The first party shall receive 85 per cent and the second party 15 per cent of the sum charged for such message, in the manner hereinbefore provided.

Eleventh. It is further agreed that each party hereto shall save the other harmless from any damage or injury caused or occasioned by its negligence or default, or the negligence or default of its agents or employees, as to all matters covered by the terms of this contract.

Twelfth. It is further agreed and understood that first party shall adopt such rules and regulations governing the transmission of messages over its lines and the transfer of the same to and from other lines as shall be by first party deemed just and reasonable, and the agents and employees of second party shall observe and enforce such rules and regulations at all times.

Thirteenth. It is agreed and understood that each party will do all things necessary to give full force and effect to the spirit of this agreement, without further compensation or conditions than those herein specifically set forth.

Fourteenth. This contract shall be and remain in force, for and during the period of ninety-nine years from date hereof, and thereafter until one year's written notice shall have been given by either party to the other of its intention to terminate the same.

Witness our hands and seals in duplicate this.....day of.....190 .

THE UNITED STATES TELEPHONE COMPANY,

By.Prest.

AttestSecy.

.....
.....
.....

No. 161.

A. R. BENNETT, M.I.E.E.

Telegraphic address: Telephraze, London.

Telephone: Post Office, Victoria, 1546.

QUEEN ANNE'S CHAMBERS.

BROADWAY, WESTMINSTER,

LONDON, S.W., June 5, 1905.

The Secretary to the
Select Committee on Telephone Systems,
Ottawa, Canada.

SIR,—A correspondent in Ottawa informs me that it has been stated before the Select Committee on Telephone Systems, by one or more witnesses in the 'Bell' interests, that I was dismissed from the position of general manager and chief engineer to the Glasgow Corporation Telephone department, owing to extravagant waste of money, and that subsequently the system had to be reconstructed. I think it due to myself to bring to the notice of the Select Committee that these statements are false in every particular. When the Glasgow Corporation Telephone System was commenced, in 1900, it was proposed in the first instance that I should be appointed as chief engineer and electrician, but subsequently, owing to the difficulty in finding an independent telephone manager of prolonged experience, I consented, at the request of the telephone committee, to act as general manager for a period of three years. At the expiry of this period I also, at the request of the telephone committee, consented to occupy that position for another term of twelve months, and again on the expiry of the second period for a third term of six months. I may explain that during the whole of this period I, with the consent of the corporation, was acting as engineer to all the other corporations owning telephone systems. This involved my absence from Glasgow very frequently, and as Glasgow was not a good centre from which to travel, most of the other corporations owning telephone systems being in the south, I did not see my

APPENDIX No. 1

way to renew the special engagement in Glasgow longer, and accordingly reminded the telephone committee that I had in the first instance only consented to act as general manager to oblige them, and regretted that I did not see my way to continuing in that position any longer. I, therefore, gave up my duties on June 1, 1904, after an engagement of four years and a half, during which the exchange had started from zero and had connected up over twelve thousand lines, and had been placed in a thoroughly remunerative position. On my leaving, the town council passed a resolution thanking me for my services. At the request of the telephone committee I consented to continue my connection with the department as consulting telephone engineer for one year. This year terminated on May 31st last, and at the request of the telephone committee I have again consented to act for them for another year. It will, therefore, be seen that all such statements are absolutely false, and if any doubt remains I would be glad if you would communicate with the town clerk of Glasgow.

The further statement that the expenditure has been extravagant and that the system has to be reconstructed are also false. A modification of the switch-room has been discussed, and the telephone committee have agreed to alter experimentally one of the small switch-rooms at a cost of £1,500, and that is all.

It is necessary for the Select Committee to be extremely careful about statements which are made from the monopolistic side, as the telephone interests both in Great Britain and the United States, have a secret service staff which controls newspapers and expert witnesses, packs public meetings and influences municipal elections for the purpose of obstructing the progress of independent telephony.

I should be glad if you would bring this before the Select Committee on Telephone Systems at the earliest possible opportunity, and have the honour to be,

Yours very faithfully,

A. R. BENNETT.

No. 162.

A. R. BENNETT, M.I.E.E.

QUEEN ANNE'S CHAMBERS,
BROADWAY, WESTMINSTER, X
LONDON, S.W., June 1, 1905.

Sir WILLIAM MULOCK,
Postmaster General,
Ottawa, Canada.

Select Committee on Telephones.

SIR,—In consequence of paragraphs appearing in the London papers that Mr. H. L. Webb had given evidence before your Committee in a sense damaging to the telephone undertakings of the post office and the municipalities in the United Kingdom, and that this evidence had produced a considerable impression on your committee, I took the liberty of cabling you on May 29 to the effect that Mr. Webb is a salaried officer of the National Telephone Company, and that he is also connected with American telephone interests. Mr. Webb is retained specially by the National Telephone Company to combat the municipalities and has been in the habit of giving evidence against them at the various local government board inquiries, with a view of preventing any further loans for telephone purposes being sanctioned. The tenor of Mr. Webb's evidence on these occasions is that the municipalities employ obsolete plant, that their systems are badly engineered, that their tariffs are on unremunerative scales, and generally that the municipal telephone systems are badly conceived and worse executed. Notwithstanding Mr. Webb's evidence in this sense, the local government board have never yet refused a loan to municipalities for telephone purposes, and it is notorious that the evidence runs counter to the experience of the sub-

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scribers to the municipal systems who, generally speaking, express the opinion that the service given by the municipalities is greatly superior to any with which they were acquainted under the National Telephone Company's monopoly. Furthermore, every municipality working has secured handsome balances of profit after paying interest and sinking fund on the capital outlay. As a rule, the loan is only granted for twenty-five years, Glasgow, which has thirty years, being an exception, so that the amount which has to be set aside for sinking fund every year is very considerable. Under these circumstances, it appears to me that the value of Mr. Webb's evidence is very greatly discounted and should be received by your committee with the greatest caution. The National Telephone Company's monopoly has been hardly hit in this country by the action of the municipalities, and if a large number of the municipalities had had the courage to undertake telephones the company would have been altogether destroyed, as experience shows that it is quite unable to hold its own in competition. The company, therefore, evince the greatest anxiety to discredit municipal enterprises, and as there is a strong link between the British and American telephone interests, it can be understood that every effort will be used and no expense spared to prevent municipal telephony taking root in Canada or the United States."

I would respectfully submit, therefore, that if your committee have any doubts as to the complete success of the British municipal systems, you should hear evidence from some witness qualified to speak authoritatively on all aspects of municipal telephony. As I stated before, I trust soon to be in a position to forward you copies of the various municipal accounts for the year ending March 31. These have not yet all been confirmed by the town councils, but I trust they will soon be confirmed and printed.

I have the honour to be,

Yours very faithfully,

A. R. BENNETT.

No. 162a.

15 DEY STREET,
NEW YORK, June 17, 1905.

The Chairman,
The Select Committee on Telephone Systems,
House of Commons, Ottawa, Ont.

SIR,—I notice there has been published a letter addressed to the committee by Mr. A. R. Bennett, making various personal references to myself. It seems to me that the tone of these remarks requires no comment or reply. I stated in my evidence before the committee that I was retained as consulting expert by the National Telephone Company, and stated my qualifications in full.

I have only to say, in commenting on Mr. Bennett's letter, that his statement that experience shows that the National Telephone Company has been unable to hold its own in competition with the municipal systems is contrary to the facts. In every town in Great Britain where there is municipal competition the National Company's system is much the larger of the two, and is gaining new subscribers at a more rapid rate.

Very truly yours,

HERBERT LAWS WEBB.

APPENDIX No. 1

No. 163.

E. J. HARRIS,
*Mayor.*J. W. PATTISON,
Sec.-Treas.

NEEPAWA, MAN., June 12, 1905.

To Sir WM. MULOCK,
Chairman Select Committee on Telephone Systems,
Ottawa.

SIR,—I have the honour to acknowledge receipt of your letter of 2nd instant, desiring to obtain the views of the council of the town of Neepawa regarding telephonic conditions in this locality. The town of Neepawa owns and operates its own telephone system. Your communication was placed before the council at its first meeting, the matter was discussed and a select committee of the council appointed to prepare a report thereon, which was presented and adopted by the council. Following is a copy of the report, also additional information directed to be furnished by the council:

'The select committee of the council of the town of Neepawa appointed to consider the letter from the select committee of the parliament of Canada appointed to consider the telephone systems, beg to report as follows:

'That having considered the letter referred to, they would suggest that the secretary-treasurer be instructed to furnish the committee with any and all information they desire. That they view with pleasure the fact of the government taking up this question, the outcome of which they hope may be a recommendation looking toward government-owned trunk long-distance lines. That we do not think, judging from experience with the Bell Telephone Company, that an arrangement between any municipal system and that company would be a satisfactory one to the municipality. In our case the municipal system has proved very satisfactory, as to service, cost and profit.

'Upon motion of Councillors Dinwoody and Gossell, report was adopted.

E. J. HARRIS,
'Mayor.'

You are already in possession of certain information relating to this system, which has been furnished from this office and is printed in your reports. The system in use is metallic circuit and was installed five years ago. It is run to a certain extent in connection with our electric lighting system. The cost up to the present time on capital account is \$12,000. We have a switchboard of the manufacture of International Company of Chicago, 200 drop. Number of 'phones installed, 180; charges are \$10 per annum for domestic, and \$20 for commercial. The average cost per 'phone installed and in operation is \$70. Cost of maintenance is \$16.50, which includes interest and sinking fund. At these rates the system is just self-sustaining. We have no long-distance or party lines in connection with our system. The Bell Company operate a long-distance line. They have about nine subscribers; they are building lines to the neighbouring localities.

Yours truly,

JAS. W. PATTISON,
Secy.-Treas.

No. 164.

PARKHILL, ONT., June 20, 1905.

Sir WILLIAM MULOCK, Ottawa.

HON. SIR,—Your communication to our clerk *re* telephone system, has been referred to me to reply to, by motion of the council.

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In 1894 five men—myself among the number—obtained a charter for a telephone company to be known as the Parkhill Telephone Company. We had 22 instruments in use, and had put up a line to a pleasure resort called Grand Bend, on Lake Huron, 14 miles north of this town, and had 5 instruments working on this line. We were charging \$1 per month for use of 'phones, and were making a little money when Mr. Scott, a special agent of the Bell Telephone Company, appeared upon the scene and told us we had to sell out to the Bell Company or they would put in instruments and put up a parallel line to Grand Bend and run it free. This we could not stand, so we had to sell out at less than it cost us. I was the secretary of the company.

Re CHARGES.

Now we pay \$15 each for our 'phones, and do not get very good attention, for the boy who attends to it is clerking in the store, and though there are 35 subscribers here, we have to wait until he waits upon his customers and then he answers the 'phone or call.

Re LONG-DISTANCE 'PHONES.

The price we consider almost prohibitive; 70 cents for 3 minutes to Toronto, 100 miles; and 15 cents per minute over time.

Three minutes is not long enough where breaks occur frequently. We are not satisfied with the charges for long-distance messages, nor with the time given.

Yours respectfully,

A. W. HUMPHRIES,
Mayor.

No. 165.

CITY CLERK'S OFFICE, HAMILTON, ONT.,
CITY HALL, June 15, 1905.

Sir: WILLIAM MULOCK, K.C.M.G.,
Postmaster General and Chairman of
Select Committee on Telephone Systems,
Ottawa.

SIR,—In reply to your circular letter of the 7th instant, respecting telephone systems, I have the honour to subjoin a memorandum submitted to the Minister of Justice on the question by representatives of the Ontario Municipal Association on February 3, 1903. The memorandum expresses fully the views of the association, and if legislation could be secured along the lines suggested therein we believe that it would greatly improve existing conditions.

I have the honour to remain,

Yours faithfully,

S. H. KENT,
Secretary, Ontario Municipal Association.

MEMORANDUM.

It is submitted that in any measure that may be passed by the Dominion parliament, provisions should be inserted to the effect following:—

1. That no telephone system should be established or any existing system extended in any city or town without the consent by by-law of the council of the municipality, which should have power to impose such terms, conditions and restrictions as to the use of its streets, the placing of poles and conduits and of wires and other appliances, in all streets and public places, and the rates of service to be charged, as the municipal council deem reasonable.

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2. That any company having a trunk line should be compelled to permit any such local telephone company or any municipality owning a telephone system to use such trunk line for long-distance messages or conversations, and to transmit the messages or permit the use of its long-distance system for such conversations upon terms to be mutually agreed on between the local company or municipality and the owners of the long-distance line, or in the event of their failure to agree, then upon such terms as might be imposed by order of the Governor General in Council, and that such trunk line company shall upon like terms deliver to or through such local telephone company any messages received for it or its customers over the trunk line or permit conversations to be had from the trunk line or over the lines of the local telephone company.

3. It would be still better in the public interest that the Dominion government should own and control all the long-distance lines, and permit them to be used by all local telephone systems under a reasonable tariff of rates to be fixed by the government.

4. Provision should be made that all telephone companies incorporated by or under the authority of the parliament of Canada should be subject to the expropriation of their local systems by the municipalities in which they are respectively situated, upon such terms and conditions as may be imposed by the legislature of the province in which any of such systems may be located.

5. That the lines of any telephone company now existing or hereafter established shall be placed underground in any city or town in such manner and to such extent as the council of the city or town may by by-laws require, the terms and conditions upon which such change in the companies' lines shall be made to be determined by by-law of the council, subject to appeal to the High Court of Justice of the province, if they are deemed by the company to be oppressive or unreasonable.

6. It should be declared in the proposed Act that nothing therein contained shall be so construed as to extend the existing rights of any telephone companies, or as recognizing that such companies now have rights, independently of the consent or control of the local municipalities in which their lines are constructed.

No. 166.

R. F. MCTAVISH,
Sec.-Treas.

D. M. URE,
Mayor.

CORPORATION OF THE TOWN OF MORRIS.

MORRIS, MAN., June 16th, 1905.

Sir WM. MULOCK, K.C.M.G.,
Ottawa, Ont.

DEAR SIR,—I am duly in receipt of your favour of the 2nd ultimo *re* information in regard to the telephone system. I may say that at our last regular meeting, the matter was fully taken up by the council and a committee appointed to give you all the information that could be got. Two years ago the Bell Telephone Company put in the local system, the long-distance a year previous. In the beginning they had 32 subscribers, and at the present time they have 42. Their rate for places of business and residence are respectively \$25 and \$20 per annum paid in advance, semi-annually and under a contract for three years. So far as the working of the Bell Telephone Company is concerned, local or long-distance, everything is in first-class condition, but we feel that the rates are exorbitant, and that one-half of the present rates should be sufficient. In long-distance the rate for three minutes to Winnipeg, a distance of 42 miles from this point is 40c. for day and 25c. after six p.m., and to St. Jean, a distance of six miles from this point, the rate for three minutes is 15c. At offices where the day rate is 25c. there is no reduction after six. From data at my disposal I infer that the revenue of the Bell Telephone Company at this office can not be less

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than \$3,500 per annum. The expense is small, they employ a local manager, one girl, and one man as inspector, or what they call their trouble man. He takes care of the company's lines, and puts in new 'phones that may be required in his district. He has full charge of all the 'phones from Morris to La-Salle and Gretna, on the Canadian Pacific Railway, and Rose-Bank, Emerson and Ridgeville, on the Canadian Northern Railway, a total mileage of some one hundred miles. Thus you see the cost for maintenance is very small. Should there be any extra work, such as erecting poles, &c., they have an extra man to do it, but this hundred miles, at the present time, is solely under the charge of the trouble man. Now, what our council think is this: that if the 'phone system could be taken over by the Dominion government and managed similar to the Customs and Post Office Departments, we believe the present rates could be reduced one-half, and that it then would be a paying revenue to the government, perhaps better than from any other department.

Yours respectfully,

D. M. URE,
Mayor.

SYNOPSIS OF LETTERS RECEIVED FROM MUNICIPALITIES.

No. 167.

Township of Draper, Ont.—No system in operation, council of opinion that telephone system in connection with post office would be a great convenience, but owing to the sparsely settled state of many townships does not consider municipalities could successfully establish and operate a system.

No. 168.

Municipality of Denbeigh, Abingfield and Ashby.—No railway, express, telegraph, or telephone facilities in this locality. Any one of these systems would be hailed with delight.

No. 169.

Municipality of Plum Coulee, Man.—'Bell' toll station only. Complain that service is slow. A customer may have to wait several hours to get the desired connection—there being only one line. Two wires could be fully employed.

No. 170.

Township of York, Ont.—'Bell' rates excessive. More residents would use telephones if rates were moderate. Council believes in government ownership of all long-distance lines within the Dominion.

No. 171.

Tarentorus Township, Algoma.—No telephone service here. 'Bell' line from Sault Ste. Marie to Thessalon passes through. Farmers asked for connection, but price demanded prohibitive.

No. 172.

Municipality of the County of Quebec, P.Q.—Secretary-treasurer writes, 'Bell' pay station, but no subscribers here. Charge to Quebec, 3½ miles, 10 cents for three minutes. Company quoted \$60 per year for telephone in writer's house. System gives satisfaction, but would be more telephones used if rates were lower.

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No. 173.

Municipality of Pipestone, Man.—No system here. Council forwards resolution favouring government ownership of telephones.

No. 174.

St. Andrews, N.B.—New Brunswick Telephone Company have 42 subscribers at \$20 per annum. Town council favours legislation giving municipalities protection in regard to use of streets, and favours government ownership of long-distance lines. Local rates are too high for service limited to the hours between 7 a.m. and 9 p.m. on week days only. Long-distance rates also too high. No rural service. Writer states that in Woodstock where there is competition, lower rates and all night service are given.

No. 175.

Dartmouth, N.S.—Board of Trade committee interviewed manager of Nova Scotia Telephone Company on subject. Service now fairly satisfactory. 140 telephones in use at \$40 business, and \$25 residence. \$5 extra for long-distance instrument. Merchants consider these charges out of proportion for the value received. It would be regarded as a great benefit if cost of service could be cheapened.

No. 176.

Township of Toronto Gore, Ont.—No service. Council very strongly favour any scheme to give service in rural districts at reasonable cost. Such service to fill requirements should have long-distance connection.

No. 177.

Township of Turnberry, Ont.—'Bell' service here. No further information.

No. 178.

Township of Derby, Ont.—'Bell' pay station in Kilsyth, no complaints or suggestions.

No. 179.

Wetaskiwin, Alta.—'Bell' operating here, at rates of \$30 business, \$20 residence, on three year contracts. 80 subscribers; no franchise. Council very much in favour of municipal ownership. Present system does not satisfy public requirements, both as to service and rates. All night service and considerable reduction in local rates desired. No rural service.

No. 180.

Essex, Ont.—'Bell' operating here. Unanimous opinion of council that local and long-distance rates so high that service is beyond reach of majority of people. Council believes if Dominion Government operated lines, public would willingly pay such rates as would be remunerative.

No. 181.

St. Boniface, Man.—Satisfied with 'Bell' service, but charges too high. Have 50 subscribers which form part of Winnipeg system.

No. 182.

Sandwich, Ont.—Subscribers not at all satisfied with 'Bell' service. Very little rural inter-communication because company has not encouraged farmers to take telephones. 40 subscribers.

No. 183.

Elizabethtown, Ont.—No service. Nearest telephone at Addison, six miles distant. Telephones much needed. Offered to furnish North American Telephone Company with poles to Glen Buell, $2\frac{3}{4}$ miles distance where main line passes through, but with no results.

No. 184.

Lennoxville, P.Q.—'Bell' and 'People's Company' operate here. 'Bell' has 40 telephones with free service to Sherbrooke. 'People's' have not so many. Service very good, but long-distance rates too high. Council considers free service should extend to nearby towns and that all telephone companies should be allowed connection with railways on equal terms.

No. 185.

Secretary-Treasurer, Maskinongé, Que.—Two companies here. 'Bell,' which gives long-distance and 'Maskinongé' having local service connecting to parishes and county. 'Bell' long-distance satisfactory. No local subscribers at the present time. Maskinongé Company's service not always satisfactory. These two systems are of great convenience to the public.

No. 186.

Municipality of Pembina, Man.—'Bell' long-distance only service. Rate to Winnipeg 102 miles 60 cents. Company has been canvassing for local subscribers at \$24 per year. Council considers these rates too high by half. Improvement of service also needed. Patrons frequently have long waits.

No. 187.

Yorkton, Assa.—System operated by local company for seven years. Highly satisfactory, but proprietors cannot supply would-be subscribers for lack of capital. Council appoints one director on board of company. Have 130 miles of rural lines, with 60 telephones; also 100 local subscribers. Rates: \$12 residence, \$25 business. Holders of \$25 stock have reduced rates. Ordinary service 6 a.m. to 10 p.m. Doctors, fire and police departments have continuous service. Subscribers have free service over rural lines. Non-subscribers pay 25 cents and \$1 for night service per conversation.

No. 188.

St. Scholastique, P.Q.—Public very well satisfied with 'Bell' service. 41 subscribers, rates from \$15 to \$25.

No. 189.

Township of Rama, Ont.—Line being built by 'Bell' Company from Orillia to Longford, on extreme west of township. Council considers a line with pay stations, through centre of township connecting other municipalities and towns would be great benefit, and would facilitate the selling of farm produce and the securing of medical aid, &c. Council also favours establishment of national telephone system.

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No. 190.

Brooke Township Council, Ont.—Clerk of council writes: 'Bell' Company has 25 miles of lines in township, but no connection with a single farm house. Rates too high. When company were building from Wattford to Alviston they asked the writer \$80 for connection, and very little reduction for service. Line passed 200 feet from house. Have private line connecting doctor, cheese factory and a farm house and writer's house. This is not much used except for doctor and veterinary surgeon. Farmers need rural free delivery of mail more than rural telephone service.

No. 191.

Ailsa Craig, Ont.—Council recommends in the strongest possible manner government ownership of the long-distance lines. Also object to companies having control of public highways. 'Bell' monopoly give fair local service at reasonable rates, but inflict antiquated telephones and single lines. Charges for metallic lines with long-distance telephones unreasonable. Company refused to establish office at Clandeboy, to which line runs, because inhabitants would not donate \$50, 'this being only one instance of unfair manner in which monopolies conduct their business.'

No. 192.

Killarney, Man.—Telephone system not installed long enough to decide as to quality of service. Long-distance rates too high. Local rates business \$24, residence \$13.

No. 193.

Riverside, Man.—Council forwards resolution objecting to monopoly in telephones, and desiring that municipality should have a voice as to the placing of 'phones, &c.

No. 194.

Weston, Ont.—Council recommends government ownership of long-distance lines. 'Bell' service good, but does not go far enough without you pay well for it. Fifteen telephones at old rates of \$15 per year. New ones being charged \$20 per year. Charge of 15 cents for three minutes' conversation with Toronto, five miles distant, too high, hence there are few residence telephones.

No. 195.

Peterborough, Ont.—'Bell' system has 660 subscribers at rates of \$25 for business and \$20 for second connection for same subscribers, \$5 extra for long-distance equipment. Residence party line rates, \$20, \$18 and \$15, with 2, 3 or 4 subscribers on same line. The Canadian Machine Telephone Company's exchange will be operating in a few days. Rates: business \$20, residence \$15, or \$30 for the two combined. Since franchise has been given to the Machine Company, the 'Bell' Company has been active in extending lines to rural districts and reducing local residence rates. Council strongly recommends government ownership of long-distance lines, and that municipalities be given control of streets.

No. 196.

Chatham, Ont.—'Bell' system has 490 subscribers. Rates: business, \$25; residence, \$20, \$5 extra for long-distance equipment. \$5 extra also charged on one-year contracts. Service given by local staff is of best quality. Company operate two rural lines and is installing a third, at local rates, if not less than six telephones on same line. City council considers long-distance rates too high, and that 'Blake' equipment should be replaced by modern appliances, without increasing charges, if not at lower rates.

No. 197.

Raglan, Ont.—Council believes government should control telephone system. No service in locality at present.

No. 198.

Dalhousie Lake, Ont.—Has 14 miles of line built by people and managed by committee running through part of Dalhousie, North Sherbrooke and Palmerston, giving good satisfaction. Have connection with North American Telegraph Company. Have fairly good terms and very good service.

No. 199.

Township of Byerson.—No telephones in township, but if put in and charges low would be largely used.

No. 200.

Portneuf County.—The Portneuf Telephone Company is extending wires in this parish, but people not satisfied as there is no communication with Quebec. 'Bell' office three miles distant.

No. 201.

County of Rouville, Que.—Service satisfactory, but three-minute limit of conversations too short, considering rate charged.

No. 202.

County of Pontiac, Que.—Council believes more people would have telephones if rates were lower—'Bell' operator refused any information regarding rates, &c. Two years ago local company operated in part of county at \$12 per year, including service over whole district. Bell acquired this system—now charges \$15, with service limited to one town only. The old company had more 'phones than the 'Bell.' The 'Bell' Company give good service but have so few telephones that subscribers complain that service is practically useless at \$15 with such limited connections. In this parish, Bryson, there are only two telephones, one in each hotel.

No. 203.

New Glasgow, N.S.—Nova Scotia Telephone Company charges \$30 for business, \$25 for residence, which is considered too high. No complaint as to service. The Egerton Company was organized recently; since then the Nova Scotia Company have put in an up-to-date telephone. No rural service as yet. A local company, mostly farmers, recently organized to connect this exchange with farming district as far as East River, St. Mary's, 35 miles distant.

No. 204.

Maple Creek, N.W.T.—Has no service, but council is unanimously in favour of a national system.

No. 205.

Bixley, Ont.—'Bell' operating in west of township. The eastern part requires service. Long-distance rates too high.

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No. 206.

Halifax County, Nova Scotia.—Council is in favour of government ownership of long-distance lines. Service of rural systems connecting with the Nova Scotia Company is satisfactory.

No. 207.

North Plantagenet, Ont.—'Bell' service not satisfactory—rates high. Too long waits for connection. Rates \$25, limited to this village at present. One subscriber in village, two at the station. Rural facilities much needed. Writer suggests that if Plantagenet had free service with all stations in same township, it would benefit rural districts.

No. 208.

Beaverton, Ont.—'Bell' service fairly satisfactory. Business and residence, \$20; farmers, under existing contracts, \$15; under new contracts, \$20. Fifty-eight telephones, including eighteen farmers. No night service. Contracts being only taken for one year, which leads council to believe that it is intended to increase rates. Formerly a local company operated here, but sold to the 'Bell.'

No. 209.

Duoro, Ont.—'Bell' service gives general satisfaction, but writer considers charge of 15c. to Peterborough, 6 miles, excessive. The farmers furnished the 'Bell' Company with poles free, for this line.

No. 210.

Sullivan Township, Ont.—Privately owned line operating between Chelsea and Desboro. Charges 25c. per message. Is a convenience when working, but is often out of order. Favour government control of telephone systems.

No. 211.

County of Halton, Ont.—'Bell' Company has 38 subscribers. Service satisfactory but limited for want of greater facilities in rural districts.

No. 212.

Dysart, Ont.; Ryde, Ont.; Ratter and Dunnet, Ont.; Hanley, Ont.—No service.

SYNOPSIS OF GENERAL LETTERS RECEIVED.

No. 213.

H. H. Millie, Government Telegraph Agent, Kelowna, B.C.—Twelve telephones here, owned by private individuals. Cost of maintaining same 80c. per telephone per year. Government owns long-distance line which operates here and gives perfect satisfaction.

No. 214.

J. B. Melcher, Melcher's Distillery Company, Berthierville, Que.—Stating that the 'Bell' Company is neglecting its business at Berthierville and charging too high rates, considering the number of telephones. Complains of delay in providing writer with service, and trusts there will be change before long.

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No. 215.

Arthur H. Burton, Montreal, Que.—Stating that 'Bell' Company compelled his sister-in-law to take the long-distance instrument at increased rate, and also refused to supply writer with 'Blake' instrument until he pressed the matter by complaining to the city hall and calling at the head office of the company. Also subsequent letter stating that if the 'Bell' Company deny the facts he will send an affidavit and other proofs.

No. 216.

M. H. Overholt, The Fernside Fruit Farm, Jordan, Ont.—Stating that private line has been running for 15 years over a distance of 12 miles, connecting with St. Catharines. The line had connection with the 'Bell' Company, but was cut out and further connection refused. Two years ago a company was about to be formed, when the 'Bell' Company promised service at \$15 and blocked the scheme. The 'Bell' Company have taken all the subscribers of this line with the exception of the writer, who is keeping it up alone. The 'Bell' Company are now charging \$20 per year. The writer asked Mr. Sise to give him connection and he would bear the cost, but was refused. The writer states that the 'Bell' Company asked Mr. Rittenhouse to visit Ottawa and testify that the company was giving good service; they did not, however, give any in the Pelham district until they were compelled to do so. The writer asks for a grant of \$200 or \$300 to complete all the private lines and get new 'phones and he would furnish the rest to put this line in good running order. He also asks what power he has to put telephones and whether the 'Bell' Company is compelled to give him connection. When he was running the private line, the telephone did not cost him over \$3 per year.

No. 217.

I. R. Edmands, Union Carbide Co., Sault Ste. Marie, Mich.—Enclosing newspaper clipping giving notice of the incorporation of the Home Telephone Company, of San Francisco, with a capital of \$10,000,000, for the establishment of an automatic telephone system in San Francisco.

No. 218.

F. V. Warmal, Seeley Manfg. Co., Montreal, Que.—Contradicting statement made by the Bell Company that a five-cent piece is never lost when using slot machine telephones. The writer states that he loses money in this way three or four times daily, and explains that the operators refuse by order of the company, to obtain the person required as in the case of long-distance service, hence if the man wanted at a subscriber's is out, the coin is lost.

No. 219.

Home Telephone and Telegraph Co., San Diego, California.—This company operates the Strowger Automatic System. Has 1,350 subscribers and trouble department only reports average of 7 or 8 cases of trouble per day. From standpoint of first cost, operation, expense of maintenance, the system is very satisfactory.

No. 220.

Lafleur, McDougall & Macfarlane, Montreal, Que.—Enclosing copy Journal Telegraphique, containing Swedish Telephone Tariff.

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No. 221.

Hector Champagne, St. Gabriel, de Brandon, P.Q.—Writer is one of 12 shareholders owning system which has been operating for 12 years at St. Gabriel de Brandon, Que. The circuit extends six miles, and has 25 subscribers, paying \$8 per year, with a charge of 10 cents for conversation to adjoining parishes. The company pays forty per cent of revenue to central office employees, the balance pays for repairs and 6 per cent interest on capital. The Canadian Pacific has telephone in same central office. Has offered to buy this system, but shareholders do not care to sell, as telephones are needed, and they fear higher rates.

No. 222.

From H. A. Turner, M.D., Millbrook, Ont.—The writer built this line for private practice and it was used by community, without charge, up to May, 1903, when a contract was made with the 'Bell' Company for interchange of service which has been found satisfactory. Local charge on this line, 10 cents per conversation. All instruments and supplies purchased from Bell Company.

No. 223.

Dr. Fisher, Vittoria, Ont.—The writer states he is under contract with the 'Bell' Company for three years for interchange of service. The general feeling is that the present service is too expensive and that government service at lower rates would be hailed with satisfaction. A number of farmers and others in locality would like rural service and connection with the nearest town. This system connects Vittoria with Fisher's Glen, Ont., $3\frac{1}{4}$ miles distance, and has four telephones.

No. 224.

J. A. SPRAGUE,
Pres. and Manager.

J. G. SPRAGUE,
Supt. and Constructor.

SPRAGUE TELEPHONE COMPANY.

DEMORESTVILLE, ONT., June 13, 1905.

Sir WM. MULOCK,
Postmaster General and Chairman Telephone Committee.

DEAR SIR,—In compliance with your request I herewith, so far as I can, furnish you with information asked for. We are doing business in a small way with our own private capital, and a start in the telephone business was made necessary on account of being unable to get telephone connection from the companies doing business here, ('Bell' and 'North American' companies. Practically one under the 'Bell' management). We are living about three miles from the post office, telegraph and telephone offices and we wanted telephone communication, but were unable to get it, so we decided to put up a private line to connect our residence with the post office, which we did, and applied to the American Company to go into their office, which they refused. We then put an instrument in the two doctors' offices, and in the grocers. We were not long in finding the benefit, and other firms wanting telephones, we started putting in different lines and connecting with the village of North Port. We soon found out that the 'Bell' Company were after us and our subscribers were notified by the 'Bell' Company's solicitor, of Toronto, threatening prosecution for infringement of patent on their bridging system. However we kept on doing business, and will continue to the extent of our finances, and we are now connected with the 'Bell' system, which we find a great advantage.

The name of our company is the Sprague Telephone Company, it is a private enterprise confined to myself and son. We started first in the year 1901, and operate in two townships, having a population of about 5,000. We have installed 190 instruments and have 52 more ready to install. We have no one station lines, neither have any of our subscribers 'Bell' telephones. We have one hundred and sixty-three residence telephones, and 52 orders now under construction; also 5 doctors, 11 grocers and general stores, 4 post offices, 3 cheese factories, and 4 ministers of different denominations. We have 30 miles of toll line. The average cost per subscriber's station is \$50, and the average cost per mile of toll line is \$65. All our line as yet are grounded single iron wire. We have no subscribers on toll line, of which there are 30 miles. We use nothing but long-distance instruments (Bridging) manufactured by the Chicago Company of Elkhart, Ind., the Wm. Abbott Company of Cleveland, Ohio, and the Farr Company of Chicago, Ill. The number of rural telephones is one hundred and sixty-three, also 52 partly equipped. Non-subscribers pay 5 cents, and if switched on other lines 10 cents, which gives them conversation with any of our subscribers. We have only one toll line connecting our system with the 'Bell' over which we have joint control, and by arrangements we have a 15 cent rate which gives connection with the 'Bell' subscribers in the town of Picton. We charge a yearly rental of \$10, which entitles the subscribers to the use of the whole system. We pay no dividend, but put the revenue into the business. We have no bonds. We estimate the depreciation at $3\frac{1}{2}$ per cent. We have no funds, except private capital.

We have a contract with the Bell Telephone Company to connect with their system at the town of Picton by a toll line from our central office, the charge being 15 cents for three minutes' conversation. This gives our subscribers connection with the Bell system by paying their regular rate, which is a great advantage, because we have access to their trunk lines, which all independent companies should have. I trust the government will see the importance of this matter.

Before we started the Bell Company had only two instruments installed in the township of Sophiasburg. They were toll offices, one at North Port, one at Demorestville. They had one in the township of Ameliasburg, making three altogether. They have now two in township of Sophiasburg and ten in the township of Ameliasburg.

They had no subscribers before competition. Now they have eight residence telephones. The Bell rates were, and still are, \$25 per year.

We manage largely our own business and our own installing. Our labourers we pay \$1.25 per day, with board. At the main central office we have one of our own family, in the other we have a lady, at \$50 per year.

We use the plug switchboard, and have two centrals, one with eleven lines and the other with five lines, the two centrals being connected by a trunk line. Our system is 'party line,' that being the only practical one for rural telephone service. We have from 12 to 14 subscribers on each line. More than that number would make confusion, and would prevent prompt service. We use nothing but the best long-distance instrument 1,600 ohm. Bridging, which cost us about \$15 each duty paid. We are somewhat handicapped by the duty, which I think should be removed, as the 'Bell' people are connected with the only manufactory of instruments in Canada, and they keep the prices equal to foreign manufacture, duty added. I think it would be better for the government to help the people instead of protecting the manufacturer. Our lightning arrestors, insulators, side block and pins we get from Chicago cheaper, duty added, than we can here. Poles we use (cedar) which are scarce in this part of the country, although we have been able to get, so far, what we have used at prices ranging from 50 cents to 80 cents apiece, 25 feet, 5-inch top. Side arms we get here at about 18 cents apiece, 3 x 4, five feet long.

I hope and trust, for the benefit of the people of this country, the government will take over the trunk lines or control them in some way so that independent companies can get connection, which would do more for the telephone service than anything else. Independent companies could then connect with trunk lines and give all the advantages

APPENDIX No. 1

that the companies owning the trunk lines now do. Independent companies would be operating all over the country, and the farming community could then have telephone service at a reasonable rate. It would allow competition to step in and regulate prices. Farmers must have cheap telephone service, as the average farmer cannot pay more than \$10 per year. On our lines we are getting 50 per cent of the farmers, and if the cost was \$15 or \$20 per year you could not get 10 per cent. In the township of Sophiasburg the 'Bell' Company charge \$20 per year and have only one subscriber, whilst we are charging \$10 per annum and we have 125 subscribers, and orders for more. So you see it is necessary to give cheap service to farmers, and yet there is no class of the community that require the telephone more than the farmers. Hoping your labour may result in good for the people of this county,

I remain, yours, &c.,

SPRAGUE TELEPHONE COMPANY,

Per JOHN A. SPRAGUE, *Pres.*

No. 225.

OFFICE OF THE COUNTY CLERK,

WELLAND, ONT., June 13, 1905.

The Hon. WILLIAM MULOCK,
Postmaster General,
Ottawa.

SIR,—By resolution of council of the county of Welland I am instructed to forward you the inclosed report of the council, setting forth their views, as requested by communication received from you *re* 'the telephone service.'

Yours respectfully,

ROBERT COOPER,

County Clerk.

No. 225a.

To the Warden and Council of the County of Welland :

GENTLEMEN,—Your special committee appointed to consider the communication from the Postmaster General *re* telephone service, beg leave to report as follows.—

Telephone service in this county is entirely by the Bell Telephone Company, whose charges are too high and hours too short in villages and towns. Service is not good in the rural municipalities, there being on many lines too many subscribers. There are also many complaints as to lack of promptness in service. Rates were increased recently and time of communication shortened from five minutes to three minutes. Were service improved and rates lowered on both long and short-distance service, list of subscribers would be largely increased. Residents in rural municipalities would greatly appreciate good telephone service.

Port Colborne and Welland subscribers on one side of canal are charged five dollars more for service than subscribers on the opposite side per year. The telephone company's excuse being because of cable across the canal, which they must have in any event. The placing of wires, whether above ground, in cities, towns and incorporated villages, should be entirely under the control of the municipality, as well as the placing of poles in rural municipalities.

All of which is respectfully submitted.

J. HARRISON PEW, *Chairman.*

CHAS. HENDERSON,

J. K. HENDERSON,

C. E. STEELE.

Certified a true copy.

ROBERT COOPER,

County Clerk.

4-5 EDWARD VII., A. 1905

No. 226.

(Translation.)

OFFICE OF THE MUNICIPAL COUNCIL OF THE COUNTY OF LABELLE, P.Q.

THURSO, P.Q., June 22, 1905.

The Honourable
Sir WILLIAM MULOCK,
Ottawa.

HONOURABLE SIR,—A meeting of the municipal council of the county of Labelle was, as mentioned in my letter of the 14th instant, held on the 10th instant. The request made by your honourable committee was duly communicated to his honour the warden and to the several mayors of the county of Labelle.

The county of Labelle not being favoured with telephone systems, the council did not, under the circumstances, deem it expedient to adopt any resolution authorizing me to transmit to your honourable committee the desired information; and deplore that the county has, up to this date, through failure on the part of the telephone companies, been neglected, and venture to express the hope that the federal government will, if possible, endeavour to ameliorate present conditions.

Your list of questions was given consideration by certain mayors whose municipalities are favoured by a telephone system which is confined to restricted and limited distances, such as in the villages of Papineauville, Masson, St. André Avelin, Ripon, Cheneville and Montebello, and the townships of Suffolk, Portland, Hartwell and Ponsonby, whose municipalities will communicate to your honourable committee the information which it desires to obtain from each of them,

I have the honour to be, honourable and dear sir,

Your devoted servant,

J. ROBILLARD, M.D.,
Sec.-Treas.

No. 227.

BRIGHTON CORPORATION TELEPHONE DEPARTMENT,
TOWN HALL, BRIGHTON, June 15, 1905.

SIR,—I have received your letter of the 3rd ultimo, and have pleasure in forwarding herewith replies to the list of questions enclosed with your communication.

I enclose herewith print of a report of the Telephones Committee, dated the 15th August, 1902, which gives a brief history as to the reasons which prompted the corporation to establish a telephone system. The principal reasons which prompted the corporation to apply to the Postmaster General for a license to carry on a telephone undertaking was the excessive charges of the National Telephone Company and the inefficiency of the service.

I also enclose copy of the balance sheet for the first complete year of the Corporation Telephone Undertaking.

I am, sir, your obedient servant,

HUGO TALBOT,
Town Clerk.

Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General,
Ottawa, Canada.

APPENDIX No. 1

No. 227a.

BRIGHTON CORPORATION—*Continued.*

The system operates in the municipality of Brighton, England. Population: Census, 1901, 123,478; estimated to middle of 1904, 126,286.

The term of the Postmaster General's license is from May 1, 1901, to April 30, 1926.

	No. of Subscribers.	No. of Public Telephones.	No. of Extension Telephones.
Brighton.....	1,213	83	291
Purgess Hill.....	68	5	6
Portslade.....	28	5	6
Shoreham.....	12	2	Nil.
Steyning.....	1	2	"
Hurstpierpoint.....	9	1	"

The total number of telephones is 1,888. The number of party lines 43. The number of telephones on party lines 78. The number of inside extension telephones 144. The rates are: Business and residence, £5 10s. 0d. (\$26.79) per annum for unlimited service; £3 0s. 0d. (\$14.61), four party line; £4 4s. 0d. (\$20.46), two party line per annum unlimited. Inside extensions, £1 3s. 3d. (\$5.67) per annum. Measured service, £3 10s. 0d. (\$17.05) per annum and one penny (2 cents) per outward call.

These rates are for subscribers up to two miles from exchange.

The service is continuous, day and night, including Sunday. One penny per call is charged to non-subscribers for local conversations.

Subscribers can converse throughout the United Kingdom by means of the post office trunk lines, on payment of the usual long-distance charges.

Wall and desk instruments fitted with combination transmitter and receiver are used by subscribers.

Subscribers lines are metallic circuit. Copper underground and bronze overhead.

The whole of the main routes are underground and are distributed to the subscriber's premises overhead.

£49,753 7s. 9d. has been expended on the system up to date. The revenue per annum is £7,788 8s. 6d. The expenditure per annum is £6,374 2s. 6d., including management, operating expenses, maintenance, sinking fund and depreciation. Three per cent interest is paid on capital, and $3\frac{1}{8}$ per cent sinking fund is set aside, leaving a surplus of £413 14s. 4d. (first year of working). The surplus is set aside for depreciation. As the whole of the loan is re-payable within the life of the plant it is considered unnecessary to have any further depreciation fund.

About £80 per annum is paid for way-leave privileges.

The wages paid are: Manager, £300 per annum. Assistant manager, £150, rising to £200 per annum. Superintendent of outside engineering, £156 per annum. Superintendent of inside engineering, £130 per annum. Gangs' foremen, 35s. per week. Instrument men, 25s. to 30s. per week. Wiremen, 24s. to 28s. per week. Operators, 6s. to 20s. per week, according to service and ability.

The cost of material is: Central exchange equipment, £4,356. Present capacity, 2,088; ultimate, 5,000; lines connected, 1,296. 30 line switchboards ultimate capacity 50 for sub-exchanges, £31 each. Wall telephones, £2 6s. 3d. Desk telephones, £2 9s. 9d. 312 pr. 22s. D.C. cable 7s. 7d. per yard; 312 pr. 1s. 20d. D.C. cable at 9s. 11d. per yard. Bronze wire 10½d. per lb. Creosoted Norwegian fir poles, 28 ft. 20s. 9d.; 70 ft. £9 15s. 0d. Karri wood cross-arms at £90 per thousand. Straight long bolt insulators at 31s. 10d. per thousand. Two ft. octagonal porcelain duct, 4 inches at 11d. per length. Nine ft. cast iron pipes, 3 inches, at 4s. 7½d. per length.

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The National Telephone Company has 2,061 telephones, 724 party lines. Before competition they had about 1,100 telephones, and no party lines.

Municipal subscribers.—No connection locally with 'National' Company's subscribers, but they connect with 'National' in other towns through the post office trunk lines. A terminal fee is charged on each call varying from 3d. to 6d., according to the amount of trunk fee.

Four hundred and seventy-five subscribers have the telephone of both systems.

Accounts for long-distance charges are rendered monthly by post and payment is received by post.

The system is central battery calling and clearing. The subscriber calls the exchange by putting a temporary earth on one leg of the line, thus dropping the calling indicator, on replacing the telephone on the cradle the temporary earth is again put on, thus dropping the clearing indicator.

APPENDIX No. 1

No. 227b.

I.—STATEMENT as to Loans Authorized for the Purposes of the Undertaking prior to March 31, 1905.

AMOUNT SANCTIONED.			AMOUNT BORROWED.				Amount repaid.	Amount Sanctioned but not Borrowed.
Date of Sanction.	Amount.	Cash.	Discounts and Costs of issuing Stock.		Total Debt created.			
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		£ s. d.	
1902.....	42,000 0 0	42,000 0 0	3,859 9 1		45,859 9 1	(See Balance Sheet No. VI.)	—	
1904.....	4,666 0 0	—	—		—		4,666 0 0	
	46,666 0 0	42,000 0 0	3,859 9 1		45,859 9 1		4,666 0 0	

Dr.

II. REVENUE ACCOUNT FOR THE YEAR ENDED MARCH 31, 1905.

Cr.

1903-4.		EXPENDITURE.	1903-4.		INCOME.		
£	s. d.		£	s. d.		£	s. d.
		<i>Operating Expenses.</i>			<i>Rentals and Tolls.</i>		
		Central Exchange Expenses—			307 4 6 Exchange rentals.....	5,995	15 11
118	5 1	Wages of operators and mechanics...£	501	3 7	65 9 5 Private rentals.....	287	9 11
27	5 1	Fuel, light and miscellaneous charges..	143	13 2	5 3 0 Message rate tolls.....	114	8 6
			644	16 9	2 11 7 Public telephones—Call office tolls.....	137	19 4
11	18 4	Burgess Hill sub-exchange expenses	50	17 5	17 17 10 Terminal fees receivable.....	118	10 5
		Portslade " "	21	2 1			
		Shoreham " "	1	15 0			
		Steyping " "	1	9 0			
		Hurst " "	0	4 6			
		Commission on call office receipts.....	34	18 2			
11	6 9	Wayleave rentals.....	59	5 8			
59	4 8	Terminal fees payable.....	366	7 5			
0	17 11	Post office commission.....	5	15 8			
31	10 11	Post office royalty.....	628	1 8			
£	260 8 9	<i>Repairs and Renewals.</i>	£	1,814 13 4			
		Repairs, maintenance and renewals, viz:—					
4	6 4	Ducts, lines, poles and overhead equipment....	284	10 11			
		Buildings.....	5	17 2			
5	0 6	Instruments.....	193	4 3			
		Plant and tools	12	12 9			
£	9 6 10		£	496 5 1			
		<i>Rents, Rates and Insurances.</i>					
17	10 0	Rents.....	174	16 8			
1	0 8	Rates.....	26	15 7			
6	10 6	Insurances.....	10	15 9			
£	25 1 2		£	212 8 0			
		<i>Management Expenses.</i>					
51	11 10	Salaries of manager, assistant manager, storekeeper and clerks.....	705	13 0			
		Stationery and printing.....	151	11 8			
22	8 9	Registrar of stock and stamp duty on stock.....	45	14 3			
6	3 7	General establishment charges.....	149	8 2			
		Proportion of town hall establishment charges and salaries of general staff	171	10 11			
4	0 6	Law expenses.....	55	5 10			
£	84 4 8		£	1,279 3 10			

£ 379 1 5	£ 3,802 10 3	
37 15 1 Balance carried to net revenue account (No. III)	2,985 6 7	
£ 416 16 6	£ 6,787 16 10	£ 6,787 16 10

Dr.	III. NET REVENUE ACCOUNT.	Cr.
	£ s. d.	£ s. d.
Interest on capital—		
Interest on redeemable stock paid to loan fund and accrued due to March 31, 1905	1,093 14 4	
Income tax—		
Income tax on profits	25 13 0	
Bad debts—		
Amount transferred to suspense account to provide for bad debts	125 0 0	
	1,244 7 4	
Balance carried to appropriation account (No. IV.)	1,740 19 3	
	£ 2,985 6 7	£ 2,985 6 7

Dr.	IV. APPROPRIATION ACCOUNT.	Cr.
	£ s. d.	£ s. d.
Sinking funds—		
Sinking fund contributions paid to loans fund and accrued due to March 31, 1905	1,327 4 11	
Balance unappropriated at March 31, 1905, to be carried forward . .	413 14 4	
	£ 1,740 19 3	
		£ 1,740 19 3

EXPENDITURE.	To March 31, 1904.		From Apr. 1, 1904, to Mar. 31, 1905.		Total.		INCOME.	To March 31, 1904.		From Apr. 1, 1904, to Mar. 31, 1905.		Total.		
	£	s. d.	£	s. d.	£	s. d.		£	s. d.	£	s. d.	£	s. d.	
Building switchroom.....	1,059	4 4	79	3 1	1,138	7 5	Loans raised.....	42,000	0 0			42,000	0 0	
Underground construction.....	12,382	18 2	6,999	18 0	19,382	16 2								
Overhead ".....	4,604	8 10	5,065	4 8	9,669	13 6								
Exchange ".....	1,787	4 1	2,569	15 7	4,356	19 8								
Instruments.....	3,054	12 3	2,951	13 1	6,006	5 4								
Plant and tools.....	357	16 9	97	10 1	455	6 10								
Office furniture.....	257	5 0	64	11 4	321	16 4								
Preliminary and general expenses	1,430	5 8	558	6 10	1,988	12 6								
Engineer's commission.....	1,192	17 6	810	10 10	2,003	8 4								
	26,126	12 7	19,196	13 6	45,323	6 1	Balance of capital account, March					4,885	8 0	
Sundry stores.....					1,562	1 11	31, 1905.....						4,885	8 0
					£ 46,885	8 0							£ 46,885	8 0

Mar. 31, 1904.		LIABILITIES.	Mar. 31, 1904.		PROPERTY ASSETS AND OUTLAY.					
£	s. d.		£	s. d.		£	s. d.			
		<i>Redeemable Stock.</i>			<i>Cost of Existing Works, &c.</i>					
45,859	9 1	3 per cent stock—			Amount expended for works, &c., viz.:—					
		Issue No. 1.....	45,859	9 1	1,059	4 4	Building switchroom.....	1,138	7 5	
		Amount appropriated for redemption of stock..	1,318	17 4	12,382	18 2	Underground construction.....	19,382	16 2	
£ 45,859	9 1	Balance to be provided for.....	£ 44,540	11 9	4,604	8 10	Overhead construction.....	9,669	13 6	
					1,787	4 1	Exchange construction.....	4,356	19 8	
		<i>Floating Liabilities.</i>			3,054	12 3	Instruments.....	6,006	5 4	
3,550	4 11	Exchange rentals—proportion applicable to year			357	16 9	Plant and tools.....	455	6 10	
		1905-6.....	4,961	14 6	257	5 0	Office furniture.....	321	16 4	
81	13 1	Private rentals—proportion applicable to year 1905-6	145	1 11	1,430	5 8	Preliminary and general expenses.....	1,988	12 6	
231	9 0	Interest accrued due.....	334	18 11	1,192	17 6	Engineer's commission.....	2,003	8 4	
974	15 1	Sinking fund—proportion of appropriation accrued			£ 26,126	12 7			£ 45,323	6 1
		due.....	984	0 0	608	11 11	Sundry stores.....	1,562	1 11	
		Bad debt suspense account—balance.....	43	1 0	£ 26,735	4 6			£ 46,885	8 0
		Deposits.....	2	4 0						
4,904	14 1	Sundry creditors.....	2,612	11 7			<i>Discounts and costs of issuing stock.</i>			
£ 9,742	16 2		£ 9,083	11 11	3,859	9 1	Discounts and cost capitalized.....	3,859	9 1	

Appropriation Account.

Floating Assets.

..... Balance at credit thereof.....	413 14 4
	<u>£ 54,037 18 0</u>

Surplus Account.

..... Contributions to loans fund for redemption of stock and earnings of fund to March 31, 1905.....	1,318 17 4
---	------------

1,986 4 5 Exchange rentals due and unpaid.....	3,322 9 7
24 8 3 Private rentals " ".....	119 8 3
5 3 0 Local tolls " ".....	59 5 11
25 5 3 Removals and sales " ".....	71 8 2
79 10 4 Trunk and telegram fees due and unpaid.....	279 2 7
..... Call office tolls.....	9 18 9
..... Post office royalty—proportion applicable to year 1905-6.....	496 3 6
30 0 0 Manager's advance.....	30 0 0
3,623 18 9 Cash in treasurer's hands.....	224 1 6
17,000 0 0 Cash on deposit.....	
	<u>£ 4,611 18 3</u>

Revenue Account.

1,878 1 2 Balance at debit thereof.....	
	<u>£ 55,356 15 4</u>

£ 55,602 5

£ 55,356 15 4 £ 55,602 5 3

£ 55,356 15 4

H. M. STEVENS, F.S.A.A.,
Borough Accountant.

No. 227c.

COUNTY BOROUGH OF BRIGHTON.

REPRINT OF THE REPORT OF THE TELEPHONES COMMITTEE OF THE 10TH APRIL, 1901.

The telephones committee report that with a view to carrying into effect the license about to be granted by the Postmaster General, empowering the council to carry on telephone exchange business in the Brighton area, they have obtained from Mr. Bennett an estimate of the cost of installing the necessary system.

The council will remember that in June last, the committee submitted a preliminary report prepared by Mr. Bennett in accordance with the instructions of the council, of the cost of the provision of a 1,200 and 2,000 line exchange respectively, for the purposes of the application to the Postmaster General for the necessary license, and that the council adopted the committee's recommendation thereon, which was as follows:—

'That application be made to the Postmaster General, for a license to the corporation to establish and carry on a system of public telephonic communication in the Brighton Telephone Exchange area for a period of 25 years, the maximum rates of charges for exchange subscribers to be as follows:—

' For unlimited service	£7 0 0
' For limited service	3 10 0 and toll of 1d. a call.

and that the councils of the several districts included within the proposed exchange area be requested to give their consent to the application.'

In the same report, estimates, furnished by Mr. Bennett, were submitted, of the probable income and expenditure in respect of a 2,000 and 1,200 line exchange respectively. The particulars of which, for a 2,000 line exchange, are as under:—

Estimate of Revenue.

2,000 subscribers at £5 5s. per annum, average receipt.	£10,500
80 public telephone offices, at 3s. per week, average receipt.	624
Extra mileage charge on long lines, say 80 miles at £4.	320
Commission on telegrams, express letters, &c., telephoned to the post office.	25
	£11,469.
	£11,469.

*Estimate of Working Expenses.**Staff.*

Manager and engineer	£250 0 0
Assistant engineer	130 0 0
Outside superintendent	117 0 0
Inside superintendent	117 0 0
Storekeeper	91 0 0
3 inspectors, at £78 average	234 0 0
2 improvers, at £26	52 0 0
4 clerks, at £65.	260 0 0
2 boys, at £26.	52 0 0
Chief operator (lady).	91 0 0
Assistant operator (lady)	52 0 0
44 girl operators, at 10s. per week average.	1,144 0 0
5 night and Sunday operators, at 12s. per week	156 0 0
Travelling and allowances	50 0 0

APPENDIX No. 1

General.

Rent of central switch-room and offices or interest on cost of site and building	206	0	0
Rent of 4 branch switch-rooms at £20	80	0	0
Post office royalty, 10 per cent on £11,444	1,144	8	0
Local assessments	527	0	0
Corporation establishment charges	200	0	0
Stationery, printing, stamps, office sundries	100	0	0
Light, heat, water, cleaning, insurance	200	0	0
Way-leaves and roof repairs at 4s. 6d. per line per annum	478	8	0
Repairs and shifts at 5s. 6d. per line per annum	582	8	0
Interest at 3 per cent on £38,480	1,154	8	0
Sinking fund at 3 per cent on £38,480. This, with interest on accumulations at 2½ per cent, will pay off the whole capital in 25 years	1,154	8	0
Depreciation and renewal fund, 2½ per cent on £38,480—3 per cent, with interest on accumulations at 2½ per cent would renew the whole system in 25 years. But the old material taken out would be worth at least ½ per cent, so that 2½ per cent will renew the whole system in 25 years	962	0	0
Income tax	100	0	0
Commission on public telephone receipts	52	0	0
Contingencies	250	0	0
	£9,981	0	0
Add on account of lines partly constructed:—			
Interest at 3 per cent on £4,800	144	0	0
Sinking fund at 3 per cent on £4,800	144	0	0
	£10,269	0	0
Net revenue	£1,200		

The committee have decided that it is desirable to adopt the 2,000 line exchange and have obtained from Mr. Bennett an estimate for its construction.

The committee also report that they have interviewed Mr. Bennett with regard to the terms upon which he would act as engineer for the construction of the municipal telephone system, and have ascertained that he would undertake the duty at a commission (in which will be merged Mr. Bennett's charge of £52 10s. for his preliminary report) of five per cent on the actual cost of the works, limited to the sum of £41,392. Such commission will amount to a sum of £2,069 12s. if the total of the estimate is expended.

The following is a copy of Mr. Bennett's report and estimate:—

(COPY.)

' BRIGHTON.

' SCHEME AND ESTIMATE FOR A METALLIC CIRCUIT TELEPHONE EXCHANGE IN THE BRIGHTON TELEPHONE AREA OF 2,000 COMPLETED SUBSCRIBERS, WITH THE NECESSARY JUNCTION, PUBLIC TELEPHONE AND SPARE LINES.

' To give effect to a scheme for 2,000 subscribers, it is necessary to provide a margin of public telephone and junction lines, and, also, in order to avoid reopening

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of streets, a number of partially-constructed lines which can be brought into use from time to time with little trouble or expense.

‘I propose to provide lines of these different descriptions as follows:—

	Completed Subscribers	Public Telephone Lines completed.	Junction Lines to branch switch- rooms completed	Junction Lines to Post Office.	Partially complet- ed Lines.
Brighton—(Including Hove, Preston, Kemp Town, &c.).....	1,890	72	16	10	538
Shoreham.....	30	2	—	—	18
Steyning.....	20	2	—	—	8
Hurstpierpoint.....	30	2	—	—	18
Rottingdean.....	30	2	—	—	18
Totals.....	2,000	80	16	10	600

‘The junction lines to branch switch-rooms would consist of:—

	Junction Lines.
‘Brighton to Rottingdean.....	4
‘ “ Shoreham.....	6
‘ “ Steyning.....	2
‘ “ Hurstpierpoint.....	4
Total.....	16

‘Room would be provided on the poles for additions to these as future developments might require.

‘I do not propose to have any sub-exchanges in Brighton or Hove, but to bring all the subscribers in Hove, Preston, Kemp Town, &c., direct to the central exchange, which I have assumed to be located in the neighbourhood of Church, Bond or King streets.

‘The method of construction estimated for is underground in the chief streets with overhead distribution from fixed points, although in some cases it will probably be more convenient and economical to distribute underground.

‘The conduits, which would consist of cast-iron socket and spigot 3 in. pipes jointed with lead, would be laid under the roadways when these are macadamized, and under the footpaths where wood pavement exists.

‘The accompanying plan shows the proposed main underground routes. Advantage is taken of the approaching tramway construction to lay ducts along the tramway routes. In the estimate the cost of this is taken at the price of an independently laid conduit, except as regards restoration of surface, which is assumed to be covered by the tramway construction.

‘The plan of distribution may be understood by regarding the main underground routes as backbones from which ribs or spurs will extend overhead to the right and left for the purpose of serving the districts on either side. Where the existing subscribers of the National Telephone Company lie thickest, and around the Hove town hall, I have provided for underground spurs from the main line.

‘The overhead wires would not be much seen from the main streets, which would be but rarely crossed by them, as they would go away over the houses to the right and left. The plan I adopt would also render it unnecessary to cross the tramway trolley lines with overhead wires, and dangers arising from accidental contacts between telephone and tramway wires will thus be avoided.

APPENDIX=No. 1

'The following are the numbers of underground lines leaving the central exchange on the various routes:—

'Western route (red on plan)	720
'Eastern route (brown on plan)	384
'Tramway route (yellow on plan)	408
'King street route (green on plan)	312
'Dyke road route (blue on plan)	384
'Bond street route (purple on plan)	312
	2,520
	2,520

'The number of underground lines taken to various points is shown in figures on the plan. Thus 264 lines are taken as far as Hove town hall; 120 as far as the town depot, Hove; and 48 as far as St. Philip's church, Hove. On the eastern route it is proposed to take 240 lines as far as Devonshire Place; 96 as far as Paston Place; 36 as far as Sussex Square; and 24 as far as the gas works.

'The total mileage provided comes to 2,300 miles of metallic circuit, equal to more than an average of one mile for each subscriber. In all probability this is in excess of what would be required, as the National Telephone Company lines do not exceed an average of three-quarters of a mile.

'The cables would consist of copper wires, insulated with paper and covered with lead, so as to make a compact, strong and air-tight cable possessing the electrical properties most suitable for telephonic transmission. They would be drawn into the iron pipes, and would be tapped for distributing purposes at manholes or equivalent devices placed at proper intervals.

'The overhead distributing wires would be of silicium bronze weighing 40 lbs. to the mile and of great tenacity. The junction wires to the branch exchanges would be of hard-drawn high-conductivity copper, weighing 100 lbs. to the mile, supported on stout creosoted Norwegian red fir poles furnished with cross arms of American oak and porcelain insulators. The whole of the construction work would be in conformity with the specification annexed to the post office license.

'The instruments would be of handsome design and best workmanship, similar to those now being supplied to the Corporation of Glasgow for the purposes of their exchange. Each instrument would bear the arms and motto of the Brighton corporation. If desired, sample instruments can be forwarded from Glasgow for the inspection of the telephone committee.

'The following construction estimate is based on recent experience in Glasgow, and its prices are consequently quite up-to-date. As the price of iron is showing a downward tendency, a saving on the estimate might be made in respect to the conduits and some other items.

'Construction Estimate.

'2,080 instruments, at 55s. 6d.	£ 5,772	0 0
'Conduits with manholes	6,600	0 0
'Restoration of roadways and footpaths	2,734	0 0
'Main cable, including drawing in and jointing	7,841	0 0
'Branch cable, and laying	2,000	0 0
'Switchboards, one for 2,550 lines and four for 50 lines each	4,000	0 0
'200 distributing poles and standards, at £12	2,400	0 0
'450 miles of overhead distributing wire, at £8	3,600	0 0
'Carting and distributing material	300	0 0
'Tools	150	0 0

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'Ornamental iron poles.	500	0	0
'Labour, fitting up switchboards and subscribers' instruments.	1,000	0	0
'Switches, bells and miscellaneous instruments.	100	0	0
'Testing instruments.	100	0	0
'Junction lines to Rottingdean, Shoreham, Steyning and Hurstpierpoint.	2,200	0	0
'Adapting exchange premises to telephonic requirements.	500	0	0
'Salaries of manager and inspectors during construction.	705	0	0
'Rent of office during construction.	200	0	0
'Printing, stationery and miscellaneous.	150	0	0
'Travelling expenses.	200	0	0
	<hr/>		
	£41,052	0	0
'Add cost of extension to Burgess Hill, not included in above.	340	0	0
	<hr/>		
	£41,392	0	0
'Engineer's fees, 5 per centum on £41,392.	2,069	12	0
	<hr/>		
'Total.	£43,461	12	0
	<hr/>		

The committee have been in correspondence with the Hove Town Council with reference to the terms on which the Brighton Council shall be privileged to construct telephones in the Borough of Hove, but as yet have had no definite reply.

Provision has been made in the case of the roads in which tramways are to be constructed in the Borough of Brighton for laying underground ducts for telephone wires, and the Hove Council have been requested to make a similar provision in Church Road, Hove, at the cost of the corporation, in connection with the wood paving now about to be laid.

The committee have also obtained a grant from the pavilion committee of rooms at the pavilion (Palace Place) for offices and central switchroom, on terms to be hereafter arranged.

The committee now beg to recommend that Mr. Bennett's report and estimate be approved, and that he be appointed engineer to the corporation to carry out the work specified therein, on the terms agreed to by him, subject to satisfactory agreements being previously entered into with the several local authorities having the control of roads, under, over, or along which it is necessary that telephonic circuits shall be constructed, and subject to the sanction of the local government board being obtained to the loans required to defray the cost of the works.

The committee recommend that application be made to the several local authorities within the Brighton telephone area for permission for the corporation to construct telephones in their respective districts, either underground or overhead, as they may be advised by their engineer.

The committee also recommend that application be made to the local government board for their sanction to the council borrowing the sum of £45,000 required for the purposes of the work (including interest during the construction of the works), such loan to be repayable within 25 years, but the council to have the right to defer the payment of sinking fund charges for a period of three years from the date of borrowing.

On behalf of the committee,

JOHN C. BUCKWELL,

Chairman.

10th April, 1901.

APPENDIX No. 1

NOTE.—The members present at the meeting at which the above report was agreed to were:—Councillors Buckwell, Carden, Galliers, Holder, Hollis, Neale, Jarvis and Wilson.

No. 227d.

COUNTY BOROUGH OF BRIGHTON.

REPRINT OF THE REPORT OF THE TELEPHONES COMMITTEE OF THE 10TH DECEMBER, 1901.

The telephones committee beg to remind the council that at a meeting of the council held on the 18th April last, the committee submitted a report recommending the construction of a municipal telephone installation within the Brighton telephone area for 2,000 subscribers, at an estimated cost of £43,461 12s., and that the council then passed the following resolutions upon the subject:—

'That Mr. Bennett's report and estimate be approved, and that application be made to the several local authorities within the Brighton telephone area for permission for the corporation to construct telephones in their respective districts, either underground or overhead as may be advised by the corporation telephone engineer.'

'That application be made to the local government board for sanction to borrow a sum of £45,000 to defray the cost of construction (including interest on capital during the period of construction) a system of municipal telephones within the County Borough of Brighton and the several other towns and parishes comprised within the Borough telephone area, such loan to be repayable within 25 years, but the first payment to a sinking fund for the liquidation of the debt to be deferred for three years from the date of borrowing.'

'That subject to the sanction of the local government board being given to the required loan, and to satisfactory agreements being previously entered into with the several local authorities having the control of roads under, over or along which it is necessary that telephone circuits shall be constructed, Mr. A. R. Bennett be appointed telephone engineer to the corporation to carry out the work specified in his report, and that he be paid for his services a commission (in which shall be merged his charge of £52 10s. 0d. for his report and estimate) of 5 per cent on the actual cost of the works, but not exceeding a total sum of £2,069 12s. 0d.'

Since the above mentioned date, the committee have been in negotiation with the county councils and the several urban authorities comprised within the exchange area, with the following result:—

East Sussex County Council.—1. The council to consent to the erection of poles and wires on the main roads and district roads within their area, subject to the payment of an annual rental of 5s. per mile of road on which poles or wires shall be erected.

2. All poles erected on main roads to be of such kinds and descriptions as the county surveyor shall approve, and all works are to be carried out to his satisfaction. The poles to be used on rural district roads to be similar to those used by the Tunbridge Wells corporation, or alternatively of such description as the county surveyor shall approve.

3. All poles and wires are to be removed within six months after notice.

4. The charges to subscribers within the county area are not to exceed those for the time being made to subscribers within the County Borough of Brighton in respect of similar services.

5. Wires passing across the line of any tramway or light railway worked by means of overhead electric wires, are to be placed underground.

The agreement embodying these terms has not yet received the approval of the county council, but the committee believe that the county council will agree to them.

West Sussex County Council.—The committee believe that the terms when agreed to by the East Sussex County Council, will also be accepted by the West Sussex County Council.

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Hove.—No answer has yet been received to the committee's application, but the committee are advised by Mr. Bennett that in the event of terms not being agreed with Hove for underground wayleaves, the Hove subscribers can be supplied by means of overhead wires erected upon poles placed on private premises.

Portslade.—Terms similar to those offered by the committee in the case of East Sussex have been agreed to, and the committee have agreed to provide an exchange so situate with regard to the Portslade urban district that subscribers in that district shall not be liable to the extra mileage charges which the corporation are entitled to make in the case of subscribers situate more than one mile from the nearest exchange.

Southwick.—Terms similar to those arranged by the committee in the case of Portslade have been offered, but the agreement has not yet been settled.

New Shoreham.—Terms similar to those offered by the committee in the case of East Sussex have been arranged, subject to the further condition that the council shall establish and maintain an exchange and call office at New Shoreham.

Burgess Hill.—The same terms have been offered to Burgess Hill as in the case of East Sussex, but no reply has been received. Unless these terms are accepted, the committee would recommend that Burgess Hill be excluded from the operation of the scheme.

The committee think that, though the agreements with several of the local authorities are not yet completed, the negotiations are sufficiently advanced to justify the council in proceeding with the installation of the exchange, as they understand from Mr. Bennett that, in the event of any local authority unreasonably refusing to grant wayleave rights, the Postmaster General would authorize the exclusion of that area from the scheme.

The canvass which the council have caused to be carried out has resulted in the obtaining of 662 applications for telephones on the municipal exchange (including 13 in respect of corporation departments), and the committee think that it is advisable that steps should now be taken for carrying out the installation of the exchange in accordance with the scheme and estimate prepared by Mr. Bennett and approved by the council on the 18th April last.

They therefore recommend that application be made to the local government board for sanction to the loan of £45,000 for the period of 25 years, in accordance with the resolution of the council of the 18th April last.

Also that advertisements be published inviting tenders for the performance of the work in accordance with specifications now being prepared by Mr. Bennett, the execution of the work to be subject to the sanction of the local government board to the loan being obtained.

On behalf of the committee,

HERBERT CARDEN,
Chairman.

10th December, 1901.

NOTE.—The members of the committee present at the meeting at which the foregoing report was agreed upon, were: The Mayor, Alderman Buckwell, and Councilors Burberry, Carden, Galliers, Jarvis and Lintott.

No. 227e.

COUNTY BOROUGH OF BRIGHTON.

REPORT OF THE TELEPHONES COMMITTEE.

In accordance with the promise given to the council, the telephones committee beg to present the following report with reference to the present position of the telephone undertaking :—

APPENDIX No. 1

It will be convenient first to remind the council of the steps which have been taken with a view to the establishment of the undertaking.

On the 5th of April, 1898, a letter was written to the Postmaster General asking for the grant of a license for a municipal telephone service in Brighton, and on the 21st April, 1898, the Postmaster General replied that the government had appointed a select committee to consider the question of whether any changes in the law were desirable in order to enable municipalities to transact telephone business, and that pending the report he was unable to take any action in the matter.

The select committee reported on the 9th August, 1898, and in the session of 1899 the Telegraph Act of that year was passed for the purpose of giving effect to the recommendations of the select committee.

On the 14th August, 1899, the Postmaster General wrote inquiring whether, in view of the provisions of the Act, the council desired to renew their application for a license.

The council appointed a special committee to consider the question, and on the 6th June, 1900, the committee reported recommending that application be made for the grant of a license. This recommendation was approved by the council, and on the 27th July, 1900, application was made for a license.

The license authorises the council during the period of 25 years from the 1st May, 1901, to carry on telephone exchange business within the Brighton exchange area, and it provides that if the council do not within two years from the 30th April, 1901, establish an exchange system, the Postmaster General may revoke the license.

On the 10th April, 1901, the committee reported to the council with recommendations for carrying the license into effect, and on the 18th April, 1901, this report was adopted by the council, subject to satisfactory agreements being entered into with the several local authorities included in the exchange area with regard to wayleaves, and subject to the sanction of the local government board being obtained to the loans required to defray the cost of the works.

A copy of the committee's report of the 10th April, 1901, is sent herewith for the information of the council.

On the 10th December, 1901, the committee reported to the council with a statement of the wayleave agreements obtained, and recommending that steps should be taken for carrying out the installation of the exchange in accordance with the scheme and estimate which had been approved by the council on the 18th April, 1901. A copy of the committee's report of the 10th December, 1901, is sent herewith for the information of the council. Since the date of that report, Burgess Hill has accepted the terms as to wayleaves offered by the council.

With the authority of the council, application was made to the local government board for sanction to a loan of £45,000 to defray the cost of the execution of the work, and tenders for the installation of the exchange were invited.

The tenders for the work have been received, but the committee have deferred bringing them up to the council pending the receipt of the sanction to the loan.

The committee are, however, advised by Mr. Bennett that the cost of execution of the work in accordance with the tenders which he would recommend for acceptance will be well within the amount of his estimate for the work.

With regard to the sanction of the local government board to the loan, a difficulty has arisen, in consequence of the refusal of the corporation of Hove to consent to the execution of works within that borough.

As stated in their report of the 10th December, 1901, the committee were advised by Mr. Bennett, that in the event of terms not being agreed with Hove for underground wayleaves the Hove subscribers could be supplied by overhead wires placed on poles erected on private premises.

At the local inquiry, with reference to the application for the loan of £45,000, this view was urged upon the inspector, but the representatives of the Hove corporation then put forward a claim to prevent the erection of overhead wires across streets of the

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portion of the Borough of Hove comprised in what was formerly the area of the Brunswick Square and Terrace district, *i.e.*, about one-sixth of the area of the present Borough of Hove. On behalf of the council it was contended that the Hove Corporation could not lawfully prevent the erection of overhead wires across any of the streets in Hove, and that there was nothing to prevent the supply of telephonic communication to subscribers in the Borough of Hove by means of overhead wires, as advised by the engineer.

Whatever the merits of the contention on the part of the Hove council may be (and the committee do not for one moment admit the right claimed), the local government board have refused to sanction any loan in respect of the execution of works in the Borough of Hove until the consent of the Hove council has been obtained.

The decision of the local government board was communicated to the committee in the following letter:—

(Copy.)

‘LOCAL GOVERNMENT BOARD,

‘WHITEHALL, S.W., 5th June, 1902.

‘SIR,—I am directed by the local government board to state that they have had under consideration the report made by their inspector, Colonel Slacke, after the inquiry held by him with reference to the application of the town council of Brighton for sanction to borrow £45,000 for the establishment of a municipal exchange in the Brighton telephone area.

‘The board approve generally of the scheme, but unless the consent of the town council of Hove is obtained, they will not be prepared to sanction any loan for the execution of works in that borough.

‘If therefore, the town council are unable to obtain such consent, the board should be furnished with a revised estimate of the cost of the scheme, excluding all works in the Borough of Hove.

‘I am further to ask for a copy of a resolution of the town council applying for the board’s consent to the use of the building on the pavilion estate as the central exchange, under the provisions of the Brighton Pavilion Estate Act, 1850, as amended by the Brighton Pavilion Acts Amendment Act, 1876, and the Provisional Order of 1891.

‘I am at the same time to draw attention to the last paragraph of the board’s letter of the 3rd of March last, as regards the payment of interest on capital, and to state that no item on this account should be included in any revised estimate which may be submitted.

‘I am, sir, your obedient servant,

‘JOHN LITHIBY,

‘Assistant Secretary.

‘The Town Clerk, Brighton.’

The committee requested the local government board to grant them an interview with reference to the matter, but the board did not accede to the request, and the matter of the loan has since remained in abeyance.

The committee do not consider that the refusal on the part of Hove to grant underground wayleaves constitutes any reason why the council should not proceed with the installation of the exchange elsewhere than in the Borough of Hove. They are informed that the corporation of Glasgow have encountered a somewhat similar difficulty but have, nevertheless, proceeded with the execution of their scheme and have brought it to a successful issue.

Neither do the committee regard the refusal of their consent by the corporation of Hove as final, inasmuch as it appears from the following letter received from the town clerk of Hove that they intend to apply for parliamentary powers to construct underground conduits in the next session of parliament:—

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(COPY.)

BOROUGH OF HOVE, TOWN CLERK'S OFFICE, TOWN HALL,
HOVE, SUSSEX, 1st April, 1902.

Telephones.

DEAR SIR,—I am directed by my council to inform you that, after full consideration, they are of opinion that it is undesirable that they should at present commit themselves to any scheme for telephones which will involve underground works.

Their present intention is to apply for parliamentary powers to lay ducts under the roadways for the purpose of telephone and other wires should they deem it desirable to take this course at any future time.

Yours faithfully,

H. ENDACOTT,
Town Clerk.

F. J. TILLSTONE, Esq.,
Town Clerk,
Town Hall, Brighton.

The committee have received from Mr. Bennett the following communication embodying the results of his experience as engineer to the Glasgow and Tunbridge Wells Municipal Exchanges.

(COPY.)

65 RENFIELD STREET, GLASGOW,
August 13, 1902.

The Telephone Committee of the Town Council of Brighton.

GENTLEMEN,—With regard to the position created by the refusal of the Local Government Board to sanction any expenditure in Hove, I am strongly of opinion that the circumstance does not warrant the abandonment of Brighton's telephone scheme.

The number of subscribers to be obtained in Hove must be but a small proportion of the total to be obtained in Brighton itself, without reckoning outlying places in the area. In any case, I believe that Hove could be telephoned overhead by means of private wayleaves in the same way as it is now telephoned overhead by the National Telephone Company. If it were found impossible to use the security of the Brighton rates for the purpose, I believe that contractors could be found who would erect the necessary plant on the security of subscriptions payable by Hove subscribers, which could be assigned to them for a certain period. The necessary expenditure in Hove would not exceed from £2,000 to £3,000, as the routes to Portsdales, Southwick and Shoreham have been arranged so as to avoid the Borough of Hove in any case. The post office could not object to this arrangement if the work were carried out in accordance with the post office specification, which of course would be arranged for.

I may state that in connection with the Glasgow corporation telephone enterprise a similar difficulty cropped up in the case of the Burgh of Clydebank, which refused to grant underground wayleaves in much the same manner as Hove has done. But the Glasgow corporation have telephoned Clydebank overhead, in defiance of the council of that burgh, and have secured a large measure of support amongst the Clydebank citizens.

Although the Glasgow corporation telephone system is not a year old, 6,184 subscribers had been connected up to the last Monday evening, while 1,530 orders remain on hand to be executed. From 6 to 12 new orders are received every day, so that an exchange of 20,000 is being looked to in the near future. This is in face of the keenest competition by the company, who have entirely reorganized their system and replaced their old and inefficient plant by the latest devices, and that altogether regardless of expense. They are also giving their subscribers facilities which at the date of the inquiry in 1897 were derided as impossible. In Tunbridge Wells when a corpora-

tion system was first mooted the company had only 92 subscribers in the whole telephone area; their rates were very high and their service was so bad that out of 92 subscribers some 85 signed a memorial to the Postmaster-General vouching for the general inefficiency of the service. After a year's work the Tunbridge Wells Corporation had at August 7 no fewer than 834 lines at work. The company are supposed to possess some 600 others, so that the effect of a corporation system has been to provide the Tunbridge Wells Telephone area with 1,434 telephones in lieu of the original 92.

Brighton presents a field for telephonic development which is out of all proportion greater than that at Tunbridge Wells. The Brighton corporation have very wisely kept the company out of their routes. Overhead wayleaves are more difficult to get in Brighton than in most other places, so that the corporation, with power to make an unlimited use of the roads for underground work, would be out of all proportion in a better position to give a telephonic service than the company. The company's present Brighton system is single wire, and to meet the corporation competition two wires would have to be placed overhead where one is now. Under these circumstances, there can be no reasonable doubt that the corporation, with the additional advantages of the most modern plant, which they would be able to command, would create a large exchange in a very short time; so much so that Hove might be left entirely out of the question in the meantime, as the Hove citizens would only be too glad later on to take advantage of the cheaper rates and better service that the Brighton citizens would be in possession of as a consequence of the corporation system.

I would venture to point out that if Brighton town council gave up the telephone scheme now they would not only sacrifice all the time, trouble and money which have been expended in bringing it so successfully so far, but they will have to abandon for the future all hopes of the low rates for telephones that were intended to be charged, and will burden their burgesses permanently with telephone rates far in excess of anything that the circumstances call for. In the future the action of the council in abandoning their scheme will unquestionably be condemned, as, with the examples of other towns before them, the Brighton citizens will consider themselves very badly treated by having to pay £10 for telephones when other towns will be getting them for £6 or £5. I venture to predict that the act of abandoning, if it should be decided upon, will hereafter be characterized as timid and short-sighted.

If the scheme be dropped, the council will have to face the contingency of granting underground wayleaves to the company. If they once get into the hands of the company they will find them severe masters. The town clerk of Hull will tell you that his corporation granted the N.T.C. underground wayleaves some few years ago. Recently the Hull corporation went to parliament for power to effect some street improvements and they found themselves opposed by the N.T.C. on the ground that the improvements would necessitate a deviation of the company's telephone pipes, and they asked parliament to order that such deviations should be carried out at the expense of the corporation. It would seem, therefore, that even a change in the tramway routes could not be carried out without arrangement with the company. On another ground the Hull corporation have been threatened with litigation in consequence of this grant of wayleaves, and the same grant has been the cause of the N.T.C. introducing a Bill in parliament which the corporation had to oppose at great expense. Tunbridge Wells corporation granted the N.T.C. underground wayleaves. This has already led to one action at law which was carried through several courts, and a second action arising out of a different cause, but growing out of the same wayleaves, is threatened. The states of Guernsey had to fight the company through all the courts, including the Privy Council, and you may depend upon it that Brighton will not be singular if they place their necks under the yoke.

I would also commend to the consideration of the council those contractors who tendered for the carrying out of the work in conformity with the elaborate specifications which were prepared and advertised widely.

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All the best electrical firms in the United Kingdom, as well as some foreign ones, sent in tenders which in some cases cost much time, trouble and money to prepare, as I know that some of the contractors sent representatives to Brighton from long distances in order to obtain local information; so that if Brighton decides to stay its hand, unquestionably these contractors will feel aggrieved, although of course the council did not pledge themselves to actually accept tenders.

The financial results obtained in Glasgow for the first nine months are considered by competent and unbiassed critics to be of an exceedingly favourable character, and I am sure that Brighton can reckon upon similar results there, especially as the rate proposed to be charged in Brighton is £5 10s. 0d. instead of the Glasgow rate of £5 5s. In conclusion I may say that I see nothing in the action of Hove to compel Brighton to change its attitude in connection with the telephone scheme, which in my opinion should be gone on with without further delay.

I am, gentlemen,
Yours very faithfully,

A, R, BENNETT.

The expenditure incurred by the council, with a view of carrying their license into effect, amounts to £3,507 13s. 1d. in respect of underground ducts and £202 8s. 6d. for miscellaneous expenses.

They have also agreed to pay Mr Bennett a commission of 5 per cent on the cost of the work, subject to a maximum limit of £2,069 12s.

Provision is also being made, in accordance with the direction of the council, for the laying of underground ducts in connection with the new tramways routes in Old Steine and London Road.

The number of persons who have promised to become subscribers to the municipal exchange is 831, viz., 146 in Hove, and 685 in the other portions of the area, exclusive of the corporation connections; and there is no doubt that subscribers will join in large numbers as soon as the exchange is an accomplished fact.

The committee have no hesitation in recommending the council to proceed with the installation of the telephone exchange as soon as possible, and they recommend that Mr. Bennett be instructed to revise his estimate as required by the local Government Board by excluding therefrom the cost of all works in the borough of Hove, so that the application to the board for their sanction to the loan may be renewed.

The committee also recommend that a resolution be passed applying for the consent of the local Government Board to the use of the building in Palace Place, part of the Pavilion Estate, for the purposes of a central exchange, such use of the building having already been sanctioned by the council on the recommendation of the Pavilion Committee.

On behalf of the Committee,

HERBERT CARDEN,
Chairman.

TOWN HALL, BRIGHTON, August 15, 1902.

NOTE.—The members of the committee present at the meeting at which the foregoing report was agreed upon were: The Mayor, Councillors Allen, Carden, Jarvis, Lintott, Robinson and Stringer.

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No. 228.

CITY OF VICTORIA, B.C., June 7, 1905.

The Honourable Sir WILLIAM MULOCK, K.C.M.G.

Postmaster General and Chairman Parliamentary Committee *re* Telephone Systems, Ottawa.

RE TELEPHONE SYSTEM.

SIR,—In reply to your circular of the 29th ult., with reference to this matter, I have the honour, by direction, to state for the information of the Parliamentary Committee that the only system of telephones operating in Victoria, is that of the Victoria & Esquimalt Telephone Company, which is an organization subsidiary to, and forming part of, the British Columbia Telephone Company, Limited.

The number of telephones in use is 1,350, and the number of subscribers is a little less. The charges are \$4 per month for business, and \$3 per month for residential use, excepting where party lines are installed in residences, and then the charge is \$2 per month.

The system is well managed and gives general satisfaction as far as the operating part is concerned, though there are instances in which telephones fail to reproduce distinctly the words of the speaker, but these conditions are remedied promptly upon complaint.

The business section of the city is well supplied with long-distance telephones and through them has connection with Nanaimo, Vancouver, New Westminster, B.C., and Seattle and Tacoma, Wash., also with points on Vancouver Island between Nanaimo and Victoria and throughout the Saanich Peninsula.

Generally speaking the company has proved enterprising in supplying localities with telephonic communication wherever business warranted extensions.

There is little doubt that if the rates were reduced there would be a corresponding increase in the number of telephones used and in the extension of the benefit of this convenience to many who decline to incur the expense involved under the present rates.

The council has already expressed its approval of the principle of municipal ownership and control of this public utility, by endorsing a resolution passed by the municipal council of Fernie, B.C., in January last, which reads as follows:—

‘Whereas, the Municipal Clauses Act now contains powers authorizing municipal ownership of all public utilities except telephones, Therefore be it resolved:

‘That, in the opinion of this council, the Municipal Clauses Act should be amended so as to empower city municipalities to construct, maintain and operate telephone systems throughout such municipality, and that a copy of this resolution be forwarded to our member, Mr. W. R. Ross, the Fernie Board of Trade, each board affiliated with the Associated Board of Trade, each city, municipality and each member of the legislature, asking their support in securing the necessary legislation.’

I have the honour to be, sir, your obedient servant,

W. J. DOWLER,
C. M. C.

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No. 228a.

CITY OF VICTORIA, B.C., June 14, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
 Postmaster General and Chairman Parliamentary Committee re Telephone
 Systems, Ottawa, Ont.

SIR,—In further reference to my letter to you of the 7th instant, and in addition to the information contained therein, I beg to transmit herewith the following enclosures:—

1. Map showing the lines and connections of the British Columbia Telephone Company's systems.
 2. Schedule of long-distance telephone rates.
 3. Directory of the British Columbia Telephone Company.
- I have the honour to be, sir, your obedient servant,

W. J. DOWLER,
 C. M. C.

No. 228b.

BRITISH COLUMBIA TELEPHONE COMPANY, LTD.,
 BANK OF MONTREAL BUILDING,
 VICTORIA, B.C., June 14, 1905.

LONG-DISTANCE TELEPHONE TARIFF FROM VICTORIA.

Lines owned and operated by the British Columbia Telephone Co.

	Cts.	
Keating's Crossing.	25	}
Saanichton.	25	
Sidney.	25	
Goldstream.	25	
Strathcona.	25	
Koenig's.	25	
Duncans.	30	
Crofton.	30	
Chemainus.	35	
Ladysmith.	40	
Nanaimo.	50	For conversations of two minutes or fraction. Half-rates for each additional minute or fraction.

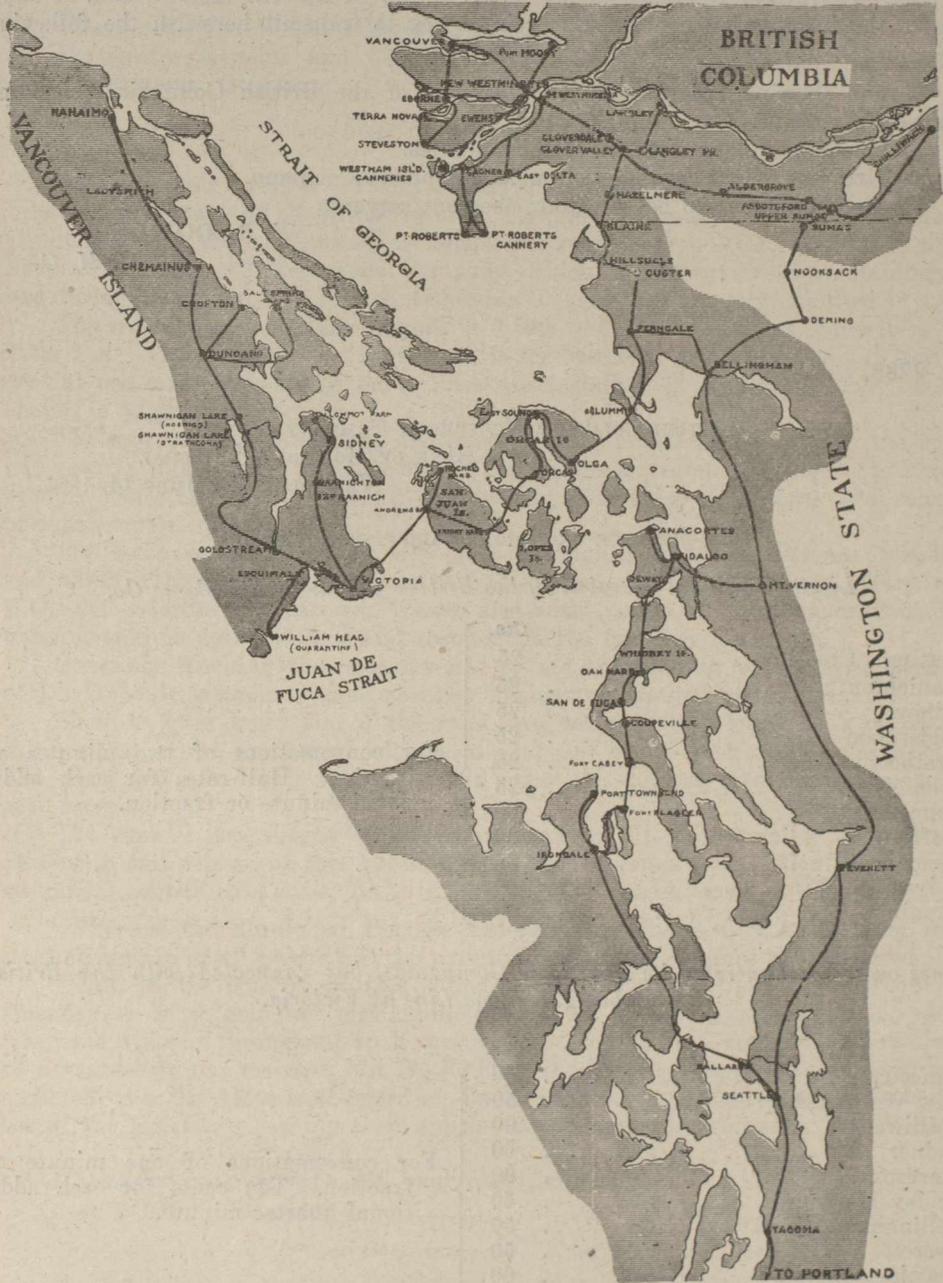
Lines owned and operated by American Companies, but connected with the British Columbia Telephone Line at Victoria.

	Cts.	
Vancouver.	50	}
New Westminster.	50	
Chilliwack.	60	
Ladner.	60	
Steveston.	60	
Friday Harbour.	50	
Bellingham.	50	
Everett.	50	
Seattle.	60	
Tacoma.	80	

For other places call up 'long-distance' operator.

No. 228c.

MAP SHOWING LINES AND CONNECTIONS OF THE BRITISH COLUMBIA TELEPHONE COMPANY'S SYSTEM.



APPENDIX No. 1

No. 229.

CORPORATION OF THE CITY OF KASLO,
MUNICIPAL CLERK'S OFFICE,
KASLO, B.C., July 8, 1905.

The Chairman,
Select Committee on Telephone Systems,
Ottawa.

SIR,—I have the honour to acknowledge your communication dated 2nd ultimo, and to inform you that the council of this city having duly considered said communication, have instructed me to reply as follows:—

This is only a small city of about 1,200 inhabitants, the telephone system is owned by the Bell Telephone Company and leased to a private individual.

There are two miles of poles and about six miles of line.

The charges are \$2.50 per month to business houses and \$1.50 per month to private houses, there being altogether about twenty subscribers.

There is a private line (owned by the person leasing the local line) to Lardo, 25 miles north of Kaslo, the rate for messages being 25 cents each.

The facilities for inter-communication are practically nil, there being no telephone communication with any of the towns and cities on lake and river, or with Sandon, Slocan City, Silverton, Nakusp, &c.

Trusting the above is the information you require,

I am, sir,
Your obedient servant,

A. W. ALLEN,
Clerk of the Municipal Council.

No. 230.

THE CORPORATION OF THE MUNICIPALITY OF HILTON,
CLERK'S OFFICE, MARKSVILLE, P.O., ONT., July 10, 1905.

To the Honourable
Sir WILLIAM MULOCK.

SIR,—In reply to yours *re* information as to telephone system in operation in this township and adjoining townships, I beg to say that I have carefully read over the statements contained in Mr. Young's examination before the Select Committee, and I have read over the statements of Mr. Young to the Reeve of this township, who was one of the management committee at the time this division known as the Hilton and Jocelyn Farmers' Telephone line was constructed. Mr. Young's statements corroborate the Reeve's in nearly every particular, with exception to a slight difference in the cost of construction.

This division, consisting of 15 miles, cost for constructing \$390. There are 43 subscribers, each subscriber was assessed \$9; this sum entitled him to purchase and install a 'phone in his house or place of business, the actual cost of building the line was about \$26 per mile, including material and construction.

Last year we assessed every subscriber owning a 'phone \$1 per annum for repairs to line and \$1 for switches, subscribers not owning 'phones were assessed 50 cents per annum for repairs and 50 cents for switches. All 'phones to be kept in repair at the cost of the owner.

The 'phones in use in this division are the same as described by Mr. Young. The line works well, with perhaps one exception, we have too many 'phones for one wire.

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In a conversation between the Reeve and Mr. Burrows, Mr. Burrows in speaking of an arrangement whereby his company might take over the Farmers' line, said he thought the company would be willing to lease the line for a term of years by each subscriber paying \$11 per annum in addition to paying their regular schedule of rates. So far the committee are not in favour of such an arrangement.

The Bell Company have a 'phone in the post office, as formerly, and one in the Ottawa House, for which the proprietor pays \$25 per annum in addition to their rates as charged the public.

As far as I understand the situation, if we wish to do business over the Bell Telephone Company line we must pay well for it; if they, on the other hand, wish to do business over the Farmers' line, as I am given to understand they would like to do, then we must still pay them well for the privilege, there is no give and take. I don't think I can say anything more. Mr. Young's testimony covers the ground; what he has stated in regard to his division applies also to this division. Trusting this will be satisfactory.

I am yours respectfully,

W. E. WHYBOURNE,
Clerk.

No. 231.

MUNICIPALTY OF THE TOWNSHIP OF PICKERING.

WHITEVALE, ONT., July 10, 1905.

Sir W. MULOCK.

Postmaster General and Chairman Select Committee on Telephone Systems,
Ottawa, Ont.

DEAR SIR,—We are directed by the municipal council of the township of Pickering, in reply to your favour of the 2nd ult., to say that in this township the telephone service is very good, the Bell Telephone Company and several independent organizations being in operation. To the council it seems a great waste of money to have the Bell Telephone Company duplicating independent lines and the independents duplicating the Bell lines. The council wish respectfully to submit that telephones are now as necessary as post offices, and that the telephone system should be a monopoly in the hands of the Dominion government. The council is of opinion that a better service would then be had, the public better served and at much less cost than now, and that the telephone system could be made a success if placed under the control of the post office department.

Previous to the advent of independent lines the telephone service in this township was very limited and charges were high, but now the rates are more reasonable, the Bell Company charging a rental of about \$15 per annum for a 'phone, and a fee of 15 cents for a 3-minute talk in the local zone. The local companies charge an annual rental of from \$12 to \$15 per 'phone and from 10 to 15 cents for 5-minutes' talk.

The usefulness of the local telephone systems would be much increased if they had a long-distance connection and the privilege of installing telephone instruments in the railway stations.

JAMES McBRADY,
Reeve, Township of Pickering.

DONALD R. BEATON,
Clerk, Township of Pickering.

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No. 232.

COUNTY CLERK'S OFFICE, UNITED COUNTIES OF STORMONT, DUNDAS AND GLENGARRY.

CORNWALL, ONT. June 29, 1905.

ADAM ZIMMERMAN, Esq., M.P.,

Chairman pro tem, Select Committee *re* Telephone Systems,
House of Commons.

SIR,—I beg to advise you that the circular letter of 2nd June of Sir William Mulock, chairman, was duly received and laid before counties council of these united counties at their session last week, being referred to committee on communications. In their report, which was adopted in council, appears the following, after referring to the letter of Sir William, dealt with:—

'We recommend that the clerk be authorized to communicate the following information to the chairman of committee in question:

'1. That the Bell Telephone system is the only one in operation in these counties.

'2. Its present charges are \$15 for house, and \$20 for business 'phones. New and improved 'phones are to be shortly installed, when the rate is to be increased to \$20 and \$25 respectively.

'3. The committee tried to procure information from the local office as to the number of subscribers in these counties, but we were informed that such information could only be had from the head office. There are about 300 'phones in town of Cornwall.

'4. That the committee considers the present message rates and annual rentals much too high.

'5. The committee favours government control for long-distance, and either government or municipal control for local business.

'6. Some years ago a new company, known as the Dundas Telephone Company, was formed to compete with the Bell, and for a time did business with satisfaction to the subscribers at rates of \$10 and \$15 for annual rentals, and their ordinary message rates being about the same as the Bell Company. They were eventually driven out of business by the Bell Company's opposition, and were obliged to dispose of their business, at a great sacrifice, to the Bell Company. This was brought about by the latter company giving free 'phones where those of the others were in use, and by instituting an action for damages alleged to have been caused to their line by the placing of the Dundas Company's poles and wires in too close proximity to the Bell Company's line. Intimidated by this course of "competition" (?) the Dundas Company succumbed, one of its principal promoters being ruined and others financially crippled to a greater or less extent.

'7. The present rentals of the Bell Company are too high to enable people in the rural districts to take advantage of this means of intercommunication. If the rates were reasonably reduced no doubt many additional subscribers would be the result. For \$15 or \$20 a farmer or rural resident is placed in a very small circuit, and is charged extra for any service extending beyond that circumscribed limit.

'The foregoing suggestions embody all your committee think necessary to communicate.'

I trust this may reach you in time to be of some service to the special committee.

I have the honour to be, sir, your obedient servant,

ADRIAN I. MACDONELL,
Clerk, S. D. & G.

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No. 233.

WINFIELD BREWSTER,

Conveyancer Insurance Loans.

'Phone 50.

HESPELER, CANADA, July 4, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,

Postmaster General, Chairman of Committee,
Ottawa, Canada.

SIR,—Acknowledging receipt of your favour of the 2nd of June, I beg to inform you as follows:—The Bell Telephone Company have about 57 subscribers in the town of Hespeler. They are installing long-distance telephones at a charge of \$20 per annum, and give us also a rate of \$15 on party lines. They have promised shortly to give us night service, but at present we have no such services.

The council of the town of Hespeler appear to be under the impression that the Bell Telephone Company does not deal fairly with its subscribers. I inclose you herewith a copy of resolution on the matter of government control of the telephones which our council are of the opinion to be advisable. It was at Hespeler that the central office of the Farmers' line was located concerning which you will remember Dr. Ochs gave evidence before your committee at Ottawa, in this case the Bell Telephone Company appears to have gobbled up the Farmers' line.

Any information which you may require I shall be very much pleased to give you if it is in my power so to do. I inclose herewith a copy of resolution, and I have the honour to remain,

Your obedient servant,

W. BREWSTER,
Per E.D.M.

No. 233a.

WINFIELD BREWSTER,

Municipal Council of the Town of Hespeler,

HESPELER, CANADA, July 4, 1905.

'Phone 50.

Resolved, That in the opinion of this council the government of Canada should take over the Bell Telephone system or if that be not deemed advisable at least the trunk lines.—Carried.

GEORGE D. FORBES,
Mayor.

No. 234.

COUNTY OF WATERLOO,

BERLIN, June 30, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,

Chairman, Select Committee on Telephone Systems,
Ottawa.

HON. SIR,—The municipal council of the county of Waterloo appointed a committee to aid in obtaining cheaper and more general telephone service, especially for the rural districts, which we considered had been neglected by the Bell Telephone Company. At one time there was a private telephone service which was eventually acquired by the Bell Telephone Company, the particulars of which you have already

The committee of the county council held two public meetings and much interest

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was taken in the proceedings by the farmers of the county, but it was deemed best to postpone further action, awaiting the decision of parliament.

The county council, at its recent session, authorized me to again express their approval of national ownership, or at least control of all telephone systems in the country, and trust the day is not far distant when so desirable an end may be reached.

Signed on behalf of the municipal council of the county of Waterloo.

ANTHONY OCHS,

Chairman, Special Committee on Telephone Services.

No. 235.

Translation.

LAPRAIRIE, P.Q., July 4, 1905.

To the Chairman of the Select Committee on Telephones,
House of Commons, Ottawa.

DEAR SIR,—In accordance with instructions received from the municipal council of the village of Laprairie, and in reply to your letter of June last, I have to say that the telephone system of the Bell Company is not what it ought to be or might be in this municipality. That company is the only one here and the price which they charge to subscribers per annum is so high that the number is reduced to two or three. These subscribers pay \$20 per annum for a telephone, and besides they have to pay the long-distance rate the same as non-subscribers. The charge for long-distance telephone is also too high; for example, 15 cents for three minutes to Montreal, and 5 cents for each additional minute. A tariff of 15 cents for five minutes and a yearly rate of \$10 for a telephone would be reasonable and quite sufficient.

Your obedient servant,

A. F. GRONDIN,
Secretary-Treasurer.

No. 236.

MAYOR'S OFFICE,

EDMONTON, ALTA., June 16, 1905.

Sir WILLIAM MULOCK, Postmaster General,
Chairman Select Committee on Telephones.

SIR,—We have to-day endeavoured to answer as fully as possible your questions re telephone, and are glad to assist you in this or any other way.

As has been pointed out already, this system came into our possession only at the beginning of this year, and, under municipal control, is working out quite as satisfactorily as was expected. The system as taken over by us was capable of considerable extension and improvement. We have not as yet fixed upon any definite policy further than a general advancement under municipal control; and though we are contemplating the installing of a modern and up-to-date system, the particular system has not been decided upon. In any case we are about to proceed with the standardizing of the system so that we may be able to make satisfactory connection with outside systems when the opportunity presents itself.

We experience some difficulty in carrying on the work outside the municipality that had been commenced by the private company from whom we purchased the plant, being more expensive and much less satisfactory. Moreover, we are not connected with

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the Bell long-distance system, and this is a great inconvenience to us. The Bell people are anxious to connect with us, and, of course, failing any other solution of the difficulty we must freely connect our systems on the best terms we can get. We are deeply interested in the work of your committee, and are looking for good results.

If there is anything we can do for you further than this we will be always glad to do it, and in the meantime beg to remain,

Yours very truly,

K. W. MACKENZIE,
Mayor.

No. 236a.

MAYOR'S OFFICE,
EDMONTON, ALTA., June 27, 1905.

WALTER TODD, Esq.,
Clerk of the Select Committee on Telephones,
Ottawa, Ont.

DEAR SIR,—In reply to your communication of June 21, I beg to say that although the Bell Telephone Company, through their agents, have shown a desire to connect freely with our municipal system, we have not received from them any definite proposal as to the terms upon which such connection could be effected, and on our part since our system is not standardized we are not in a position at the present time to talk business, thus the matter stands for the present.

I regret that by an oversight my communication to you of the 16th June went forward unsigned.

Yours very truly,

K. W. MACKENZIE,
Mayor.

No. 236b.

The Select Committee on Telephone Systems.

In reply to the committee's inquiry, the mayor of the city of Edmonton reports as follows:—

The system operates in Edmonton, Strathcona, Fort Saskatchewan, St. Albert, Leduc and Beaumont, with long-distance connections, also connections with government lines, Edmonton and St. Albert to Spruce Grove, Stony Plain, Ray, Rivière Qui Barre, Morinville and St. Emile. The amount of debenture stock issued is \$27,000. The population of the territory served is about 16,000, and total number of telephones in operation 460, of which 448 are direct one station lines. The number of residence telephones is 124; business, 324; and rural, 12.

The lines are No. 12 iron wire grounded circuits. The construction is pole entirely. The system is magneto, the central office equipment being manufactured by Bell Telephone Company and Stromberg-Carlson Telephone Manufacturing Company, and the subscribers' telephones by Stromberg-Carlson Company (with a few exceptions by other manufacturers.)

The rates charged per annum are: business \$30, residence \$20, rural \$20. The system was only acquired by the city in January last, and the question of depreciation, etc., has not yet been determined. The system was acquired by purchase from the Edmonton District Telephone Company, Limited.

The number of 'Bell' telephones in our territory before acquisition was 1, viz., the Edmonton toll office. The number at this date is 2, viz., the Edmonton and Leduc toll offices.

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The Edmonton District Telephone Company rates before sale to city were: Business \$36, residence \$25 per annum. The wages paid are: Foremen, \$75 per month; troublemen, none; inspectors, none; wiremen 25 cents per hour, operators \$20 to \$40 per month.

The cost of construction material is as follows: Central offices equipment \$2,000, capacity 525 lines, subscribers wall telephones \$14, subscribers desk telephones \$14 to \$15, iron wire No. 12 5 cents per pound, poles, \$3 to \$5, cross-arms, 35 cents each (spruce), insulators and pins, 6 cents each.

The system operates 85 miles of long-distance lines, the mileage of poles being 60. These lines are iron wire, grounded circuits, the cost per mile of single wire being \$8.

The charges per conversation over the long-distance lines are rated according to distance from 5 cents to 40 cents for 3-minute connection, with charge of 5 cents per minute beyond this limit.

No. 237.

E. MALCOLM YOUNG,

Barrister, Solicitor, Notary, &c.

PICTON, ONTARIO.

SOLICITOR FOR THE
COUNTY PRINCE EDWARD.

The Honourable WILLIAM MULOCK,
Postmaster General and Chairman Telephone Committee,
Ottawa, Ont.

HONOURABLE SIR,—I have the honour to inclose a recommendation from the county council of Prince Edward *re* telephone system as asked in your circular of a former date.

I have the honour to remain, your obedient servant,

E. M. YOUNG,
County Clerk.

PICTON, June 30, 1905.

No. 237a.

To the Honourable Wm. MULOCK,
Ottawa.

We, the committee appointed by the county council of Prince Edward to memorialize the government *re* telephone service, beg leave to say after inquiry and careful consideration that the general sentiment of the county council, and the people, particularly of those who have paid attention to the question is unanimous in favour of the government having control of the trunk or long-distance telephone lines. There is a very widespread conviction based upon solid facts, that the Bell Company's rates are far higher than they should be, and we consider that the progress of the use of the telephone as a home convenience among the mass of our people, is immensely retarded by the present monopoly, and with the isolated condition of our rural population, every possible effort should be made by parliament to better facilities for cheap telephone communication.

We further believe, owing to the very large amount of business required in giving our rural population telephone communication, that we must have companies operating all over this country, and those companies should be in a position to give a cheap

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and a complete service which cannot be done as long as the trunk lines are controlled by large companies, who prohibit smaller companies connecting with their trunk lines.

Therefore we, the committee of the county council of Prince Edward would recommend that the government of Canada take over or control the trunk lines and give all telephone companies connection with said trunk lines with a fair tariff per mile. All of which is respectfully submitted.

D. H. YOUNG, *Warden.*
D. T. STAFFORD,
B. F. WILSON,
W. S. BENSON.

No. 238.

SUMMERSIDE, P.E.I., July 3, 1905.

Sir WILLIAM MULOCK,
Ottawa.

SIR,—The telephone system in Summerside is operated by the Telephone Company of Prince Edward Island who control the telephone business throughout Prince Edward Island.

This company's trunk lines cover all parts of the island thoroughly. Their long distance charges are 25 cents for five minutes' conversation, or a twenty-word message to any point on Prince Edward Island. For distances under 10 miles the tariff is 15 cents. Subscribers are allowed an additional 20 per cent discount from the above rates.

There are at present about 50 subscribers to the Summerside exchange. The rates charged by the company for local service in Summerside are as follows: Business telephones \$20 per annum; residence telephones, \$15 per annum.

They render a very fair service, and are rapidly improving their plant. They have almost completed the installation of new bronze wire circuits for all subscribers, so that when this is finished we may expect a thoroughly good service. I don't think that any change in ownership, or competition would benefit us in any way, as we could hardly expect to get the present scale of charges reduced. I am of the opinion that perhaps it would be wise to lay down some general method or system of arranging the pole lines of electric, telegraph and telephone companies, to apply to future extensions or reconstruction, with the view of keeping them as far apart, and with as few intersections as possible, as there seems to be an ever present danger from accidental crosses between those lines. Rural service is not rendered to any extent to individuals throughout this country, as there seems to be little demand for such among the farmers. The telephone company, however, maintains a large number of toll offices all over the country, and I believe that a great number of these even are operated at a loss.

It is difficult to see how any legislation would benefit us, and the telephone being a natural monopoly, competition would simply mean largely duplicating the present system, and putting us to the expense of two telephones instead of one, without corresponding benefit.

As the telegraph system touches only a few points here, comparatively speaking, while the telephone operates in all the outlying sections, it would almost seem that the latter should receive government assistance for the maintenance of their non-paying points, and for the further extension of the system among small communities. I believe the telephone company receive a small subsidy for a limited time from the provincial government for the maintenance of some of their smaller offices. We at

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present have no telephonic communication with the mainland, but I presume that this would be a work of such great cost that it would not be self-supporting, and that it therefore cannot be undertaken without help from the Dominion government, though it would be a great benefit, not only to us, but also to the neighbouring provinces.

Yours truly,

WM. T. HUNT.

No. 239.

CITY CLERK'S OFFICE,
FREDERICTON, N.B., July 6, 1905.

Sir WILLIAM MULOCK,
Chairman, Select Committee on Telephones,
Ottawa.

DEAR SIR,—By direction of the city council, I inclose a copy of the report of the special committee of this council in reply to your communication of May 29 last, respecting telephone system.

I have the honour to remain,
Yours very truly,

J. W. McCREADY,
City Clerk.

No. 239a.

To His Worship the Mayor and Members of the City Council:

GENTLEMEN,—Your committee appointed to make inquiries concerning the telephone system in the city of Fredericton for the benefit of the telephone commission at Ottawa, after careful inquiry beg leave to submit the following report:—

The telephone company doing business in our city is known as the New Brunswick Telephone Company, the number of instruments in use being 410, and the service and rates are evidently satisfactory to all parties, as we never hear of any complaints. The arrangement between the city and the said company is of a most satisfactory nature. The company are supplying the city with all necessary telephones for one-half of their regular rates, also allowing city free use of their poles for fire alarm service.

Considering the vast number of shade trees in our city, and the fact of two electric companies operating a system of high voltage, there are certain times, such particularly as spring and fall, when local troubles arise through grounds and induction, and with the view of eliminating those troubles as much as possible, the telephone company at their last general meeting decided upon many large and expensive improvements. We may add they have decided upon an estimated expenditure of \$25,000 to include a new exchange building, cabling, conduit W.R.R., and the installation of central energy system which will give a service of the most improved and up-to-date kind.

We understand that the commission is already in possession of the long-distance rates of the New Brunswick Telephone Company, and you undoubtedly find said rates are much lower than rates charged by other companies with the same service, this company's line being equipped with copper metallic circuits, and whose staff is of efficient size and possessed of the required knowledge to keep the system in general in a satisfactory working order.

Any further information or inquiries you may require which the committee can furnish we most cheerfully offer.

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The committee urge the wisdom of underground wiring, especially on business streets of cities, for the sake of appearances as well as for greater ease of fighting fires.

W. H. MCGINN,
D. J. STOCKFORD,
J. A. EDWARDS.

FREDERICTON, N.B., July 1, 1905.

No. 240.

Secretary-Treasurer Rural Municipality of Springfield, Man.—One private line to neighbouring village here, charge on same being 10 cents per message. Two years ago had Bell connection with Winnipeg, 16 miles distant, but the message rate and rental were prohibitive to rate payers and the service was discontinued. Connection with Winnipeg and rural districts much needed.

No. 241.

Township Clerk of Municipality of Starrington, Ont.—No system here. Greatly feel the need of telephone service, which would be far better than rural mail delivery. Would no doubt give bonus and hopes the government will take action in the matter.

No. 242.

Clerk of Houghton, Ontario.—No service here. Think government should assist in the matter.

No. 243.

County Council of Soulanges, Que.—Council satisfied with service in general, but suggests that local pay stations be not established in hotels and that installations at local offices in the county be free. At present they are charged \$25 per annum, and do not realize that amount.

No. 244.

Clerk of Municipal Council, Township of Huron, Ontario.—Bell pay-station only here. Long-distance rates too high. If service was cheaper rural population would use it more, at present do not appreciate its usefulness.

No. 245.

Secretary-Treasurer, City of Prince Albert, Sask.—Bell has 93 subscribers at rates: residence, \$20 up to one mile, \$4 each additional one-quarter mile. Business, \$30 up to half mile, beyond, \$4 each additional quarter mile. No long-distance or rural service. Service was most unsatisfactory, but since the metallic lines installed is better.

No. 246.

Town Clerk, Welland, Ontario.—Bell has 101 subscribers, \$15. No night service. Several complaints of charges being too high to suit public. Placing of unsightly poles, digging up of streets, cutting down beautiful shade trees, also complained of.

No. 247.

Town Clerk of Hantsport, N.S.—Nova Scotia Telephone Company giving good service, charges reasonable, six subscribers.

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No. 248.

Secretary-Treasurer, Restigouche County Council, N.B.—No service.

No. 249.

Clerk, Rochester Township, Ontario.—Four villages in township and two Bell offices. Company was bonused to install these. Service fair, but rates too high to permit much use of it. People suffer for want of service at reasonable rates.

No. 250.

Clerk of Township of Cardiff, Ontario.—Only service private wire of I. B. & O. Railroad. Word telephone has no meaning to many inhabitants. Weekly mail only communication with outside world.

No. 251.

Town Clerk of Kincardine, Ontario.—Bell system. No complaint.

No. 252.

THE INDEPENDENT TELEPHONE ASSOCIATION OF WISCONSIN.

OFFICERS—Richard Valentine, President, Janesville; H. G. Slater, Vice-President, Waupaca; H. C. Winter, Secretary and Treasurer, Madison.

JANESVILLE, WIS., July 3, 1905.

Chairman Select Committee on Telephone Systems,
Ottawa.

MY DEAR SIR,—Enclosed I hand you a copy of Bill 263—A, which was lately made a law of the state of Wisconsin. I also send you a part of the Senate Journal, in which is given the opinion of the Attorney General on the constitutionality of the measure.

Sincerely yours,

RICHARD VALENTINE,
President.

No. 252a.

A BILL

To prohibit discrimination in the charges of telephone rentals in different cities and villages and fixing a penalty for the violation thereof.

The people of the State of Wisconsin, represented in Senate and Assembly, do enact as follows:

Section 1. There is hereby created and added to the statutes of 1898 a new section to be known and to read as follows: Section 1791a-1. It shall be unlawful for any individual, company, partnership or corporation, owning, controlling, or operating telephone exchanges in two or more cities or villages in this state to charge any individual, company, partnership or corporation in one city or village, a greater or a lesser rental for exchange telephone service than he or it charges any other individual, company, partnership or corporation residing in any other city or village of the same class, as defined herein, for like telephone exchange service. It shall be unlawful for any individual, company, partnership or corporation, owning, controlling or operating

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telephone exchanges in cities and villages of different classes, as herein defined, to charge a higher rental for exchange telephone service in any city, or village, of a lower class than he or it shall charge for a like service in any city or village of a higher class. For the purposes of this section, cities and villages shall be classified as follows, according to the last preceding state or federal census, to wit:

- Cities of the first or highest class, those above 100,000 population.
- Cities of the second class, 75,000 to 100,000 population.
- Cities of the third class, 50,000 to 75,000 population.
- Cities of the fourth class, 40,000 to 50,000 population.
- Cities of the fifth class, 30,000 to 40,000 population.
- Cities of the sixth class, 25,000 to 30,000 population.
- Cities of the seventh class, 20,000 to 25,000 population.
- Cities of the eighth class, 15,000 to 20,000 population.
- Cities of the ninth class, 10,000 to 15,000 population.
- Cities of the tenth class, 7,000 to 10,000 population.
- Cities of the eleventh class, 5,000 to 7,000 population.
- Cities of the twelfth class, 3,000 to 5,000 population.

This section shall not apply to telephone exchanges owned, controlled or operated by any individual, company, partnership or corporation in cities or villages having a population of less than three thousand according to the last state or United States census. Any individual, company, partnership or corporation violating or failing to comply with any of the provisions of this Act, shall, for each and every such violation or failure, forfeit not less than fifty dollars nor more than five hundred dollars, one-half thereof to belong and be payable to the person prosecuting.

Section 2. This Act shall take effect and be in force from and after its passage and publication.

No. 252b.

OPINION OF ATTORNEY GENERAL

May 31, 1905.

To the Honourable Senate of Wisconsin:

GENTLEMEN,—I am in receipt of the request of your honourable body that I give you my opinion as to the constitutionality of Bill No. 263, A., entitled: 'A Bill to prohibit discrimination in charges of telephone rentals in different cities and villages, and fixing a penalty for the violation thereof.'

The Bill classifies cities, according to population, into twelve classes, and forbids telephone companies operating telephone exchanges in two or more cities from charging greater or less rental for exchange telephone service in any city of the same class, and also prohibits a higher rental charge for exchange telephone service in any city of a lower class than shall be charged for a like service in any city of a higher class.

The purpose of the Bill is said to be to prevent telephone companies having exchanges in more than one city from levying tribute on the people of one city in the form of higher rentals for the purpose of driving a competitor in another city out of business. In other words, the purpose of the Bill is said to be to prevent a monopoly in the telephone business.

A telephone company is a common carrier of messages and enjoys those rights, and must perform those duties that exist in all cases where private property is used in a business in which the public has a common interest.

A telephone system is simply a means for the transmission of intelligence and news. In other words, it is a common carrier of information.

It is an undisputed proposition that the legislature has the power to regulate the charges of, and to prescribe reasonable regulations for all common carriers. The tele-

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phone, by the necessities of commerce and public use, has become a public servant—a factor in the commerce of the nation and a great portion of the civilized world. It has, and must be held to have, taken the place by the side of the telegraph as a common carrier.

State vs. Neb. Telephone Co., 22 N. W., 237, 239.

See also *Western Union Telegraph Co. vs. Call Pub. Co.*, 44 Neb., 326.

State ex rel. vs. Delaware Telephone Co., 47 Fed., 633.

Telegraph Co. vs. Tex., 105 U.S., 460.

A common carrier is bound to serve the public at reasonable rates and without unjust discrimination, either as to price or the manner of service.

Gardner vs. Telephone Co., 7 Am. Elec. Cases, 867.

Munn vs. Ill., 94 U.S., 113.

'A telephone system is simply a system for the transmission of intelligence and news. It is, perhaps, in a limited sense, and yet in a strict sense, a common carrier.

The moment it establishes a telephonic system here it is bound to deal equally with all citizens in every department of business, and the moment it opens its telephonic system to one telegraph company, that moment it put itself in a position where it was bound to open its system to any other telegraph company tendering equal pay for equal service.'

State ex rel. vs. Delaware Telephone Co., 47 Fed., 633.

Under the form of regulation, however, the state cannot deprive a telephone company of a reasonable compensation for services performed.

Smith vs. Ames, 169 Wis., 466.

It follows, therefore, that if telephone companies are common carriers, they are subject to reasonable regulations and their charges may be controlled by the state. Indeed, the legislature of this state has already enacted statutes recognizing the right of supervision and control. Section 1791a was enacted to prevent discrimination in rates in certain cases. Section 1778, as amended by chapter 319, laws of 1901, grants to such corporations the right of eminent domain. It is claimed, however, that this Bill does not provide for such regulation as the legislature is authorized to impose. It has been argued against its validity that the Bill will result in class legislation, discriminating against some and favouring others; that it denies to some telephone companies the equal protection of the law guaranteed by the constitution; that it imposes burdens and liabilities upon some which are not cast upon others similarly situated.

It is a maxim of constitutional law that the legislature can not pick out one individual or one corporation and enact that one shall be subject to certain burdens, while others situated in the same circumstances are exempted from the operation of the law. It must be admitted that the legislature can make a classification of individuals or corporations and impose upon such class special burdens and liabilities; but it cannot make a selection obviously unreasonable and arbitrary if the discrimination is based upon matters which have no relation to the object sought to be accomplished.

If this Bill is subject to these criticisms, of course it would be void if it became a law. It is permissible to classify, but the classification must be founded on real differences. Our court has said:

'It is a trite expression that classification, in order to be legal, must be rational. It must be founded upon real differences of situation or condition which bear a just and proper relation to the attempted classification and reasonably justify a difference of relation.'

State vs. Black, 113 Wis., 205.

It is not proposed by this Bill to fix the rates which may be charged by telephone companies. It is a Bill to prevent discrimination in rates, not by all companies in all cities, but by telephone companies doing business in two or more cities. The rates which may be charged by any telephone company are not attempted to be fixed or regulated by this Bill. The Bill is designed to prevent:

1. A telephone company from discriminating in rates between cities of the same class.

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2. To prohibit telephone companies operating in cities of different classes from charging a higher rental for telephone services in a city of a lower class than it shall charge for a like service in a city of a higher class.

The rates, however, to be charged, are left to the discretion of the telephone company.

The question which arises is, whether the discrimination in charges between one city and another is such a matter of public interest and concern as to authorize the legislative action to prevent it under the police power of the state. The claim is made that a telephone company strong enough to have exchanges in several cities may and does make its charges very high in cities where it has no competition, for the purpose of reducing them to a minimum in cities where there is competition, and by this means be enabled to drive the lesser company out of business, and thus obtain a monopoly which it may use thereafter to extort higher rates from its patrons.

If this is a matter fraught with danger to the public welfare, then the classification of companies operating in two or more cities may be justified. If no public interest or concern can be subserved by such a classification, then the legislature would have no power to act in the premises. In other words, if no reason or just basis exists for the fixing of uniform rates between cities as classified by the Bill, then there is not a constitutional classification.

I have not the information concerning the telephone business such as will enable me to judge of this matter as well as the committee having this Bill in charge, who no doubt are informed as to the necessity of regulating the matters by law and, as to this matter of public concern, you are better able to judge than I.

Our court has sustained the right of the legislature to classify in many cases, for the purpose of taxation, for the purpose of municipal government in classifying cities, and in other matters too numerous to mention. Whether or not the classification is arbitrary or unreasonable depends upon the nature of the danger threatened or the wrong to be remedied. Courts will not set aside a classification as unreasonable because they may not think the classification the best that might have been adopted, but only when they can see that, beyond all rational doubt, the classification is arbitrary, unreasonable and unjust.

'Of the propriety of legislative interference within the scope of the legislative power the legislature is the exclusive judge.'

Munn vs. Ill., 94 U. S., 113.

It is also a maxim of constitutional law that a legislature is presumed to have acted within constitutional limits, with full knowledge of the facts and with the purpose of protecting the interests of the people as a whole, and the courts will not lightly hold that an Act duly passed by the legislature was one in the enactment of which it had transcended its powers.

The provisions of the Bill seem to violate no vested rights; it does not impair the obligations of contracts, nor do its provisions deny to any person or company the equal protection of the laws, and there seems to be no deprivation of property without due process of law. I am unable to see that the classification made by this Bill is unjust and unreasonable, or that the discrimination in telephone rentals, which the Bill designs to remedy, is without the police power of the state, and therefore not the subject of legislative action. If, in fact, there is a wrong to be righted, then, in my opinion, there is nothing in the Bill which makes it obnoxious to any constitutional provision.

The classification is based on population, and a further classification is made to depend on whether or not a telephone company does business in two or more cities.

Discrimination in charges between two cities cannot be in the nature of things enforced as to a telephone company doing business in only one city. And therefore, if discrimination in rates between cities is to be prevented, the classification of telephone companies doing business in two or more cities is a natural classification based on a situation made necessary by the situation, and cannot be said to be an arbitrary one.

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Classification based on the population of cities has been sustained by the highest court of this state, as well as by the United States Supreme Court in the great case of *Munn vs. Illinois*, 94 U. S., 113.

Respectfully submitted,

L. M. STURDEVANT,
Attorney General.

No. 253.

THE MUNICIPALITY OF THE COUNTY OF SHERBROOKE.

E. B. WORTHINGTON, Secretary-treasurer. SHERBROOKE, P.Q., June 30, 1905.

To the CHAIRMAN,
Select Committee on Telephone Systems,
Ottawa.

SIR,—Your circular letter of June 2 last in reference to the efficiency of the telephone systems in this section, and asking if same gave general satisfaction, was laid before the general quarterly session of this county council held on the fourteenth day of June last, and the following is an extract from the minutes:—

It was moved by Mayor Joseph Allard, seconded by Mayor Alfred Gauthier, and resolved, that the secretary be instructed to write the commission, explaining that we are satisfied with the telephone systems in this locality, but that we believe that the Bell Telephone Company should not have the monopoly in connection with the Railway Stations; and that other companies should have the same privileges.

I remain,

Your truly,

E. B. WORTHINGTON,
Secretary-treasurer.

No. 254.

THE UNION OF CANADIAN MUNICIPALITIES.

President,

THOMAS URQUHART, Esq.,
Mayor of Toronto.

G. S. WILSON, Asst. Secretary,
Bureau of Information,
107 St. James St., Montreal.

Hon. Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General, Ottawa.

Hon. Secretary-treasurer,

W. D. LIGHTHALL, M.A.,
Ex-Mayor of Westmount.

L. N. SENECAI,
Sec. de la Prov. de Que.,
St. Henri.

MONTREAL, August 28, 1905.

DEAR SIR,—I have the honour of transmitting you herewith a copy of a resolution on the subject of the Dominion Telephone Committee, which was passed unanimously at its fifth annual convention at Winnipeg, July last.

Yours respectfully,

W. D. LIGHTHALL,
Hon. Sec.-Treas., U.C.M.

No. 254a.

RESOLUTION.

Moved by Controller Ward, of Toronto, seconded by Mayor Emerson, of Calgary, That this convention hails with satisfaction the inquiry into the telephonic conditions at present existing in Canada, carried on during the past session of parliament by the Select Committee on Telephone Systems, under the able chairmanship of the Postmaster General; and congratulates the government upon the voluminous and valuable information regarding this important question which has been secured by the Com-

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mittee and placed at the disposal of the municipal and other public bodies in the Dominion.

This convention is strongly of opinion that the time has arrived when the long-distance telephone service should no longer be operated as a monopoly for private gain, and that this service should be owned and operated by the Federal government under conditions which will enable every telephone user to have unrestricted intercommunication between all local systems now in operation, or which may be hereafter established.—Carried unanimously.

No. 255.

To the Honourable Sir WILLIAM MULOCK,
Chairman of the Telephone Committee,
and Members of the House of Commons of the Dominion of Canada,
in Parliament assembled.

The Petition of the County Council of the County of Bruce, humbly sheweth:

That in the opinion of this council the time has arrived when the telephone systems of the country should become national institutions under the management and control of the Post Office Department. Every private or company owned institution is conducted with a view to profit, and it follows, as a matter of course, that the Bell Telephone Company, which is virtually a monopoly, must charge high, if not exorbitant rates, for the services rendered, in order to produce dividends for the stockholders. That there should be no tax on knowledge is a recognized principle of government in this country, and it is upon this principle that our postal service is not expected to produce a revenue. There is a close parallel between communication by mail and communication by wire, and if one should be maintained at the bare cost of operation, why not the other? We would, therefore, urge upon the Dominion government the importance of assuming as speedily as possible the management and control of the telephone business of the country, believing that if the idea of profit were eliminated, the cost to the public would be materially reduced, and as a natural consequence this means of communication brought within the reach of a much greater number of people. And the clerk is hereby instructed to forward a copy of this resolution to Sir William Mulock, Chairman of the Telephone Committee now in session at the House of Commons, Mr. P. H. Mackenzie, member for South Bruce, and Mr. L. T. Bland, member for North Bruce.

And your petitioners will ever pray.

WM. MACDONALD,
Warden.

W. S. GOULD,
Clerk.

No. 256.

REPORT OF COMMITTEE RE TELEPHONES.

COUNCIL ROOM, SARNIA, ONT., June 13, 1905.

To the Warden and Councillors of the County of Lambton:

Your committee appointed to prepare an answer to the circular from the Hon. Sir William Mulock, beg leave to report as follows:—

1. The system in use is that operated by the Bell Telephone Company, and there is no other in use in the county.

There are seven different exchanges in the county, viz.: Sarnia and Point Edward, 400 subscribers; Petrolea, 150; Forest, 50; Oil Springs, 17; Watford, 17; Brigden, 10; Alvinston, 1; Sombra, 2; Inwood, 1. Total of 648 subscribers.

There are other telephone stations connected with the system in the county, as follows: Camlachie, Ravenswood, Aberarder, McCormicks, Wyoming, Oil City, Marthaville, Florence, Edy's Mills, Courtright, Weesbeach, Bunyan, Osborne.

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Rates: For long distance equipment in Sarnia, \$30 for business offices; \$25 for residential places.

The above is for individual metallic circuit line. Blake equipment, \$5 less for each in Petrolea, \$5 less than in Sarnia. In the smaller places, \$15 per annum.

The company will give telephones to farmers and residents in the rural districts at \$20 per annum, provided there is one subscriber for each mile of line outside the limits of a municipality have a regular exchange. The Bell Company has never been requested to put in rural service except in two instances, and service was immediately installed. They have met all demands for service thus far. The present system seems to satisfy the public so far as it is possible under the circumstances. There are points in the county which should, in our opinion, be connected with the long-distance lines, viz.: Rutherford, Oakdale, Corunna, Aberfeldy, Wilkesport and other places. With these exceptions, the county is fairly well covered.

This county council would approve of a well matured scheme for managing the telephone service of the country by the government in much the same manner as the post office department, and would approve of having the same fully extended through the rural districts at as reasonable rates as the actual cost will permit, if after investigation such should be deemed feasible and advisable.

All of which is respectfully submitted.

F. C. WATSON,
Chairman.

No. 257.

J. R. McNEILLIE, Clerk and Treasurer.

The Chairman,
Select Committee on Telephone Systems,
House of Commons, Ottawa.

LINDSAY, ONT., July 19, 1905.

SIR,—I have the honour, by instructions from the council of the county of Victoria, to reply to your letter of June 2, asking for information respecting the telephonic conditions in this locality.

It was present to the mind of the committee appointed by the council to deal with your communication, that some years ago there had been a contest between the Bell Telephone Company and some private individuals respecting the extension of telephone service to various points in the county of Victoria, and that Mr. J. G. Eyres, now of Lindsay, was an active combatant on the side of the public. An interview with Mr. Eyres shows him to be the historian of an event in telephone affairs which is worthy of being recorded in the proceedings of the Select Committee of the House of Commons. Mr. Eyres and those who were associated with him won a notable victory. The leader is, naturally, not desirous of being called before the Committee, but should the taking of evidence be continued at the next session of parliament, the testimony Mr. Eyres could give would throw a flood of light on the methods of the company in preventing and withholding service from what the company may declare to be non-paying points, unless forced by the enterprise and courage of interested persons.

To Mr. Eyres and his colleagues is owing the result that the service given by the company extends to almost every village and grain-buying station in the county of Victoria.

Besides the service given by the company, there is a private system covering the southern portion of the township of Mariposa, with which the company gives connection at the village of Little Britain.

On the main question, the council adheres to the terms of their petition to His Excellency the Governor-General in January last, that the long-distance telephone business of the Dominion should be owned and operated by the government.

I have the honour to be, sir,

Your obedient servant,

J. R. McNEILLIE,
Clerk, County of Victoria.

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No. 258.

COUNTY CLERK'S OFFICE, COUNTY OF HALTON,
MILTON, ONT., August 18, 1905.

Sir WILLIAM MULOCK,

Chairman, Select Committee on Telephones.

SIR,—The county council of Halton has instructed me to say, in answer to your letter of June 2 last, that, while no special complaint is offered as to the efficiency of the system in this county, the use of the telephone would be much more general, and the service to the public made thereby more efficient if a substantial reduction were made in the charges that now prevail. The council believes that a general adoption of the telephone throughout the rural districts would be of great benefit to all concerned.

I have the honour to be, sir,

Your obedient servant,

WM. PANTON,
County Clerk.

No. 259.

YORK COUNTY, N.B.

To the Honourable Chairman of Select Committee on Telephone Inquiry, Sir William Mulock.

SIR,—In response to your letter addressed to the municipality of York, under date of June 3, last, through its secretary, F. St. John Bliss, the Committee appointed by the warden of York county at the semi-annual session of the county council, held on Tuesday, July 4, 1905, beg leave to report as follows:—

We have within the confines of our county two systems of telephone connection, the New Brunswick Telephone Company of some years' standing and operation, doing a long distance business entirely through pay stations at toll rates located at a few scattered points, the said company operating a fairly good service of its kind, *i.e.*, one controlled by a private corporation, which has enjoyed up to last year a monopoly of the telephone business of this county at rates that in many cases must show a large margin of profit for the company over and above a fair return on their money invested. The pay stations of the New Brunswick Company in the county outside of the city of Fredericton exchange, at present number about nineteen (19), which covers but a small portion of the rural field. The New Brunswick Company do not lease 'phones anywhere, operating solely on the pay station toll rate system, outside of cities and towns.

In contrast with the New Brunswick Company, a new company known as the Union Telephone Company, entered the western end of our county in the month of May, 1904. This company is operated solely on a mutual co-operation basis. They are seeking to ruralize the telephone system of York county, they have in a large measure done in the counties of Carleton and Victoria to the north. They built and operated last year a circuit, covering some fifty miles in York county, on which they have leased twenty-six 'phones, many of them in farmers' houses, and they are now constructing a main line of thirty-seven miles following the St. John river to Fredericton, the capital of the province, and will commence work on two branch lines of fourteen and sixteen miles respectively to connect with main line in a few days. All of these three districts are now without telephone connection, and a number of telephones have been subscribed for on each circuit—more of course will doubtless be taken when construction is completed.

They are building these new extensions in York county in a substantial manner, and putting on the latest improvements and appliances known to the business. Their main line is to be number 12 copper wire, continuous circuit of two wires for long-distance business, and for local circuits two number 9 copper wires will be used, making metallic circuits throughout. The instruments used are to be the newest and best made. All the people are asked to take stock, for purposes of extension of the system through their individual territory, thus participating in profits as well as privileges,

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and making the system thoroughly mutual. As to rates: They are charging \$15 per annum for farmers' 'phones with free use of circuits and a small switching charge in addition for long distances outside of the circuits, which average 35 to 50 miles.

From inquiry among the people who are now stockholders and lessees of telephones on the lines of the Union Telephone Company, we would report that the greatest satisfaction exists with the new system, and it is being adopted and called for in new districts more rapidly than the company at present can build, though everything we are assured will be done to expedite the work of connecting the different parishes in the county, and linking all the different districts together.

In regard to government ownership of telephone lines, we have to say that, that is a matter that in our limited scope of time for consideration, we do not care to hazard an opinion further than to say we do not think that our county with the development of telephone work going on at present, could be better served by government ownership.

Respectfully submitted.

HEDLEY F. GROSVENOR,
M. BYRON McNALLY,
Committee.

Certified.

F. ST. JOHN BLISS,
Secretary-Treasurer,
York County, N.B.

No. 260.

YARMOUTH, N.S., July 28, 1905.

Sir WM. MULOCK,
Chairman of Select Committee on Telephone Systems,
Ottawa.

DEAR SIR,—I am instructed by the town council of the town of Yarmouth to submit the following regarding telephonic conditions in our town:—

The principal telephone operating in this section is a joint stock company, with 237 subscribers.

The rate charged to business people is \$22 per annum; if Blake sets are used, the charge is \$5 additional, giving complete long-distance service. Residences are \$17 per annum.

The service is as efficient as can be expected from a grounded system which is out of date.

Owing to the present rate charged, and the small number of subscribers, it is plain to be seen that the revenue would not be adequate to warrant the instalment of an up-to-date metallic system.

Regarding the long-distance service, the same might apply, as the grounded system is still in use. Sections of the long-distance lines are owned by small companies, and are probably not what they should be. These different companies are not in a position to expend what would be required to furnish an up-to-date service.

The present town system has connections with all towns and villages of any size.

The fee for outside messages, 20 cents for five minutes conversation.

The quality of outside service depends to a certain extent on atmospheric conditions, lines being grounded.

In conclusion, I might say the system may be as good as we can reasonably expect from the present conditions, but is very much inferior to towns of our size, say for instance in the United States.

I am, dear sir, yours truly,

HIRAM GOUDEY,
Town Clerk.

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No. 261. LETHBRIDGE BOARD OF TRADE.

M. YOUNG, President. L. M. JOHNSTONE, Vice-president. F. H. BARNES, Secretary.

Hon. WM. MULOCK, LETHBRIDGE, ALBERTA, July 20, 1905.
Postmaster General, Ottawa, Ont.

DEAR SIR,—Referring to your circular letter of June 2, I beg to advise you that I have obtained the following information concerning the telephone system in this town:—

Business rate in town.	\$35
Residence rate in town (with business 'phone also)	20
Residence rate without business.	25

Desk 'phone, \$3 extra; extension 'phone, \$10 extra.

There are 130 telephones in Lethbridge.

I have also been instructed by the board to state that we found the service very satisfactory, but that in our opinion the rates are excessive.

Yours truly,

F. H. BARNES,
*Secretary.***No. 262. TOWN OF INNISFAIL.**

JAMES JENSON, Secretary-treasurer. INNISFAIL, ALTA., August 8, 1905.

Re SELECT COMMITTEE ON TELEPHONE SYSTEMS.Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General, Ottawa.

SIR,—I have the honour to inform you that the above subject was discussed last evening at the meeting of the town council, and the resolution was passed that I should inform you that:

The Bell Telephone Company are operating the local and long-distance telephone in the district of Innisfail, that they are just commencing operations in this district, and that we are not in a position to speak of the success or non-success of the system at present.

The following are the rates:—

OFFICE.	CALL.		TOLL DAY		TOLL NIGHT.	
	Day.	Night.	3 Minutes.	Per Minute Overtime.	3 Minutes.	Per Minute Overtime.
	cts.	cts.	cts.	cts.	cts.	cts.
Calgary			50	15	25	05
Carstairs			30	10	25	05
Didsbury			30	10	25	05
Olds			25	05	25	05
Red Deer			25	05	25	05
Blackfalds			30	10	25	05
Lacombe			30	10	25	05
Ponoka			50	15	25	05
Wetaskwin			50	15	25	05
Millett			60	20	30	10
Leduc			60	20	30	10
Strathcona			70	20	35	10
Edmonton			70	20	35	10

I have the honour to be, sir,

Yours truly,

JAS. JENSON,
Secretary-treasurer.

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No. 263.

MACLEOD, ALBERTA, July 18, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
Chairman Select Committee on Telephone Systems,
Ottawa.

SIR,—We, the undersigned, appointed a committee by the council of the town of Macleod for the purpose of answering your letter of date June 2, 1905, referring to the telephone system of this locality, beg to reply to the same as follows:—

(1.) The Macleod telephone system is owned and operated by a local company, and has no long-distance connection.

(2.) There are about 62 subscribers, and the rates are \$30 per annum for business service, and \$18 for residences.

(3.) The service of the present system is found to be satisfactory to the extent of its present limits.

(4.) There is immediate and pressing need of long-distance connection with Calgary, Lethbridge, Pincher Creek and elsewhere, and we believe that a company that would be satisfied with a reasonable profit would have ample business to justify the outlay. We have been informed that the present company has considered the matter, but are deterred by the practical certainty of later being crushed out by the Bell Telephone Company.

We are, sir, yours faithfully,

C. J. REACH,
ARTHUR YOUNG.

No. 264.

CORPORATION OF THE CITY OF NANAIMO.

OFFICE OF THE CITY CLERK,
NANAIMO, B.C., July 12, 1905.

The Honourable Postmaster General,
Chairman, Select Committee on Telephone Systems,
Ottawa.

SIR,—Your communication of June 2 *re* telephone matters in this city, was laid before the municipal council, and was referred by that body to a committee for report. At the last meeting of the council a report was presented from which I was directed to send the following:—

1. The system in this city is controlled by a private company, and the service is fairly good. There are about 175 subscribers.

2. The charges are, for 'phones in business houses, \$3.50 per month, and in residences \$2 per month.

The charge for use of the trunk line to Victoria and elsewhere on the Island, is from 25 to 50 cents, according to the distance, for two minute conversations.

The council considers that these rates are higher than they should be, and they strongly favour government ownership of all telephone lines, as then communication may be had with outlying sections, which under the present system might not be considered profitable, but which would be of great mutual advantage.

The council would also like to see some measure of municipal control, especially with regard to the placing of pole lines in the streets.

And they would also suggest that every private corporation using the streets for their business should provide the members of the council and municipal officers with 'phones free during their terms of office.

I have the honour to be, sir,

Your obedient servant,

S. GOUGH,
City Clerk.

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No. 265.

RICHMOND MUNICIPALITY.

A. B. DIXON, C.M.C.

EBURNE, B.C., July 13, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General, Ottawa.

SIR,—In reply to yours of June 2, *re* inquiry into telephone systems in operation in this locality, I have the honour to submit the following:—

This locality is served by a branch of the system operated by the N. W. & B. I. Telephone Company, of Vancouver, B.C.

This company has two central offices, and have about twenty subscribers. The charge to subscribers is thirty-five dollars per year, which does not include long-distance charges.

The rates charged the public is 10 cents, with about one cent per mile added for long-distance messages.

The Richmond council would much prefer the government ownership of the telephone systems.

I have the honour to be, sir,
Your obedient servant,

A. B. DIXON,
C. M. C.

No. 266.

MUNICIPALITY OF MATSQUI.

ABBOTTSFORD, B.C., July 29, 1905.

The Hon. Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General, and Chairman of the Select Committee on
Telephone Systems, Ottawa.

HON. SIR,—I am directed by the Matsqui council, at its meeting held to-day, to acknowledge the receipt of your circular letter of June 2 *re* telephone systems existing in our locality.

I beg to say that our municipality is about ten miles long by about eight miles wide, and has just one telephone line, running through its centre, or nearly so, east and west, and in the whole length it has but one 'phone the public can use, one installed at the post office at Abbotsford (which is the Canadian Pacific Railway depot). Last year the charges were for short distances, ten cents; now the minimum price is 25 cents. This is considered exorbitant, and deters many from its use. Our council tried some time ago to better this state of affairs by asking the Bell Company to install a system to Mt. Lehman, which would be a great benefit to that part of the district, and upon inquiries the council was informed if the public would erect the poles the company would string the wire, but a guarantee of \$8 per month must be made, and all other expenses met. The public would readily have erected the poles if these unreasonable charges had not been made. The long-distance rates are also too high. It is very evident the company prefers a slow shilling to quick pennies, and the public will welcome the inauguration of another line that will remedy the present state of things. We maintain that where there is, as I remark, only one 'phone in existence in this ten miles there ought and would be a dozen if the charges were more within the reach of the public, and I am instructed to inform you that the council is in favour of government ownership and operation of main and local telephone service, seeing that private ownership in so many cases is so unsatisfactory.

I have the honour to be, sir,
Your humble and obedient servant,

JOHN BALL,
Clerk.

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No. 267.

THE CITY OF ROSSLAND.

CITY CLERK'S OFFICE,

ROSSLAND, B.C., July 31, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,

Postmaster General, and Chairman of Committee on Telephone Systems,
Ottawa, Ont.

Sir,—In reply to your communication of June 2 last, I am instructed to say that the British Columbia Telephone Company operate in this city, and give very good satisfaction. The municipal council appreciate very much your kindness in having a copy of the proceedings of your committee forwarded to them for perusal.

Through the kindness of the company here, they have given us the following figures:—

Telephone Rates per Month.

Individual business	\$4 00
“ residence	3 00
Party line business	3 00
“ residence	2 00

Charge for connections, \$5, or six months' rental in advance.
No telephone installed for less than twelve months.

Long-distance Trunk Line Rates per Minute.

	1st minute.	2nd minute.
To Nelson, B.C.	30c.	30c.
“ Trail	10c.	10c.
“ Northport, Wash.	25c.	20c.
“ Grand Forks, B.C.	55c.	50c.
“ Greenwood, B.C.	65c.	60c.
“ Phoenix, B.C.	60c.	60c.
“ Spokane, Wash.	55c.	50c.
“ Colville, Wash.	50c.	50c.

We have to regret the delay in obtaining this information for you. We trust your investigation will have good results.

I have the honour to be, sir,

Your obedient servant,

WM. McQUEEN,

City Clerk.

No. 268.

THE WINNIPEG PRINTERS' BOARD OF TRADE.

O. H. POLLARD, Manager.

175 McDERMOTT AVE.,

WINNIPEG, July 18, 1905.

The Chairman, Telephone Committee,
Ottawa, Ont.

DEAR SIR,—I am authorized to send you a copy of a resolution passed at a meeting of our board held July 11, 1905, and which reads as follows:—

'Resolved, that this board deplores the unsatisfactory service given by the Bell Telephone Company, and we hereby endorse the principle of municipal ownership of telephones, with government ownership of trunk lines.'

I beg to remain, sir, yours respectfully,

O. H. POLLARD.

No. 269.

THE UNITED STATES TELEPHONE COMPANY.

801 ELECTRIC BUILDING,
CLEVELAND, OHIO, July 11, 1905.

Sir WILLIAM MULOCK,
Postmaster General, Ottawa, Ont.

DEAR SIR,—Your letter of June 9, attaching a number of questions, has been received and referred to me for reply, and you will find the questions referred to answered below.

This company has pole lines over most all of Ohio, and a portion of Michigan and Indiana. Its capitalization and bonds are as follows:—

Common stock.....	\$2,000,000
Preferred stock.....	363,200
Bonds.....	2,085,000

It has been operating six years, and is a toll line only, connecting with the various independent exchange companies, furnishing them with their long-distance service. It has 15,000 miles of circuit, costing an average of \$80 per mile of circuit. The length of pole routes is 2,600 miles. The company does not own any switchboards, but has a number of toll boards connecting with all manner of systems, including magneto, central energy, central signalling and local talking; also automatic. The toll boards were manufactured by the Stromberg Carlson Telephone Manufacturing Company, the Kellogg Switchboard Supply Company, the North Electric Company and the Sterling Electric Company. The company has no telephones at all. Our rates for long-distance service are measured on the air-line basis, and are made not to exceed $\frac{3}{4}$ of a cent per mile, excepting for short distances, when the rates are made up as follows:—

10 miles or less.....	10c.
10 to 20 miles.....	15c.
20 " 30 "	20c.
30 " 39 "	25c.
39 " 48 "	30c.
48 " 56 "	35c.

The company pays 5 per cent on its bonds and 6 per cent on the preferred stock. Nothing is set aside for depreciation of property, but is kept in good shape each year and is charged to maintenance. Any re-building of lines is taken care of right out of the earnings and charged up to maintenance expenses. The company has a surplus of \$70,270.39.

The United States Telephone Company connects with all local exchange companies in the state of Ohio, and also makes connection with the long-distance companies in the states of Indiana, Michigan, Pennsylvania, West Virginia and Kentucky, so that it has connection with all companies in those states. We pay the local company originating a call 25 per cent, and not to exceed 12½c. on any three minute conversation. If the message is carried over some other company's long-distance line, in addition to our own, after the commission is deducted, the balance is divided pro rata according to the air line distance carried by each company. Before competition the Bell had about 25,000 telephones in Ohio. At this date they have about 90,000. The Bell Company does not seem to have any regular rates, and charges whatever it can get. If there is no competition it charges a great deal; if there is very strong competition it gives the service away.

In our construction department we pay our foremen from \$60 to \$75 per month; the linemen \$40; the groundmen \$25 and \$30 per month, and in addition to the above wages we pay their expenses,

You will understand, of course, that all of our work is outside of towns and cities. Our troublemen who are stationed at various points along our line receive from \$60 to

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\$65 per month, and their expenses when they are away from home. Our inspectors receive from \$60 to \$80 per month, depending on their ability and the class of work they are on. We have no wiremen in the strict sense of the term. We have but a few operators, as the local exchanges operate our lines in most cases. There are a few cases, however, in which we pay the operators, and their wages run from \$15 up to \$50 for the chief operator. Where the United States Telephone Company employs its own operators it pays the local company 15 per cent instead of 25 per cent. The United States Telephone Company has general supervision, of course, and has contracts with all of the local exchanges, and the local exchanges operate toll lines as directed by the long distance company.

If there is any further information that you may need, I will be glad to furnish it for you if I can.

Yours very truly,

M. B. OBERLY,
General Manager.

No. 270.

WEST VIRGINIA WESTERN TELEPHONE COMPANY.

FOURTH STREET,
PARKERSBURG, W. VA., July 7, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General, Ottawa, Ont.

DEAR SIR,—Replying to your communication of June 9, permit me to give you the following information concerning our telephone equipment.

This company operates in the counties of Wood, Ritchie, Doddridge, Tyler, Pleasants, and a part of Lewis, Gilmer and Jackson.

The amount of stock is \$225,000 and bonds \$125,000. The company has been operating for twelve years in territory having a population of 85,000, not all fully developed. The number of telephones in operation is 5,146, of which 2,645 are direct lines with one telephone each. 125 subscribers have also Bell telephones. The number of residence telephones is 2,260 and business 2,886. The company has 5,592 miles of long-distance wire on 931 miles of pole, or 2,796 miles of metallic circuit. The cost of the Parkersburg plant was \$96.75 per subscriber. The country system, while not fully developed cost \$172. Cost per mile of single wire as follows:—

Copper.....	\$25 54
Iron.....	\$6 25 to \$12 50

All circuits are metallic; all lines copper, except rural farmer line construction. With the exception of Parkersburg, which has an underground plant, all construction is over-head. The system at Parkersburg is central energy; elsewhere magneto. The plants were manufactured by the Stromberg-Carlson Telephone Manufacturing Company, the American Electric Company, North Electric Company, &c. The company has 1,246 rural telephones, including small rural exchange service.

Rates vary in districts as follows:—

Business.....	\$24 00 to \$36 00
Residence.....	12 00 to 25 00

Long-distance charges, 15c. to 75c. for three minutes' conversation. The rates charged on farmers' lines are same as local rates, with 8 to 12 telephones per line, the rates being based on distance from local exchange. The company pays 6 per cent dividends and 6 per cent on bonds. Ten per cent is set aside for depreciation of rural lines and smaller exchanges; 7 per cent on city plant. The company has a surplus of \$81,275. The company exchanges service with 31 companies in the state of West Virginia, and connects with the United States Long Distance Company of Cleveland, Ohio, giving service throughout Ohio, Indiana and all other United States territory.

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Before competition, the Bell had about 1,675 telephones; at this date, 497 telephones, of which latter 206 are residence and 291 business.

Before competition the Bell rates were \$78 business, \$56 residence; at this date they are business \$15 to \$30 per annum, residence, \$7.50 to \$20 per annum.

Wages paid are: Foremen, \$75 per month; troublemen and inspectors, \$55 to \$60; wiremen, \$2.50 per day; operators, rural exchanges, \$20 to \$25 per month, city exchanges, 6 cents to 10 cents per hour; the merit system being used in city exchanges.

Cost of apparatus: Magneto switchboard, about \$2.50 per line, equipped; wall telephones, \$6.25 to \$11.50 each; desk telephones, \$8.50 to \$14.50.

We are jobbers in materials and supplies, hence our figures would not, perhaps, give you the information you desire.

The city of Parkersburg comprises the largest exchange we have on our system, and is one of the most complete and up-to-date small telephone plants in the United States, the cable equipment being of the John A. Roebling's Sons Company of Trenton, N.J., make. The switchboard and telephones are all of the Stromberg Carlson Tel. Manufacturing Company make of Rochester, N.Y. All of the wire, both interior and exterior, are of the Roebling make. We operate a number of small magneto exchanges outside of the city of Parkersburg. Our system began as a farmers' mutual company, but was incorporated in 1895 and entered into the commercial field, and has been more than successful in its operation. The West Virginia owns 90 per cent of the stock of the Marietta Telephone Company, operating the city of Marietta, Ohio, and Washington county. However, this plant is not reckoned in the above statement, but is operated independent as an underlying corporation. The company also controls directly or indirectly a number of smaller companies in the state, which, when taken in conjunction with the original plant, makes it the largest independent company operating in this section of the Ohio valley. Since competition the Bell Company have reduced their rates, and have always given lower rates of service than we do. The fight has been aggressive, and taking the whole territory the ratio is ten (10) to one in favour of our company. We have been able to pay fixed charges, repairs, maintenance, and improvements and betterments (which are always charged up to maintenance account, and not to improvements or betterments), and pay 6 per cent on our stock and bonds, and carry a large amount annually to our surplus fund. We have never earned less than 15½ net on our common stock, but invariably pay but 6, carrying the residue, after depreciation charges have been deducted, to surplus account.

When we began operation in this field our competitors stated that our rates were too low, and that we could not maintain ourselves in the field at the prices we charged. However, it is true that they immediately reduced their own prices, and have been giving service for less money than we do. We can say that our success has been far ahead of our expectations, and our business constantly growing and increasing.

Yours very truly,

A. C. DAVIS.

No. 271.

NEWARK TELEPHONE COMPANY.

HARRY SWISHER, President. C. E. HOLLANDER, Manager. C. H. SPENCER, Secretary.

OFFICE, 38½ HUDSON AVENUE,

NEWARK, OHIO, July 13, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,

Postmaster General, Ottawa, Canada.

DEAR SIR,—Your circular letter of June 9 at hand, and in reply we would say that the amount of our stock issued is \$100,000, and with a bonded indebtedness of \$40,000. This company has been operating for ten years in a territory of 25,000 population, and has now in service 1,935 telephones, of which 900 are on independent line and the balance on party lines. The Bell people have in this territory about a thousand telephones, as near as we can ascertain. We have in service about 1,200 resident tele-

APPENDIX No. 1

phones, and about 700 business telephones. We have about 125 miles of toll line. Our average cost per subscriber in our local plant is about \$77; the average cost per mile of toll lines about \$30. We have both iron and copper metallic circuits. We have no underground construction. We are operating a full central energy Sterling Electric Company switchboard and telephones of the same type. There are about 150 farmer line telephones, for which we charge the rate of \$18 per year, and give all subscribers a 10 cent toll rate between exchanges in this county. We are paying at the present time 6 per cent interest on our bonds, 6 per cent interest on our preferred stock, and 8 per cent per annum on our common stock. We are laying aside 5 per cent for depreciation on our plant per annum, and the surplus at the present time we are using for the growth of the plant, which amounted last year to about \$10,000. There is no interchange of service between this system and any other company except on a toll basis. In regard to the Bell telephones in service in this territory before this plant was constructed, we will say that there were 200, as ten years ago telephones were not in demand as they are at the present time. We cannot tell you anything in regard to the number of Bell telephones in residences and business houses before competition and at the present time, except that probably the Bell have no more than 300 business telephones in this city at this time. We pay our city foreman \$80 per month, our wire chief \$75 per month, our troubleman \$60 per month, our day operators \$18 per month, our relief operators \$12 per month, our chief operator \$30 per month and our chief toll operator \$20 per month. Our switchboard cost us with protection practically \$10 a line. It has an ultimate capacity of 4,000 lines, and an installed capacity of 1,200 lines. We have paid all kinds of prices for cable according to the market prices at the time that it was purchased. We pay $3\frac{3}{8}$ cents a pound for No. 14 B.B. galvanized iron wire and the market price on copper. Our poles are all cedar and chestnut, with prices according to length. We have no underground. Our system seems to be giving the best of satisfaction, and investors in the plant seem to be more than satisfied with the returns they are getting on their money.

Any further information we will cheerfully furnish.

Yours very truly,

THE NEWARK TELEPHONE COMPANY,

By CHAS. E. HOLLANDER, *Mgr.*

No. 271a.

OTTAWA, ONT., July 15, 1905.

CHARLES E. HOLLANDER, Esq.,

Manager, the Newark Telephone Co., Newark, Ohio.

SIR,—I have the honour to acknowledge the receipt of your letter of the 13th instant replying to inquiries submitted by this Committee, and assure you that your kindness and courtesy in furnishing this information is much appreciated.

Might I, however, venture to ask if you will be good enough to furnish me with particulars as to the rates charged for business and residence telephones by your company. The farmers' rates are stated, but in order to have the information complete it is desirable to have the local exchange rates.

Thanking you for your kindness in this matter, and anticipating your further reply,

I am, sir, yours faithfully,

WM. MULOCK,

Postmaster General, and Chairman of Committee.

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No. 271b.

NEWARK TELEPHONE COMPANY,

38½ HUDSON STREET,

NEWARK, OHIO, July 25, 1905.

Sir WILLIAM MULOCK,

Postmaster General, Ottawa, Canada.

DEAR SIR,—Replying to your favour of recent date, I would say that our rates are:

\$2.00 for direct line business per month.

1.50 “ 4 party business per month.

1.50 “ direct line residence per month.

1.00 “ 4 party residence per month.

Any other information desired I will be glad to furnish you.

Yours very truly,

CHAS. E. HOLLANDER.

Mgr.

No. 272.

THE CHILI TELEPHONE COMPANY, LIMITED.

42 OLD BROAD STREET,

LONDON, E.C., July 20, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,

House of Commons, Ottawa, Canada.

SIR,—Our general superintendent at Santiago-de-Chili has forwarded to us your communication of May 1 last, and we have pleasure in furnishing you with the following information regarding our system:—

The company operates in all important cities and towns throughout Chili, and has about 6,400 subscribers.

The rates are \$100 to \$150 per annum Chilian currency (\$36.50 to \$54.75), for unlimited service day and night, including Sunday.

The long-distance rates are fixed according to distance and time occupied, the greatest distance over which such service is given being about 130 miles.

The apparatus used is 'Western Electric' (Chicago) and Ericsson's (Sweden).

The local lines are single, bronze. The trunk lines, single and metallic, iron and copper. All overhead.

We also inclose copy of our last report, in which you will find further particulars which may be of use to you.

I am, sir, your obedient servant,

EDMUND PETLEY,

Secretary.

No. 273.

CHINA AND JAPAN TELEPHONE AND ELECTRIC COMPANY, LIMITED.

ALDERMAN'S HOUSE, ALDERMAN'S WALK, BISHOPSGATE, E.C.,

LONDON, August 2, 1905.

The Chairman of the Select Committee on Telephones,
Ottawa, Canada.

SIR,—We beg to hand you herewith replies to certain of the questions asked by you with reference to the Telephone Exchange at Hong Kong. As in the case of the Telephone Company of Egypt, the undertaking is at the moment in a transition stage, and is undergoing practically entire reconstruction, so that under the circumstances we fear that we cannot afford much information which is likely to be of service to you. In this case, also, any information is likely to prove misleading unless due regard is paid to, and allowance made for, the peculiar circumstances governing this class of

APPENDIX No. 1

business in an oriental country, and methods in vogue there must not be taken as necessarily suitable for application in other countries.

I am, sir, yours faithfully,

A. B. CHALMERS,
Secretary.

No. 273a.

THE CHINA AND JAPAN TELEPHONE AND ELECTRIC COMPANY,
LIMITED.

The China and Japan Telephone and Electric Company, Limited, has one exchange in the city of Victoria, Hong Kong.

Ten pounds (\$48.70) per annum up to a radius of one mile and £2 10s. (\$12.18) per annum for each one-half mile beyond. Extension instruments according to circumstances and distance. No message rate in force. The service is continuous, day, night, and on Sundays. There are no public call offices, and no trunk or long-distance lines.

Some of the older subscribers' telephones are Western Electric Standard Magneto instruments. The later patterns are by Ericsson & Company, Stockholm. The lines are single bronze wire. At present all lines are overhead, but the work of converting the system to metallic circuits in underground cables is now in hand, and will be completed by the end of the year.

There is no competition.

The system at the moment is the ordinary magneto, but is now in process of conversion, outside, from overhead single grounded lines to metallic circuits in underground cables, and inside to a central energy lamp signalling multiple board and accessory apparatus.

No. 273b.

TELEPHONE Statistics of the Hong Kong Exchange, operated by the China and Japan Telephone and Electric Company, Limited.

Name of Town.	Population.	Total Number of Exchange Lines say.	Number of Lines with one Telephone.	Number of Extension (or Extra Telephones).
Hong Kong) Victoria...)	181,918	633	589	44

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No. 274.

THE TELEPHONE COMPANY OF EGYPT, LIMITED.

Société Anonyme des Téléphones d'Égypte.

ALDERMAN'S HOUSE, ALDERMAN'S WALK, BISHOPSGATE, E.C.,

LONDON, July 31, 1905.

The Chairman of the Select Committee on Telephone Systems,
Ottawa, Canada.

SIR,—In reply to your inquiry of May 1, 1905, we beg to hand you herewith replies to certain of the questions put by you with regard to the working of this company in Egypt.

The reconstruction and extensions necessitated by the sudden access of prosperity in Egypt, and the consequent stimulus to trade and commerce, have combined to place the undertaking in a stage of transition, and this coupled with the peculiar conditions obtaining in that country, render any information at the present juncture somewhat deceptive, and not of a nature upon which to base conclusions for the establishment of similar undertakings in other parts of the world.

With regard to rural telephones, there is at present no appreciable demand for such a service, as there is no large class who would patronize it, nor are the distances sufficiently great. The company is, however, installing for the government an extensive system of 'provincial telephones,' joining up the chief towns of provinces with the outlying towns and villages, these lines being used by the government for administrative purposes.

I am, sir yours faithfully,

A. B. CHALMERS,

Secretary.

No. 274a.

EGYPT—*Continued.*

The Telephone Company of Egypt, Limited, has an exchange in each of the towns named in the attached statement.

The rates vary according to many circumstances from about £8 (\$38.96) upwards, all for unlimited service, within an area extending roughly to the outskirts of the towns, say 2 to 2½ miles.

In Alexandria, Port Said and Suez continuous service is given. Other exchanges close at midnight and open at 7 a.m. Open Sundays everywhere.

The fee for local conversations, to non-subscribers, is one piastre=2½d. (5 cents) per communication of any reasonable length.

The long-distance fees on the Cairo-Alexandria trunk line are 5 piastres up to 3 minutes and 10 piastres up to 8 minutes, equal to about 1s. ½d. (26 cents) and 2s. 1d. (52 cents) sterling.

About 160 miles (Cairo to Alexandria) is the greatest distance spoken over.

All instruments are made by L. M. Ericsson & Company, Stockholm, and are of their standard magneto patterns.

The local systems are now in course of conversion from overhead earth circuits to metallic circuits in dry core underground cables, with overhead distribution. The change is about half completed.

APPENDIX No. 1

The only trunk line at present existing in Egypt is owned and maintained by the Egyptian government, and leased to and worked by the Telephone Company. It is metallic circuit of No. 11 copper.

Payment of long-distance charges is covered by deposits from subscribers, and by cash payments at the time of speaking from call offices.

In regard to competition, there has been nothing that can be seriously considered as such.

The system at present in use is the ordinary magneto, with 'multiple' switchboards.

No. 274b.

EGYPT—*Concluded.*

TELEPHONE Exchanges operated by the Telephone Company of Egypt, Limited.

Name of Town.	Population.	Total Number of Exchange Lines say.	Number of Lines with one Telephone.	Number of Extension (or Extra Telephones).
Alexandria.....	320,000	2,020	1,807	213
Cairo.....	570,000	1,747	1,569	178
Assiout.....	42,000	38	31	7
Mansourah.....	36,000	132	114	18
Port Said.....	42,000	211	166	45
Suez.....	17,000	105	84	21
Tantah.....	57,000	152	126	26
Zagazig.....	36,000	76	58	18

No. 275.

CORPORATION OF GLASGOW.

CASTLE CHAMBERS, 65 RENFIELD STREET,
GLASGOW, July 5, 1905.

The Hon. Sir WILLIAM MULOCK,
Postmaster General, Ottawa, Canada.

DEAR SIR,—In answer to your request addressed to the town clerk for information concerning the telephone undertaking of this city, I have pleasure in forwarding you a statement containing replies to your questions.

In addition to the statement, there is forwarded by same post:

(1) Map of Glasgow telephone area, showing corporation switchboards and main routes.

(2) (a) Statement of financial statistics.

(b) Statement of telephone tariffs in Great Britain and the continent.

(3) Corporation telephone directory.

If additional information be desired I should be pleased to be of further service.

Yours truly,

JOHN MACFEE,
General Manager.

No. 275a.

GLASGOW.

TELEPHONE DEPARTMENT.—ABSTRACT STATEMENT OF REVENUE AND EXPENDITURE AND CAPITAL EXPENDITURE ACCOUNT FOR YEAR ENDING MAY 31, 1905, AND CAPITAL ACCOUNT AND BALANCE SHEET, AS AT MAY 31, 1905.

MEMBERS OF THE COMMITTEE ON TELEPHONE SERVICE.

The Lord Provost (Sir John Ure Primrose, Bart); Bailie Shaw Maxwell, Bailie Stewart, Bailie Forsyth, Bailie J. P. Maclay, Hugh Alexander, James Alexander, W. F. Anderson, William Borland, Hugh Brechin, A. Scott Gibson, Robert Harvie, Jas. H. Mathieson, Hugh J. Miller, Alex. Murray, Wm. F. Russell, D. M. Stevenson, William Wallace.

James Alexander, Convener; D. M. Stevenson, Sub-convener; William Borland, Convener of Finance Committee; John Macfee, M.I.E.E., General Manager; A. R. Bennett, M.I.E.E., Consulting Engineer.

FOURTH ANNUAL REPORT BY THE COMMITTEE ON TELEPHONE SERVICE TO THE CORPORATION OF THE CITY OF GLASGOW.

The committee beg to submit to the corporation of Glasgow the abstract statement of revenue and expenditure for the year from June 1, 1904, to May 31, 1905, together with the capital account and balance sheet as at May 31, 1905.

SUMMARY OF REVENUE AND EXPENDITURE.

Proportion of rentals brought from last year.	£24,170 19 9
Rentals received and outstanding for the year from June 1, 1904, to May 31, 1905.	£54,051 2 6
Less proportion of rentals applicable to year 1905-06 carried to suspense account.	25,165 7 0
	28,885 15 6
Sundry receipts (including terminal fees, £473 17s. 1d.)	2,369 8 9½
	£55,426 8 9½
Working expenditure (including post office royalty, £5,538 15s. 5d.; and terminal fees, £673 18s. 4d.)	34,680 8 3
	£20,746 0 6½
Net revenue.	
Out of which the following requirements had to be met:—	
1. Interest on loans.	£ 9,188 7 11
2. Sinking fund.	10,053 6 8
	19,241 14 7
Leaving a surplus on the year's operations of.	£1,504 5 11½

which has been carried to general depreciation fund.

This amount, together with the sum of £5,743 7s. 5½d. standing at the credit of the account as at May 31, 1904, makes the total sum laid aside for general depreciation purposes, £7,247 13s. 5d.

GLASGOW.

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MAINTENANCE.

The whole plant is being efficiently maintained out of revenue.

BORROWING POWERS.

Borrowing powers authorized under section 2 (2) of the Telegraph Act, 1899:—

1. On April 12, 1900.	£120,000	0	0	
2. On February 19, 1902.	100,000	0	0	
3. On February 23, 1903.	80,000	0	0	
4. On March 15, 1904.	50,000	0	0	
Total.				£350,000 0 0
Deduct amount of sinking fund for year to May 31, 1902.	£ 1,960	0	0	
Deduct amount of sinking fund for year to May 31, 1903.	5,806	13	4	
Deduct amount of sinking fund for year to May 31, 1904.	8,343	6	8	
Deduct amount of sinking fund for year to May 31, 1905.	10,053	6	8	
				<u>26,163 6 8</u>
Net amount of borrowing powers as at May 31, 1905.	£323,836	13	4	
Amount borrowed and not repaid as at May 31, 1905.	302,936	13	4	
				<u>£20,900 0 0</u>

SINKING FUND.

The following table shows the payments out of revenue to sinking fund at the rate of 3½ per cent per annum:—

Year of Borrowing.	Gross Amount Borrowed.	SINKING FUND.		
		Amount paid as at May 31, 1904.	Amount paid during year to May 31, 1905.	Total amount paid as at May 31, 1905, and applied in reduction of debt.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Year to May 31, 1901.	58,800 0 0	5,880 0 0	1,960 0 0	7,840 0 0
" 31, 1902.	115,400 0 0	7,693 6 8	3,846 13 4	11,540 0 0
" 31, 1903.	76,100 0 0	2,536 13 4	2,536 13 4	5,073 6 8
" 31, 1904.	51,300 0 0	.....	1,710 0 0	1,710 0 0
	301,600 0 0	16,110 0 0	10,053 6 8	26,163 6 8

CAPITAL EXPENDITURE.

The capital expenditure for the past year has been incurred in completing the Bell street exchange, laying down new cables in various districts, and extending the system generally by the construction of lines and apparatus for new subscribers—it amounted to £2,949 14s. 10d.; adding the sum of £320,782 12s. previously incurred, there is a total capital expenditure of £350,273 16s. 10d.

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The switch-rooms at present in operation are as follows: Central, Bell exchange, Western, Bridgeton, Kinning Park, Queen's Park, Govan, Maryhill, Springburn, Milngavie, Shettleston, Clydebank, Rutherglen, Kirkintilloch, Stepps, Clarkston, Cambuslang, Bearsden, Duntocher and Balmore.

The following statement shows the work which was contemplated under the original scheme and the work actually completed:—

Work.	Original Scheme.	Actually Completed.			
		1901-02.	1902-03.	1903-04.	1904-05.
Completed instruments.....	5,250	5,479	9,122	11,405	12,362
Partially-completed lines.....	1,200	8,787	7,387	9,065	10,293
Switchboard accommodation.....	6,050 lines.	7,060 lines.	10,826 lines.	12,062 lines.	13,334 lines.
Pairs of cable wires underground.	6,450	14,572	18,171	21,874	24,618
Mileage of pairs of wires in cables.	4,938 miles.	11,061 miles.	14,029½ miles.	17,597 miles.	19,001 miles.
Length of trenching.....	22 miles.	94 miles.	127¾ miles.	143 miles.	152 miles.
Pipes going out of exchanges	32	126	135	150	162
Capacity of pipes going out of exchanges.	6,900 pairs of wires.	27,000 pairs of wires.	31,000 pairs of wires.	36,000 pairs of wires.	40,000 pairs of wires.
Length of pipes.....	32 miles.	104½ miles.	127¼ miles.	140 miles.	157 miles.
Length of underground cable.	31 miles.	113¾ miles.	162 miles.	205¾ miles.	221 miles.
Ground poles.....	2,326	691	1,799	2,544	3,006
Roof standards.....	456	238	243	239	239

The following tables indicate briefly the financial operations of the department:—

—	1901-02.		1902-03.		1903-04.		1904-05.	
	£	s. d.	£	s. d.	£	s. d.	£	s. d.
1. Total capital expenditure.....	192,693	0 0	270,928	0 0	320,782	0 0	350,274	0 0
2. Average gross cost per station.....	35	3 4½	29	14 0½	28	2 6¾	28	6 8¼
<i>i.e.</i> , (Total capital expenditure.....) (Total number of stations.....)	(including spare plant and preliminary expenses.)							
3. Amount borrowed and not repaid.....	172,240	0 0	242,533	0 0	285,490	0 0	302,936	0 0
4. Total revenue.....	14,096	0 0	35,014	0 0	49,639	0 0	55,426	0 0
5. Total revenue per station.....	2	11 5½	3	16 9	4	7 0½	4	9 8
6. Rentals carried forward to following year	12,417	0 0	20,715	0 0	24,170	0 0	25,165	0 0
7. Public Telephone receipts.....	29	0 0	225	0 0	776	0 0	1,137	0 0
8. Working expenses, excluding P. O. royals, and terminals.....	6,832	0 0	15,968	0 0	23,154	0 0	28,468	0 0
9. Interest paid.....	2,680	0 0	6,642	0 0	8,537	0 0	9,188	0 0
10. Sinking Fund paid.....	1,960	0 0	5,806	0 0	8,343	0 0	10,053	0 0
11. Depreciation fund.....	398	0 0	1,694	0 0	3,650	0 0	1,504	0 0
12. Loss on terminal fees.....	725	0 0	1,131	0 0	299	0 0	200	0 0
13. Royalty to Post Office.....	1,379	0 0	3,405	0 0	5,007	0 0	5,539	0 0
14. Total expenditure.....	13,698	0 0	33,320	0 0	46,000	0 0	53,922	0 0
15. Total expenditure per station.....	2	10 0	3	13 0¾	4	0 7½	4	7 2¾
16. Percentage of Sinking Fund paid, plus Depreciation Fund to total capital expenditure.....	Percent.		Percent.		Percent.		Percent.	
	3·93		4·2		4·67		3·79	
17. Percentage of total expenditure to total revenue.....	97	17	95	16	92	66	97	28
18. Percentage of total revenue to capital expenditure.....	7	31	12	92	15	47	15	82
19. Percentage of outstanding rentals to gross rentals.....	13	95	9	91	7	44	7	74
20. Percentage of working expenses, less interest, Sinking Fund, and depreciation to revenue, less royalty.....	31	68	55	25	54	02	58	41
21. Stations working.....	5,479		9,122		11,405		12,362	

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SERVICE AND TRAFFIC.

The traffic through the various exchanges has continued to increase during the year, the rate at the end of the year being 40 millions per annum, counting each call as being equal to two messages. The trunk traffic has also shown an increase over the previous year. The loss incurred in terminal fees amounts to £200, against £299 last year.

PUBLIC TELEPHONE OFFICES.

The number of public call offices now open throughout the area is 362. The number of calls made from these offices during the year exceeded 300,000.

GENERAL REMARKS.

The negotiations between the Postmaster General and the National Telephone Company, Limited, during the past year created a condition of doubt as to the future position of municipal telephony, and has led to diminution of activity in telephone work generally.

The agreement resulting from the negotiations has been the subject of careful consideration by the committee, in conjunction with the committees of the other telephone-owning municipalities, and evidence was laid before the Parliamentary Select Committee on behalf of the municipalities. A report of the action taken by the committee is set forth in their minute, which will be found on pages 2428-31 of the Corporation Print No. 37.

STATISTICS.

There will be found on page 15 a statement of the work which has been executed up to May 31, 1905, and of the number of employees.

JAMES ALEXANDER,
Convener of Telephone Committee.

JOHN MACFEE,
General Manager.

GLASGOW, September 1, 1905.

DR.

I.—CAPITAL EXPENDITURE ACCOUNT, FROM JUNE 1, 1904, TO MAY 31, 1905.

CR.

Expenditure for Year to May 31, 1904.	£ s. d.		£ s. d.		Revenue for Year to May 31, 1904.	£ s. d.		£ s. d.	
	£	s.	d.	£		s.	d.	£	s.	d.
21,735 18 7				13,808 14 9	84 17 7				
9,177 9 9				5,433 11 5	49 5 8				
6,746 1 9				613 15 9	24 5 2				
2,553 12 5				3,499 13 2	7 3 4		8 5 6		
8,397 5 10				4,454 1 0	40 15 0		12 0 0		
1,213 16 5				701 14 1	47 18 4				
226 3 7				289 14 1	49,844 1 7				
			319 18 1						
			473 7 0						
			793 5 1						
50,050 8 4			29,594 9 4		50,050 8 4				29,491 4 10
									29,594 9 4

DR.

III.—REVENUE ACCOUNT, FROM JUNE 1, 1904, TO MAY 31, 1905.

CR.

Expenditure for Year to May 31, 1904.	Expenditure.	£ s. d.	£ s. d.	Revenue for Year to May 31, 1904.	Revenue.	£ s. d.	£ s. d.
£ s. d.				£ s. d.			
4,814 1 10	Inspection and Repairs Account—			20,417 3 7	Exchange Rentals Account—		
2,118 12 5	Wages.....	5,992 7 0		50,177 8 10	Proportion brought from last year....	23,798 9 5	
	Materials, &c.....	2,965 18 0	8,958 5 0		Rentals received and outstanding.....	52,992 10 0	
6,932 14 3				70,594 12 5		76,790 19 5	
500 18 4	Reconstruction Account—				DEDUCT—Proportion of rentals applicable to year 1905-6 carried to Suspense Account (<i>see</i> Balance Sheet).....	24,752 9 3	52,038 10 2
66 8 10	Wages.....	276 3 7	313 12 8	23,798 9 5			
	Materials, &c.....	37 9 1		46,796 3 0			
567 7 2					Private Rentals Account—		
	Post Office Commission Account—			297 12 2	Proportion brought from last year....	372 10 4	
27 1 6	Commission paid to Postmaster General for moneys collected by him.....		27 15 4	791 10 0	Rentals received and outstanding....	1,058 12 6	
						1,431 2 10	
5,292 3 8	Post Office Royalty Account—			1,089 2 2			
893 0 0	Royalty paid Postmaster General....	5,587 18 6			DEDUCT—Proportion of rentals applicable to year 1905-6 carried to Suspense Account (<i>see</i> Balance Sheet).....	412 17 9	1,018 5 1
2,041 14 4	" due ".....	987 10 11		372 10 4			
	Proportion carried from last year....	2,379 16 11		716 11 10			
8,136 18 0		8,955 6 4			Local Tolls Account—		
	LESS—Amount unpaid at last year... £ 893 0 0			258 16 6	Tolls received and outstanding.....		228 5 2
	Amount applicable to year 1905-6 (<i>see</i> Balance Sheet, folio 14)....	2,523 10 11		776 15 10	Public Telephones Account—		
3,129 16 11		3,416 10 11	5,538 15 5	173 19 3	Fees collected.....	1,137 8 1	
					Shifts and sales account.....	280 5 5	
5,007 1 1					Post Office Commission Account—		
	General Expenses—			167 3 7	Amount received from Postmaster General in respect of postal facilities collected by this Department.....	142 3 7½	
232 4 11	Postages and stamp duty.....	250 18 3			General Receipts—		
20 2 5	Petty expenses.....	24 18 7		61 10 0	Directory insertions received and outstanding.....	69 11 0	
11 15 4	Sub-exchange petties.....				Rents, Rates and Insurance—		
13 16 5	Central fire escape, proportion cost of.....	14 0 0		28 14 5	Commission received on insurance.....	20 6 10	
97 18 4	Deputation and travelling expenses..	165 3 0					

183 4 8	Miscellaneous	254 17 2				
150 0 0	Town clerk's fee fund for secretarial work.....	150 0 0				
31 10 0	Auditor's fee for year 1904-1905	47 5 0				
274 19 10	Wayleaves.....	395 19 9				
9,581 16 8	Salaries, wages and allowances	11,688 17 0				
			12,991 18 9			
10,597 8 7						
1,102 11 4	Printing, stationery and advertising.....		1,183 15 9			
3,498 16 7	Rents, rates and insurance.....	4,576 12 9				
187 8 8	Proportion carried from last year....	134 18 10				
3,686 5 3		4,711 11 7				
	DEDUCT—Prepaid insurance applicable to 1905-6, and carried to Suspense Account (<i>see</i> Balance Sheet)	85 10 3	4,626 1 4			
134 18 10						
3,551 6 5						
342 2 11	Fuel and light.....	351 7 11				
	Terminal Fees Account—					
958 2 4	Fees paid and outstanding	673 18 4	659 6 9		473 17 1	
	Trunk and Terminal Fees Accounts—					
33 7 4½	Fees written off	14 17 9			17 16 4	
20,519 18 2½	Balance carried to Net Revenue Account.....	20,746 0 6½				
49,639 1 2		55,426 8 9½	49,639 1 2		55,426 8 9½	

DR.

IV.—NET REVENUE ACCOUNT, from June 1, 1904, to May 31, 1905.

CR.

For Year to May 31, 1904.	—	£ s. d.	£ s. d.	For Year to May 31, 1904.	—	£ s. d.	£ s. d.
£ s. d.				£ s. d.			
8,537 9 8	Interest Account— Corporation Loans Fund.....		9,188 7 11	20,519 18 2½	By Balance from Revenue Account.....		20,746 0 6½
8,343 6 8	Sinking Fund— Amount for year applied in reduc- tion of debt.....		10,053 6 8	11 16 0	Interest account— Interest on temporary loans.....		
3,650 17 10½	General Depreciation Fund— Amount laid aside for general pur- poses.....		1,504 5 11½				
20,531 14 2½			20,746 0 6½	20,531 14 2½			20,746 0 6½

DR.

V.—BALANCE SHEET, as at May 31, 1905.

CR.

As at May 31, 1904.	—	£ s. d.	£ s. d.	As at May 31, 1904.	—	£ s. d.	£ s. d.
£ s. d.				£ s. d.			
320,782 12 0	Capital Account— Amount of capital account.....		350,273 16 10	250,300 0 0	Corporation of Glasgow Loans Fund— Amount borrowed as at May 31, 1904.....	301,600 0 0	
9,202 11 5	Stores.....		7,686 6 1	51,300 0 0	Add amount borrowed during year.....	27,500 0 0	
1,829 12 11	Tools.....		1,508 19 3	301,600 0 0		329,100 0 0	
77 7 10	Stationery.....		72 3 11	16,110 0 0	Deduct amount applied in re- duction of debt.....	26,163 6 8	
134 18 10	Insurance—Amount applicable to year 1905-1906.....		85 10 3	285,490 0 0			302,936 13 4
56 0 0	Fire escape suspense account.....		42 0 0		Sinking Fund— Amount for year to May 31, 1902	1,960 0 0	
	Change of system suspense account.....		60 10 6		" " 31, 1903	5,806 13 4	
3,669 16 11	Sundry Debtors— Exchange rentals.....	4,116 16 2					
130 7 10	Private rentals.....	66 18 7					
75 18 2	Local tolls.....	65 0 9					
97 8 4	Trunk and telegram fees.....	40 8 10					
317 10 2	Shifts and sales.....	396 15 10					

	20 18 10	Sundries.....	35 19 7½	8,343 6 8	" "	31, 1904	8,343 6 8		
	39 0 8	Terminal fees.....	67 2 10	.....	" "	31, 1905	10,053 6 8	26,163 6 8	
				4,789 2 7½					
1-2-17	4,351 0 11			16,110 0 0					
		Union Bank of Scotland.....	1,067 13 3	633 12 2	Retention Account—				
	331 3 1½	Cash in hand.....	56 1 2	5,466 3 3	Amounts retained against fulfil-				
				399 5 6	ment of contracts.....				498 0 0
				893 0 0	Sundry creditors.....				4,399 6 2½
				29 11 9	Unpaid interest.....				409 9 0
				14 4 1	Unpaid post office royalty.....				987 10 11
				195 0 0	Unpaid terminal fees.....				74 13 9
					Union Bank of Scotland.....				
					Wages, &c., payable.....				283 14 6
					Rentals Suspense Account, being				
					proportion of prepaid rentals				
					applicable to year 1905-6—				
				23,798 9 5	Exchange rentals.....				24,752 9 3
				372 10 4	Private rentals.....				412 17 9
				24,170 19 9					25,165 7 0
				2,379 16 11	Less proportion of post office				
					royalty.....				2,523 10 11
				21,791 2 10					22,641 16 1
					General Depreciation Fund—				
				2,092 9 7	Balance as at May 31, 1904....				5,743 7 5½
				3,650 17 10½	Amount set aside out of revenue				
					for year to May 31, 1905.....				1,504 5 11½
				5,743 7 5½					7,247 13 5
	336,765 7 0½		365,642 3 10½	336,765 7 0½					365,642 3 10½

GLASGOW, August 4, 1905.

As Auditors appointed by the Corporation of Glasgow, we have examined the books and accounts of the Telephone Department for the year ending May 31, 1905 (of which the foregoing are abstracts), and we hereby certify that the foregoing capital and revenue accounts and balance sheet are correctly stated, duly vouched, and exhibit the true position of the undertaking.

THOMSON, JACKSON, GOURLAY & TAYLOR, *Auditors.*

VI.—STATISTICS.

	Year 1901-02.	Year 1902-03.	Year 1903-4.	Year 1904-5.
Switchrooms in operation	9	17	19	20
Stations in Operation—				
Direct lines to the exchange, unlimited.. ..	4,532	7,019	8,385	8,563
" " toil	186	303	352	348
Party lines		13	82	289
Public telephones	27	115	235	362
Service telephones	42	60	68	72
Extensions outside	198	611	791	1,013
" inside	412	811	1,081	1,270
Private lines	80	184	377	408
Sundry lines	2	6	34	37
	5,479	9,122	11,405	12,362
Junction lines	306	494	627	910
	5,785	9,616	12,032	13,272
Mileage of metallic circuits outside switchrooms and subscribers' office—				
Miles in underground cable	11,061 $\frac{1}{4}$	14,029 $\frac{1}{2}$	17,597	19,001
" in aerial cables	26	32 $\frac{3}{4}$	35 $\frac{1}{4}$	34
" in leading-in cables	317 $\frac{1}{2}$	506 $\frac{1}{2}$	574	624
" of overhead open wires	370 $\frac{1}{2}$	791 $\frac{1}{2}$	995 $\frac{1}{2}$	1,139
Particulars of outside construction—				
Underground pipes from exchanges	126	135	150	162
Pairs of wires from exchanges	14,572	18,171	22,243	25,183
Underground cables from exchanges	60	78	92	103
Distributing points	982	1,422	1,631	1,800
Manholes built	98	107	116	135
Junction pillars erected		11	17	17
Poles erected in ground	691	1,799	2,544	3,020
Standards erected on roofs	228	243	239	036
Fixtures to building	6,342	9,370	11,671	13,239
Miles of trench opened	94	127	143	152
" pipes laid	104	127	140	157
" armoured cable laid	53	66	80	84
" cable drawn into pipes	60	95	125	137
Employees—				
Officials	11	12	12	10
General office	22	25	30	32
Stores office	8	8	7	7
Operators	121	192	243	293
Canvassers	5	8	9	13
Engineering and drawing office staff and clerical staff in Engineering and Electrical Departments	31	24	21	21
Cleaners	9	9	9	9
Inspectors, fitters, &c., in Electrical Department	106	105	108	109
Foremen, wireman, labourers, &c., in Engineering Department	315	213	132	94
	628	596	571	588

APPENDIX No. 1

No. 275b.

GLASGOW—Continued..

CASTLE CHAMBERS, 65 RENFIELD STREET,
GLASGOW, July 4, 1905.

Included in the telephone area of Glasgow are the municipalities of Partick, Clydebank, Govan, Kinning Park, Rutherglen, Pollokshaws, Kirtintilloch, Milngavie; and the townships of Bearsden, Lenzie, Stepps, Shettleston, Cambuslang, Busby, Eaglesham, Clarkston, Giffnock, &c.

There are about 1,000,000 inhabitants in the area.

The license extends from March, 1900, to December, 1913.

The system includes 20 switchrooms, ranging in number of stations from 12 to 6,500.

The number of telephones are as follows:—

	As at May 31, 1905.
Unlimited service.	8,563 stations.
Measured service (toll).	348 "
2 party lines.	42 "
4 party lines.	247 "
Public telephones.	362 "
Inside extensions.	1,270 "
Outside extensions.	1,013 "
Sundry stations.	486 "
	12,331 "

The rates are:—

- (a) £5 5s. 0d. (\$25.56), unlimited service, business.
- (b) £5 5s. 0d. (\$25.56), " residence.
- (c) £4 4s. 0d. (\$20.45), " 2 party lines.
- (d) £3 3s. 0d. (\$15.34), " 4 party lines.
- (e) £3 10s. 0d. (\$17.05), plus 1d. (2 cents), per message.

Above rates cover service over whole area, and are applicable to business and residence located within one mile from any exchange.

The service is continuous, day and night, including Sunday.

The charge to non-subscribers is one penny (2 cents) per message from public telephones.

Post office, trunk or long-distance tariffs charged plus additional terminal fee when speaking to distant National Telephone Company subscribers:—

Trunk or long-distance tariffs—

	For conversation of 3 minutes' duration.
Within 25 miles.	3d. (6 cents)
" 50 "	6d. (12 cents)
" 75 "	9d. (18 cents)
" 100 "	1s. (24 cents)

Every additional 40 miles, 6d. (12 cents).

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Terminal fees—

For conversation of 3 minutes' duration.

When trunk charge does not exceed 1s. 6d. (36 cents)	3d. (6 cents)
When trunk charge does not exceed 3s. (72 cents) . .	4d. (8 cents)
When trunk charge exceeds 4s. (94 cents)	6d. (12 cents)

Terminals not charged between corporation and post office subscribers.

Subscribers have long-distance service all over the Kingdom. Greatest distance about 450 miles direct.

The subscribers' telephones are L. M. Ericsson pattern, supplied by that firm, and Ericsson Bell Telephone Company.

All lines are metallic circuit, the construction being:

Underground—Dry core cables of low static capacity; conductors 20 and 22 gauge.

Overhead—No. 18 S.W.G. bronze for subscribers' circuits and 100 lbs. H.D. copper wire for junction circuits.

Total mileage of lines erected	20,800 miles.
Of which, underground	19,001 "
" overhead	1,799 "

The undergrounds extend 11 miles east to west, and 10½ miles north to south.

Total mileage of trench	152 miles.
" pipes	157 "
" armoured cable	84 "
Number of pipes from exchanges	162
Total pairs from exchanges	25,183
Total duct capacity	40,000

As at March 31, 1905, the amount expended on the system was £355,000, including stores and tools on hand.

The gross revenue as at May 31, 1904, was £73,809; net, £49,639.

The total expenditure per annum, including management, operating expenses, maintenance, sinking fund and depreciation is £45,989; interest on capital, 3½ per cent at present; varies slightly according to money market. Sinking fund, 3½ per cent. Surplus last year, £3,650.

Taking capital expended at May 31, 1903, which amounted to £270,938, the surplus last year equalled 1·34 per cent, to which percentage must be added 3½ per cent on total amount borrowed to May 31, 1904, making a total of 4·67 per cent.

The post office has adopted the principle of 2½ per cent depreciation. It is a debatable point whether a depreciation fund is necessary when a sinking fund is provided.

About £300 (\$1,461) per annum is paid for way leave privileges on private property. The wages paid are:—

Foremen	31s. (\$7.56) to 40s. (\$9.74) per week
Instrument fitters	10s. (\$2.44) to 36s. (\$8.78) per week
Wiremen	25s. (\$6.09) to 32s. (\$7.80) per week
Operators—	
3rd grade or learners	5s. (\$1.21) to 8s. (\$1.93) per week
2nd grade	8s. (\$1.93) to 14s. (\$3.40) per week
1st grade	14s. (\$3.40) to 18s. (\$4.37) per week
Supervisors	18s. (\$4.37) and upwards.

APPENDIX No. 1

The cost of equipment was:—

(a) Central exchange cost £32,982.

Equipped for	6,400 lines.
Ultimate capacity	8,000 "
Test jacks and frames, present	11,900
" " ultimate	12,000
High voltage guards, present	7,900
" " ultimate.	10,700

(b) Sub-exchanges cost altogether £9,670.

Equipped for	5,100 lines.
Ultimate capacity	38,000 "
Test jacks and frames, present	14,000
" " ultimate	20,000
High voltage guard frames, present.	8,000
" " ultimate.	19,000

(c) Wall instruments, 45s. (\$10.96) to 50s. (\$12.18) each.

(d) Table instruments, 45s. (\$10.96) to 50s. (\$12.18) each.

(e) The cost of underground cable varies according to class of cable and number of conductors, *e.g.*—

1 pair	£16 per mile.
12 pair	£74 to £108 "
24 pair.	121 to 173 "
48 pair	190 to 270 "
120 pair.	300 to 390 "
168 pair.	450 to 670 "
217 pair.	680 "
312 pair.	700 "

(f) Overhead wire—

Bronze.	10d. (20 cents) per lb.
Copper, 100 lbs.	8d. (16 cents) "

Varies according to price of copper.

(g) Poles—

Iron	10s. (\$2.44) to 21s. (\$5.12) each.
Wood.	10s. (\$2.44) to 160s. (\$38.96) "

According to size.

(h) Arms—

Iron.	2s. 6d. (60c.) to 4s. 6d. (\$1.09) each.
Oak.	9d. (18c.) to 1s. 8d. (40c.) "

(i) Insulators—5d. (10c.) to 1s. 2d (28c) each.

(j) Ducts—

Stoneware	4d. (8 cents) per foot.
Iron.	5d. (10 cents) "

4-5 EDWARD VII., A. 1905

The National Telephone Company claim to have 23,000 telephones in the Glasgow area. An analysis of the 1905 directory gives the following:—

Direct line stations	8,382
Party line stations	6,641
Sundry	905

(Including 1,000 call offices) 15,928

The 1900-1901 directory gives—

Direct line stations	6,590
Party line stations . . . . .	...
Sundry	341

6,931

The tariffs charged by the National Telephone Company before competition were:

- £10 0 0 (\$48.70), unlimited, 1st connection.
- 8 10 0 (\$41.40), unlimited, 2nd connection.

In some cases as much as £25 (\$121.75) was charged for an exchange line. The tariffs since competition commenced are:—

- £10 0 0 (\$48.70), 1st connection, unlimited.
- 8 10 0 (\$41.40), 2nd connection, unlimited.
- 6 0 0 (\$29.22), 2 party line, unlimited.
- 4 0 0 (\$19.48), 4 party line, unlimited.
- 5 0 0 (\$24.35), measured service for 600 calls; £1 for additional 300 calls.
- 5 0 0 (\$24.35), measured service for houses for 1,500 calls.
- 2d. (4 cents) per day—ten party line, equal to £3 1s. 0d. (\$14.85) per year; calls in excess of second per day, 1d. (2 cents) each.

As the National Telephone Company does not publish detailed statistics of its telephones, the figures should be taken as approximate. It is not possible to give the number of the National Company's residence telephones.

The National Company's direct lines include a large number of service lines for residences at £5 (\$24.35) per annum for 1,500 calls, and the party lines are mostly composed of 20 party lines at 25s. (\$6.08) per annum for 600 calls.

There is no local inter-communication between the subscribers of the competing systems. All subscribers, however, have the right to the use of the state trunk lines at the charges mentioned in answer No. 15. National Company's subscribers are charged trunk fees only, while corporation subscribers pay the terminal fees in addition. The corporation relieves its subscribers of terminal fees up to 20s. (\$4.87) for each in any one year on outward trunk calls.

Between 4,000 and 5,000 approximately, subscribe to both the 'Municipal' and 'National' telephones at the same address.

Accounts for toll fees are rendered quarterly, and payable within 28 days. Trunk and postal service fees are rendered to the subscribers monthly, and are payable within 7 days. Although deposits against these fees are not generally exacted, subscribers can deposit a sum and work it off from month to month. The trunk fees and telegraph charges are paid to the post office each month.

In the five chief city exchanges the call wire system of switching was adopted. In the other exchanges the magneto-ring-through system is in operation.

GLASGOW.

APPENDIX No. 1

No. 275c.

GLASGOW—Continued.

FINANCE STATISTICS (TELEPHONE DEPARTMENT).

	1901-02.			1902-03.			1903-04.			Total.
	£	s.	d.	£	s.	d.	£	s.	d.	£
1 Total capital expenditure.....	192,693	0	0	270,938	0	0	320,782	0	0	320,782
2 Average gross cost per station.....	35	3	4½	29	14	0½	28	2	6¾	
<i>i.e.</i> } Total capital expenditure } } Total number of stations }	(Including spare plant and preliminary expenses.)									
3 Amount borrowed and not repaid....	172,240	0	0	242,533	0	0	285,490	0	0	285,490
4 Gross revenue.....	26,513	0	0	55,729	0	0	73,809	0	0	
5 Net revenue.....	14,096	0	0	35,014	0	0	49,639	0	0	
6 Net revenue per station.....	2	11	5½	3	16	9	4	7	0½	
7 Rentals carried forward to following year.....	12,417	0	0	20,715	0	0	24,170	0	0	
8 Public telephone receipts.....	29	0	0	225	0	0	776	0	0	
9 Working expenses, excluding P.O. royalty and terminals.....	6,832	0	0	15,968	0	0	23,154	0	0	
10 Interest paid.....	2,680	0	0	6,642	0	0	8,537	0	0	17,859
11 Sinking fund paid.....	1,960	0	0	5,806	0	0	8,343	0	0	16,109
12 Depreciation fund.....	398	0	0	1,694	0	0	3,650	0	0	5,742
13 Loss on terminal fees.....	725	0	0	1,131	0	0	299	0	0	2,155
14 Royalty to post office.....	1,379	0	0	3,405	0	0	5,007	0	0	9,791
15 Total expenditure.....	13,698	0	0	33,320	0	0	46,000	0	0	
16 " per station.....	2	10	0	3	13	0¾	4	0	7½	
17 Percentage of sinking fund paid, plus depreciation fund to total capital expenditure.....	Per cent.			Per cent.			Per cent.			Average p.c.
	3·93			4·2			4·67			4·26
18 Percentage of total expenditure to net revenue.....	97·17			95·16			92·66			94·99
19 Percentage of net revenue to capital expenditure.....	7·31			12·92			15·47			11·9
20 Percentage of outstanding rentals to gross rentals.....	13·95			9·91			7·44			
21 Stations working.....	5,479			9,122			11,405			

No. 275d.

GLASGOW—Continued.

COMPARATIVE STATEMENT SHOWING FINANCIAL RESULTS OF THE NATIONAL TELEPHONE COMPANY AND THE GLASGOW CORPORATION TELEPHONES.

	Standard Rate for Unlimited Service.	Interest and Dividends.	Provision against the Future.	Remarks.
The National Telephone Company, to 30th June, 1904.	£17, London. £10, provinces. £8 10s. in some smaller towns in provinces.	4·29 per cent. Average rate of interest and dividends paid on various stocks and shares.	1·52 per cent.	Carried to reserve fund and invested in Company's business. (From 33rd report presented to shareholders.)
Glasgow Corporation Telephones, to 31st May, 1904.	£ s5.	3·20 per cent. Interest on borrowed money.	4·67 "	Includes sinking fund and depreciation fund. (From 3rd annual report and balance sheet.)

GLASGOW.

No. 275e.

GLASGOW—*Continued.*

FINANCE STATISTICS COMPILED FROM THE LATEST BALANCE SHEETS ISSUED BY THE UNDERNOTED TELEPHONE UNDERTAKINGS IN GREAT BRITAIN, CANADA AND THE UNITED STATES.

EXTRACTED FROM THE 'AMERICAN TELEPHONE JOURNAL,' MARCH 11, 1905.

In order to throw some light upon the financial side of telephone competition, we publish herewith some statistics showing results of the working of telephone monopolies in Great Britain and Canada, in comparison with those of competitive undertakings. These figures prove conclusively what it is possible for a company or municipality having a system that is well managed and legitimately capitalized to accomplish, as compared with a monopoly whose capital includes much watered stock, and whose obsolete plant is replaced at the expense of telephone users, instead of being charged against the profits of the undertaking. It will also be noticed that on both sides of the Atlantic the comparisons between the monopoly and its competitor show almost identical results, the slight difference being in favour of the two United States independent companies quoted. This is due to the fact that there are more subscribers within the same area in American cities than in Great Britain. Another very significant fact is that the average capital per station of the monopoly (and especially is this the case in Canada) includes a large proportion of obsolete plant and single-grounded lines; whereas the competitive systems are all modern plants, comprising long-distance telephones, copper metallic circuits, and a large percentage of underground wires.

The figures for the United States and Canada include the long-distance lines, which in Great Britain are owned by the state, therefore some allowance must be made in this respect, but it will be seen from the mileage of long-distance wire per telephone that if the figures could be accurately dissected, it would not make the 'Bell' compare more favourably with the 'Independent' results.

	MONOPOLY.		COMPETITIVE.				
	National Tel. Co. (England).	Bell Tel. Co. of Canada.	Glasgow, Scotl'd (Municipal).	Portsmouth, England (Municipal).	Guernsey, Channel Isles (State). (No competition)	Inter-State Tel. Co., Illinois.	Citizens' Tel. Co. Grand Rapids, Mich.
Total capital expenditure	\$50,681,963 00	\$8,000,000 00	\$1,562,208 00	\$155,329 00	\$144,851 00	\$969,915 00	\$1,609,280 00
Average capital per station	168 50	139 93	137 00	93 62	94 34	96 99	98 20
Revenue	9,413,477 00	1,877,605 00	241,742 00	29,137 00	19,792 00	150,410 00	343,392 00
Revenue per station	31 28	†32 84	21 19	17 55	16 22	15 04	20 95
Annual expenditure, including interest and dividends	6,921,099 00	*2,407,634 00	224,020 00	23,215 00	18,813 00	114,971 00	211,279 00
Annual expenditure per station	23 01	†42 11	19 63	13 00	15 45	†11 50	†12 89
Interest and dividends	4·29 p.c. (average on bonds & stock)	5 p.c. on bonds 8 p.c. on stock	3·20 p.c. on bonds	3 p.c. on bonds.	3 p.c. on bonds.	5 p.c. on bonds. 4 p.c. on stock.	8 p.c. on stock.
Set aside for sinking fund, depreciation, &c.	1·52 p.c.	3 28 p.c.	4·67 p.c.	6·06 p.c.	5 p.c.	3·66 p.c.	3·1 p.c.
Percentage of annual expenditure to revenue	73·54	95·45	92·66	79·67	95·05	76·43	61·53
Percentage of revenue to capital expenditure	18·57	31·52	15·47	18·57	17·23	15·52	21·34
Number of telephones	300,775	57,172	11,405	1,659	1,217	10,000	16,388 (5,605 in Grand Rapids).
Business rates—							
In cities—London	\$82 79						
"	48 73	\$30 to \$50	\$25 47	\$24 35	\$24 35	\$30 to \$40	\$30 to \$36
In small towns	41 40	15 " 25				15 " 24	12 " 24
Residence rates—							
In cities	As above.	20 " 30	As above.	As above.	As above.	18 " 24	18 " 24
In small towns	As above.	15 " 25				12 " 18	9 " 18

NOTE. The 'Bell' rates in small towns cover, in most cases, a distance of only half-a-mile of single-grounded line, and do not include long-distance telephones.
 * Including long-distance receipts, \$2,522,275. † Including long-distance receipts, \$44.12. ‡ Includes expenditure on long-distance lines.

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STATEMENT OF TELEPHONE TARIFFS

Nature of Service.	Germany. (Government).	Wurtemberg. (Government).	Bavaria. (Government).
Exclusive line— Unlimited service.	£4 (\$19.48) p. ann., centres up to 50 subs. £5 (\$24.35) " " 50/100 " £6 (\$29.22) " " 100/200 " £7 (\$34.09) " " 200/500 " £7 10s. (\$36.53) " " 500/1,000 " £8 (\$38.96) " " 1,000/5,000 " £8 10s. (\$41.40) " " 5,000/20,000 " £9 (\$43.83) " " above 20,000 "	£6 (\$29.22) p. ann., within town limits; suburbs, ½d. (1c.) each call, in addition to rental.	£4 (\$19.48) to £7 10s. (\$36.53) p. ann., according to number of subscribers
Exclusive line— Message rate service.			
Toll service.			

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ON THE CONTINENT OF EUROPE.

Norway. (Company).	Sweden. (Govt. and Co'y).	Belgium. (Government).	Switzerland. (Government). ¹	Denmark. (Company).	Holland. (Municipal).
<p>Christiania.</p> <p>Single wires, £4 8s. 10d. (\$21.62) p. ann., 6,000 calls; £5 (\$24.35) p. ann., over 6,000 calls.</p> <p>Other towns.</p> <p>Single wires from £2 4s. 5d. (\$10.80) to £4 (\$19.48) p. ann.</p> <p>Double wires from £2 15s. 5d. (\$13.50) to £4 17s. (\$12.62) p. ann.</p> <p>N. B.—In some towns telephone instruments are owned by subscribers and maintained by telephone companies.</p>	<p>Stockholm.</p> <p>State Telephone Department.</p> <p>Business £2 15s. 6d. (\$13.50) p. ann.; entrance fee, £2 15s. 6d. (\$13.50).</p> <p>Private houses, £2 15s. 6d. (\$13.50) p. ann.; no entrance fee.</p> <p>Allmänna Tele. Company.</p> <p>£4 8s. 10d. (\$21.62) p. ann.; entrance fee, £2 15s. 6d. (\$13.50) or £5 11s. (\$27.03) p. ann. with no entrance fee.</p> <p>Allmänna Tele. Company.</p> <p>Business, £2 10s. (\$12.18) p. ann.</p> <p>Private houses, £2 (\$9.74) p. an., limited to 100 calls per quarter.</p>	<p>Brussels.</p> <p>£10 p. ann.</p> <p>Other towns s from £5 to £9 p. ann.</p>	<p>Switzerland. (Government).¹</p> <p>1st y. £4 (\$19.48) p. ann.</p> <p>2nd y. £2 16s. (\$13.64) p. ann.</p> <p>3rd y. £1 12s. (\$7.79) p. ann.</p> <p>½d. (1c.) e a c h call.</p>	<p>Denmark. (Company).</p> <p>Copenhagen.</p> <p>Business, £6 13s. 4d. (\$32.46) p. a n n . , 5,000 calls; £7 15s. 6d. (\$37.87) p. a n n . , over 5,000 calls.</p> <p>Private houses, £5 (\$24.35) p. ann.</p> <p>Other towns.</p> <p>£2 4s. 5d. (\$10.80) to £4 3s. 3d. (\$20.26) p. ann.</p> <p>Funen Municipal Co'y.</p> <p>£2 10s. (\$12.18) to £3 1s. 1d. (\$14.87) p. ann. according to size of centre, for 1,200 calls; 5s. 6d. (\$1.34) p. 100 calls above 1,200.</p>	<p>Holland. (Municipal).</p> <p>Amsterdam, Rotterdam and Hague.¹</p> <p>£7 10s. p. ann.</p>

STATEMENT OF TELEPHONE TARIFFS IN GREAT BRITAIN.

Nature of Service.	Post Office Rates. Per annum.	Corporation Rates. Per annum.	NATIONAL TELEPHONE COMPANY'S RATES.	
			Competitive Areas Per annum.	Non-Competitive Areas generally. Per annum.
Exclusive line, with unlimited service.	London, £17 (\$82.79); second connection, £14 (\$68.18); provincial rates, £7 10s. (\$36.53) to £10 according to distance from exchange.	From £5 (\$24.35) to £6 6s. (\$30.68). In case of Hull, for business premises, second connection, £5 15s. (\$28.01); private houses, £5 (\$24.35). Portsmouth, second connection, \$5 5s. (\$25.57).	£10 (\$48.70). Second connection, £8 10s. (\$41.40).	£10 (\$48.70). Second connection £8 10s. (\$41.40). In some towns, first connection, £8 (\$38.96) to £8 10s. (\$41.40); second connection, £7 4s. 6d. (\$35.17) to £8 10s. (\$41.40).
Exclusive line—Message-rate service.	Inside county of London, £5 (\$24.35); additional calls inside county of London, 1d. (2c.) each; outside, 2d. (4c.) each. Outside county of London, £4 (\$19.48); additional calls to any subscriber on same exchange, 1d. (2c.) each; to any other exchange, 2d. (4c.) each.	Portsmouth only. £5 (\$24.35) for 1,800 calls.	£5 (\$24.35), £6 (\$29.22), £7 (34.09), £8 (\$38.96), £9 (\$43.83). Rental entitles subscribers in different areas to varying number of calls per annum. (See Statement below.)	
Toll service—Exclusive line	Provincial, £4 10s. (\$21.92), with 360 free calls; 1d. (2c.) each additional call.	Glasgow and Brighton, £3 10s. (\$17.05); 1d. (2c.) outward call. Swansea and Hull, £3 (\$14.61); 1d. (2c.) outward call. Portsmouth, £3 10s. (\$17.05); ½d. (1c.) outward call. Portsmouth, £2 10s. (\$12.18) per annum.. 1d. (2c.) outward call	£3 10s. (\$17.05) with 1d. (2c.) per outward call, in every area except Portsmouth, which is £3 10s. (\$17.05), with ½d. (1c.) per outward call.	£3 10s. (\$17.05). 1d. (2c.) each outward call.
Two-party line.....	London, £3 (\$14.61) on any exchange, except Central, plus 1d. (2c.) or 2d. (4c.) per call, with minimum of £3 (\$14.61).	Glasgow, £4 4s. (\$20.44) unlimited.	£6 (\$29.22), unlimited.....	£6 (\$29.22), unlimited.
Four-party line		Glasgow, £3 3s. (\$15.33). Brighton, £3 (\$14.61).	£4 (\$19.48), unlimited.	

Ten-party line.....	Outside county of London, £2 (\$9.74), plus 1d. (2c.) or 2d. (4c.) per call, with minimum of £3 (\$14.61).	Each subscriber pays £3 1s. (\$14.85) per annum, equal to 2d. (4c.) per day for 2 calls; excess calls in any one day, 1d. (2c.) extra.	In some towns only. Each subscriber pays £3 1s. (\$14.85) per annum, equal to 2d. (4c.) per day for 2 calls; excess calls in any one day, 1d. (2c.) extra.
Omnibus line, or 20-party line.		25s. (\$6.09) for 600 calls, with ½d. (1c.) each additional call. Brighton, 20s. (\$4.87).	

NATIONAL TELEPHONE COMPANY'S MESSAGE RATES IN COMPETITIVE AREAS.

Portsmouth.	Brighton.	Hull.	Glasgow.	Swansea.
£5 0s. (\$24.35) for 1,800 calls.	£5 0s. (\$24.35) for 1,800 calls.	£5 (\$24.35) for 600 calls.	£5 (\$24.35) for 600 calls.	£5 0s. (\$24.35) for 1,800 calls.
5 10s. (\$26.79) " 2,500 "	5 10s. (\$26.79) " 2,500 "	6 (\$29.22) " 1,100 "	6 (\$29.22) " 900 "	5 10s. (\$26.79) " 2,500 "
6 0s. (\$29.22) " 3,000 "	6 0s. (\$29.22) " 3,000 "	7 (\$34.09) " 1,600 "	7 (\$34.09) " 1,200 "	6 0s. (\$29.22) " 3,000 "
7 0s. (\$34.09) " 3,500 "	7 0s. (\$34.09) " 3,500 "	8 (\$38.96) " 2,100 "	8 (\$38.96) " 1,500 "	7 0s. (\$34.09) " 3,500 "
8 0s. (\$38.96) " 4,200 "	8 0s. (\$38.96) " 4,200 "	9 (\$43.83) " 2,600 "	9 (\$43.83) " 1,800 "	
9 0s. (\$43.83) " 5,000 "	9 0s. (\$43.83) " 5,000 "			

So far as can be ascertained only competitive areas enjoy message rate service.

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GLASGOW—*Continued.*CASTLE CHAMBERS,
65 RENFIELD STREET, GLASGOW.

LOCAL COMMUNICATION.

The exchanges are open day and night, Sundays included.

COMPLAINTS.

Subscribers are requested to communicate all complaints in writing, no verbal complaint can be recognized. In order to facilitate investigation, the time at which the fault occurred should be given. Complaints regarding incivility or inattention on the part of the staff should be communicated direct to the general manager. As complaints respecting trunk service have to be referred to the post office, they must be in writing, and particulars given. Subscribers are particularly requested not to converse with operators, any information required may be obtained from the chief operator or supervisors.

PAYMENT OF SUBSCRIPTIONS, &C.

Subscriptions are due on completion of the connections, and are payable immediately thereafter. Subscriptions, trunk, telegraph and local toll fees are not collected, but are payable at Castle Chambers, 65 Renfield street, where official receipts will be given only. The department's official form of receipt will only be recognized. Cheques should be made payable to the general manager and crossed.

Any subscriber who wishes to be disjoined from the Corporation Exchange must give notice to that effect in writing at least four months previous to the day on which his subscription for the ensuing year would become due, as per clause 6 of conditions of supply. Failing such notice, he shall be liable for another year's subscription.

TRUNK COMMUNICATION.

Subscribers to the Corporation Exchange can communicate by means of the government trunk lines with subscribers to other exchanges in all parts of the kingdom.

Trunk messages to post office subscribers in London, Newcastle-on-Tyne, Cardiff, Hull, Leicester, &c., and corporation telephones in Hull, Portsmouth, Swansea, Brighton and the National telephones at Hull and Tunbridge Wells will be charged at the ordinary trunk message rates without any terminal fees.

Trunk messages to National telephone subscribers in other towns will be charged the ordinary trunk rate plus a terminal charge, which, it is understood, will be imposed by the National Telephone Company. The corporation telephone department have arranged to free their subscribers of terminal charges on outward trunk calls to the extent of £1 per exchange line, for any one year, commencing June 1 of any year.

Corporation subscribers are recommended to draw the attention of their correspondents in other towns to the corporation exchange, and to request that all calls made to them should be made through the medium of the corporation instruments.

National telephone subscribers in Edinburgh, Manchester and Liverpool, on applying by telephone to the post offices, will be informed the telephone number of any subscriber to the Glasgow Corporation system.

The corporation will, under no circumstances, be responsible for trunk charges incurred by subscribers. Subscribers making trunk calls must do so entirely at their own risk, and if the post office decline to waive or alter any charge that may be objected to, the loss must fall on the subscriber.

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Subscribers whose numbers are not prefixed with a letter or name are requested to give the word 'Central' in addition to their number to the post office operator when asking for a trunk message or telegram, *e.g.*, Central 2456 on Edinburgh 1324.

REDUCTION OF TRUNK TELEPHONE CHARGES AT NIGHT.

The charge for a 6-minutes' conversation on the trunk telephone wires between 8 p.m. and 6 a.m. is the same as that for a single period of 3 minutes during the day. No reduction is made in the charge for a 3-minutes conversation.

Particulars of trunk line charges, &c., can be obtained from the department's offices, Castle Chambers, 65 Renfield street.

TRUNK NUMBERS.

Corporation subscribers not acquainted with the correspondents' numbers in other towns shall be afforded this information on asking the exchange for 'Directory 467,' and giving the full name and address of the correspondent wanted.

SUBSCRIBERS IN OTHER TOWNS.

Subscribers in other towns who purpose calling up subscribers on the corporation system will be supplied at a small charge with a telephone directory on making application to the general manager.

SPECIAL NOTE.

Persons in other towns may call up corporation subscribers from the call boxes in the post offices on payment of the simple trunk fee, without any terminal charge being made. For instance, a call can be made from the Paisley, Greenock, Dumbar-ton or Coatbridge, &c., post office call boxes for 3d.; from Edinburgh, Bo'ness or Ayr, &c., post office call boxes, 6d., &c. &c.

POST OFFICE FACILITIES.

The central exchange is connected with the post office, George Square, telephone numbers 910 and 3169.

Subscribers are thereby enabled to exercise any of the following facilities:—

1. Any corporation subscriber may telephone messages to the general post office (Nos. Corporation 910 and Corporation 3169) for transmission by telegraph at the ordinary rate for telegrams. He may also telephone to any postal telegraph office which can be reached either through the local exchange system, or subject to payment of the proper trunk fees, by means of the post office trunk wires, in order that the messages may be written down and forwarded as express letters.

2. No letter telephoned to a post office for delivery by express messenger may contain more than 30 words if the telephone call is for a single period of 3 minutes. If the call is for a double period of 6 minutes, 60 words may be sent, but in this case a double express fee will be charged.

3. Any person receiving an express letter in this way may send another express letter back to the post office to be telephoned to the sender of the original message on payment of the full ordinary express and telephone fees.

4. Any subscriber to a telephone exchange may obtain the services of an express messenger by telephoning to the nearest post office which is connected with his exchange

5. In general the ordinary rules for telegrams or express letters will apply to all messages telephoned to post offices for transmission in one of these forms.

6. The senders of such messages should speak very distinctly, and should spell all proper names, numbers or difficult words. The persons who take down messages at post offices will, at the end, carefully read them to the senders, who are requested to do all in their power to prevent and correct mistakes.

7. It is also possible for subscribers who have registered abbreviated addresses to make general arrangements to have all telegrams bearing such addresses delivered by telephone, in lieu of delivery by messenger. Delivery by messenger will, of course, be resorted to if a subscriber's circuit is faulty.

8. Call for post office messengers for express delivery of parcels and letters.

For further particulars of services (3) and (4) see local post office guide.

Subscribers desirous of participating in above services will please communicate with the general manager, 65 Renfield street.

The payments for cost of telegrams, postage of letters, and hire of messengers are due to the post office, but the accounts will be rendered monthly by the telephone department, and payment is to be forwarded by cheque or postal order to the telephone office, Renfield street, within one week, or on demand if necessary. Inquiries or objections in respect of accounts rendered for postal facilities can only be entertained if made within five days after receipt of account.

The telephone department reserves the right of withdrawing the services from subscribers whose payments are overdue, or who fail to comply with the rules and regulations.

DEPOSIT.

Post Office Facilities and Local Toll Service.

In order to obviate the necessity of remitting small amounts monthly, in payment of postal facilities and local toll service, subscribers may lodge a sum with the department which will be worked off according to their requirements.

TELEPHONE INSPECTORS.

Subscribers are informed that all officials of the corporation telephone department entitled to go into offices and houses are furnished with certificates of employment in the telephone department, which they will produce on demand. No householder should, therefore, admit any person about whom doubt exists unless he produces the certificate.

REMOVAL OF SUBSCRIBERS' TELEPHONES.

Subscribers purposing removing offices, &c., are requested to give at least one month's previous notice in writing to the general manager.

Removals will be charged for, and the department will not be responsible for any interruption of service due to such removals.

FIRE INSURANCE OF INSTRUMENTS.

Subscribers are recommended to include the sum of £4 in respect of each instrument in their fire policy, as per clause 5 of the conditions of supply.

WALL CARDS FOR SUBSCRIBERS' NUMBERS.

These will be supplied on calling at the department's office, Castle Chambers, 65 Renfield street.

DIRECTORY AND SUBSCRIBERS' NUMBERS.

Subscribers' numbers, names and addresses will be inserted in the first directory or supplement published after date of their connection to the exchange; and while every care is taken in compiling the list, the department will not be liable for omissions or inaccuracies. Any omissions or inaccuracies should be immediately notified, in writing, to the general manager, at the address given below. Additional insertions are charged at the rate of 5s. each per annum. The department reserves the right to GLASGOW.

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disconnect the subscriber's line from the exchange to which it may be connected, and to reconnect it with any other exchange belonging to the corporation. The department also reserves the right to alter the telephone number of any subscriber when such change is rendered necessary by the exigencies of the service, and will not be liable for any loss or inconvenience caused thereby.

JOHN MACFEE,
General Manager.

GENERAL MANAGER'S OFFICE,
CASTLE CHAMBERS, 65 RENFIELD ST., GLASGOW,
February, 1905.

GLASGOW—*Continued.*

No. 275h.

Conditions of Supply.

The following is a copy of the conditions under which the corporation supply telephone service, and subscribers shall be deemed to have a knowledge thereof:—

I.—GENERAL.

The corporation shall, as soon as practicable, connect the office of every subscriber to the corporation telephones with one of their exchanges by a metallic circuit telephone line, and shall maintain in good working order the said line and the instrument to be fitted up in the subscriber's office.

2. The subscriber shall have the right to communicate with all other corporation telephone subscribers within the Glasgow telephone area, and to use at the usual tariff rates the post office trunk lines, subject to the regulations for the time being relating thereto respectively.

3. The corporation shall not be responsible to the subscriber or liable in damages or otherwise for any delay, interruption, or failure of service, but it shall use every reasonable endeavour to repair defects and restore connection as speedily as possible after receipt of notice in writing.

4. The corporation reserves to itself the right to disconnect the subscriber's line from the exchange to which it may be at first connected, and to reconnect it with any other exchange belonging to the corporation.

5. The subscriber shall take good care of the exchange line and instrument, and of all extra instruments, additional wires, switches, and other apparatus which may be fitted up, and of all the fixtures and accessories connected therewith, and shall not damage, alter, or remove the same, nor allow it or them or any of them to be damaged, altered, or removed, nor make, nor suffer to be made, any attachments to the same, and shall not obliterate, nor allow to be obliterated, any marks, words, or numbers which may be written, painted, stamped, or impressed thereon. In the event of any of the foregoing telephonic appliances being damaged otherwise than by ordinary tear and wear, the subscriber shall pay to the corporation the cost of the repair of such damage, and in the event of any of them being totally destroyed by fire or otherwise, or stolen, or missing from any cause whatever, then the subscriber shall pay to the corporation the sum of £4 for each set of instruments as compensation for the destruction or loss thereof.

6. The subscription shall begin to run from the date of the connection of the subscriber with an exchange, and the corporation's books shall be sufficient and conclusive proof of such date, and (unless proved to be inaccurate) of all accounts between the parties, and the said subscription shall be due on that day in each succeeding year. Any subscriber who wishes to be disjoined from the Corporation Exchange must give notice to that effect, in writing, at least four months previous to the day on which his subscription for the ensuing year would become due. Failing such notice, he shall be liable for another year's subscription.

7. In the event of the annual subscription hereinafter mentioned, or any other money payable to the corporation, being in arrear for one calendar month after the same ought to have been paid, or if the subscriber shall be adjudged bankrupt, or make or enter into any composition or arrangement with his creditors, or shall execute any assignment for the benefit of his creditors, or shall have the movables within his premises poided, or if the subscriber shall commit any breach of or fail to observe any of the conditions herein contained, the corporation may, after notice in writing, disconnect the subscriber and remove the telephone appliances as from the date of such notice or the leaving of the same at the subscriber's premises, and such action shall not prejudice the right of the corporation to recover the full year's subscription and any other moneys which may be due to them.

8. The corporation reserves to itself the right to disconnect, without prejudice to any of the other conditions herein contained, any subscriber who persistently neglects to observe the instructions for using the instruments, or who uses objectionable language to the operators.

9. If the corporation shall at any time be unable, or, for any reason, unwilling, to obtain or maintain any necessary licenses, wayleaves, permission for attachment or poles, or other easements, the corporation, by notice in writing, may disconnect the subscriber, who shall be entitled to no payment or compensation except the return of so much of the current year's subscription as shall be proportionate to the unexpired portion of the year.

10. The subscriber shall give to the corporation every facility in his power for running his own wire or wires, laying underground cables, making attachments, fixing poles, &c., and will permit the corporation and its servants at all reasonable times to have free access to the subscriber's premises for the purpose of erecting, fixing, examining, repairing, or removing the said exchange line, wires, cables, instruments, poles, attachments, &c.

11. The following conditions in the license between the corporation and His Majesty's Postmaster General shall, under the penalty of the immediate disconnection of the subscriber's premises from the exchange, and the removal of all telephonic appliances, be observed by the subscriber, viz. :—

(In what follows, the expression 'local authority' means the corporation, and the expression 'telephonic message' means a spoken message or communication transmitted by telephone.)

(a) The local authority have license and permission from the Postmaster General (subject as hereinafter provided) to work and use within the licensed area telegraphs of which the transmitting and receiving instruments shall be telephones (but no other kind or description of telegraphs) for the purpose of enabling any person to transmit direct from and receive at any office to and from any other person at any other office to and from any other person at any other office telephonic messages (but no other description of telegrams) relating to the business or private affairs of such persons respectively or one of them, and the local authority shall (subject to the provisions of their license) have license and permission to receive from all such persons for or in respect of the purchase or hire or maintenance or working or use of the said telegraphs, or any part or parts thereof, for the purpose aforesaid, or for or in respect of the right or permission to transmit or receive or otherwise in respect of the transmission or receipt of such telephonic messages as aforesaid by means of the said telegraphs such sums of money or other valuable considerations as shall be agreed upon between the local authority and the said persons respectively.

The term 'business' used above shall not be construed or held to mean or include the business of collecting, receiving or delivering messages or other communications transmitted or intended for transmission by telegraph or any other business of a like kind.

(b) Neither any office whether in the occupation of the local authority or of any other person, nor any such telegraphs as aforesaid, nor any part thereof, shall be used by the local authority, or by any other person either on their behalf or by their per-
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mission, for the transmission or receipt of telegrams of any kind except such telephonic messages as are hereinbefore expressly authorized.

No office or part of any office in the occupation of the local authority, either solely or jointly with any other person, shall be used by the local authority or any other person, or be permitted or suffered by the local authority to be used by any other person, for the purpose of making any copy, transcript, memorandum or note of any telephonic message, or of the contents, substance, purport or effect of any such message received at such office by means of the said telegraphs or any part thereof—it being the express intention of these presents and of the license and permission hereby given that no written message or communication or any written copy, memorandum or note of any message or communication, or of the contents, substance, purport or effect of any message or communication transmitted to any such office as aforesaid by means of the said telegraphs, shall be made or taken at or conveyed from any such office by any person whomsoever for any purpose whatsoever.

The local authority shall make due provision and take all necessary and proper precautions for the observance of the conditions contained in this article by each and every person who may be from time to time or at any time entitled or permitted to use any office in the occupation of the local authority, or any part thereof, or the said telegraphs or any part thereof.

Nothing in this article contained shall prevent either the sender or receiver of any telephonic message from making a note or memorandum of the purport of such message for the purposes of the business or private affairs of such sender or receiver.

(c) No office whether in the occupation of the local authority or of any other person shall be used by the local authority or any other person for the collection or delivery of telegrams of any kind.

No written message or communication, or written copy, memorandum or note of any message or communication, or of the contents, substance, purport or effect of any message or communication transmitted to any office by means of the said telegraphs, shall be delivered from such office or any other office.

Subject to the provisions of the license of the local authority, no money or other valuable consideration shall in respect of the transmission or receipt of any telegram by means of the said telegraphs or any part thereof be or be promised to be paid or given to any person (other than the local authority) entitled or permitted to use the said telegraphs by any other person whomsoever.

The local authority shall take all necessary and proper precautions for the observance of the conditions stated in this article, and shall in entering into every contract or agreement with any person or persons in relation to the aforesaid business of the local authority, make due provision for the summary determination by the local authority of such contract or agreement or breach of any of such conditions by any such person or persons.

(d) Where the charges for the establishment of telephonic communication with the office of any exchange subscriber are made with reference to the number of messages transmitted, such subscriber may (notwithstanding anything contained in the license of the local authority) allow the telephones supplied to him to be used by any other person, and may charge for the use of such telephones.

(e) In case any person or persons with whom the local authority may make any contract or agreement in relation to telephonic business, or who may be for the time being permitted by the local authority to use at any office the said telegraphs or any part thereof for the purposes hereinbefore authorized, shall at any time during the continuance of these presents use any office, or the said telegraphs, or any part thereof respectively, for any purpose or by any means or in any manner other than as hereinbefore expressly authorized, and according to the conditions hereinbefore declared the following provisions shall apply:—

(1) The local authority shall forthwith determine any such contract or agreement with or withdraw such permission from any and every such person so using such office or the said telegraphs or any part thereof;

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(2) If such office belong to or be occupied by such person either solely or jointly with any other person or persons, the local authority shall forthwith disconnect such office from any other office which is or may be telegraphically connected therewith by means of their aforesaid telegraphs.

(3) The local authority shall give notice forthwith to the Postmaster General of such determination of contract or agreement or withdrawal of permission, as the case may be, together with full particulars of the reasons for the same; and

(4) The local authority shall not without the special license and authority of the Postmaster General re-establish telephonic communication between such office and any other office, or enter into any other contract or agreement with such person in relation to telephonic business, or permit him to use the said telegraphs at any other office.

12. Private wires, extensions, extra instruments, bells, switches, &c., may be supplied at rates to be adjusted from time to time.

13. The corporation reserve right to make rules and regulations, and to impose an extra charge, not exceeding £2 per half-mile, for lines exceeding one mile in length from an exchange, but exchanges will be so arranged that this extra charge will not be imposed within the city or in any burgh included in the telephone area.

14. On ceasing to be a subscriber from whatever cause, the subscriber shall surrender to the corporation the said wire and instrument, or instruments, with all fixtures and accessories, in as good condition as when received, ordinary wear only excepted, and the corporation shall remove the same, and any poles, wires, attachments, &c., which may have been erected within six months from the termination thereof, and for that purpose shall have access at all reasonable times by its agents and workmen to the premises of the subscriber, and to all other places under the control of the subscriber, on, through, or over which any part of the foregoing telephonic appliances are fixed, and the subscriber shall (except as hereinbefore provided) have no claim for any compensation or damages, or for the repayment of any part of his subscription for any unexpired portion of the year then current.

14a. The corporation shall not be responsible to the subscriber for any damage or injury arising from the leakage into the corporation telephone lines, through any cause whatever, of high tension electrical currents belonging to another system of electrical conductors.

II.—UNLIMITED SERVICE.

15. The subscriber shall pay in advance an annual subscription of £5 5s. (which includes the government royalty) for the establishment of telephonic communication and the right to transmit an unlimited number of messages.

16. The subscriber shall not send, or permit to be sent, nor receive, nor permit to be received, by or through the said line or instruments, or any of the foregoing appliances, any message in respect of which any money or other consideration shall be given, paid or promised to the subscriber, or to any person other than the corporation, and he shall not permit his instrument, or any of them, to be so used by any person other than the subscriber and his servants.

III.—TOLL SERVICE.

17. The toll subscriber shall pay in advance an annual subscription of £3 10s. (which includes the government royalty) for the establishment of telephonic communication, and shall, in addition, pay for each connection established at his call, One Penny. Accounts for calls shall be made up to the 31st March, 30th June, 30th September, and 31st December, and shall be payable at the corporation telephone offices, 65 Renfield street, within 28 days thereafter.

GLASGOW.

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CORPORATION OF PORTSMOUTH, ENGLAND.

No. 276.

TOWN HALL,

PORTSMOUTH, July 13, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General,
Ottawa, Canada.

SIR,—With reference to your circular of May 3 last, I now beg to inclose the replies which have just been supplied to me by the engineer and manager of the telephone department here to the questions sent with your letter, and I also inclose copies of the reports since the establishment of the system here.

The origin of the municipal system here was the failure to obtain from the National Telephone Company any reduction in their rate of charges, and when it was found that no reduction could be obtained, the corporation determined to apply to the Postmaster General in England for a license which was granted.

The effect of the introduction of the municipal telephone system has undoubtedly been to lower the rates of charges, and it will be seen from the accounts that notwithstanding the rates being considerably lower than those in force under the company prior to the introduction of the municipal system, a profit has been earned after providing for the proper sinking fund.

I am, sir, your obedient servant,

ALEX. HELLARD,

Town Clerk.

No. 276a.

Portsmouth has a population of 200,000. The term of the Postmaster General's license is from 1900 to 1926. There are eight switchrooms, the number of subscribers being (a) 1929; (b) 37; (c) 25; (d) 113; (e) 25; (f) 20; (g) 12; (h) 18. The total number of telephones is 2,213, of which 304 are residence, and 1,909 business connections. There are no party lines on the municipal system. There are 188 extension telephones.

The following tariffs are in vogue for both residence and business telephones:—

1. Unlimited service at £5 17s. 6d. (\$28.61) per annum
2. Unlimited service, 2nd connection at £5 5s. (\$25.77) per annum.
3. Toll service at £5 (\$24.35) per annum (1,800 outward calls free).
½d. (1 cent) per call afterwards.
4. Toll service at £4 (\$19.48) per annum (1,000 outward calls free).
½d. (1 cent) per call afterwards.
5. Toll service at £3 10s. (\$17.05) per annum, and ½d. (1 cent) per call.
6. Toll service at £2 10s. (\$12.18) per annum and 1d. (2 cents) per call.

Inside extension telephones, 25s. (\$6.08) per annum. The rates cover service over the whole area, and are for stations within 1 mile of any switchroom. The service is continuous day and night, Sundays included. The charge to non-subscribers is 1d. (2 cents) for five minutes' conversation. The long-distance rate is 3d. (6 cents) for each 25 miles (3 minutes limit). Subscribers can speak 600 miles by aid of trunk (long-distance) lines.

Metallic circuits in all cases; subscribers' lines are provided with phosphor bronze and junction circuits between switchrooms (sub-exchanges) with hard drawn copper.

All subscribers' circuits are underground with the exception of spur from cable terminals; the junction circuits connecting the several exchanges being overhead. The total amount expended on the system to date is £39,240 (\$191,098.80).

The total revenue per annum is £9,366 (\$45,612.42). The total expenditure per annum, including management, operating, maintenance, interest, sinking fund and depreciation is £7,394 (\$36,008.78).

PORTSMOUTH.

APPENDIX No. 1

The interest paid for the year ending March 31, 1905, is £969 8s. 10d. (\$4,721.17). Three per cent is provided as sinking fund. The surplus for the year ending March 31 last was £1,972 19s. 3d. (\$9,608.33).

As this undertaking is only in the third year of working no actual depreciation fund has been provided, but the surplus which has been made during that period is available for such a purpose at the discretion of the Telephone Committee.

Between £60 (\$292.20) and £70 (\$340.90) per annum is paid for way-leave privileges.

The wages paid are: Manager, £300 (\$1,461) per annum; foremen, 30s. (\$7.31) per week; instrument and switchboard men, 35s. (\$8.54) per week; wiremen, 22s. (\$5.35) to 27s. (\$6.56) per week; operators, 6s. (\$1.46) to £1 1s. (\$5.11) per week.

The prices paid for equipment are as follows: Main switchboard plant, capacity for 1,560 lines, contract price £2543 9s. 4d. (\$12,386.69); sub-exchange switchboards with average capacity of 50 lines, £64 (\$311.68); subscribers' wall telephones £2 5s. (\$10.96) each; subscribers' desk telephones, £2 5s. (\$10.96) each; hard drawn copper wire, 8d. (16 cents) to 9d. (18 cents) per lb.; bronze wire, 9½d. (19 cents) to 10½d. (21 cents) per lb.; plain wood poles, 30 feet long, 19s. 5d. (\$4.73) each; 55 feet long, 94s. 2d. (\$22.94) each; wood arms, £9 (\$43.83) per hundred; insulators, 44s. 6d. (\$10.86) per hundred.

The National Telephone Company has 417 residence telephones, of which 251 are party lines, and 1,981 business telephones, of which 1,380 are party lines. The total number of 'National' party lines is 1,631.

Before competition the 'National' had 114 residence telephones, of which 11 were party lines, and 898 business telephones, of which 105 were party lines. The total number of 'National' party lines before competition being 116.

There is no intercommunication between 'National' and corporation subscribers locally, but corporation subscribers may call up 'National' subscribers in distant towns on payment of trunk fees; the scale being 3d. (6 cents) for every 25 miles, conversation being limited to 3 minutes.

Six hundred and forty-seven subscribers have both 'Municipal' and 'National' telephones on the same premises.

Daily accounts for long-distance messages are rendered by the post office, details of which are forwarded on monthly statements to our subscribers who are requested to pay same at the offices of the department.

Subscriber's instrument.—This consists of a magneto of any ordinary construction provided with a ring-off key. This key, when in normal position, connects the subscriber's instrument to the metallic circuit, but when pressed down it connects the metallic circuit directly to 'earth' so long as it remains pressed.

Switchboard.—Each subscriber's metallic circuit contains an indicator of ordinary construction and a 4-point spring-jack. When the answering plug is inserted in the spring-jack the line indicator is cut out of circuit, and the metallic loop is in direct communication with the two circuits of the plug. The second or rear plug when out of use sits on and presses down a switch which connects the two conductors of the flexible cord joining the two plugs to a second switch, which is worked by the operator's finger. When the rear plug is sitting on its switch and the button of the second switch remains unpressed the metallic circuit into which the answering plug has been inserted, is directly on to the operator's 'phone. If in this position the finger switch is pressed, the operator's 'phone is cut out and a magneto generator is brought into circuit by means of which the operator is enabled to ring the bell of the subscriber into whose jack the answering plug is inserted. The consequence of this arrangement is that the mere insertion of the answering plug puts the operator in communication with the calling subscriber without any further movement. After ascertaining his wishes she lifts the rear plug from its position and inserts it in the jack of the subscriber called for. The lifting of the rear plug from the switch cuts off the operator's telephone and brings into circuit a ring-off indicator. This indicator is wound so

PORTSMOUTH.

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that a current passing through both coils successively will not work it but if a current enters between the two coils, the shutter falls. From a point between the two coils of the indicator a wire is taken which is connected to the pole of a ring-off battery, the other pole of which is joined to 'earth.' Supposing two subscribers are connected one can ring the other's bell without disturbing the indicator at the exchange, but when conversation is finished, if one or both of the talkers touch their ring-off buttons a current flows from the battery, actuates the indicator, and flows over both wires of the metallic loop to 'earth' through the subscriber's ring-off key. At the central exchange the main switchboard is multiplied and built for automatic calling and clearing, the energy being derived from accumulators in duplicate sets, capable of being charged from a motor generating set, provided with power switchboard. All circuits are distributed through fuses mounted on a distributing slate working in conjunction with the power switchboard.

C. M. GARDNER,

Engineer and Manager

Portsmouth Corporation Telephone Department.

July 12, 1905.

PORTSMOUTH—Continued.

TELEPHONE DEPARTMENT.

Balance Sheet, Revenue Account and Statistics, for Year ending 31st March, 1905

CAPITAL ACCOUNT.

	Payments to 31st March, 1904.			Payments this Year.			Total Payments to 31st March, 1905.		
	£	s.	d.	£	s.	d.	£	s.	d.
Underground construction... ..	11,296	3	11	3,522	6	6	14,818	10	5
Overhead construction and junction lines... ..	8,174	15	9	2,449	10	6	10,624	6	3
Exchange... ..	1,173	0	11	2,314	8	0	3,487	8	11
Instruments.. ..	5,102	11	5	1,299	2	7	6,401	14	0
Engineer's commission	1,300	10	9	385	7	4	1,685	18	1
Salaries and wages during construction... ..	989	6	6	163	13	4	1,152	19	10
Building store-room, &c... ..	247	1	3				247	1	3
Furniture and fittings... ..	149	17	9	5	11	0	155	8	9
Printing, stationery and advertising	258	3	4				258	3	4
Tools, &c	190	12	11				190	12	11
Miscellaneous... ..	217	19	3				217	19	3
	29,100	3	9	10,139	19	3	39,240	3	0

STATEMENT OF INCOME AND EXPENDITURE.

REVENUE ACCOUNT.

<i>Expenditure.</i>			<i>Income.</i>		
	£	s. d.		£	s. d.
Line repairs.....	569	0 6	Exchange rentals.....	7,222	16 8
Instrument and exchange repairs.....	692	2 6	Private rentals.....	139	8 2
Salaries.....	275	5 7	Local tolls.....	929	6 0
Wages, office.....	329	4 7	Public telephones.....	59	18 4
" operators.....	810	8 4	Post Office Commission Account—amount receivable on collection of trunk fees ..	47	5 0
Post office royalty and commission—royalty of 10 per cent on exchange rentals and local tolls.....	834	2 7	Terminal fees—amount receivable from National Telephone Co.	59	0 7
Terminal fees account—fees payable to National Telephone Co....	151	15 10	Extra insertions in directory.....	2	14 7
Printing and stationery.....	155	11 4	Shifts and sales.....	32	19 10
Rents, rates, taxes and insurance.....	379	17 11			
Wayleaves.....	62	8 0			
Contribution to Borough Treasurer's Department.....	30	0 0			
Gas and electric lighting.....	72	15 10			
Furniture and fittings.....	34	5 3			
Maintenance of loans and stamp duty.....	20	7 6			
Postages.....	73	2 7			
Miscellaneous.....	68	0 9			
Bad debts written off during year.....	£ 97	17 0			
Reserve provided this year.....	150	0 0			
	247	17 0			
Less—Amount provided last year.....	60	0 0			
	187	17 0			
	4,776	6 1		8,493	9 2
Trunk and telegram fees—fees payable to the Postmaster General.....	822	5 0	Trunk and telegram fees—fees receivable from subscribers.....	822	5 0
	5,598	11 1			
Balance to net revenue account.....	3,717	3 1			
	9,315	14 2		9,315	14 2

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AUDITOR'S CERTIFICATE.

We have examined the foregoing accounts made up to March 31, 1905, and find them correct.

We find that all interest on capital expenditure has been properly charged against the undertaking, and due provision has been made for repayment of all loans sanctioned.

HOWARD B. MORRIS,
Incorporated Accountant.

ERNEST EDMONDS,
Chartered Accountant.

PORTSMOUTH, June 1, 1905.

PORTSMOUTH—*Concluded.*

No. 276c.

STATISTICS—MARCH 31, 1905.

Number of Telephones working, exclusive of Junction Lines.....	2,147
Payments on Telephone construction	£39,240
Income for year.....	9,366
Expenditure for year.....	7,394
Profit.....	£1,972

	1903.	1904.	1905.	Increase for 12 months.
Number of subscribers' lines.....	742	1,384	1,758	374
Extension and other lines	129	293	410	117
Exchanges	4	6	8	2
Underground cables.....	6	8	10	2
" " distributors.....	61	68	80	12
Mileage of metallic circuit wire, overhead.....	308 miles	566½ miles	851¾ miles	285½ miles
" " " underground.....	1,207 "	1,224 "	1,734 "	510 "

EMPLOYEES.

	1903.	1904.	1905.	Increase.
Engineer and manager.....	1	1	1	
Assistant manager.....	1			
Chief clerk.....		1	1	
Clerks and canvassers.....	5	4	6	2
Inside superintendent	1	1	1	
Outside superintendent	1	1	1	
Inspectors and operators.....	27	34	43	9
Foremen	5	4	5	1
Wiremen, labourers, &c. (not on permanent staff)....	29	20	22	2
	70	66	80	14

PORTSMOUTH.

APPENDIX No. 1

ROTTERDAM MUNICIPAL SYSTEM.

No. 277.

ROTTERDAM, HOLLAND, July 3, 1905.

Select Committee on Telephone Systems,
Ottawa.

GENTLEMEN,—Enclosed I beg to hand you a list, containing answers to the questions made in your letter of May 1.

The answers only refer to the town of Rotterdam, and concerning the interlocal service you might apply to, 'Den Heer Directeur-Generaal, der Posterijen & Telegrafie, 's—Gravenhage.'

Yours truly,

KIST,
Manager.

No. 277a.

The government is owner and operator of the long-distance lines; municipalities and companies of the local central stations.

There are 5,200,000 inhabitants in the Netherlands. Rotterdam has 357,500 inhabitants and 4,300 local telephone subscribers.

The rates are 90 florins (\$36.18) per annum for business telephones and 66 florins (\$26.53) per annum for private telephones.

The Rotterdam radius is 5 kilometres (about $3\frac{1}{2}$ miles).

Subscribers have direct connection with the central office of Rotterdam for ordinary rate within the city, and 3 florins (\$1.20) more for 10 metres length of the line, out of the city, the last amount to be paid once only, at the beginning, but within a radius of 5 miles.

Around Rotterdam there are 25 subscribers in rural districts.

There is no measured rate in Rotterdam, and no extra charges above the rates paid by the state for long-distance conversations. Subscribers can talk within the radius of 5 K.M. (about $3\frac{1}{2}$ miles) for local conversations without further charge.

'Berliner' and 'Ericsson' apparatus is used in Rotterdam, and all lines are metallic circuits, bronze 1.5 m.M., in the cables 0.9 m.M.

Ninety-four per cent of the lines are underground and 6 per cent overground:

The amount expended on the system to date is 1,780,200 florins (\$715,640), 1895 to 1904.

The revenue for 1904 was 368,837.60 florins (\$148,272.87).

The expenses for 1904 included the following items: Rent, 52,487.83 florins (\$21,100.17); wages, 89,417 florins (\$35,945.63); depreciation, 65,588.72 florins (\$26,366.77).

The profit last year was 66,231 florins (\$26,624.86).

The cost of equipment was as follows: Multiple switchboard of the Western Electric Company, ultimate capacity 8,100 subscribers, at present 5,400. Cost of construction now in total 213,631.62 florins (\$85,880). Switchboards for different numbers of subscribers, for instance, 60—1,000 florins (\$402); 40—330 florins (\$132.66); 30—387.50 florins (\$155.75); 21—210 florins (\$84.42); 15—180 florins (\$72.36); 10—81.50 florins (\$32.76). Wire, 90 florins (\$36.18) per 100 K.G. (240 pounds), (bronze 1.5 m.m.)

All cables are armored, and buried in ground without ducts or pipes. The working is quite satisfactory.

GREAT BRITAIN AND IRELAND.

POSTAL TELEGRAPH DEPARTMENT.

No. 278.

GENERAL POST OFFICE,

LONDON, ENG., August 17, 1905.

The Chairman, Select Committee on Telephone Systems,
Ottawa.

SIR,—I have the honour by direction of the Postmaster General to acknowledge the receipt of your letter of May 1 last on the subject of the inquiry into the telephone systems in Canada, and to furnish as requested, answers (marked A) to the questions enclosed herewith, together with the following documents:—

B. Circular of telephone rates in small towns.

C. Circular of measured service rates in small towns.

D. Circular of party-line rates in provinces.

E. Descriptive pamphlet of the London Telephone Service.

F. Agreement with the National Telephone Company, dated February 2 last, with a supplemental indenture embodying certain alterations proposed by the Select Committee which examined the agreement.

G. Reprints of three articles in the 'Electrician' describing the working of recent post office exchanges.

H. Copy of the Postmaster General's report for the past financial year. *See* especially Appendix 0 and pages 18 to 23.

I. Copy of instructions for working the telephone system.

K. Directory of post office provincial exchanges.

L. Memorandum concerning rural telephones.

M. Memorandum about inter-urban working.

Much information about the telephone service in the United Kingdom, and especially as to the competition between municipal systems and the National Telephone Company in certain towns was given in evidence before a recent parliamentary committee. As soon as that evidence is published a copy shall be sent to you.

The Postmaster General takes this opportunity of thanking you for forwarding copies of the evidence taken by the select committee in Canada.

I am to add that the Postmaster General has not had great experience of the provision of telephone facilities in rural districts, and he is unable to furnish you with any useful statistics in this respect, other than the information contained in the post office provincial telephone directory. As a general rule, extensions of the trunk system have been carried out under a guarantee calculated at the rate of £5 (\$24.35) per mile of line, or under a promise of sufficient support to the new exchange to justify him in dispensing with such a guarantee. Long exchange circuits are provided on special terms, calculated at rates of from £5 to £7 (\$24.35 to \$34.09) per mile of circuit for that part of the circuit extending beyond the radius covered by subscription.

The party line system has not yet found much favour in this country.

It is difficult in purely rural districts to find sufficient subscribers to warrant the expense of establishing an exchange and connecting it with the trunk system. Some details of an experiment which has been tried of establishing village call offices may be of interest to the committee and are also inclosed (Inclosure L).

I have the honour to be, sir,

Your obedient servant,

A. H. KING.

APPENDIX No. 1

No. 278a.

GREAT BRITAIN—Continued.

INCLOSURE A.

ANSWERS TO QUESTIONS.

The United Kingdom is divided into a number of exchange areas containing generally one large town and the surrounding smaller places. These areas vary considerably in size, the largest being the metropolitan area, which is about 640 square miles in extent. These areas are connected by long-distance or trunk lines, which are all owned and operated by the state. Circuits, which may be of considerable length connecting exchanges within the same area are erected and worked by the party or parties supplying the local exchange service in the area.

There were 112,743½ miles of long-distance lines on March 31, 1905, the cost of same being about £21 (\$102.27) per mile of single wire, or £42 (\$204.54) per mile of circuit. These lines were carried upon 10,958½ miles of poles, and comprised 56,371½ miles of separate circuits. The charge for long-distance service is 3d. (6 cents) for each period of three minutes' conversation for each 25 miles up to 100 miles, 6d. (12½ cents) for each additional 40 miles or fraction thereof above 100 miles.

The distances are measured 'as the crow flies,' between the central exchanges where the trunk lines are worked, except in the case of the lines between Great Britain and Ireland. In that case, the mileage is calculated as the crow flies to the respective terminals of the cable, and an extra charge of 1s. 6d. (37 cents) for each three minutes' use is made for the use of the cable. A charge of 3d. (6 cents) for each three minutes' use is also made for the cable connecting the Isle of Wight with the mainland. Double periods are allowed for a single charge when the conversations take place at night.

Subscribers' circuits are with few exceptions of copper and metallic throughout. The size of wire varies from 150 lbs. per mile to 800 lbs. per mile.

The expenditure on trunk lines was £2,797,000 (\$13,621,390) up to March 31, 1905. The cost of maintenance was £62,394 (\$303,858.78) for year ending March 31, 1905. This amount does not include depreciation. Three per cent interest is paid on capital. The amount set aside for depreciation was £77,659 (\$378,199.33) for year ending March 31, 1905.

An account of the receipts and expenditure relating to the London service for the year ended March 31, 1905, is printed in Appendix O on page 93. It shows a balance of £93,298, a sum nearly sufficient to meet the charge for interest on capital and to provide for depreciation of plant. This balance is rapidly increasing as more of the plant comes into use and begins to earn revenue. Similar tables are also given (for the first time) in respect to the post office provincial exchange systems and the trunk line system. A table is also added to show the financial position of the three systems taken as a whole. This shows a balance of £282,321, while the estimated amount required to provide for depreciation of plan and interest at 3 per cent on the capital expenditure of £5,042,000 is £300,776. Other statistics of the post office telephone and private wire systems will be found in the appendices M. and N.

Accounts for long-distance service are rendered monthly, and subscribers are required to deposit a sum covering the monthly credit given. Persons using public call offices of course pay at the time.

The trunk lines are not used for simultaneous telegraphy and telephony.

The state owns some local telephone exchanges, and has agreed with its principal licensee, the National Telephone Company, to acquire its system in 1912. The municipalities of Glasgow, Brighton, Hull, Portsmouth and Swansea also have established systems under license from the Postmaster General. The great majority of local exchanges are in the hands of the National Telephone Company.

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The last census return of the population taken in 1901 was as follows:—

England and Wales.	32,527,843
Scotland.	4,472,103
Ireland.	4,458,775
Islands.	150,370
Total.	<u>41,609,091</u>

The number of local telephone subscribers (not including municipal) is:—

	Subscribers.	Stations.
Post office, to March 31, 1905.	25,781	32,744
Principal licensee (National Telephone Co.)		326,017
		<u>358,761</u>

The number of subscribers' telephones on the post office system in the London area is about 28,000. The corresponding figures for the company's London system are 77,000.

Owing to the division of the country in areas, it is not possible to give accurate figures either as regards the number of telephones or as regards the populations for the chief localities. Particulars respecting certain places where post office telephone exchanges exist will be found in the index of the directory (Inclosure K).

Both unlimited message, and party line rates are available for post office subscribers. Particulars of the rates are given in the circulars marked B, C and D.

The unlimited service rates of licensees vary from £5 (\$24.35) to £10 (\$48.70).

The longest trunk line circuits which are made up in practice are: For inland communications London to Cork, 776½ miles, including 27¼ miles of submarine cable. For international communications London and Marseilles, 800 miles, including 23 miles of submarine cable.

The principal types of telephones used are shown in the pamphlet marked E.

The following is the percentage proportion of overhead and underground lines:—

	Wire Mileage.	
	Overhead.	Underground and Submarine.
Local Exchange system, London.	0·6	99·4
“ Provinces.	75·0	25·0
	(Estimated.)	

The wages paid are as follows:—

Managers, post office exchanges (London), per annum—

		Mean.
	£160 (\$779.20) to £200 (\$974)	£180 (\$876.60)
Foremen, per week.	31s. to 45s. (\$7.55 to \$10.96)	38s. (\$9.25)
Instrument men, per week.	23s. to 36s. (\$5.61 to \$8.77)	29s. 6d. (\$7.19)
Wiremen, per week.	25s. to 35s. (\$6.09 to \$8.53)	30s. (\$7.31)
Telephone operators (London), per week—		
	11s., 14s., 17s. (\$2.68, \$3.42, \$4.15)	18s. 6d. (\$4.52)
	Then 1s. 6d. to 26s. (37 cents to \$6.33) (efficiency bar at 20s. (\$4.87).	

Telephone learners (in provinces), per week—

	10s., 12s., 15s. (\$2.44, \$2.93, \$3.66)
	Then by 1s. 6d. (37 cents) to maxima ranging from 20s. to 24s. (\$4.87 to \$5.83).

Telephone learners (London), per week. 7s. (\$1.71)

GREAT BRITAIN.

APPENDIX No. 1

The cost of equipment is as follows:—

(a) Central Exchange, London.—ultimate capacity, 14,400 subscribers. Equipped for full capacity of 14,400 subscribers, £6.77 (\$32.97) per circuit.

New City Exchange.—Ultimate capacity, 18,500 subscribers. Equipped for 15,500 subscribers. Cost, £7.1 (\$34.58) per circuit. Difference due to cost of fireproof materials largely used in construction.

Victoria Exchange.—Ultimate capacity, 5,400 subscribers. Equipped for 2,160 subscribers. Cost, £5.59 (\$27.22) per circuit.

Hamstead Exchange.—Ultimate capacity, 7,500. Equipped for 2,200 subscribers. Cost, £5.18 (\$25.23) per circuit.

Ealing exchange, ultimate capacity, 5,400. Cost for 1,080 subscribers, £5.48 (\$26.69) per circuit.

The only large provincial common battery exchange installed by the post office is at Cardiff. Ultimate capacity, 7,500. Cost for 1,080 subscribers, £6.18 (\$30.10) per circuit.

These figures include all exchange equipment for subscribers, junction circuits, distributing frames, protective devices, secondary cells and power plant, together with all wiring and fitting inside the exchanges.

(b) The cost of branch exchange switchboards for subscribers' offices is as shown below:—

Switchboard with 1 exchange connection and 2 to 4 extensions....	£18	(\$87.66)
" 1 " " 5 to 9 " 	23	(\$112.00)
" 2 " " 10 to 20 " 	46	(\$224.00)
" 2 " " 21 to 30 " 	69	(\$336.00)
" 3 " " 31 to 50 " 	104	(\$506.48)

(c) The cost of a subscribers' common battery wall telephone comes to £2 17s 0d. (\$13.89).

(d) The cost of a subscribers' desk or table common battery telephone amounts to £2 10s. 0d. (\$12.18).

(e) Light conductors—

14/20 paper insulated cable, twin, per mile.....	£50	(\$243.50)
612/20 " " " " 	870	(\$4,236.90)
794/12½ " " " " 	894	(\$4,353.78)
216/40 " " " " 	630	(\$3,068.10)

For the above light conductor, paper insulated cables, the average cost per mile of double wire is about £4 11s. 0d. (\$22.16).

Heavier conductors—

42/100 multiple twin per mile	£400	(\$1,948.00)
32/150 quad. pair—10/150 twin, per mile.	557	(\$2,712.59)
8/150 Q.P.—56/100 Q.P.—22/100 S.S.—44/70		
S.S.—7/40 S.S.	1,700	(\$8,279.00)

(Hanwell—Slough cable).

The average cost per mile of double wire in these three cables is about £23 10s. 0d. (\$114.45). It varies from £19 (\$92.53) to £26 10s. 0d. (\$129.06).

(f)	Per cwt. (112 lbs.)			Per mile of single wire.			
	£	s.	d.	£	s.	d.	
70 lbs. bronze (sometimes used for exchange circuits)	4	5	3	(\$20.76)	2	15	0 (\$13.40)
100 lbs. copper (exchange circuits)	4	0	0	(\$19.48)	3	14	0 (\$18.02)
150 " (junctions and minor trunks							
—also some telegraphs	4	0	0	(\$19.48)	5	10	0 (\$26.79)
200 " (Longer trunks)	4	0	0	(\$19.48)	7	8	0 (\$36.03)
300 " "	4	0	0	(\$19.48)	11	2	0 (\$54.06)
400 " "	4	0	0	(\$19.48)	14	16	0 (\$72.08)

(g) Poles—

	£	s.	d.	
Iron, 30 feet, light.	5	3	6	(\$25.21)
“ 30 feet, medium.	5	11	0	(\$27.03)
“ 35 feet, stout.	7	3	6	(\$34.95)
“ 35 feet, extra stout.	8	18	6	(\$43.48)
“ 35 feet, heavy.	11	9	6	(\$55.89)
Average cost, say £7 15s. 0d. (\$37.75).				
Wood, creosoted, 30 feet, light.	10	9		(\$2.62)
“ 30 feet, medium.	15	5		(\$3.76)
“ 34 feet, stout.	1	16	8	(\$8.94)
Average cost, say £1 1s. 0d. (\$5.12)				
(h) Arms, Iron, 20 inches for iron poles.	2	9		(68c.)
“ 44 inches, for iron poles.	3	9		(92c.)
Average, 3s. 3d. (80c.)				
Wood, 48 inches.	1	8½		(42c.)
(i) Armbolts.	3			(6c.)
Insulators, D.S.W. screwed.	5½			(11c.)
Spindles, standard.	4			(8c.)
(j) Ducts.	2¾			(6c.)
Pipes, C.I., 2-inch.	4			(8c.)
“ 3-inch.	6½			(13c.)
“ 3¼-inch.	6½			(13¼c.)
“ 4-inch.	9			(18½c.)
Average, say 8¾d. (17¾c.) per foot of pipe.				

There is competing system in operation in several towns, notably in London and Glasgow.

In London competition is between the post office and the National Telephone Company, but as there is a working agreement and intercommunication between the systems, the systems are not altogether independent, and the two will become one when the London system of the licensee is transferred to the post office in 1912.

In Glasgow, the competition is between the corporation and the National Telephone Company. There is at present neither intercommunication nor a working agreement between them. Subscribers wishing to obtain full use of the facilities available are, therefore, obliged to subscribe to both systems, and there is consequently considerable duplication of plant throughout the district.

As you are doubtless aware, an agreement has recently been concluded under which the post office will acquire the whole system of the largest license in 1912. A copy of that agreement is inclosed.

Three handbooks reprinted from the 'Electrician' are inclosed, which furnish full descriptions of the most recent post office exchanges.

There is no separate record available of the actual way-leave incurred by the post office in respect to telephone lines. As a general rule it may, however, be stated that the post office does not pay for way-leave facilities on the public roads, although it makes certain contributions in lieu of rates. It pays small sums for way-leave privileges on private property, and on railway property there is in most cases a special payment for way-leave, as way-leave rights have been acquired by Act of Parliament. The railway companies as a rule maintain the telegraphs at a fixed rate of £1 (\$4.87) a mile of wire per annum; and where the department maintains the wires a small payment is made for waiver of maintenance.

Licensees pay for way-leaves on the public roads, and the amounts vary in the different districts.

APPENDIX No. 1

GREAT BRITAIN—Continued.

No. 278b.

(Circular B.)

POST OFFICE TELEPHONE EXCHANGES.

RATES OF SUBSCRIPTION AT SMALL TOWNS.

I. *Message-rate Service*.—Charges for connection with an exchange within a radius of half a mile from the subscriber's premises:—

Annual subscription, £3 (\$14.61), payable in advance, and in addition: Message fees of one penny (2 cents) for each local call originated by the subscriber; the annual payment in respect of local messages to be at least £1 10s. (\$7.31), also payable in advance.

The minimum payment under this arrangement is thus £4 10s. (\$21.92), for which a subscriber can make 360 local calls in a year, paying one penny for each additional call beyond 360. The subscriber is not charged for answering calls made by other subscribers.

II. *Unlimited Service*.—Annual subscription for connection with an exchange within half a mile radius of the subscriber's premises, together with an unlimited number of *Local* calls, £7 10s. (\$36.53), payable in advance.

III. Where the premises of any subscriber at the message-rate or at the unlimited service rate are beyond the prescribed radius from the exchange, the annual subscription is increased by £1 5s. (\$6.09) for every additional quarter of a mile or fraction thereof. Where new work of an exceptionally expensive character is involved, a higher charge may be necessary.

IV. Agreements are usually for three years, and are terminable at the expiration of this term or thereafter by three months' notice.

V. The charge for use of a call office for local calls is 1d. for each three minutes' conversation.

VI. Post office subscribers are able to use their exchange circuits for the following purposes:—

- (1.) To forward messages for transmission over the public wires as telegrams.
- (2.) To forward messages for delivery as express letters.
- (3.) To forward messages for delivery as ordinary letters
- (4.) To call for the services of post office express messengers.
- (5.) To receive telegrams, in place of the ordinary delivery by messenger, where, in adopting this course, no alteration in the circulation of telegrams is involved.

VII. Post office subscribers have the right to communicate over the trunk wires with subscribers of the National Telephone Company and other licensees of the Postmaster General in all other areas on payment of the trunk fees shown below. In the case of trunk calls for subscribers of the National Telephone Company certain 'terminal fees' are payable to that company; but these are borne by the Postmaster General himself, and are not charged to his subscribers when the calls are made over their circuits.

TRUNK FEES.

The rates for trunk messages generally are as follows:—

For 25 miles or under	Threepence (6½ cents)
“ 50 “	Sixpence (12½ cents)
“ 75 “	Ninepence (18¾ cents)
“ 100 “	One shilling (24½ cents)
“ every additional 40 miles or fraction thereof	Sixpence (12½ cents)

4-5 EDWARD VII., A. 1905

for a conversation of three minutes' duration between 6 a.m. and 8 p.m., or 6 minutes between 8 p.m. and 6 a.m., in cases where a continuous service is provided.

These fees must be paid by both message-rate and unlimited service subscribers in respect of trunk communications, but no local message fee is charged to a message-rate subscriber in respect of a trunk conversation.

GENERAL POST OFFICE, May, 1904.

No. 278c.

GREAT BRITAIN—*Continued.*

(Circular C.)

POST OFFICE TELEPHONE EXCHANGES.

RATES OF SUBSCRIPTION AT SMALL TOWNS—MEASURED SERVICE.

I. Charge for installing a telephone on the subscriber's premises and connecting it with an exchange not more than half a mile distant:—

Annual subscription:

- (a) Five pounds (\$24.35), covering the right to send 480 messages during the year to offices on the same exchange, or
- (b) Six pounds (\$29.22), covering the right to send 720 messages during the year to offices on the same exchange.

Any additional messages to offices on the same exchange will be charged 1d. (2 cents) each.

Each call from one exchange to another in the same area is generally reckoned as two local calls.

No charge is made to a subscriber for calls received.

II. Where the premises of any subscriber are more than half a mile from the exchange, the annual subscription is increased by £1 5s. (\$6.09) for every additional quarter of a mile or fraction thereof. Where new work of an exceptionally expensive character is involved, a higher charge may be necessary.

III. Agreements are usually for three years, and are terminable at the expiration of this term or thereafter by three months' notice.

IV. The charge for the use of a call office for local calls is 2d. (4 cents) for each three minutes' conversation.

V. Post office subscribers are able to use their exchange circuits for the following purposes:—

- (1.) To forward messages for transmission over the public wires as telegrams.
- (2.) To forward messages for delivery as express letters.
- (3.) To forward messages for delivery as ordinary letters.
- (4.) To call for the services of post office express messengers.
- (5.) To receive telegrams, in place of the ordinary delivery by messenger, where, in adopting this course, no alteration in the circulation of telegrams is involved.

VI. Post office subscribers have the right to communicate over the trunk wires with subscribers of the National Telephone Company and other licensees of the Postmaster General in all other areas on payment of the trunk fees shown below.

GENERAL POST OFFICE, July, 1905.

GREAT BRITAIN.

APPENDIX No. 1

No. 278d.

GREAT BRITAIN—*Continued.**Circular D.*

POST OFFICE TELEPHONE EXCHANGES.

RATES FOR PARTY LINES IN THE PROVINCES.

Where two or more persons share the use of one line to an exchange, the Postmaster General is prepared to provide the service at special rates. Such lines are called 'party lines.' They may be 'two-party lines'—where the Postmaster General undertakes to connect the premises of only two subscribers on the one circuit; or 'ten-party lines'—where he reserves to himself the right to connect the premises of any number of subscribers from three to ten by means of the one line and its spurs.

The main circuit is that portion of a party line which is used in common by two or more subscribers.

The expression 'spur circuit' means that portion of a party line used by one subscriber only.

The rates of subscription are:—

I.—Party line Message Rate Service.

(a) Where the length of the main circuit does not exceed the radius from the post office covered by the minimum payment at the ordinary message rate (usually half a mile), and the spur circuits do not in each case exceed 220 yards in length, an annual subscription payable in advance of £2 (\$9.74) per subscriber for a 'two-party line,' and of £1 10s. (\$7.31) for a 'ten-party line,' exclusive of the charge for the transmission of messages.

The charge for local messages is in each case one penny (2 cents) per call with a minimum payment of £1 10s. (\$7.31) per subscriber, also payable annually in advance.

(b) Where the length of the main circuit exceeds the ordinary radius, a charge of 12s. 6d. (\$2.97) in the case of a 'two-party line,' and of 10s. (\$2.44) in the case of a 'ten-party line' for each additional quarter of a mile for each subscriber using it.

(c) Where the spur circuit exceeds 220 yards, a charge of 12s. 6d. (\$2.97) for each additional 220 yards or fraction thereof payable by the individual subscriber concerned.

II.—Two-party line Unlimited Service.

A subscription of £6 (\$29.22) a year payable in advance for ordinary 'two-party lines' when the length of the main circuit does not exceed half a mile and the spur circuits do not in each case exceed 220 yards in length. Excess distances in the main or spur circuits to be charged for as in the case of the message rate subscription. The unlimited service subscription covers an unlimited number of local calls, but not trunk calls, which must in all cases be paid for at the usual tariff, the charge varying according to distance. There will be no unlimited service rate for 'ten-party lines.'

Agreements are as a rule for three years, but where the work of construction is specially expensive, agreements for a longer period may be required, and some additional charge beyond the tariff charge may be necessary.

Extension lines are not provided in connection with party lines.

SPECIAL CONDITIONS OF THE SERVICE.

1. A portion of a 'party-line' is in every case used in common by two or more subscribers. The premises to be connected by a party line must lie in the same direction from an exchange.

2. A subscriber shall not be entitled to interrupt or otherwise interfere with the conversation of any other subscriber connected with the same party line. When one of the subscribers to a party line is speaking over the circuit, no local calls for the other subscribers can be effected.

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3. But the Postmaster General reserves to himself the right to interrupt any local conversation of a subscriber if a trunk call is received from or for any other subscriber connected with the same party line.

4. Secrecy as between the several subscribers connected with a party line cannot be given.

GENERAL POST OFFICE, May, 1904.

No. 278e.

GREAT BRITAIN—Continued.

Pamphlet E.



The London telephone area, which is probably the largest and most populous single exchange area in existence, is upwards of 600 square miles in extent, and contains a population of more than 6,000,000.
GREAT BRITAIN.

APPENDIX No. 1

No. 278f.

GREAT BRITAIN—*Continued.**(Pamphlet E.)*

POST OFFICE LONDON (ENGLAND) TELEPHONE SERVICE.

EXCHANGES.

The following post office exchanges have been provided, or are in course of establishment, and will serve the districts indicated:—

Within the County of London.

1. Central Exchange.—Serving the city and west central districts as far as Regent street on the west, King's Cross on the north, and Wapping on the east, together with Bermondsey and the Borough on the south of the Thames.
2. Victoria Exchange.—Serving Westminster, Belgravia, and the adjoining districts, as far as St. James' Park and Hyde Park on the north to Chelsea on the west.
3. Western Exchange.—Serving South Kensington, Earl's Court, Kensington, Brompton, with parts of Walham Green, Chelsea and Hammersmith.
4. Mayfair Exchange.—Serving the Mayfair, Paddington, Marylebone and Bayswater districts, with part of St. John's Wood.
5. Hamstead Exchange.—Serving Hamstead, West Hamstead, Child's Hill and Kentish Town.
6. Putney Exchange.—Serving Putney, Fulham and Roehampton, with parts of Barnes and Wandsworth.

Outside the County of London.

7. Wimbledon Exchange.—Serving Wimbledon, Wimbledon Park, Merton, Mitcham, with the adjoining districts.
8. Kingston-on-Thames Exchange.—Serving Kingston-on-Thames, Norbiton, Surbiton, Teddington, Hampton, East Molesey, Esher, the Dittons and Malden.
9. Richmond Exchange.—Serving Richmond, Twickenham, Petersham, Kew Mortlake and East Sheen.
10. Chiswick Exchange.—Serving Chiswick, Acton, East Acton, Shepherd's Bush, Turnham Green, Gunnersbury, and parts of Hamersmith, Barnes and Brentford.
11. Croydon Exchange.—Serving Croydon and the adjoining district.

New exchanges will be established from time to time for the service of other districts.

The work of connecting the premises of subscribers with these exchanges will be carried on as rapidly as possible.

ADVANTAGES OF THE SYSTEM.

(1.) The Post Office London Exchange system is an entirely new system, and the apparatus and method of working represent the latest achievements of electrical science. The operator at the exchange is called automatically by the removal of the telephone receiver from the rest. This action lights a small glow lamp on the switch-board, which keeps alight until the necessary connections are made; and the replacement of the receiver at the end of the conversation light another lamp, notifying the completion of the call. If the subscriber required is engaged, the fact is indicated by the production of a distinct sound (an intermittent buzz) in the calling subscriber's telephone.

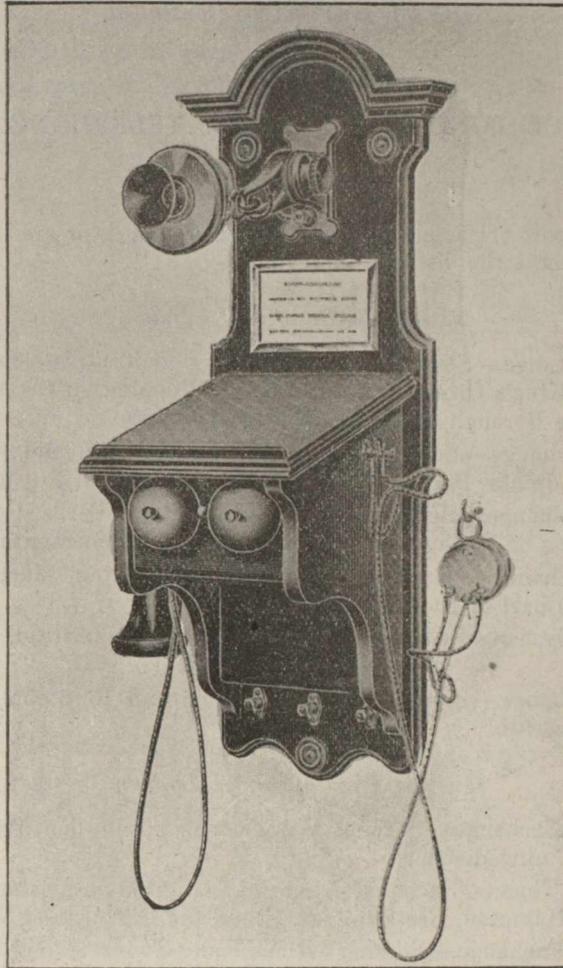


FIG 1.—WALL TELEPHONE FOR EXCHANGES IN CENTRAL LONDON
(with moveable arm for adjusting the height of the transmitter).

(2.) At the more important exchanges the system is worked by means of batteries at the exchange, which obviate the necessity for batteries at the subscriber's premises.

(3.) Table or wall telephones of the latest and most approved pattern are supplied at the option of the subscriber.

(4.) The system, which is composed throughout of double-wire (metallic) circuits, is almost entirely underground. By the use of underground wires, interruptions due to storms, as well as accidents due to contact between telephone wires and wires carrying high-power currents, are obviated.

(5.) The various post office exchanges are connected with each other, with the trunk wire exchange, and with the various exchanges of the National Telephone Company, by means of a large number of direct circuits. In this way the loss of time which would otherwise arise in passing calls through several exchanges is avoided, and subscribers to the post office system should be able to communicate with the company's subscribers as readily as if there were but one system.

GREAT BRITAIN.



FIG. 2.—TABLE TELEPHONE FOR EXCHANGES IN CENTRAL LONDON
(Fixed transmitter.)

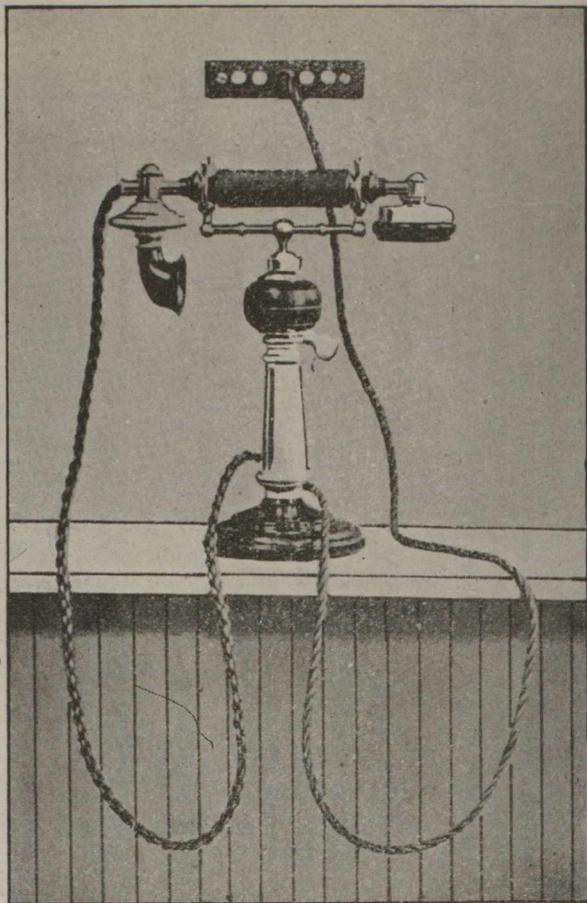


FIG. 3.—ALTERNATIVE TABLE TELEPHONE FOR EXCHANGES
IN CENTRAL LONDON.

Attention to Calls.

To ensure that subscribers' calls are attended to promptly by the operators at the exchange, officers of the post office will from time to time, unknown to the operators, visit subscribers' premises and ask permission to call up the exchange. The number of seconds occupied before the operator answers will be recorded, and subscribers are earnestly requested to give the officer, on production of his card of authorization, every facility.

RATES OF SUBSCRIPTION.

The rates of subscription for exchange circuits are as follows:—

I. Ordinary Message Rate Service:—

(a) Charges for connection with any exchange in the county of London within two miles of the subscribers's premises.

	£	s.	d.	
Annual subscription	5	0	0	(\$24.35)

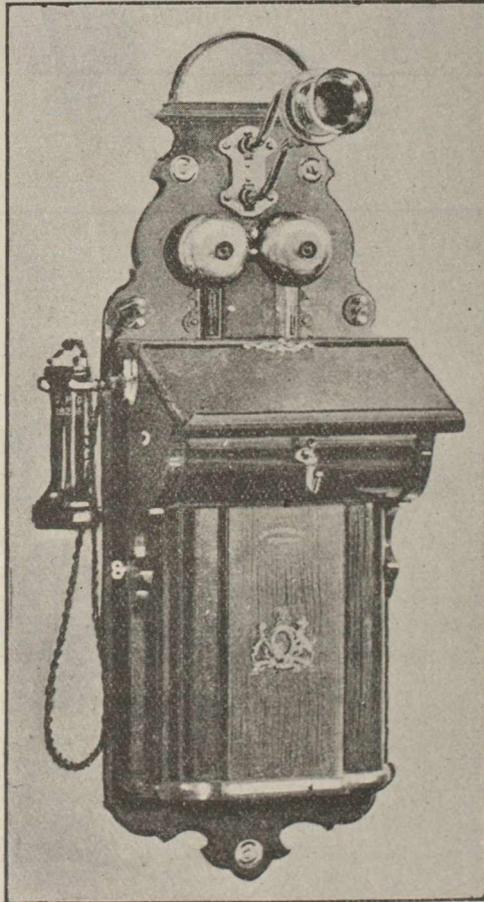


FIG. 4.—WALL TELEPHONE FOR SUBURBAN EXCHANGES
(with movable arm for adjusting the height of the transmitter.)

APPENDIX No. 1

Message Fees—

£ s. d.

One penny (2 cents) for each call to a subscriber on any exchange in the county of London.

Two pence (4 cents) for each call to a subscriber on any exchange outside the county of London, but within the London area.

(b) Charges for connection with any exchange outside the county of London within two miles of the subscriber's premises.

Annual subscription 4 0 0 (\$19.48)

Message Fees—

One penny (2 cents) for each call to a subscriber on the same exchange.

Two pence (4 cents) for each call to a subscriber on any other exchange in the London area.

The minimum yearly amount payable by each subscriber for message fees is 1 10 0 (\$7.31)

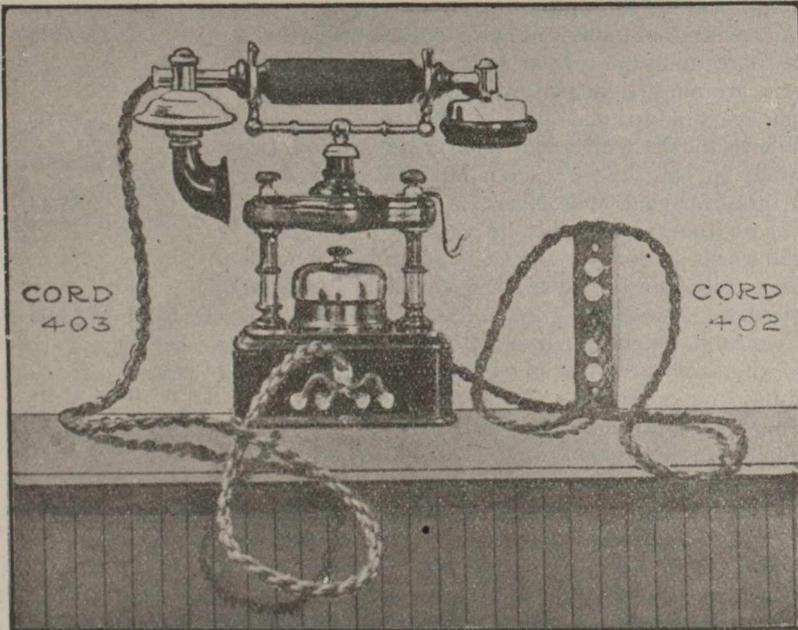


FIG. 5.—Table Telephone for Suburban Exchanges.

II. Party-line Message Rate Service:—

Annual Subscriptions—

(a) For connection with any exchange, except the Central Exchange, by means of a line used by not more than two subscribers 3 0 0 (\$14.61)

(b) For connection with any exchange outside the county of London by means of a line used by more than two and not more than ten subscribers 2 0 0 (\$9.74)

Subscriptions at party-line rates cannot be accepted from subscribers on the Central Exchange, or at the lower party-line rate from subscribers on any exchange in the county of London.

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£ s. d.

Message fees for calls originated by party-line subscribers will be the same as for calls by subscribers at the ordinary message rate, but the minimum yearly amount payable for message fees by each party-line subscriber is. 3 0 0 (\$14.61)

III. Unlimited Service:—

Annual subscriptions for connection with any exchange within two miles of the subscriber's premises, together with an unlimited number of calls—

(a) For the first line. 17 0 0 (\$32.79)

(b) For each additional line connecting any premises of the same subscriber with an exchange. 14 0 0 (\$68.18)

IV. Call Office Fee:—

For any call from a call office to any subscriber in the London area, for each period of three minutes 0 0 2 (4 cents)

V. Additional Annual Charges:—

(a) Where the premises of any subscriber at the ordinary message rate or at the unlimited service rate are more than two miles from the exchange, for every additional quarter of a mile 1 5 0 (\$6.09)

(b) Where the main circuit of a party-line exceeds two miles in length, for each additional quarter of a mile, for each subscriber 0 10 0 (\$2.44)

(c) Where the spur circuit of a party-line exceeds 220 yards in length, for each additional quarter of a mile, for the subscriber served by the spur circuit 1 5 0 (\$6.09)

(d) For each extension line connecting two parts of the same premises of a subscriber, where the line is not more than 110 yards in length 1 10 0 (\$7.31)

(e) For each additional 110 yards of such a line. 0 10 0 (\$2.44)

(f) For each extension line connecting separate premises of the same subscriber, and not more than a quarter of a mile in length. 3 10 0 (\$17.05)

(g) For each additional quarter of a mile of such a line. 1 5 0 (\$6.09)

The distances (except in the case of party-lines) are measured in a straight line on a horizontal plane.

VI. All agreements are for one year, and are terminable thereafter by three months' notice.

VII. Post office subscribers have the right to communicate with subscribers of the National Telephone Company in the London Exchange area at the same rates of charge as for communication with other post office subscribers.

Note.—Message fees will be charged only when subscribers' lines are connected with the lines of subscribers with whom they have asked to speak. No fees will be charged if the lines are out of order or engaged.

Where an extension line goes to a point more than two miles from the exchange with which it is connected, an agreement for five years may be required. Similarly, a five years' agreement may be required in cases where an exchange circuit is, at the request of the subscriber, connected with an exchange other than that by which the subscriber's premises would normally be served.

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APPENDIX No. 1

Special arrangements will be made for the service of residential flats, and of commercial exchanges, clubs, and similar institutions, particulars of which can be had on application.

See also the fourth paragraph on 'Use of Exchange Lines by Non-Subscribers.'

ADDITIONAL APPARATUS.

Receivers.

Wherever the exchange line is likely to be used for trunk messages, a second receiver will be supplied, if desired, without additional charge.

Additional receivers after the second will be provided, if required, at an annual rental of 3s. 6d. (86 cents) each.

Extension Bells.

An extension bell will be supplied for an additional annual rental of 5s. (\$1.22), provided that not more than 25 yards of wire are required to connect the bell with the telephone.

Any length of wire in excess of 25 yards will be charged for at the ordinary internal extension rate, viz., 10s. (\$2.44) for each 110 yards or portion thereof.

Silence Cabinets and other Fittings.

Silence cabinets and ornamental cases for batteries will, when required, be supplied at the expense of subscribers—the articles, of course, becoming their own property. The cost of the standard post office cabinet is £12 12s. (\$61.37), but any other pattern will be supplied if desired.

Automatic Coin-Collecting Boxes.

In the case of party-line subscribers a coin-collecting box for the payment of message fees will be provided at each subscriber's office. Such boxes will be supplied in other cases, when desired, without additional charge.

SERVICES AVAILABLE FOR SUBSCRIBERS.

The system is available day and night, including Sundays.

A subscriber may use his exchange line for the following purposes, viz.:—

(1.) For originating and receiving calls to and from subscribers to the Post Office system, or subscribers to the National Telephone Company's system in the London exchange area.

(2.) For originating and receiving calls over the telephone trunk wires to and from subscribers to any exchange system of the Postmaster General, or of any licensee in other exchange areas, as well as for originating and receiving calls over the London-Paris telephones wires.

Printed copies of the list of trunk charges may be obtained on application.

Message-rate or party-line subscribers, on making trunk calls will pay the ordinary local tolls in addition to the trunk fee. Trunk calls will, in all cases, be effected through the trunk switch at the Central telegraph office.

(3.) For forwarding telegrams for onward transmission over the public wires, subject to payment of the telegraphic charge. The telegrams will be written down at the Central telegraph office, and message-rate or party-line subscribers will pay the ordinary local tolls in addition to the telegraphic charge, as in the case of trunk calls.

(4.) For the receipt of telegrams bearing the subscriber's registered abbreviated address, in lieu of delivery by messenger. The fee for the registration of an abbreviated address is one guinea (\$5.12) per annum.

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Where a subscriber whose telegrams are delivered by telephone, wishes also to have for record purposes a written copy of each message, such copies will be sent to him separately, or in daily batches, either by post or by express messenger, on payment of the postage, or of the express fee calculated at the rate of 3d. (6 cents) per mile, as the case may be.

Delivery by messenger will, of course, be reverted to at once in the event of a subscriber's circuit becoming faulty.

(5.) For forwarding messages for delivery as express letters. Such a message, if intended for delivery within the London exchange area, will be written down at any post office connected with the Post Office system or with the National Telephone Company's system, which may be selected by the subscriber, and will be delivered by special messenger from that office on payment of the ordinary express letter fees (*i.e.*, 3d. (6 cents) for each mile or part of a mile traversed by the messenger on his outward journey) if the message does not exceed 30 words in length; and on payment of double those fees if the message is over 30 but under 60 words in length.

For instance, if a subscriber in Croydon wishes to communicate with a non-subscriber in Kensington, he can call up the post office in Kensington and dictate a message which would be immediately delivered by express messenger.

Such messages can also be sent by means of the trunk wires for delivery in other areas, the trunk fees being payable in addition to those already specified.

Messages over 60 words in length or occupying more than six minutes in transmission cannot be accepted.

The ordinary local tolls will, of course, be payable by message-rate and party-line subscribers in addition to the express and trunk fees.

(6.) For forwarding messages for delivery as letters, on payment of the ordinary postal fees and local tolls, such messages being not more than 60 words in length and occupying not more than six minutes in transmission.

(7.) For obtaining the services of express messengers for such purposes as the conveyance of parcels from one address to another, the summoning of doctors, the calling of cabs, &c., subject to the charges specified in clause (5) and to the conditions laid down in the post office guide with regard to the express messenger service.

DEPOSITS.

Each message-rate subscriber will be required to pay the minimum amount for message fees, namely, 30s. (\$7.31), at the time of payment of the annual subscription.

Subscribers, whether at the message-rate, or unlimited service rate, who desire to use their lines for trunk messages or for the telegram and express services, will be required to make a deposit of £1 (\$4.87) to cover the credit given, on payment of their first annual subscription. An additional deposit will be required in the case of large users.

CALL OFFICES.

Call offices will, in course of time, be established at the majority of the post offices in the London area.

The fee for originating or receiving a call at a call office within the London exchange area is 2d. (4 cents) for each period of three minutes' conversation.

In the case of a trunk call this fee is charged in addition to the trunk fee.

USE OF EXCHANGE LINES BY NON-SUBSCRIBERS.

Message-rate subscribers (including party-line subscribers) may allow their telephones to be used by other persons, and may charge and retain fees for such use in addition to the charges payable to the Postmaster General.

GREAT BRITAIN.

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No objection will be raised if a subscriber at the message-rates exhibits a notice that calls may be made by means of his telephone, or if he advertises the fact on his business note-paper, &c.

This privilege does not extend to subscribers at the unlimited service rate, whose lines are not permitted to be used for the transmission of messages which do not relate to their own business or private affairs.

Two persons or firms occupying the same offices and desiring to use the same telephone will severally be admitted to the ordinary privileges of subscribers (including a separate entry in the directory in respect of each person or firm) on payment of a subscription and a half, either at the 'message' rate or 'unlimited service' rate.

PRIVATE WIRES.

The Postmaster General undertakes the construction and maintenance on rental terms of private telegraph and telephone wires, *i.e.*, wires not led into post offices or exchanges, nor used in connection with exchange wires, between the offices or houses of firms or private individuals. Inquiries regarding such wires should be addressed to the Secretary, General Post Office, London.

No. 278g.

GREAT BRITAIN—*Continued.**(Pamphlet F.)*

POSTMASTER GENERAL AND NATIONAL TELEPHONE COMPANY.

RETURN TO AN ORDER OF THE HONOURABLE THE HOUSE OF COMMONS, DATED FEBRUARY 14, 1905.—FOR,

COPY 'of memorandum of the Postmaster General, dated February 14, 1905, setting forth an agreement, dated February 2, 1905, between the Postmaster General and the National Telephone Company, Limited.'

STANLEY.

POST OFFICE, February 14, 1905.

MEMORANDUM of the Postmaster General, dated February 14, 1905, setting forth an agreement dated February 2, 1905, between the Postmaster General and the National Telephone Company, Limited.

On November 18, 1901, the Postmaster General entered into an agreement with the National Telephone Company, Limited, for the purchase of the plant of the company in the London Exchange Area on the termination of the company's license, that is on December 31, 1911. The plant was to be purchased at its value *in situ*, and no payment was to be made in respect of compulsory purchase, goodwill, or past or future profits, in other words the purchase was to be made on what are known as 'tramway terms.' The agreement also provided for inter-communication between the systems of the Postmaster General and of the company in London during the continuance of the company's license, and for uniformity of rates.

This agreement was in effect approved by the House of Commons, after full discussion, on January 27, 1902.

An agreement, on similar lines, has now been made in relation to the whole country. On December 31, 1911, the Postmaster General will take over the whole business carried on up to that date by the company, and will acquire the plant of the company on 'tramway terms.' No payment will be made in respect of goodwill or profits except in the case of the private wire business of the company (which can be carried on without the Postmaster General's license) and in the very few cases where the com-

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pany licenses have, under the provisions of the Telegraph Act, 1899, been extended beyond 1911.

At the option of the government, three-fourths, and, with the consent of the company licenses have, under the provisions of the Telegraph Act, 1899, been extended exceeding twenty years.

Certain powers of objecting to plant as unsuitable for purchase are reserved to the Postmaster General; and rules for the construction of plant are laid down.

During the continuance of their license the company are to allow intercommunication without additional charge between the systems of the Postmaster General and of the company. The company will be precluded from showing favour or preference as between subscribers, and the rates charged by the company will be confined within certain limits. If, on complaint and after full inquiry, it is proved that the company is giving an inefficient service in any district, the Postmaster General may take over the company's business in that district at once, without any payment for goodwill.

Certain provisions of the London agreement which are not of general application remain in force. In other respects the provisions of that agreement have been assimilated to those applicable to the rest of the country.

A copy of the agreement is appended. It will become binding when confirmed by a resolution of the House of Commons, or on August 31, if not disapproved by Parliament before that date.

STANLEY.

February 14, 1904.

Dated February 2, 1905.

POST OFFICE TELEGRAPHS.

HIS MAJESTY'S POSTMASTER GENERAL

and

THE NATIONAL TELEPHONE COMPANY, LIMITED.

Agreement for Purchase of Plant, Property and Assets.

This indenture made the second day of February, one thousand nine hundred and five, between the Right Honourable Edward George Villiers Stanley, C.B., commonly called Lord Stanley, His Majesty's Postmaster General (who and whose successors in office for the time being are intended to be hereinafter included in the term 'the Postmaster General') on behalf of His Majesty of the one part and the National Telephone Company, Limited, the registered office of which is at Telephone House, Victoria Embankment, in the City of London (hereinafter called 'the company') of the other part.

Whereas by an indenture dated the 29th day of November, 1884, and made between the Right Honourable George John Shaw Lefevre, then Her late Majesty's Postmaster General, on behalf of Her late Majesty of the one part, and the company of the other part (which indenture is hereinafter referred to as 'the license of 1884') the Postmaster General covenanted and agreed with the company that the company should during the term of thirty-one years from the 1st day of January, 1881 (determinable as in the same indenture provided) have license and permission to do the following things (that is to say) :—

1. To work and use telegraphs of which the transmitting and receiving instruments should be telephones but no other kind or description of telegraphs for the purpose of enabling persons to transmit and receive by means of spoken words (but not otherwise), and with the aid of such telegraphs as aforesaid telegraphic messages (within the exclusive privilege conferred on the Postmaster General by the Telegraph Act, 1869) relating to the business or private affairs of such persons, and

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2. To receive money or other valuable considerations in respect of the use of the said telegraphs or the transmission and receipt of messages thereby;

And the license of 1884 was granted subject to such provisions and to such covenants on the part of the company as in the same license are specified;

And whereas the several acts which the company were authorized to do and the business which they were authorized to carry on under and by virtue of the license of 1884 are hereinafter for convenience collectively referred to by the expression 'licensed telephonic business,' and the expression 'to transact licensed telephonic business' means to do such acts and to carry on such business as aforesaid;

And whereas by an indenture dated the 25th day of March, 1896, and made between the Most Noble Henry Duke of Norfolk, Earl Marshal and Hereditary Marshal of England K.G. then Her late Majesty's Postmaster General on behalf of Her late Majesty of the one part and the company of the other part (which indenture is hereinafter referred to as 'the Trunk Line agreement') it was agreed (inter alia) that the company should cease to transact licensed telephonic business elsewhere than within exchange areas as therein specified and provision was made by the Trunk Line agreement and by an indenture dated the 26th day of March, 1896, and made between the same parties for the purchase by the Postmaster General from the company of the telephonic lines of the company connecting exchange areas (which lines were in the said indentures more specifically defined and were therein and are hereinafter called 'trunk lines.')

And whereas the trunk lines of the company were accordingly on April 4, 1896, delivered and handed over by the company to the Postmaster General upon payment of the purchase money specified in the said debentures and the Postmaster General has from that date maintained a system of public telephonic communication by means of trunk lines between exchange areas and the company have transacted licensed telephonic business according to the provisions of the Trunk Line Agreement within exchange areas and not elsewhere;

And whereas by an indenture dated November 18, 1901, and made between the Most Honourable Charles Stewart, Marquis of Londonderry, K.G., His Majesty's then Postmaster General on behalf of His Majesty of the one part and the company of the other part (which indenture is hereinafter referred to as 'the London Agreement') it was agreed (inter alia) that (subject to the provisions therein contained) the Postmaster General should on the determination of the license of 1884 in the London Exchange area purchase all such plant of the company within that area as was in use for the purposes of the company's London system at the time of such determination and was then suitable for the requirements of the telephonic service of the post office in that area.

And whereas under the provisions of the Telegraph Act, 1899, and of certain agreements between the Postmaster General and the company made in pursuance thereof the license of 1884 has within the areas specified in the first schedule hereto been extended until the dates respectively specified in the second column of the said schedule opposite the names of such areas, but subject to such extensions and to any further extensions which may hereafter be made in pursuance of the provisions of the Telegraph Act, 1899, or any agreement between the Postmaster General and the company the power of the company to transact licensed telephonic business will expire on December 31, 1911;

And whereas the company also transact telephonic business which may by law be transacted without the license of the Postmaster General, such business being hereinafter referred to as 'private wire business;'

And whereas it has been agreed between the Postmaster General and the company that the company shall as from December 31, 1911, cease to transact any telephonic business except as hereinafter specified and that the Postmaster General shall purchase all such plant, property and assets of the company as hereinafter specified together with any telephonic business of the company which could be lawfully transacted

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after December 31, 1911, and it has further been agreed between the parties aforesaid as hereinafter specified;

Now this indenture witnesseth that in consideration of the premises and of the matters hereinafter appearing, it is hereby agreed and declared between and by the parties hereto and the company as to the covenants and agreements hereinafter contained on their part) do hereby covenant and agree with the Postmaster General and the Postmaster General (as to the covenants and agreements hereinafter contained on his part) in exercise of the powers and authorities enabling him in this behalf doth hereby covenant and agree with the company in manner following (that is to say):—

Interpretation clause—

1. In this agreement and in the schedules hereto—The expression 'plant' includes works, materials and plant.

The expression 'competitive exchange area' means one of the areas specified or described in the second schedule hereto.

The expression 'exchange system' means a system of public telephonic communication established in any exchange area.

The expression 'junction wire' means a wire used for telephonic communication and connecting one exchange with another exchange in the same exchange area.

The expression 'terminal charge' means a charge for the use of an exchange system in respect of a conversation initiated on another exchange system whether in the same or in any other area.

The expression 'United Kingdom' includes the Channel Islands and the Isle of Man. Other expressions interpreted in the Trunk Line agreement and the London agreement shall have the same meanings as in those agreements so far as the subject or context so requires or admits.

Purchase and sale—

2. (1) Subject to the provisions of this agreement the Postmaster General shall buy and the company shall sell and convey on December 31, 1911:—

(a) All plant, land and buildings of the company brought into use with the sanction of the Postmaster General and in use by the company on December 31, 1911, for the purpose of the licensed telephonic business of the company;

(b) Any licensed telephonic business of the company which by virtue of the Telegraph Act, 1899, or of any of the agreements in writing between the Postmaster General and the company particularly specified in the first schedule hereto or of any other agreement in writing between the Postmaster General and the company (whether made before or after the date of this agreement) can be transacted for any period after December 31, 1911;

(c) Any private wire business of the company together with all plant, land and buildings in use by the company on December 31, 1911, for the purposes of such business;

(d) All stores which on December 31, 1911, are in the company's possession and which are suitable for use in accordance with the methods of work described in the specification and rules set forth in the third schedule hereto and all furniture in the company's possession at the same date provided such stores and furniture are reasonably necessary for the purposes of telephonic business of the company according to the ordinary and business-like way of carrying on such business.

(2) Spare plant of all descriptions in the possession of the company on December 31, 1911, including works of all kinds in course of construction at the same date (provided such plant and works are reasonably necessary for the purposes of the telephonic business of the company according to the ordinary and business-like way of carrying on such business) shall be deemed to be plant in use by the company on December 31, 1911, for the purposes of the company's telephonic business.

(3) Plant, land and buildings shall be deemed to have brought into use the sanction of the Postmaster General if such plant, land and buildings comply with one of the following conditions, but not otherwise (that is to say):—

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(a) If such plant, land or buildings are in use (or are in process of being brought into use) for the purposes of the company's business at the date hereof; or

(b) In the case of plant, if such plant is after the date of this agreement constructed by the company in accordance with the specification and rules set forth in the third schedule hereto; or

(c) In the case of land and buildings, if such land and buildings are after the date of this agreement acquired or constructed with the consent in writing of the Postmaster General.

Provided that no exchange which has a capacity of more than 300 direct subscribers' lines and the construction of which was commenced after August 15, 1904, shall be deemed to have been brought into use with the sanction of the Postmaster General unless its site and capacity shall have been approved in writing by the Postmaster General or unless at the time when the question arises it shall be determined by arbitration that such exchanges will be suitable for the requirements of the telephonic service of the post office on December 31, 1911.

Suitability.

3. (1) In the case of—

(a) Plant not constructed in accordance with the specification and rules set forth in the third schedule hereto (other than switchboards and internal exchange plant in use on August 15, 1904, and specified in a list furnished by the company to the Postmaster General within six months from the date of this agreement), and

(b) Plant of any kind, land and buildings in use on January 1, 1911, for the purposes of the company's licensed telephonic business in competitive exchange areas (whether such plant is constructed in accordance with the said specification and rules or not),

the Postmaster General may by notice in writing given to the company not later than January 1, 1911, object to buy such plant, land or buildings as he considers will be unsuitable for the actual requirements of the telephonic service of the post office on December 31, 1911.

(2) Any question of the suitability of plant, land or buildings for the requirements of the telephonic service of the post office raised by the Postmaster General under the last preceding sub-clause shall if the parties differ be referred to arbitration, and if the company (otherwise than through any cause beyond their control) fail on or before June 30, 1911, to obtain an award of the arbitrator or tribunal to which such question is under the provisions of this agreement referred to the effect that any plant, land or building specified in any notice of objection given by the Postmaster General under the last preceding sub-clause will in the opinion of the arbitrator or tribunal be suitable for the actual requirements of the telephonic service of the post office on December 31, 1911, the objection of the Postmaster General shall be deemed valid and he shall not be bound to buy such plant, land or building as aforesaid any other provision of this agreement to the contrary notwithstanding.

(3) For the purposes of this clause the Postmaster General may give one or more notices of objection and all questions of suitability of plant, land or buildings raised by him may be the subject of one reference to arbitration or different questions may be the subject of different references as may be agreed between the parties and the provisions of the clause shall apply in either case.

(4) The right of objection reserved to the Postmaster General by this clause in relation to plant, land and buildings in competitive exchange areas shall extend to plant constructed and to buildings constructed or acquired and to land acquired by the company in such areas during 1911 provided the Postmaster General gives notice in writing within three months after December 31, 1911, that he objects to buy such plant, land or buildings. In such case the provisions of this clause as to the arbitration shall apply and the question referred shall be the suitability of the plant, land or buildings for the actual requirements of the telephonic service of the post office on December 31,

1911, and the date before which an award must be obtained by the company (otherwise than through any cause beyond their control) shall be September 30, 1912.

(5) In the event of any plant being excluded from the Postmaster General's purchase under the provisions of this clause or otherwise the company shall give the Postmaster General at the cost in all things of the Postmaster General all reasonable facilities for the construction of alternative plant in connection with the company's telephonic system for use upon the transfer of that system to the Postmaster General.

Value—

4. (1) The value on December 31, 1911, of all plant purchased by the Postmaster General in pursuance of the provisions hereof shall be deemed to be its fair market value at the time of the purchase due regard being had to the nature and then condition of such plant and to the state of repair thereof and to the circumstances that it is in such a position as to be ready for the immediate working and to its suitability for the purposes of the Postmaster General's telephonic service and no addition shall be made to such value in respect of compulsory purchase or of goodwill or of any profits which might have been or be made by the company by the use of such plant and in determining the value of any plant no advantage arising from the construction of such plant by leave of the Postmaster General upon any railway or canal over which the Postmaster General possesses exclusive rights of way for telegraphic lines shall be taken into account.

(2) The value on December 31, 1911, of all land, buildings, stores and furniture purchased by the Postmaster General in pursuance of the provisions hereof shall be the fair market value thereof at that date.

(3) The value on December 31, 1911, of any licensed telephonic business of the company which by virtue of the agreements referred to in the first schedule hereto or of any other agreement in writing between the Postmaster General and the company can be transacted as aforesaid after December 31, 1911, (apart from the plant, land and buildings used therein which are to be valued as hereinbefore in this clause provided) shall be such sum as may be agreed between the Postmaster General and the company regard being had to the net profits of such business and to the circumstances and conditions under which the company would carry on such business after December 31, 1911.

(4) The value on December 31, 1911, of any private wire business of the company (apart from the plant, land and buildings used therein which are to be valued as hereinbefore in this clause provided) shall be taken to be three years' purchase of the net profits of such business, in the average of the three years ending on the 31st day of December, 1911.

(5) All matters of difference arising under this clause shall be determined by arbitration.

Optional purchase—

5. The Postmaster General shall have the option of purchasing on December 31, 1911, any property or assets of the company not specified in the preceding clauses of this agreement and the price to be paid therefor shall be determined by arbitration in case the parties differ.

Transfer of business—

6. (1) As from December 31, 1911, the telephonic business (of whatsoever kind) theretofore carried on by the company shall be carried on (whether by the company or by the Postmaster General) at the expense and for the benefit of the Postmaster General and all income from such business shall be payable to the Postmaster General and all outgoings shall be payable by him. Where necessary there shall be an apportionment of the current income and outgoings of such business and the company shall pay or allow to the Postmaster General a proportion of all rentals or subscriptions paid or payable in advance to the company such proportion being that which the unexpired portion of the whole term for which the rent or subscription is payable in GREAT BRITAIN.

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advance bears to the whole term and the Postmaster General shall pay or allow to the company a corresponding proportion of any sums paid or payable by the company to the Postmaster General in advance by way of royalty. The Postmaster General shall undertake the collection of all outstanding rentals and other moneys owing to the company on any account current on December 31, 1911, and shall render such accounts to the company in connection with the same as may be agreed between the parties or determined by arbitration.

(2) The company shall on December 31, 1911, or on such subsequent day or days during the year 1912 as may be fixed by the Postmaster General, deliver and hand over to the Postmaster General, all plant, property and assets of the company which may be purchased by him under this agreement and upon such transfer all estates, interests, rights, powers and authorities possessed or enjoyed by the company in relation thereto shall become and be deemed to be the property of and shall vest in the Postmaster General absolutely for all the estate and interest previously enjoyed therein by the company freed from any charge or incumbrance thereon created by the company but subject to all wayleave and other rentals, contracts and burdens of every kind subject to which the company may hold the same or which the company may be liable to pay, observe, perform or bear in connection therewith and so far as such rentals, contracts and burdens are continuing liabilities the Postmaster General shall indemnify the company against the same.

(3) The company shall do all such acts and things as may be necessary to effect a complete delivery and transfer to the Postmaster General of all plant, property and assets of the company which may be purchased by him under this agreement together with all estates, interests, rights, powers and authorities as aforesaid and in particular:—

(a) The company shall show a good marketable title to all lands comprised within the contract for purchase in this agreement contained, and the Postmaster General shall not be bound to purchase from the company any land to which the company are unable to show a good marketable title or which is subject to any restrictive covenants or conditions incompatible with the use of the land for the purposes of the telephonic business of the Postmaster General any provision of this agreement to the contrary notwithstanding; and

(b) The company shall surrender to the Postmaster General all rights of carrying on licensed telephonic business after December 31, 1911, and shall hand over to the Postmaster General the license of 1884 and the several agreements specified in the first schedule hereto and any other agreements in writing between the Postmaster General and the company (whether made before or after the date of these presents) under which any licensed telephonic business of the company can be transacted for any period after December 31, 1911.

(4) Upon the completion of the transfer of the plant, property and assets of the company to be purchased under this agreement or as soon after as may be, but in any case within six calendar months from such transfer the Postmaster General shall pay or assure to the company the purchase money payable by him under the provisions hereof.

(5) If from any cause the purchase money payable by the Postmaster General for the plant, property and assets of the company purchased by him under this agreement is not paid or assured to the company on December 31, 1911, the Postmaster General shall pay to the company from that day until payment or assurance, interest on so much of the purchase money as from time to time remains unpaid at the rate of three pounds per centum per annum.

(6) On and as from the date of the completion of the transfer of the plant, property and assets of the company to the Postmaster General under the provisions of this agreement the company shall cease to transact any telephonic business within the United Kingdom and the company shall not thereafter transact any business except so far as may be necessary to wind up the affairs of the company.

(7) If the company at any time after the date of this agreement shall, without the consent of the Postmaster General enter into any contract the effect of which is to impose an obligation upon the Postmaster General either to render any service or to make any payment after December 31, 1911 and such contract shall be injurious to his interests, the company shall make compensation to the Postmaster General in respect of such contract and the operation thereof and the Postmaster General may set off against the purchase money payable to the company under this agreement any sums payable by the company under this sub-clause. If any difference arises between the parties as to whether any such contract is or is not injurious to the Postmaster General or as to the amount of compensation to be made by the company, every such difference shall be determined by arbitration.

Payment by annuity—

7. Subject as herein provided the Postmaster General shall have the option of paying the purchase money payable under this agreement by way of terminable annuities running for a period not exceeding twenty years, such annuities being calculated so as to pay the whole of the purchase money by the end of the period fixed with interest in the meantime on the balance outstanding from time to time at the rate of three pounds per centum per annum payable quarterly. Provided that if the company so require such proportion of the purchase money as may be specified by the company not exceeding one-fourth part thereof shall be paid in cash.

Company's staff—

8. With regard to the officers and servants of the company the following provisions shall have effect:—

(1) It is probable that the Postmaster General will be prepared upon the transfer to him of the plant, property and assets of the company as provided by this agreement to take into his service a considerable proportion of such officers and servants on terms to be arranged between himself and them, but the Postmaster General will not accept any obligation to recognize service under the company as giving any officer or servant any claim to consideration at the hands of the Postmaster General either as regards service, emolument, pension, gratuity or compensation, it being the intention of this agreement that any claim on the part of the officers or servants of the company arising from their service under the company for pension or compensation shall be dealt with by the company.

(2) If any officer or servant who has been continuously in the service of the company from August 15, 1904, to December 31, 1911, is taken into the service of the Postmaster General and placed upon the permanent establishment of the post office his service under the Postmaster General shall (provided the authority of the Treasury or of Parliament be obtained in that behalf) give him a claim to a superannuation allowance after the rate and under the conditions provided by the Superannuation Acts, 1834 to 1892, or any statutory modification thereof notwithstanding that he may at the date of his retirement have served less than ten years.

Temporary arrangements—

9. In order to promote the use of the telephone during the period between the date of this agreement and December 31, 1911, the following provisions shall have effect:—

(1) The company shall maintain all their plant in good and efficient working order.

(2) The company shall not show favour or preference to any person whomsoever in connection with their licensed telephonic business, and shall not as a condition of giving any service in connection with any exchange system require from any person the grant of any facility except for the purpose of giving such service to that person.

(3) The company's charges for use of their exchange systems (other than the London Exchange System) and any services connected therewith shall not exceed the maximum rates or fall below the minimum rates specified in the fourth schedule hereto. Provided that—

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(a) In cases in which at the date of this agreement the company's charges in any exchange area exceed the maximum or fall below the minimum charges specified in the said schedule the maximum or minimum charges (as the case may be) in such exchange area shall be the charges of the company at the date of this agreement in lieu of those specified in the said schedule.

(b) With the consent in writing of the Postmaster General but not otherwise other tariffs or rates of charge (including rates for private branch exchanges and other special services) not falling within the scale of rates specified in the said schedule may be adopted and brought into use by the company either in substitution for or by way of addition to or variation of the charges specified in the said schedule.

(c) Nothing in the said schedule contained shall be deemed to affect the position of the company with regard to inter-communication with the Exchange System of any licensee of the Postmaster General other than the company.

(4) (a) Subject as hereinafter provided the company and the Postmaster General shall respectively permit and give all reasonable facilities for local inter-communication between the subscribers and other persons using any post office exchange and the subscribers and other persons using the company's exchange system in the same exchange area without payment of any terminal or other additional charge and for the purposes of such inter-communication each party shall provide the junction wires for conversations originated on the system of each party and each party shall give all necessary facilities for the introduction into the exchanges of such party of the junction wires of the other party.

Provided that in every such case the Postmaster General and the company shall use every reasonable endeavour to come to an agreement as to the rates to be charged for the use of the exchange system of either party in the said area and any services connected therewith it being the intention of this agreement that in such cases the rates to be charged by the Postmaster General and the company shall be uniform. Any question relating to rates in any of the said areas as to which the parties may differ shall be referred by them to the treasury whose decision shall be final.

(b) No terminal charges shall be made in respect of messages passing in either direction over the Postmaster General's trunk wires between the subscribers to and other persons using any post office exchange and the subscribers to and other persons using any exchange system of the company.

(5) (a) On the conditions specified in clause 7 of the London agreement so far as the same are applicable the Postmaster General will without prejudice to any existing agreements between the Postmaster General and the company as to the provision of any works provide underground works for the use of the company elsewhere than in the London exchange area the rent to be paid by the company for the use of such works being at the rate of £11 per mile of double wire per annum.

Provided that—

(i) Such rent shall be calculated as though every underground work contained fifty double wires at the least except in the case of underground wires not exceeding a quarter of a mile in length led from a main cable to a distribution point and of underground wires not exceeding fifty yards in length led from a main cable to a group of a least ten subscribers' offices; and

(ii) Where the company desires to replace large overhead systems by underground systems the rate to be charged for underground work under the sub-clause may be the subject of special agreement.

(b) On the like conditions the Postmaster General will provide for the use of the company in new or refitted exchanges of the company switch-boards adapted to the Postmaster General's exchange system the rent to be paid by the company (to cover interest on cost of construction and depreciation) being nine per cent upon the cost of construction such cost to include an allowance of ten per cent on the cost of materials and labour in respect of supervision by the head office staff and local staff of the post office.

(c) The company shall maintain to the satisfaction of the Postmaster General
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all works provided under this agreement by the Postmaster General for the company and on default such works shall be maintained by the Postmaster General at the expense of the company.

(d) Leases or agreements in relation to all works provided under this agreement by the Postmaster General for the company shall be executed by the Postmaster General and the company respectively and such leases or agreements shall contain all proper provisions as to the use and maintenance of such works.

(e) Nothing herein contained shall oblige the Postmaster General to give the company the use of wires in an underground work which is provided in the first instance for the Postmaster General's own use.

(6) The Postmaster General will extend and afford to the subscribers and persons using any exchange system of the company all such postal telephonic and telegraphic facilities (so far as the same may be available) as he affords to subscribers and persons using any post office exchange system and upon similar terms and conditions.

(7) The provisions of clause 11 of the London agreement shall in addition to applying to the London exchange area supply to all other exchange areas.

Provision in the event of inefficient service—

10. If at any time before December 31, 1911, representations are made to the Postmaster General that the company are giving an inefficient service in any exchange area and upon an inquiry by an impartial person appointed by the board of trade (at which inquiry the company and the person or persons making the representations shall be entitled to be heard by counsel and to adduce evidence) it shall be ascertained by the award of such person that the company's service in that area is inefficient and that such inefficiency is not caused by the unreasonable withholding of wayleaves by any local authority it shall be lawful for the Postmaster General at his option either to require the company to take such steps as he may deem necessary to render their service efficient or to call upon the company to sell to him the plant, land and buildings used by them in such exchange area. In the first case if the company make default in complying with the Postmaster General's requirements and in the second case forthwith the company shall sell to the Postmaster General the plant and buildings used by them as aforesaid and all the provisions of this agreement in relation to the sale to the Postmaster General of the company's plant, land and buildings on December 31, 1911, shall apply to a sale under this clause so far as such provisions are applicable. Upon such day as the Postmaster General shall fix in such case the company's license to transact telephonic business in such area shall cease, and the company shall not be entitled to any payment in respect of compulsory purchase or good-will or prospective or hypothetical profits in respect of their business in the said area.

Modification of London agreement—

11. (1) Clause 9 of the London agreement shall as from the date of this agreement cease to be of effect and the provisions of this agreement in relation to the purchase of the company's plant, land, buildings, private wire, business stores and other property and assets and to the transfer of the company's business shall have effect in the London exchange area.

(2) Without prejudice to any arrangements heretofore made or now in progress between the Postmaster General and the company as to particular works, the rent to be paid by the company for the use of any underground wires which the Postmaster General may at any time after the date of this agreement provide for the company in the London exchange area under the provisions of the London agreement shall be at the rate of two pounds per mile of double wire per annum where the wires are provided and maintained by the Postmaster General and at the rate of one pound per mile of double wire per annum where the wires are provided by the Postmaster General but are maintained by the company such rents being respectively, calculated as though every underground work contained fifty double wires at the least except in the case of underground wires not exceeding a quarter of a mile in length led from a

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main cable to a distribution point and of underground wires not exceeding fifty yards in length led from a main cable to a group of at least ten subscribers' offices. And the rents in this sub-clause specified shall be substituted for the rents specified in the second schedule to the London agreement.

(3) The provisions of this agreement relating to the maintenance of the company's plant between the date of this agreement and December 31, 1911, to the provisions of switch-boards for the company by the Postmaster General and their maintenance by the company and to the extension to the company's subscribers of postal telephonic and telegraphic facilities shall have effect in the London exchange area and any provisions of the London agreement which are inconsistent with those provisions shall cease to be of effect.

(4) Save as aforesaid and save as is otherwise herein expressly provided, the London agreement shall remain in full force and effect.

Further assurance—

12. (1) The company and the Postmaster General shall from time to time do and execute or cause to be done and executed all such acts, deeds and things whatsoever as may be required by the Postmaster General or the company (as the case may be) to give effect to the covenants and agreements in this agreement contained, and the company shall, if desired by the Postmaster General, assent to the Bill for any Act which the Postmaster General may deem necessary or desirable to carry out the provisions of this agreement and take all such steps as may be necessary to facilitate the passing of such Act.

(2) The company shall from time to time furnish the Postmaster General with all such information with reference to their plant, property and assets and the organization of their telephonic business as may be reasonably required by him for the purposes of the purchase provided for by this agreement and the transaction of telephone business by the Postmaster General after December 31, 1911. Provided that if the furnishing of such information puts the company to any expense not incident to the transaction of their business or the carrying out of the said purchase the Postmaster General shall reimburse such expense to the company.

Agreement not to be assigned—

13. The company shall not assign, underlet or otherwise dispose of the benefit of the covenants herein contained or of any of such covenants or the powers or authorities hereby granted or any of such powers or authorities without the consent in writing of the Postmaster General.

Agreement not to affect Postmaster General's rights—

14. Nothing in these presents contained shall prejudice or affect the right of the Postmaster General from time to time to establish, extend, maintain and work any system or systems of telegraphic communication (whether of a like nature to any system of telegraphic communication carried on by the company or to any business of the company or otherwise, in such manner as he shall in his discretion think fit) neither shall anything herein contained prejudice or affect the right of the Postmaster General from time to time to enter into agreements for or to grant licenses relative to the working and user of telegraphic (whether of a like nature to those worked and used by the company or otherwise) or the transmission of telegrams in any part of the United Kingdom with or to any company, person or persons whomsoever upon such terms and whether with or without authority to exercise the powers in section 5 of the Telegraph Act, 1892, referred to as he shall in his discretion think fit. And nothing in this agreement contained shall in any manner interfere with the administration of the telegraphic service of the country by the Postmaster General according to his discretion. And (save as in this agreement provided) nothing in this agreement contained shall be deemed to authorize the company to exercise any of the powers or authorities conferred on or acquired by the Postmaster General by or under the Telegraph Acts or any of them.

Arbitration.

15. Save as otherwise expressly provided by this agreement all questions and matters of difference referred to arbitration by or under this agreement shall be referred to the Railway and Canal Commission if that body shall be authorized to entertain the same and each of the parties hereto shall at the request of the other join in any application to the commission which may be necessary to initiate or for the purposes of such reference. In the event of the Railway and Canal Commission not being authorized at the time when any question referred to arbitration by this agreement arises to entertain such question the provisions of the Arbitration Act, 1889, shall apply to the determination of such question.

Notices—

16. Any notice, request, consent or approval (whether expressed to be in writing or not) to be given or expressed by the Postmaster General under these presents may be under the hand of any one of the secretaries or assistant secretaries for the time being of the post office and may be served or given by sending the same by registered post letter to the company addressed to them at their registered office and any notice to be given by the company under these presents may be under their common seal or under the hand of their secretary and may be served by sending the same by registered post letter addressed to the secretary of the post office at the general post office, London.

Parliamentary veto—

17. This agreement shall not be binding if at any time before August 31, 1905, a resolution of either House of Parliament requesting the Postmaster General not to give effect to the agreement shall be passed provided that the agreement shall become binding at any time if it is approved by a resolution of the House of Commons.

In witness whereof the above-named Postmaster General hath hereunto set his hand and seal and the company have caused their common seal to be hereunto affixed the day and year first above written.

SCHEDULES.

THE FIRST SCHEDULE HEREINBEFORE REFERRED TO.

AREAS where the License of 1884 has been extended beyond December 31, 1911.

Exchange Area.	Date to which License of 1884 extended.	Date of Agreement relating to Extension of License of 1884.
Glasgow.....	December 31, 1913.....	July 8, 1901.
Portsmouth.....	June 30, 1926.....	August 11, 1902.
Tunbridge Wells.....	April 30, 1925 (subject to determination by Postmaster General on December 31, 1911, under agreement of October 10, 1903).	August 11, 1902.
Swansea.....	December 31, 1920.....	September 27, 1902.
Brighton.....	April 30, 1926.....	May 16, 1904.

THE SECOND SCHEDULE HEREINBEFORE REFERRED TO.

Competitive Exchange Areas.

Abergavenny.
 Bridgend.
 Brighton.
 Briton Ferry.
 Cardiff.
 Glasgow.
 Hull.
 London.

Merthyr Tydvil.
 Newcastle-upon-Tyne
 (with Gateshead).
 Newport (Monmouthshire).
 Pontypool.
 Pontypridd.
 Portsmouth.
 Swansea.

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THE THIRD SCHEDULE HEREINBEFORE REFERRED TO.

*Specification and Rules as to Plant.**Definitions—*

1. In this schedule—

The term 'Exchange Subscriber's Circuit' or 'Circuit of an Exchange Subscriber' means the wires and apparatus connecting a call office or a subscribers' office (whether on an exclusive line or a party line) with an exchange and the term 'Junction Circuit' means the wires and apparatus which connect any two exchanges in the same exchange area or an exchange and a prescribed post office in the same exchange area.

The term 'Test Cable' means a telephone drycore cable the wires of which have a loop resistance of 88 ohms. per mile and an average mutual electrostatic capacity of 0.054 microfarads per mile between wire and wire of each pair and an average insulation of not less than 200 megaohms per mile between wire and wire of each pair, all measurements being made at 60° Fahrenheit.

The term 'Test Instruments' means common battery instruments fed by a battery of 22 volts through a circuit which except so far as it consists of exchange apparatus and subscribers' instruments shall have a resistance of 300 ohms. (all being in accordance with the specification and diagram identified in duplicate before the execution of this agreement by the signatures of the engineer-in-chief to the post office and the engineer-in-chief to the company).

Circuits—

2. (1) All circuits whether exchange subscribers' circuits or junction circuits shall be metallic.

(2) All circuits when used for speaking on local exchange lines or through to a trunk circuit which itself is free from disturbance shall be free from inductive or other disturbances.

(3) All circuits shall be so arranged that each exchange subscriber shall be unable to overhear what passes on any other than his own circuit or those to which it is joined through.

Conductors—

3. The use of iron conductors shall not be permitted in any portion of a circuit.

Cables—

4. (1) All buried cables shall be efficiently protected by iron pipes or by ducts of glazed earthenware laid in concrete or by cement blocks thoroughly matured or by such other means as the Postmaster General may approve before the cable is laid.

(2) Cables in subways or tunnels shall be supported in such a manner as to prevent fracture of the lead covering.

Overhead and underground plant—

5. (1) Distributing wires (that is, wires from a distribution point to exchange subscribers' offices) may be carried either overhead or underground as may be considered desirable, and overhead distributing wires may either be open or be contained in a cable.

(2) No overhead wire extending more than a quarter of a mile from a distribution point shall be considered to be a distributing wire.

(3) Wires other than distributing wires may be carried overhead—

(a) Either open or in lead-covered cables, provided that on one line of poles or other supports not more than 104 wires in all may be carried, of which only 64 may be open.

(b) In cables of any kind across a river, canal, estuary or railway or across overhead electric wires used for the purpose of lighting traction or the transmission of power.

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(4) Wires other than distributing wires may be carried overhead either open or in cables without reference to the limitation contained in the last preceding sub-clause—

(a) In connection with any exchange system or part of an exchange system which at the date of this agreement consists substantially of overhead lines (a list of which exchange systems and parts of exchange systems has been furnished by the company to the Postmaster General and is identified by the signatures of the secretary of the post office and of the general manager of the company); provided that—

(i) In no case shall more than 104 circuits, or 208 wires, be carried in cables on any one line of poles or other supports to be hereafter erected, or more than 104 circuits, or 208 wires, be hereafter added in cables to any one line of poles or other supports now existing, and

(ii) All cables hereafter erected shall be lead-covered when practicable; and

(iii) The case of each exchange system or part of an exchange system which is specified in the aforesaid list, and which is established in a town having a population of 50,000 inhabitants and upwards according to the last census, shall, if the company so request, be specially considered, and in respect of each such exchange system or part of an exchange system, the Postmaster General shall notify the company within six calendar months from the date of the company's request whether he is prepared to provide from time to time such underground works as the company may require for extending or adding to such exchange system on a systematic plan, and in default of his giving to the company an assurance to provide such works, the first preceding proviso to this sub-clause shall not apply in the case of such exchange system or part of an exchange system.

(b) In cases where the company are unable to execute underground works by virtue of any powers which they may possess or are unwilling to execute such works in consequence of the terms and conditions proposed by a local authority and the Postmaster General (whether the company possess such powers as last aforesaid or not) after application to him by the company in that behalf refuses or fails to agree within a reasonable time to provide the underground works specified in the company's application.

(5) Except as aforesaid, no wires of any kind shall, without the consent in writing of the Postmaster General, be carried overhead.

Test of audibility—

6. All instruments, wires and apparatus shall be such that the transmission of speech thereby shall not be inferior in audibility to that afforded by test instruments connected by a length of test cable in accordance with the following regulations:—

(1) When—

(a) Any two exchange subscribers' circuits are connected together on the same exchange, or

(b) The circuit of an exchange subscriber whose office is on one exchange in an exchange area is connected with the circuit of another exchange subscriber whose office is on a different exchange in the same exchange area and the radial distance between the two exchanges does not exceed ten miles, the standard of speech shall not be inferior to that afforded by test instruments connected by a length of twenty miles of test cable; provided, that where an exchange subscriber's office situate more than five miles from an exchange is connected with another exchange subscriber's office situate more than five miles from another exchange, the standard of speech between such offices shall be deemed satisfactory if not inferior to that afforded by test instruments connected by a length of 25 miles of test cable.

(2) When the circuit of an exchange subscriber whose office is on one exchange in an exchange area is connected with the circuit of another exchange subscriber whose office is on a different exchange in the same exchange area and the radial distance between the two exchanges exceeds ten miles, but does not exceed fifty miles the standard of speech shall not be inferior to that afforded by test instruments connected by a length of 30 miles of test cable; provided, that where an exchange subscriber's office, situate more than five miles from an exchange, is connected with another exchange

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subscriber's office, situate more than five miles from another exchange, the standard of speech between such offices shall be deemed satisfactory if not inferior to that afforded by test instruments connected by a length of 35 miles of test cable.

(3) When the circuit of any exchange subscriber is connected to a prescribed post office in the same exchange area for the purpose of being connected to a trunk wire of the Postmaster General the standard of speech through the exchange subscriber's circuit and the junction circuit or circuits combined (exclusive of the trunk wire) shall not be inferior to that afforded by test instruments connected by a length of five miles of test cable; provided, that where the radial distance between a prescribed post office and an exchange, when added to the radial distance between an exchange subscribers' office and the same exchange exceeds nine miles the standard of speech through the exchange subscribers' circuit and the junction circuit or circuits combined (exclusive of the trunk wire) shall be deemed satisfactory if not inferior to that afforded by test instruments connected by a length of eight miles of test cable.

Exchanges—

7. All new and reconstructed exchanges shall be provided with automatic calling and clearing apparatus on every exchange subscriber's circuit, and the calling and clearing signals shall be effective in all conditions and upon the longest circuits used in an exchange area when connected together; provided, that automatic calling and clearing apparatus need not be provided in any new or reconstructed exchange designed for an ultimate maximum capacity of not exceeding 1,000 direct subscribers' lines and a fitted capacity of not exceeding 400 such lines if in any such case a thoroughly efficient method of calling the exchange and signalling the close of a conversation is provided.

Exchange equipments—

8. In exchange equipments on the multiple system the multiple jacks shall be connected on the branching system except in cases in which not more than ten jacks are in series.

Junction circuits—

9. Junction circuits connecting exchanges with prescribed post offices shall be provided with automatic signalling arrangements of a character approved by the Postmaster General and suitable for working in connection with his trunk lines, and shall be worked in accordance with such regulations as he may from time to time prescribe.

Subscribers' Instruments—

10. The apparatus fitted at exchange subscribers' offices shall be efficient for trunk line communication, and where separate batteries are provided at each exchange subscriber's office for speaking purposes the electro-motive force shall not at any time fall below two volts, and such apparatus shall be so fitted as to admit of a clearing signal being transmitted by the exchange subscriber to the prescribed post office to indicate the close of a trunk conversation.

Notice of new equipment—

11. With a view to avoid difficulty under the last two preceding clauses the company shall, at least six calendar months before the bringing into use of a new exchange equipment in an exchange, furnish the Postmaster General with diagrams illustrating both the exchange subscribers' circuits and the method by which it is proposed to actuate the signals on the junction circuits at the prescribed post office.

Protection of circuits—

12. When an overhead electric system used for the purpose of lighting traction or the transmission of power is worked in the neighbourhood of any overhead circuits of the company suitable safety devices, including fuses and heat coils shall in all circuits

likely to be affected be provided both at the exchange and at the exchange subscribers' offices.

Lightning protectors—

13. Efficient lightning protectors shall be provided on all circuits.

Modification and savings—

14. (1) Proposals for the modification of the foregoing specification and rules either generally or in relation to any particular case will be considered by the Postmaster General or the company (as the case may be).

(2) The fact that overhead work is for some purposes authorized by the specification and rules contained in this schedule is not to prejudice the right of the Postmaster General to raise any question with regard to the value of overhead work which he is authorized to raise under clause 4 of this agreement.

(3) The specification and rules contained in this schedule do not apply to the internal exchange plant of the company specified in the list to be furnished by the company to the Postmaster General under clause 3 of this agreement.

(4) Notwithstanding anything contained in the specification and rules contained in this schedule the existing internal exchange plant of the company may be utilized to the extent of the capacity for which it has been designed, but such internal exchange plant may not be extended beyond the capacity for which it has been designed otherwise than in conformity with the said specification and rules provided, that if any question arises between the Postmaster General and the company as to the capacity of any internal exchange plant the question shall be determined by arbitration.

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THE FOURTH SCHEDULE HEREINBEFORE REFERRED TO.

MAXIMUM AND MINIMUM CHARGES FOR USE OF THE EXCHANGE SYSTEMS OF THE COMPANY OTHER THAN THE LONDON EXCHANGE SYSTEM.

Service.	Maximum Charge.	Minimum Charge.
A.—FOR EXCLUSIVE LINES.		
(a).—Where the office of the exchange subscriber is within one mile of the exchange with such office is immediately connected:—		
1. For the establishment of telephonic communication between any exchange and the office of any exchange subscriber and the transmission of an unlimited number of messages of the subscriber to any office on an exchange in the same exchange area.....	£10 per annum.	£5 per annum.
(ii).—1. For the establishment of telephonic communication between any exchange and the office of any exchange subscriber, exclusive of the transmission of messages.....	£5 " "	£2 " "
2. For the transmission of each message of the subscriber to any office on an exchange in the same exchange area.....	2d.	½d.
(b). Where the office of an exchange subscriber is situated more than one mile from the exchange with which such office is immediately connected.....		
Over and above the respective charges aforesaid.		
For every additional quarter of a mile or part thereof, an additional charge of.....	25s. per annum.	Nil.
B.—FOR PARTY LINES.		
(a). Where the main circuit does not exceed one mile in length and the spur circuits do not respectively exceed 220 yards in length.....		
1. For the establishment of telephonic communication between any exchange and the office of any exchange subscriber, and the transmission of an unlimited number of messages of the subscriber to any office on an exchange in the same exchange area.....		
1. Where two exchange subscribers use the same party line.....	£8 per annum (per exchange subscriber).	£3 per annum (per exchange subscriber).
2. Where three or four exchange subscribers use the same party line.....	£6 per annum (per exchange subscriber).	£2. 10s. per annum (per exchange subscriber).
(ii).—1. For the establishment of telephonic communication between any exchange and the office of any exchange subscriber exclusive of the transmission of messages.....		
(a). Where two exchange subscribers use the same party line.....	£3 per annum (per exchange subscriber).	Nil.
(b). Where three or four exchange subscribers use the same party line.....	£2. 10s. per annum (per exchange subscriber).	Nil.
(c). Where more than four exchange subscribers use the same party line.....	£2 per annum (per exchange subscriber).	Nil.
2. For the transmission of each message of a party line subscriber to any office on an exchange in the same exchange area.....	2d.	½d.
(b).—1. Where the main circuit exceeds one mile in length in respect of every additional quarter of a mile or part thereof,—for every exchange subscriber whose spur circuit issues from the main circuit at a point exceeding one mile from the exchange.....	15s. per annum.	Nil.
2. Where the spur circuit exceeds 220 yards in length—in respect of every additional quarter of a mile or part thereof,	25s. " "	Nil.

THE FOURTH SCHEDULE HEREINBEFORE REFERRED TO—*Continued.*

MAXIMUM AND MINIMUM CHARGES FOR USE OF THE EXCHANGE SYSTEMS OF THE COMPANY OTHER THAN THE LONDON EXCHANGE SYSTEM.

Service.	Maximum Charge.	Minimum Charge.
C.—FOR EXTENSION LINES.		
(a). Where the two offices connected by the line are situate in the same building or curtilage.....		
1. Where the line does not exceed 110 yards of double wire in length.....	30s. per annum.	15s. per annum.
(ii) Where the line exceeds 110 yards of double wire in length.....		
For the first 110 yards of double wire.....	30s. per annum.	15s. per annum.
For each additional 110 yards of double wire or part thereof.....	10s. " "	Nil.
(b). Where the two offices connected are not situate within the same building or curtilage.....		
(i). Where the line does not exceed a quarter of a mile of double wire in length.....	£3. 10s. per annum.	25s. per annum.
(ii). Where the line exceeds a quarter of a mile of double wire in length.....		
For the first quarter of a mile of double wire.....	£3. 10s. per annum.	25s. per annum.
For each additional quarter of a mile of double wire or part thereof.....	25s. per annum.	Nil.
D.—FOR CALL OFFICES.		
For the transmission of a message from a call office to any other office on an exchange in the same exchange area.....	3d.	½d.
For the receipt of a message at a call office from any other office on an exchange in the same exchange area.....	3d.	Nil.

NOTES.

These charges do not cover the supply of special instruments or apparatus for the convenience of particular subscribers. Where the charges for telephonic communication are made with reference to the number of messages transmitted the company may fix an annual minimum payment to be made by the subscriber in respect of such messages, and in no case shall the total annual amount payable by an exchange subscriber be less than £1.

The distances referred to in so much of this schedule as relate to exclusive lines and external extension lines shall be deemed to be measured in a straight line on a horizontal plane. The same mode of measurement may be applied in place of actual route measurement in relation to party lines in any exchange area, provided all party lines in the same area are measured in the same manner.

Signed, sealed and delivered by
 the Postmaster General in }
 the presence of }
 ROBERT HUNTER,
Solicitor to the Post Office.

STANLEY.

Seal of
 His Majesty's
 Postmaster General.

The Common Seal of the com-
 pany was affixed hereto in }
 the presence of }
 HARRIS,
 GEORGE FRANKLIN,
Directors.
 ALBERT ANNS,
Secretary.

Seal of
 The National Telephone
 Company, Limited.

APPENDIX No. 1

No. 278h.

DATED August 8, 1905.

GREAT BRITAIN—*Continued.**Pamphlet F.*

POST OFFICE TELEGRAPHS.

HIS MAJESTY'S POSTMASTER GENERAL AND THE NATIONAL TELEPHONE COMPANY, LIMITED.

Indenture supplemental to Agreement of February 2, 1905.

This Indenture made August 8, 1905, between the Right Honourable Edward George Villiers Stanley, C.B., commonly called Lord Stanley, His Majesty's Postmaster General (who and whose successors in office for the time being are intended to be hereinafter included in the term the 'Postmaster General') on behalf of His Majesty of the one part and the National Telephone Company, Limited, the registered office of which is at Telephone House, Victoria Embankment, in the city of London (hereinafter called 'the company') of the other part, and supplemental to an indenture dated February 2, 1905, and made between the same parties (which indenture is hereinafter referred to as 'the Principal Indenture').

Witnesseth, that it is hereby agreed and declared between and by the parties hereto as follows, that is to say:—

1. From and after the date of these presents the principal indenture shall be read, construed and take effect as if in lieu of Article 4 of the principal indenture the following article had been inserted (that is to say):—

4.—(1) The value on December 31, 1911 of all plant, land buildings, stores and furniture purchased by the Postmaster General in pursuance of the provisions hereof, shall be then value (exclusive of any allowance for past or future profits of the undertaking, or any compensation for compulsory sale or other consideration whatsoever) of such plant, land, buildings, stores and furniture having regard to its suitability for the purposes of the Postmaster General's telephonic service, and in determining the value of any plant no advantage arising from the construction of such plant by leave of the Postmaster General upon any railway or canal over which the Postmaster General possesses exclusive rights of way for telegraphic lines shall be taken into account.

2. The value on December 31, 1911, of any licensed telephonic business of the company which by virtue of the agreements referred to in the first schedule hereto or of any other agreement in writing between the Postmaster General and the Company can be transacted as aforesaid after December 31, 1911 (apart from the plant, land and buildings used herein, which are to be valued as hereinbefore in this clause provided) shall be such sum as may be agreed between the Postmaster General and the company, regard being had to the net profits of such business and to the circumstances and conditions under which the Company would carry on such business after December 31, 1911.

(3) The value on December 31, 1911, of any private wire business of the company (apart from the plant, land and buildings used therein, which are to be valued as hereinbefore in this clause provided) shall be taken to be three years' purchase of the net profits of such business on the average of the three years ending on December 31, 1911.

(4) All matters of difference arising under this clause shall be determined by arbitration.

2. Except in so far as altered, modified or added to by these presents the Principal Indenture shall remain and be binding on the parties hereto.

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In witness whereof the above-named Postmaster General hath hereunto set his hand and seal, and the company have caused their common seal to be hereunto affixed, the day and year first before written.

Signed, sealed and delivered by }
the Postmaster General in the }
presence of }

STANLEY.

[Seal, &c.]

ROBERT HUNTER,
Solicitor to the Post Office.

The Common Seal of the Com- }
pany was affixed hereto in the }
presence of }

GEORGE FRANKLIN,
Director.

GEO. H. ROBERTSON,
Director.

[Seal, &c.]

ALBERT ANNS,
Secretary.

No. 278i.

GREAT BRITAIN—*Continued.**Pamphlet H.*

EXCERPT FROM THE FIFTY-FIRST REPORT OF THE POSTMASTER GENERAL OF GREAT BRITAIN.

APPENDIX M.—TELEPHONE TRUNK WIRES.

STATEMENT showing the number of circuits, miles of wire and calls in each year since the trunk lines of the National Telephone Company were acquired by the state.

Year.	Circuits.	Increase.	Miles of Wire.	Increase.	Calls.	Increase.
1897-98.....	877	73	55,721	7,866	5,888,247	643,416
1898-99.....	953	76	63,109	7,388	7,066,609	1,178,362
1899-1900.....	1,029	76	69,713	6,604	8,091,631	1,025,022
1900-01.....	1,116	87	76,831	7,118	8,980,733	889,102
1901-02.....	1,165	49	83,302	6,471	10,080,716	1,099,983
1902-03.....	1,309	144	93,473	10,171	11,574,229	1,493,513
1903-04.....	1,418	109	102,799	9,326	13,467,975	1,893,746
1904-05.....	1,604	186	112,743	9,943	15,461,822	1,993,847

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APPENDIX No. 1

APPENDIX M.—Continued.

PROVINCIAL TELEPHONE EXCHANGE WIRES OWNED AND OPERATED BY THE BRITISH POSTAL DEPARTMENT.

STATEMENT showing the number of miles of wire and exchange telephones in each of the last ten years.

Year.	Miles of Wire.	Increase.	Exchange Tele- phones.	Increase.
1895-96.....	3,110	Dec. 172	1,842	Dec. 12
1896-97.....	3,295	Inc. 185	1,863	Inc. 21
1897-98.....	3,968	673	1,957	94
1898-99.....	4,369	401	2,132	175
1899-1900.....	4,762	393	2,246	114
1900-1901.....	5,199	437	2,686	440
1901-02.....	6,283	1,084	3,891	1,205
1902-03.....	7,372	1,089	5,218	1,327
1903-04.....	8,602	1,230	6,847	1,629
1904-05.....	9,893	1,291	8,644	1,797

PRIVATE WIRES OWNED AND OPERATED BY THE BRITISH POSTAL DEPARTMENT.

STATEMENT showing the Number of Contracts, Miles of Wire and Apparatus, and the Rentals in each of the last Ten Years.

Year.	Contracts.	Increase.	Miles of Wire.	Increase.	Telephones and Telegraph Apparatus.	Increase.	Rentals.	Increase.
							£	£
1895-96*.....	2,570	146	18,471	Dec. 1,456	5,346	82	112,616	Dec. 1,541
1896-97.....	2,530	Dec. 40	19,095	Inc. 624	5,358	12	114,448	Inc. 1,832
1897-98.....	2,608	Inc. 78	23,146	4,051	5,459	101	†110,042	Dec. 4,406
1898-99.....	2,676	68	25,829	2,683	5,629	170	121,065	Inc. 11,023
1899-1900.....	2,788	112	27,334	1,505	5,863	234	126,132	5,067
1900-01.....	2,910	122	29,157	1,823	6,193	330	132,424	6,292
1901-02.....	3,234	324	34,924	5,767	6,605	412	151,853	19,429
1902-03.....	3,439	205	36,581	1,657	7,118	513	163,638	11,785
1903-04.....	3,499	60	40,608	4,027	7,595	477	169,769	6,131
1904-05.....	3,746	247	41,026	418	8,901	1,306	172,953	3,184

* Certain lines leased by cable companies were given up, and telephone trunk wires were for the first time excluded.

† The rates for private wires were reduced in 1897 and existing rentals were reduced accordingly.

NOTE.—The above figures include particulars of lines leased to cable companies. The total length of such wires is 8,187 miles and the rental £48,455.

APPENDIX N.

POST OFFICE TELEPHONES.

DR.	General Capital Account to March 31, 1905.			CR.			
	£	s.	d.		£	s.	d.
Capital authorized by Parliament, viz. :—				Trunk (Long Distance) Lines :—			
Telegraph Acts, 1892-98.....	2,300,000	0	0	Purchased from the National Telephone Co. in 1896	459,114	3	7
Telegraph Act, 1899.....	2,000,000	0	0	Construction of lines by Post Office :—			
Telegraph Act, 1904.....	3,000,000	0	0	To March 31, 1904.....	1,740,909	14	5½
				Year ended March 31, 1905.....	337,263	19	11
							2,537,287 17 11½
				London Exchange (including private wires) :—			
				Construction to March 31, 1904.....	1,451,727	14	11¾
				Year ended March 31, 1905.....	35,168	13	0½
				Expenditure on sites and building :—			
				To March 31, 1905.....	89,345	19	9
							1,876,242 7 9¼
				Provincial Exchanges (including private wires :—			
				Construction to March 31, 1904.....	269,718	16	11
				Year ended March 31, 1905.....	71,487	8	1¼
							341,206 5 0¼
				Miscellaneous expenditure, charged to capital account to March 31, 1905.			8,503 14 10
				Stores purchased and remaining unused on March 31, 1905.....			212,861 9 6
				Balance not expended on March 31, 1905.....			2,323,898 4 11
Total.....	£7,300,000	0	0	Total.....	£7,300,000	0	0

The amount of the capital advanced by the Treasury to 31st March, 1905, was £5,000,000. Repayment by the Post Office is effected by means of terminable annuities running for varying periods (12 to 20 years) and charged against Subhead B of the Telegraph Vote. The amount so charged up to the 31st March, 1904, was £1,105,722 7s. 0d., for the year ended 31st March, 1905, £331,468 9s. 0d., making in all £1,437,190 16s. 0d., being £1,029,063 12s. 4d. in repayment of capital, and £408,127 3s. 8d. for interest.

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APPENDIX O.

POST OFFICE TELEPHONES—*Continued.*

LONDON EXCHANGE SYSTEM.

AN ACCOUNT, partly estimated, of Receipts and Expenditure for the year ended
March 31, 1905.

RECEIPTS.		EXPENDITURE.	
	£		£
Subscribers' Rentals:—		Maintenance of system	34,017
Proportion of subscriptions paid in 1903-4, but proper to 1904-5	53,522	Salaries, wages, &c., of staff, including provision for pensions of established staff	48,069
Paid in the year 1904-5—		Rents, rates, fuel and light, including estimated rental value of premises already belonging to the department.	9,165
At flat rates	£ 30,622	Miscellaneous, expenses (stationery, travelling, &c.)	2,512
At toll rates	124,218		
	£ 154,840		
Less proportion proper to 1905-6	81,330	Balance available towards meeting de- preciation, interest, &c. (<i>vide notes</i>) .	93,298
	73,510		£ 187,061
Message fees, in addition to fixed mini- mum of £1 10s. per message rate circuit.	22,721		
Call office fees	3,301		
Rentals or wires leased to National Tele- phone Co.	30,688		
Miscellaneous receipts	1,245		
Value of services rendered to government departments without payment	2,074		
	£ 187,061		

NOTES.—(1) The estimated amount required to provide for depreciation of plant, inclusive of spare wires, is £56,647, and interest at 3 per cent on the capital expenditure of £1,926,000 is £57,780, making together £114,427.

(2) Terminable annuities have been created, payable from the vote for the telegraph service, to provide for the repayment, with interest at 3 per cent, of capital raised for telephone purposes under the Telegraph Acts, 1889-1904. The annuities provide for the repayment of the capital in 12-15 years, while the estimated life of the plant averages 34 years. The annuity required for interest and sinking fund on a capital expenditure of £1,926,000 repayable in 30 years with interest at 3 per cent would be £97,958. No deduction has been made from the annuity on account of the value of material recovered when plant is removed.

APPENDIX O—Continued.

POST OFFICE TELEPHONES.—Continued.

PROVINCIAL EXCHANGE SYSTEM.

AN ACCOUNT, partly estimated, of Receipts and Expenditure for the year ended March 31, 1905.

RECEIPTS.		EXPENDITURE.	
	£		£
Subscribers' Rentals :—		Maintenance of provincial exchange systems.	12,932
Proportion of subscriptions paid in 1903-4.	18,195	Salaries, wages, &c., of staff, including provision for pensions of established staff.	15,891
Paid in 1904-5.	£ 43,042	Rent, rates, fuel and light, including estimated rental value of premises already belonging to the department. . .	1,502
Less proportion proper to 1905-6.	22,623	Miscellaneous expenses (stationery, travelling, &c).	1,115
	20,419		
Deduct amount payable to, in excess of that receivable from, National Telephone Company for terminal fees.	1,993	Balance available towards meeting depreciation, interest, &c. (<i>vide notes</i>). . .	11,448
	18,426		42,888
Message fees for excess calls.	1,653		
Call office collections.	416		
Rentals of junction lines leased to National Telephone Company.	3,697		
Miscellaneous receipts.	117		
Value of services rendered to government departments without payment.	384		
	42,888		

NOTES.—(1) The estimated amount required to provide for depreciation of plant is £15,210, and interest at 3 per cent on the capital expenditure of £319,000 is £9,570, making together £24,780.

(2) Terminable annuities have been created, payable from the vote for the telegraph service, to provide for the repayment, with interest at 3 per cent, of capital raised for telephone purposes under the Telegraph Act, 1899-1904. The annuities provide for the repayment of the capital in 15 years, while the estimated life of the plant averages 19 years. The annuity required for interest and sinking fund on a capital expenditure of £319,000 repayable in 19 years with interest at 3 per cent would be £22,269. No deduction has been made from the annuity on account of the value of material recovered when plant is renewed.

APPENDIX No. 1

APPENDIX O—Continued.

POST OFFICE TELEPHONES—Continued.

TRUNK LINE SYSTEMS.

AN ACCOUNT, partly estimated, of Receipts and Expenditure for the year ended March 31, 1905.

RECEIPTS.		EXPENDITURE.	
	£		£
Trunk Fees :—		Maintenance of trunk line system	62,394
Gross value for year	£380,308	Salaries, wages, &c., of staff, including provision for pensions of established staff	105,917
Less commission paid to licensees for collection, &c.	18,749	Rents, rates, fuel and light, including estimated rental value of premises already belonging to the department	10,538
	361,559	Miscellaneous expenses (stationery, travelling, &c.)	6,916
Miscellaneous receipts	1,659	Balance available towards meeting depreciation, interest, &c. (<i>vide notes</i>)	177,575
Value of services rendered to government departments without payment	122		363,340
	363,340		363,340

NOTES.—(1) The estimated amount required to provide for depreciation of plant is £77,659, and interest at 3 per cent on the capital expenditure of £2,797,000 is £83,910, making together £161,569.

(2) Terminable annuities have been created, payable from the vote of the telegraph service, to provide for the repayment, with interest at 3 per cent, of capital raised for telephone purposes under the Telegraph Acts, 1892-1904. The annuities provide for the repayment of the capital in 12-20 years, while the estimated life of the plant averages 29 years. The annuity required for interest and sinking fund on a capital expenditure of £2,797,000 repayable in 29 years, with interest at 3 per cent, would be £145,752. No deduction has been made from the annuity on account of the value of material recovered when plant is renewed.

APPENDIX O.—Continued.

POST OFFICE TELEPHONES.

SUMMARY.

An account, partly estimated, of Receipts and Expenditure for the year ended March 31, 1905.

	RECEIPTS.					EXPENDITURE.			
	Exchanges.		Trunk Lines.	Total Receipts.		Exchanges.		Trunk Lines.	Total Expenditure.
	London.	Provincial.				London.	Provincial.		
	£	£	£	£		£	£	£	£
Subscribers' rentals, local and trunk fees, &c. (including value of services rendered to government departments without payment)	187,061	42,888	363,340	593,289	Working expenses (including day to day maintenance)	93,763	31,440	185,765	310,968
					Balance available towards meeting depreciation, interest, &c.	93,298	11,448	177,575	282,321
Total	187,061	42,888	363,340	593,289	Total	187,061	42,888	363,340	593,289
(1) Estimated amount required to provide for depreciation of plant, and interest at 3 per cent on capital, as per foot note (1) of preceding tables						114,427	24,780	161,569	300,776
(2) Annuity required for interest and sinking fund for repayment of capital, at 3 per cent, as per foot note (2) of preceding tables						97,958	22,269	145,752	265,979

GREAT BRITAIN.

No. 278j.

GREAT BRITAIN—Continued.
POST OFFICE TELEGRAPHS.

LIST OF SUBSCRIBERS TO THE POST OFFICE TELEPHONE EXCHANGE SYSTEM IN GREAT BRITAIN
AND IRELAND.

NOTE.—U. D. signifies Urban District.
P. B. signifies Parliamentary Burgh.
M. B. signifies Municipal Boro.
A. C. signifies Admin. County.
T. signifies Town.
Par. signifies Parish.
Par. & C. B. signifies Parliamentary & County Burgh.
E. P. signifies Ecclesiastical Parish.
R. D. signifies Rural District.

Where no figures are given, no reliable ones are available.

Place.	Popu- lation.	Sub- scribers Stations.	Place.	Popu- lation.	Sub- scribers Stations.
Aberaman..	13,940	16	Blaenogwy..		12
Aberbeeg..		14	Blaina, U. D..	13,489	25
Abercarn..	12,607	20	Blairgowrie, Par..	4,464	58
Abercynon..		15	Blaydon-On-Tyne, U. D..	19,623	20
Aberdare, U. D..	43,865	45	Blyth, U. D..	5,472	44
Aberdeen, P. B..	143,728	2	Bognor, U. D..	6,180	71
Aberdovey..	1,466	7	Bolton, P. B..	130,611	2
Abergavenny..	7,795	95	Bo'ness..	9,306	2
Aberkenfig..		18	Bourne, U. D..	4,361	23
Abertillery, U. D..	21,945	71	Bourton-On-Water..	1,097	13
Aberystwyth..	8,014	19	Brackley..		31
Aldeburgh..	2,405	21	Bradford, P. B..	228,625	4
Alfreton..	17,505	24	Braintree..	5,330	2
Alnwick..	6,716	5	Brasted..	1,504	15
Amersham..	2,674	16	Brecon, U. D..	5,875	71
Ammanford..		35	Brentwood..	4,932	9
Annfield Plain, U. D..	12,481	17	Bridgend..	6,062	66
Anstruther..	4,233	28	Brig..	3,137	20
Antrim, A. C..	196,090	14	Brighton, P. B..	153,336	3
Ashington, U. D..	13,956	33	Bristol, P. B..	321,935	12
Atherstone..	5,248	45	Briton Ferry..	6,973	6
Auchterarder..	3,159	30	Broadway..	821	15
Auchtermuchty..	637	18	Brooke..	573	7
Aylesbury, U. D..	9,243	94	Broxburn..	7,099	2
Badminton..	317	13	Brynmaur..	6,833	27
Baldock..	2,057	19	Bulth Wells..	1,805	27
Ballymena..	10,886	68	Burdage..	2,196	2
Ballymoney, U. D..	2,952	9	Bury, P. B..	56,409	3
Banbridge, U. D..	5,006	20	Bury St. Edmunds..	16,255	4
Banbury, M. B..	12,968	52	Bwlch..		5
Bargoed..		36	Caerau..	229	21
Barmouth..	2,214	29	Caerphilly..	15,835	32
Barnard Castle..	4,421	40	Callander, Par..	2,171	19
Barnsley..	41,086	4	Cardiff, Par. & C. B..	164,333	293
Barrow-In-Furness..	57,586	3	Carlisle, M. B..	45,480	2
Barry..	27,030	23	Castle Eden..	1,354	21
Basingstoke, M. B..	9,793	4	Castleton..		11
Bathgate, T..	7,549	2	Caterham Valley..	9,486	59
Beaufort..	2,761	11	Cellardyke (see Anstruther).		
Beaumaris, M. B..	2,326	18	Cheadle (Staffs)..	5,186	20
Bedlington..	18,766	20	Chepstow..	3,067	2
Belfast, P. B..	348,705	6	Chesham..	7,245	54
Benwell..	18,316	6	Chester, A. C..	599,070	2
Biggleswade..	5,120	24	Chesterfield..	27,185	5
Billesdon..	726	6	Chester-Le-Street..	11,753	9
Birmingham, Par..	419,303	15	Chichester, M. B..	12,244	2
Birtley, Par..	5,573	6	Chippenham, M. B..	5,074	2
Bishop Auckland..	11,969	37	Chipping Norton..	3,780	24
Bishop's Stortford..	7,143	4	Church Stretton..	816	21
Blackpool..	47,348	2	Clayton Road, Newcastle..		1
Blackwood..		19	Clutton..	78	3
Blaenavon..	10,869	31	Cobham (Surrey)..	3,901	27
Blaengwynf..		17	Colchester, M. B. & Par..	38,373	3

GREAT BRITAIN.

APPENDIX No. 1

List of Subscribers to the Post Office Telephone Exchange System in Great Britain and Ireland—Continued.

Place.	Popu- lation.	Sub- scribers Stations.	Place.	Popu- lation.	Sub- scribers Stations.
Coleraine..	6,958	26	Harrogate..	28,423	3
Colinsburgh..	352	12	Hartlepoons, P. B..	36,303	25
Consett..	9,694	55	Haswell..	5,512	10
Corbridge..	1,938	28	Hatch End.. . . . .	.....	21
Cork..	404,611	7	Hawkhurst..	3,136	21
Coupar Angus, Par..	2,704	15	Hay, U. D..	1,680	27
Cowbridge, M. B. & Par..	1,202	23	Hayes (Middlesex)..	16,353	20
Coxhoe..	3,278	7	Haywards Heath..	3,717	38
Cranbrook..	3,949	26	Hebburn..	20,901	19
Cranleigh..	2,709	25	Hengoed (see Maescycwmmmer) .. . . .	.....	19
Crawley..	441	37	Hexham..	7,071	98
Crewe, P. B..	42,074	2	Hextable.. . . . .	.....	4
Crickhowell..	1,150	26	Highclere..	547	12
Crocken Hill..	2,032	11	Hillingdon..	8,333	14
Cross Ash.. . . . .	.....	2	Hinckley, U. D..	11,304	3
Crumlin.. . . . .	.....	8	Hirst (see Ashington)..	7,672	.....
Cuckfield, U. D..	1,813	8	Hitchin..	10,072	39
Cullercoats..	1,743	15	Holbeach..	4,755	20
Cwmaman.. . . . .	.....	10	Holyhead, U. D..	10,079	27
Darlington, P. B..	44,487	10	Horley..	4,133	50
Dartford, U. D..	18,644	27	Horsham..	10,781	24
Daventry, P. B..	3,780	23	Hull, P. B..	239,517	32
Derby, P. B..	114,848	6	Humshaugh..	460	4
Doncaster, P. B..	28,932	4	Hungerford..	2,906	20
Doune..	930	17	Huntingdon..	4,261	2
Dowlais..	17,142	11	Innellan..	1,007	3
Dublin..	157,563	7	Inverurie, P. B..	3,454	22
Dundee..	162,636	2	Ipswich..	66,630	3
Dunfermline..	31,697	3	Jarrow..	34,295	36
Dunster..	1,132	5	Kells (Co. Antrim)..	225	7
Dunston..	5,660	9	Kenfig Hill.. . . . .	.....	9
Durham..	15,000	8	Kingskettle..	1,759	12
Earls Colne..	1,762	6	Kinross..	2,655	19
Easington..	1,731	9	Knebworth Station..	522	13
Easingwold..	1,945	11	Lancaster..	40,329	3
East Grinstead, U. D..	6,094	63	Leatherhead..	4,694	10
Ebbw Vale, U. D..	20,994	43	Leeds, P. B..	428,968	11
Ebchester..	407	10	Leicester, P. B..	151,489	15
Edinburgh, P. B..	298,113	2	Leighton Buzzard..	6,331	63
Elie..	1,004	21	Leiston..	3,259	17
Ellesmere, U. D..	1,945	15	Lemington (see Blaydon-On-Tyne).	.....	.....
Elswick Road, Newcastle.	.....	.....	Leominster..	5,826	50
Ely..	7,743	23	Leslie..	3,960	12
Exeter, P. B..	53,141	2	Limavady..	2,692	12
Falkirk, P. B..	20,505	2	Limerick, P. B..	46,170	1
Farnon..	564	3	Lincoln, P. B..	51,751	5
Farningham..	1,328	11	Linlithgow..	8,076	3
Fenny Stratford, U. D..	4,799	23	Liverpool, P. B..	626,634	57
Ferndale.. . . . .	.....	34	Llanbradach.. . . . .	.....	10
Ferry Hill..	3,123	8	Llandilo..	1,934	25
Fraserburgh, Par..	9,715	45	Llandrindod Wells, U. D..	1,327	79
Frinton-On-Sea, U. D..	644	47	Llandudno, U. D..	9,297	2
Gaddesby..	301	8	Llanhilleth..	5,015	11
Gainford..	869	5	Llanidloes..	2,770	18
Gainsborough, U. D..	17,660	2	Llantrisant, Par..	10,090	14
Garnant.. . . . .	.....	16	Llantwit Major..	1,113	20
Gateshead, Par. & C. B..	109,888	1	Loddon..	1,034	18
Gilfach Goch.. . . . .	.....	16	London.. . . . .	.....	28,000
Glasbury..	460	7	Long Buckby..	2,147	4
Glasgow, P. B..	622,372	14	Longside..	2,780	6
Gloucester, P. B..	45,146	3	Loughborough..	21,508	4
Gosforth..	935	6	Low Fell.. . . . .	.....	2
Gravesend, P. B..	39,833	3	Lundin Links.. . . . .	.....	16
Great Missenden..	2,166	16	Machynlleth, U. D..	2,038	11
Great Smeaton..	178	4	Maesteg, U. D..	15,012	40
Greenock, P. B..	67,672	2	Maescycwmmmer.. . . . .	.....	19
Griffithstown..	2,818	16	Maldon, M. B..	5,565	34
Grimsby, P. B..	78,198	6	Mallow..	4,542	8
Halstead, U. D..	6,073	17	Malpas..	1,139	13

GREAT BRITAIN.

List of Subscribers to the Post Office Telephone Exchange System in Great Britain and Ireland—Continued.

Place.	Popu- lation.	Sub- scribers Stations.	Place.	Popu- lation.	Sub- scribers Stations.
Malton..	4,758	69	Pontypridd, U. D.	32,316	90
Manchester, P. B.	475,356	28	Porth. . . . .	.....	43
Manningtree.	872	4	Porthcawl, U. D.	1,872	30
Mardy. . . . .	.....	17	Portrush, U. D.	1,941	15
Market Deeping.	978	14	Portstewart.	685	7
Market Drayton. . . . .	.....	28	Port Talbot. . . . .	.....	60
Maud.	575	8	Potton.	2,033	14
Maybole.	5,892	28	Prescot, U. D.	7,855	2
Melton Mowbray.	7,464	78	Prudhoe.	3,901	10
Memsie. . . . .	.....	2	Reading, P. B.	64,922	2
Menal Bridge, U. D.	1,700	10	Rhyl.	8,473	1
Merthyr Tydvil.	69,228	51	Rhymney, U. D.	7,914	28
Merthyr Vale. . . . .	.....	21	Richmond (Yorks).	3,837	36
Mevagissey.	2,088	13	Rickmansworth.	5,627	29
Middlesbrough, P. B.	116,546	42	Riddings.	4,435	10
Milnathort.	1,052	10	Risca.	9,661	23
Minehead, U. D.	2,511	34	Ross (Herefordshire).	3,303	62
Mintlaw Station.	393	9	Royston (Herts).	3,517	39
Moffat.	2,153	3	Rye.	3,900	40
Monmouth, P. B.	5,005	56	Ryton, U. D.	8,452	11
Montgomery, P. B.	1,034	3	Saffron Walden.	5,896	3
Moreton-in-Marsh.	1,374	22	St. Athan.	365	8
Morpeth, P. B.	50,043	53	St. Monance.	2,007	11
Mostyn.	1,685	10	Sandbach.	5,558	18
Mountain Ash, U. D.	31,093	42	Sandy.	3,110	19
Nantymoel (see Blaenogwy).	.....	.....	Sanquhar.	2,933	2
Neath.	13,720	6	Saxmundham.	1,452	22
Nelson (Glam). . . . .	.....	13	Scunthorpe.	6,750	21
Newbiggan-By-The-Sea.	2,032	7	Seaton Sluice. . . . .	.....	4
Newbridge. . . . .	.....	16	Sedgefield.	3,167	14
Newburn-On-Tyne, U. D.	12,500	.....	Senghenith. . . . .	.....	7
Newbury.	11,061	22	Sevenoaks.	8,006	2
Newcastle-On-Tyne.	215,328	885	Sheffield, P. B.	380,793	7
New Deer.	4,371	10	Shields Road (Newcastle).	.....	.....
Newmarket, U. D.	10,688	14	Shildon.	11,759	8
Newport (Mon), P. B.	61,465	219	Shipton-On-Stour.	1,564	15
Newport (Salop).	3,241	21	Shotley Bridge. . . . .	.....	14
Newton (Mont), U. D.	6,500	26	Shotts.	15,562	21
New Milton. . . . .	.....	6	Sible Hedingham.	1,701	12
New Pitsligo.	2,332	10	Skegness.	2,140	41
New Tredegar, E. P.	5,797	37	Skenfrith.	449	2
Northallerton, U. D.	4,009	19	Sleaford.	5,468	37
North Shields.	5,737	46	Slough.	11,453	2
Northumberland Dock. . . . .	.....	12	Somercotes. . . . .	.....	13
Northwood.	2,414	36	Southampton, P. B.	120,215	3
Norwich, P. B.	111,742	2	Southeast-On-Sea.	28,857	2
Nottingham.	239,743	14	Southerndown. . . . .	.....	9
Nutley.	967	12	South Shields, P. B.	97,263	43
Oakham.	3,294	32	Southwold.	2,800	38
Ogmore Vale.	19,907	15	Spalding.	9,385	57
Oxshott. . . . .	.....	6	Spennymoor, U. D.	16,635	10
Penarth, U. D.	14,228	9	Stanley, U. D.	13,554	26
Pencoed.	1,179	15	Stevenage.	3,957	28
Pengam. . . . .	.....	22	Stocksfield. . . . .	.....	14
Penrhiwceber.	6,991	16	Stockton-On-Tees, P. B.	71,815	31
Penrith.	9,182	4	Stow-On-The-Wold.	1,386	13
Pentewan. . . . .	.....	3	Strichen.	2,313	13
Pentre. . . . .	.....	92	Sudbury.	7,109	42
Peterborough, P. B.	32,205	2	Sunderland, P. B.	158,877	123
Peterhead.	15,146	37	Swanley Junction.	3,666	22
Peterston-Super-Ely.	327	8	Swansea, P. B.	128,773	17
Piercebridge.	207	5	Talgarth.	1,466	13
Pinner.	3,366	25	Talybont-On-Usk. . . . .	.....	9
Pittenweem, P. B.	1,859	9	Talywain. . . . .	.....	24
Ponteland.	463	7	Tamworth.	7,271	2
Pontlottyn.	7,849	21	Taunton, P. B.	19,723	3
Pontyclun. . . . .	.....	13	Tenterden.	3,243	23
Pontycymmer. . . . .	.....	28	Thetford.	381	21
Pontypool, U. D.	6,126	98	Thirsk.	3,093	16

GREAT BRITAIN.

APPENDIX No. 1

List of Subscribers to the Post Office Telephone Exchange System in Great Britain and Ireland—*Continued.*

Place.	Popu- lation.	Sub- scribers Stations.	Place.	Popu- lation.	Sub- scribers Stations.
Thornbury..	2,594	18	Warrington, P. B..	64,701	2
Thornley..	2,938	5	Warwick, P. B..	39,075	2
Tilbury Docks..		2	Watchet..	1,880	6
Tipperary..	160,232	10	Watford, U. D..	29,327	3
Tiverton..	10,382	1	Waunllwyd..		19
Toddington (see Winch- combe)..	202	..	Wealdstone..	5,901	23
Ton-Y-Pandy..		84	Welshpool, P. B..	4,609	25
Ton-Yr-Efail..		11	Welwyn..	1,660	18
Torksey..	202	2	Wendover..	2,009	27
Towcester..	2,371	20	Westoe, E. P..	26,912	2
Towyn..	3,756	18	West Cornforth..		8
Tredegar, U. D..	18,497	27	West Hartlepool, Par..	60,561	..
Treharris..		24	Westerham..	2,905	25
Treherbert, E. P..	8,826	30	Weybridge..	5,329	3
Treorchy..		36	Whitby, U. D..	11,755	2
Tring..	4,349	30	Whitchurch (Salop)..	5,221	41
Troedyrhiw..		23	Whitley Bay, U. D..	7,705	15
Truro..	2,443	2	Whittingham..	439	7
Turner's Hill, E. P..	882	7	Wigan..	60,764	2
Tylorstown, E. P..	7,564	27	Williton, R. D..	14,462	5
Tyne Dock..		13	Winchcombe..	2,699	20
Tynemouth, Par..	24,881	5	Wingate..	8,005	15
Uckfield..	2,895	39	Witham, U. D..	3,454	13
Upper Brynamman..		20	Wooler..	1,336	17
Upper Largo..	2,046	8	Workington..	26,139	6
Uxbridge, U. D..	8,585	76	Worthing..	16,996	2
Wainfleet..	1,233	16	Yiewsley..	3,213	25
Wallsend..	20,918	13	Ynysbwl..		7
Walton-on-the-Naze..	2,014	16	York, P. B..	75,521	2
Ware..	5,573	3	Ystalyfera..		26
Wark..	634	3	Ystradgynlais..	5,785	13

GENERAL POST OFFICE, LONDON, July, 1905.

No. 278k.

GREAT BRITAIN—*Continued.**(Pamphlet L.)*

TELEPHONES.

EXPERIMENTAL RURAL CALL OFFICE SYSTEMS.

When Mr. Austen Chamberlain was Postmaster General he decided, in view of representations made by Mr. Lough, M.P., to open experimentally some rural telephone call offices, that is to say call offices in villages by means of which the inhabitants may communicate with their nearest market town, and with callers at other village call offices on the same local system. The service was to be purely a local one.

Three districts were chosen for the experiments: Cavan, in Ireland, in which Mr. Lough was interested; Fraserburgh, in Scotland, and Oakham, in England. The expense involved was small in these cases, as existing telegraph circuits could be utilized for calls also. All that was necessary was to make a few slight alterations and to provide some silence cabinets. Callers in the villages can arrange with their correspondents in the market town to attend at the call office at a certain hour, or they can first make a call to the market town in order to obtain the services of an express messenger there who will fetch the person required to the telephone. There has now been a fair opportunity of judging of the utility of arrangements of this kind, and it seems clear that, when the call offices are grouped round a town to which the exchange system has not been extended, very little use is likely to be made of the call offices, and their maintenance will be unremunerative. At Oakham and Cavan, where there are no telephone exchanges, 2d. (4 cents) is charged for each call, and if the services of an express messenger are required they have to be paid for at the ordinary express service rates, and the minimum charge for a message becomes 5d. (10 cents). This perhaps is more than the villagers can afford to pay for the privilege of speaking to their market town. In any case comparatively few calls have been made; and the receipts have not covered the expenses, although the latter have been small. At Fraserburgh the circumstances are different. There is considerable post office exchange system there, and callers at the post office can speak to subscribers to the exchange without having to make previous arrangements with their correspondents or to employ express messengers. Moreover, as the charge for a local call on the Fraserburgh exchange is only one penny, one penny only has been charged for a local call office call. The result has been that at Fraserburgh the call office receipts have about met the expenses.

There is another point in connection with these call office arrangements that must be borne in mind when dealing with the financial aspect of the question. There is no doubt that when a local call office system is introduced a local call often takes the place of one or more local telegrams—that is, the caller gets for 2d. (4 cents) (or for 5d. (10 cents) or 7d. (14 cents), if an express messenger has to be employed) what formerly cost him and his correspondent 6d. or 1s. Thus local calls often supersede local telegraph traffic at a loss to the revenue.

(5d.—2d. for a call; 3d. for a messenger to deliver the message).

(7d.—2d. for a call; 3d. for express messenger to fetch correspondent; 2d. for conversation with correspondent when fetched.

The result of the working of the three systems for 12 months in each case is shown in the annexed statement.

Pamphlet L.—Continued.

Name of Rural Call Office System.	No. of Calls.	Fees for Calls.	Express Fees.	Total Receipts.	Main-tenance and Operating Expenses.	Cost of Express Services.	Total Working Expenses.	Loss of Telegraph Revenue.	Total Debit.	Loss on Year's Working.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Oakham (17 call offices).....	833	7 13 4	5 4 9	12 18 1	44 5 0	1 2 5	45 7 5	.....	45 7 5	32 9 4
Fraserburg (10 call offices).....	2,557	*10 4 7	2 14 0	15 15 4	11 6 6	0 19 2	12 5 9	5 0 0	17 5 9	1 10 5
Cavan (8 call offices).....	1,407	†16 6 1	6 12 3	22 18 4	37 16 8	0 18 4	38 15 0	15 18 7	54 13 7	31 15 3

* Rent of private wire, £2 16 9. † Including £5 rent of private wire.

Nothing in any of these cases has been reckoned for interest on capital.

No. 2781.

GREAT BRITAIN—*Continued.**Pamphlet M.*

MEMORANDUM.

When a subscriber of the National Telephone Company desires to make a trunk (or inter-urban) call, the demand is passed to the trunk exchange, where the particulars are noted on a ticket (No. T. 92)), of which a specimen is attached.

When a trunk line, which is required becomes disengaged for the call, the attention of the subscribers concerned is obtained, and they are placed in communication with each other. At the termination of the call, which would be for three or for six minutes, the trunk connections are severed and the time of conversation is noted on the ticket by the operator. The ticket is also used for noting any difficulty which may have arisen in connection with the call.

All the tickets for completed trunk calls are collected from time to time, and the charges for the conversations are entered on them by an operator.

The National Telephone Company are responsible to the post office for payment for all trunk calls made by their subscribers, and all accounts for trunk conversations are therefore rendered to the company.

Two systems are in vogue for rendering accounts.

Usually the particulars of calls are entered from the tickets on to a form (T. 78) of which a specimen is attached and the form is forwarded to the company at the end of each day. Under the other system, the tickets themselves are forwarded to the company, and the amount due is summarized on an accompanying form (T. 7), of which a specimen is attached. The post office keeps a copy of the summary. This system is favoured by the post office, but the company cannot introduce it generally, as their staff would in many cases be unable to cope with the extra work which the system throws on them.

The company in their turn collect the amounts due from the subscribers. They are allowed a commission of 5 per cent on the amount due to the post office to cover the work involved and any losses caused by defaulting subscribers.

At present the company have a right to impose terminal fees on conversations with their subscribers originated by subscribers to other exchange systems, and they have hitherto imposed these terminal fees with certain exceptions which have been agreed to. Conversely, the company's subscribers have had to pay terminal fees on trunk conversations originated by them for subscribers to other exchange systems, with the exceptions mentioned. These terminal fees were added to the trunk fees, but it has been arranged with the company that the payment of terminal fees on all conversations between their subscribers and subscribers to post offices exchanges shall cease on August 31 next.

APPENDIX No. 1

No. 278m.

GREAT BRITAIN—Continued.

<u>T. No. 92.</u>		<u>Telephone Ticket.</u>		90107	
Code time } of call }		Number of Minutes Demanded }			
		No. _____			
To		No. _____			
Time } On }		Circuit Number }			
Time } Off }					
Trunk Operator }		Record Operator }			
Charge			Office Stamp.		
s.		|	d.		
Remarks					

APPENDIX No. 1

No. 2780.

GREAT BRITAIN—Continued.

T.—No. 7.

(National Telephone Company
or Licensed Local Authority)

POST OFFICE TELEGRAPHS.

AN ACCOUNT showing the Amount due from the.....
to His Majesty's Postmaster General for Telephone Trunk Line Calls passed on to the
Post Office System at.....on the.....day of..... 190....

Number of Calls	Charge per Call		Amount due			Number of Calls	Charge per Call		Amount due		
	s.	d.	£	s.	d.		s.	d.	£	s.	d.
		1				Brought } forward }					
		2					3	4			
		3					3	6			
		4					4	0			
		5					4	6			
		6									
		9									
1	0										
1	3										
1	6										
1	9										
2	0										
2	4										
2	6										
2	10					Total number of } Charged Calls }					
3	0					Number of Un- } charged Calls }					
Carried } forward }						Amount carried forward...					

Total number of Tickets }
forwarded with this Account }

APPENDIX No. 1

No. 278q.

GREAT BRITAIN—*Concluded.*

DESCRIPTION OF THE MANNER IN WHICH DEMANDS FOR TRUNK (OR INTER-URBAN) CALLS ARE PASSED BY TELEPHONE SUBSCRIBERS TO TRUNK EXCHANGES.

The fact that the local exchange systems largely do not belong to the post office, which owns the trunk lines, and that local exchanges are in consequence rarely in the same room as a trunk exchange has led to the existence of several methods of passing demands.

Subscribers to the exchanges of the National Telephone Company and of the corporations which have established telephone systems do not as a rule pass the particulars of calls direct to the trunk exchange themselves. They inform their local operator, who in turn passes the particulars to the trunk exchange. She does so usually by means of a circuit known as a 'service' circuit which is terminated at an operator's position at the trunk exchange. This 'service' circuit is multiplied on keys at each operator's position in the local exchange, and every operator thus has access to the service circuit. The operator at the trunk exchange has to attend to trunk lines in addition to noting the particulars of demands on tickets as they are passed.

When there is a sufficient amount of traffic to justify it, the 'service' circuit is removed from the operator's position at the trunk exchange and terminated on the headgear telephone of an operator (known as a 'record operator'). This operator listens continuously, and notes particulars of calls as they are passed, the tickets being then distributed to the operators at the trunk positions.

In a few of the larger exchanges, 'direct record' working, under which subscribers themselves pass demands to the trunk exchange, is in force. The circuit of a subscriber, who wishes to make a trunk call, is switched through to the trunk exchange by means of circuits set apart for the purpose, and known as 'record circuits.' These record circuits are usually terminated on a record switch section which is fixed on a table and which is capable of accommodating 20 circuits. At the trunk exchange, one operator attends to one record switch section, and notes the particulars of calls as they are passed.

The post office is extending this system as rapidly as circumstances permit.

In London and Cardiff, the record circuits are terminated at a transfer section which is *en suite* with the switchboard. The record operators are seated at a table in the middle of the room, and their headgear telephones are connected with cords at the transfer section. When a call from a subscriber is received at the transfer section, the record circuit is immediately extended by the transfer operator to any disengaged record operator. By this means the work is better distributed than where one operator attends to 20 lines terminated on a record switch section. The post office is extending this system to the largest exchanges.

All post office subscribers pass their calls to the trunk exchange direct.

No. 279.

NEW ZEALAND.

POST AND TELEGRAPH DEPARTMENT,
GENERAL POST OFFICE, WELLINGTON, June 13, 1905.

The Hon. the Postmaster General,
Ottawa.

SIR,—I have the honour to acknowledge the receipt of your letter of the 1st ultimo, asking for information for the Select Committee on Telephone Systems of the working of the telephone system of this colony.

4-5 EDWARD VII., A. 1905

In reply, I have pleasure in forwarding herewith a list of answers to the questions which you furnished. Under separate cover, I am forwarding you copies of the Annual Report of the Department for the year 1903-4; the New Zealand Post and Telegraph Guide for the current half year; the Official Year Book for 1904; and a set of Post and Telegraph maps of New Zealand. Should any further information on the matter be required, which it is in my power to supply, I shall be glad to do so.

I have the honour to be, sir,

Your obedient servant,

J. G. WARD,

Postmaster General.

No. 279a.

ANSWERS TO QUESTIONS.

The government owns and operates the long-distance lines. The longest distances in New Zealand for trunk telephonic communications between subscribers to different exchanges are generally 50 to 60 miles, but in some cases subscribers are switched through an additional 20 to 30 miles. Provision is not made for greater distances, although at times an exchange in one telephonic district, while confined to its own limits during business hours, may after hours communicate with another, where practicable.

If erected on existing poles the cost (single wire) of the long-distance lines is: iron wire, £5 (\$24.35) to £8 (38.96) per mile; copper wire, 200 pounds weight to the mile, £10 (\$48.70) to £15 (\$73.05). The cost varies according whether the poles do or do not require strengthening, or whether additional poles are necessary to carry extra wires. There are no special poles carrying only toll telephone wires, telegraph lines of poles being used. Within distances before mentioned the mileage of wire *exclusively* used for telephone toll lines is approximately 500 miles. Most of our toll lines are also used for ordinary telegrams transmitted by telephone.

Our toll charges are 6d. (12½ cents) for three minutes' conversation within 25 miles, and 1s. (24½ cents) over 25 miles. No other rates have yet been fixed. Subscribers to exchanges, however, only pay half rates, namely, 3d. (6 cents) under 25 miles and 6d. (12½ cents) over 25 miles.

Note.—Experience shows that although three minutes is an average time for a conversation, only about seven conversations per hour can be regarded as the capacity of a circuit.

Subscribers' circuits are grounded, except that those at the four principal exchanges, Auckland, Wellington, Christchurch and Dunedin, with approximately 2,000 subscribers each, are now being converted to metallic circuits. Our toll lines, called here trunk lines, are mostly metallic, or in course of being made so, either by the erection of special wires or super-imposing on telegraph wires. Many of our circuits up to 50 and 60 miles are No. 8 iron, both grounded and metallic. Where we have copper metallic circuits specially erected, gauge No. 11½, equal to 200 pounds weight of copper to the mile, has so far been used. An example of such special circuits is that from Invercargill to Gore, comprising two metallic circuits, and a third metallic circuit super-imposed. The line is 40 miles long, *vide* map sent under separate cover.

The total cost of long-distance lines varies, but as an example it may be mentioned that a special metallic trunk line has been recently erected on telegraph poles, one section of which cost £13 8s. (\$65.25) per mile of single copper wire, 200 pounds to the mile, but this included a number of stronger poles inserted in the line.

The cost of maintenance of telephone lines is included in our telegraph lines *maintenance*, and cannot be separately stated. The operating expenses, including only the attendants on toll lines, would depend on the amount of business, and the salaries paid to the particular officers, male or female. Table No. 21 of the Department's Annual Report for the year 1904-5 gives details of exchanges, but not the separate cost of toll lines. Five per cent per annum is paid on debenture capital. For complete figures, see Table No. 21 of the annual report.

NEW ZEALAND.

TABLE No. 21

Capital, Cost, Working Expenses and Revenue of the Telephone Exchanges, year by year, from the date of their establishment.

Year.	Number of Connections.	Capital Cost for Instruments, Wire, Poles, Labour, Freight, Superintendence, &c.		Revenue, not including toll line receipts.	Working Expenses.					Balance of Revenue over Working Expenses.	Annual Rate per cent yielded on Capital Cost.
		Average cost of each connection.	Total for all connections.		Salaries and Allowances of Clerks, &c.	Materials and Linemen.	*Wear and tear, &c.	Rent, Fuel, Light, Paper, Printing, Binding, &c.	Total.		
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
March 31, 1882	116	21 16 6	2,531 14 0	613 5 2	285 0 0	275 0 0	253 0 0	150 0 0	963 0 0	207 16 0	8 17
" 31, 1883	379	21 16 6	8,271 13 6	5,014 9 2	595 0 0	595 0 0	827 0 0	300 0 0	2,317 0 0	4,492 8 8	54 31
" 31, 1884	715	21 16 6	15,604 17 6	7,746 16 7	695 0 0	770 0 0	1,560 0 0	350 0 0	3,375 0 0	3,653 7 4	23 41
" 31, 1885	1,075	21 18 6	23,461 17 6	10,008 3 6	1,770 0 0	1,590 0 0	2,346 0 0	475 0 0	6,181 0 0	3,827 3 6	16 31
" 31, 1886	1,710	20 8 6	37,319 12 1	12,294 1 2	2,849 1 3	1,704 0 0	3,731 19 2	700 0 0	8,985 0 5	5,011 19 7	13 42
" 31, 1887	2,038	19 19 5	40,686 3 1	15,477 16 2	2,873 0 0	1,580 10 0	4,068 12 2	320 0 0	8,842 2 2	6,635 14 0	16 30
" 31, 1888	2,153	22 19 0	49,407 5 0	16,881 8 6	3,119 10 0	2,252 0 0	4,940 14 6	330 0 0	10,642 4 6	6,239 4 1	12 63
" 31, 1889	2,249	23 18 10	53,849 11 6	17,613 4 0	3,315 10 0	2,249 7 0	5,344 9 2	335 0 0	11,244 6 2	6,368 17 10	11 82
" 31, 1890	2,402	24 4 1	58,229 3 0	18,581 11 7	3,790 0 0	2,206 10 0	5,823 0 1	375 0 0	12,194 10 1	6,387 1 6	11 00
" 31, 1891	2,587	24 17 1	64,294 4 4	19,961 4 2	4,192 0 0	2,249 18 5	6,429 8 5	394 3 9	13,265 10 7	5,695 13 7	10 43
" 31, 1892	3,080	24 16 11	76,579 1 8	18,571 7 8	4,630 0 0	2,345 2 9	7,658 7 11	393 1 6	15,026 12 2	3,544 15 6	4 63
" 31, 1893	3,690	24 16 11	91,687 11 1	19,155 11 5	7,405 0 0	2,695 19 10	9,168 15 1	464 6 2	19,734 1 1	-578 9 8	Loss.
" 31, 1894	4,244	24 12 1	104,425 3 0	21,771 4 4	7,720 0 0	3,313 1 1	10,442 10 4	741 18 9	22,217 10 2	-446 5 10	Loss.
" 31, 1895	4,616	25 6 3	116,845 10 4	21,552 12 10	9,285 0 0	4,253 11 4	11,684 11 0	817 19 5	26,041 1 9	-3,420 1 9	Loss.
" 31, 1896	5,143	24 6 6	125,108 4 1	25,933 12 9	9,686 0 10	5,303 11 9	12,510 16 5	1,952 8 3	29,452 17 3	-3,519 4 6	Loss.
" 31, 1897	5,747	23 7 4	134,299 11 4	29,248 19 5	12,306 9 7	7,398 0 10	13,429 19 1	1,856 13 2	34,991 2 8	-5,742 3 3	Loss.
" 31, 1898	5,787	24 11 6	142,218 11 8	36,422 6 8	14,181 18 0	11,834 2 11	7,110 18 7	1,881 11 11	35,008 11 5	1,413 15 3	0 99
" 31, 1899	6,203	24 5 3	150,490 18 9	39,718 7 7	15,030 7 1	16,190 4 0	7,524 10 11	1,861 2 3	40,606 4 3	-887 16 8	Loss.
" 31, 1900	7,150	22 14 1	162,333 1 2	43,363 2 10	15,710 13 2	20,847 13 6	8,116 13 0	1,892 10 8	46,567 10 4	-3,264 7 6	Loss.
" 31, 1901	8,210	21 9 7	176,349 1 8	49,117 0 8	16,304 6 3	18,225 18 9	8,817 9 0	2,000 15 10	45,348 9 10	3,768 10 10	2 14
" 31, 1902	9,260	20 18 0	193,511 6 2	55,542 4 9	18,448 3 5	20,570 0 9	9,675 11 9	2,078 12 10	50,772 8 9	4,769 16 0	2 46
" 31, 1903	10,633	20 2 6	213,966 10 8	62,151 8 11	20,885 13 3	22,078 4 11	10,698 6 6	2,614 15 0	56,276 19 8	5,874 9 3	2 75
" 31, 1904	12,105	19 19 8	241,903 2 6	71,028 6 3	23,359 8 3	22,507 9 10	12,095 3 1	2,986 3 8	60,948 4 10	10,080 1 5	4 17
" 31 1905	14,423	21 19 7	295,029 7 2	79,061 7 4	25,121 16 1	26,781 19 6	14,751 9 4	4,447 18 4	71,103 3 3	7,958 4 1	2 69

* This column includes 5 per cent for wear and tear, and 5 per cent for debenture capital, except in 1897-98 and following years, in which only 5 per cent for debenture capital is included.

The surplus from long-distance lines is included in telegraph revenue, conversations being treated as telegrams. See following table:—

TABLE SHOWING THE PROGRESS OF THE TELEGRAPH DEPARTMENT FOR THE FINANCIAL YEARS ENDED 31ST MARCH, 1895, TO 31ST MARCH, 1905.

Year Ended.	Number of Miles of Line.	Number of Miles of Wire.	Number of Offices Open.	Revenue (including Miscellaneous Receipts).		Value of Government Messages.	Total Value of Business done during the Year.	Total Expenditure (excluding Cable Subsidy).	Remarks.
				Telegraph.	Telephone.				
				£ s. d.	£ s. d.				
31st March, 1895...	5,961½	14,881½	705	88,459 10 11	21,552 12 10	26,050 7 5	136,062 11 2	135,791 0 7	Cable subsidy, 6,492 11 8
" 1896...	6,245½	15,764½	743	97,178 14 0½	25,933 12 9	25,843 11 11	148,955 18 8½	143,665 14 0	" 4,774 5 5
" 1897...	6,284¾	16,470¾	780	100,385 16 1	29,248 19 5	23,118 2 6	152,752 18 0	153,484 6 8	" 3,972 8 1
" 1898...	6,484	18,024	824	99,798 8 10½	36,422 6 8	24,504 9 8	160,725 5 2½	165,198 13 5	" 1,849 2 9
" 1899...	6,736	18,746	878	105,576 6 0	39,718 7 7	25,500 5 10	170,794 19 5	173,152 16 6	" 1,427 19 11
" 1900...	6,910	19,228	915	119,641 11 6½	43,303 2 10	29,431 19 0	192,376 13 4½	181,634 11 3	" 1,608 7 1
" 1901...	7,249¾	20,682¾	991	137,861 1 2½	49,117 0 8	35,327 6 2	222,305 8 0½	194,014 12 11	" 1,000 8 6
" 1902...	7,469	21,705	1,038	151,933 19*11	55,542 4 9	27,507 17 6	234,984 2 2	212,180 16 0	" 234 15 0
" 1903...	7,748¾	22,672¾	1,103	160,343 7 7	62,151 8 11	26,440 2 10	248,934 19 4	228,185 10 7	" 181 10 0
" 1904...	7,779¾	22,920½	1,153	166,535 18 8½	71,028 6 3	24,377 1 7	261,941 6 6½	245,805 9 7	" 10,057 11 7
" 1905...	7,943¾	23,704	1,200	171,001 13 11½	79,061 7 4	20,597 11 10	270,660 13 1½	258,977 10 9	" Nil.

NOTE.—Tariff, 1890: 1s. for ten words, and free address and signature up to ten words; delayed telegrams, 6d. 1892: For twelve words and free address and signature, ordinary telegrams, 1s.; delayed, 6d. Later in 1892 the number of words in text and signature made eighteen. 1896: First twelve words, 6d.; each additional word, 1d.; address and signature paid for.

APPENDIX No. 1

The fees for conversations by subscribers on toll lines are collected from them at the time the half-yearly subscription is paid by them, each exchange keeping accounts against each user of the toll line. In the case of non-subscribers, the fee is collected at the time of service.

The department has for several years been superimposing telephone circuits on telegraph wires and telegraph circuits on telephone wires. It is obvious that the use of telegraph wires for telephone purposes is limited, and nearly all the wires available for this purpose have now been absorbed. Wherever the conditions permit, use will be made of telegraph wires for telephone purposes or *vice versa*, either superimposed or on the condenser system. It is intended to give a telephone service between Wellington and Palmerston North on the condenser system—that is, using telegraph wires both for telegraph and telephone purposes. Certain alterations to the line will be necessary, but in a few months it is hoped to put the system in operation.

There is also in operation what is known as duplex-telephone circuits, and these will be extended where the necessary wires exist. Such a duplex circuit is at work between Napier and Hastings, where four telephone wires allow of a third metallic circuit being superimposed on the two metallic circuit pairs.

The government owns and operates all exchanges. The exchanges constitute a branch of the Post and Telegraph Department. The population of New Zealand, at this date, is 900,000 approximately.

TELEPHONE EXCHANGES.

Four new exchanges were opened during the year, and one closed. 1,318 new subscribers were added to the exchanges throughout the colony, bringing the total connections up to 13,423, an increase of 10:89 per cent for the year. Of the total increase, 595 were added at the four chief centres.

There were on March 31 last 28 central and 57 sub-exchanges, a total of 85 in all.

The following is a comparative return of the telephone exchange connections for the years 1903-4 and 1904-5:—

Exchange.	Number of Subscribers or Connections.		Population 1901 Census.
	March 31, 1904.	March 31, 1905.	
Ashburton	118	130	2,322
Auckland	1,707	1,854	3,823
Devonport	34	38	3,222
Blenheim	133	137	559
Christchurch	1,479	1,647	8
Akaroa	36	40	10
Doyleston	7	7	6
Duvauchelle		8	9
Leeston	11	10	4,023
Lincoln	8	6	1,768
Little River	8	9	
Lyttelton	8	8	2,315
Rangoria	15	15	1,017
Southbridge	6	6	
Dannevirke	88	109	
Dunedin	1,579	1,702	
Balclutha	24	27	
Clinton	8	8	
Kaitangata	10	13	
Milton	21	23	1,241
Palmerston	18	19	738
Port Chalmers	21	22	2,056
Waikouaiti	8	8	
Feilding	133	45	2,2
Sanson	1	1	

NEW ZEALAND.

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TELEPHONE EXCHANGES—Continued.

Exchange.	Number of Subscribers or Connections.		Population 1901 Census.
	March 31, 1904.	March 31, 1905.	
Gisborne.....	281	329	2,737
Greymouth.....	183	193	3,748
Reefton.....	44	47	
Hamilton.....		66	1,253
Hawera.....	143	157	2,131
Eltham.....	26	30	
Kaponga.....		6	
Manaia.....	18	14	
Patea.....	31	33	691
Hokitika.....	129	132	1,946
Kumara.....	10	10	
Ross.....	6	6	614
Invercargill.....	335	372	6,215
Bluff.....	30	33	
Edendale.....	5	5	
Gore.....	83	88	2,354
Lumsden.....	16	16	
Mataura.....	10	11	
Otautau.....	25	24	
Riversdale.....	17	16	
Riverton.....	18	18	815
Winton.....	22	25	474
Woodlands.....	5	5	
Wyndham.....	12	12	
Masterton.....	155	205	3,949
Carterton.....	33	38	1,205
Eketahuna.....	18	30	
Greytown North.....	10	9	1,122
Napiert.....	384	399	8,774
Hasbings.....	118	185	3,650
Wener.....	1	1	
Nelson.....	220	251	7,010
New Plymouth.....	320	329	4,405
Ingiewood.....	18	23	
Watara.....	16	14	
Oamaru.....	210	219	4,836
Ngapara.....	2	2	
Pahiatua.....	79	82	1,209
Woodville.....	20	23	926
Palmerston North.....	264	328	6,534
Foxton.....	24	25	1,211
Rotorua.....	70	91	1,307
Stratford.....	98	106	2,027
Thames.....	78	82	4,009
Paeroa.....	25	29	
Timaru.....	206	243	6,424
Fairlie.....	12	11	
Geraldine.....		28	
St. Andrew's.....	8	9	
Studholme Junction.....	6	6	
Temuka.....	17	18	1,465
Waimate.....	29	35	1,359
Wanganui.....	425	445	7,329
Hunterville.....	5	6	
Marton.....	47	63	1,101
Okaiawa.....	1	1	
Waverley.....	8	7	
Wellington.....	2,103	2,260	43,638
Westport.....	109	125	2,922
Whangarei.....	36	55	1,429
	12,105	13,423	

APPENDIX No. 1

The connections are classified : Paying, 12,377 ; free, 276 ; bureaux, 770 ; total, 13,423 (being 1 telephone to 57:56 inhabitants, based on the total population of 772,719, 1901 census).

	Telegraph.	Telephone.
Miles of lines, 31st March, 1904.....	7,779½	721½
" 31st March, 1905.....	7,943½	785½
Miles of wire, 31st March, 1904.....	22,920½	9,834½
" 31st March, 1905.....	23,704	11,028
Increase during the year—		
Miles of line.....	164½	64
Miles of wire.....	783½	1,193½
Cables—		
Submarine, 31st March, 1904.....	283·107 knots.	3·392 knots.
" 31st March, 1905.....	283·107 "	3·392 "

The following are particulars of telegraph and telephone wires, &c., in the colony on March 31, 1905, exclusive of those now maintained by the Railway Department:—

The population of the principal cities is as follows:—

Auckland and suburbs.....	74,738
Wellington and suburbs.....	57,663
Christchurch and suburbs.....	48,767
Dunedin and suburbs.....	59,000

The next towns of importance, Invercargill, Napier, &c., have under 10,000.

THE CHARGES FOR SERVICE ARE AS FOLLOWS.

1. In addition to the entrance fee of £1, the charge per annum payable in respect of the hire for any telephone instrument connected with a government telephone exchange is as follows:—

To every subscriber for a single wire, as from the date of connection:

	Per annum.
At exchanges which are open continuously—	£ s.
Business establishments.....	7 0 (\$34.09)
Private residences.....	5 0 (\$24.35)
At exchanges which are not open continuously—	
Business establishments and private residences.....	5 0 (\$24.35)

2. The following are the hours of attendance observed at telephone exchanges, according to the number of paying subscribers connected therewith:—

Subscribers.	Hours.
	a.m. p.m.
Up to 65.....	9 to 5
Over 65 and up to 100.....	8 " 8
" 100 " 125.....	8 " 10
" 125 " 150.....	8 " midnight.
" 150—Open continuously if desired by subscribers, and payment at rate of £7 (\$34.09) per annum for business connections agreed to.	

3. Extra telephone (in addition to cost of fitting); £1 (\$4.87). Special instruments or appliances, as per agreement. Printing name of subscriber in telephone list free. Printing of additional names of subscribers in connection with the same number: For each additional entry, 10s. (\$2.44).

4. The above rates are for connections with a telephone exchange of warehouses, stores, shops and business places not more than half a mile from the exchange, and of private residences not more than one mile from the exchange.

5. For every additional quarter of a mile or fraction thereof, for each year commencing from the date of connection, and for every following year, 10s. (\$2.44).

6. Where any connection with an exchange is over one mile in length, the applicant will be required to hold the same for three years.

7. If a connection with a telephone exchange necessitates the erection of a new line of poles beyond one mile, then the additional charge after the first mile will be at the rate of £1 (\$4.87) for every quarter of a mile or fraction thereof.

8. For connections over three miles in length the subscriber will be charged at ordinary rates on the first three miles. For the portion beyond that distance he will be required to pay the cost of erection of the line, and an annual maintenance charge of £1 (\$4.87) for each quarter of a mile or fraction thereof if the line is on new poles, or 10s. for each quarter of a mile if the wire is on an existing line of poles.

CHARGES FROM TELEPHONE BUREAUX OR PUBLIC CALL OFFICES.

1. A 'telephone bureau' means any ordinary telegraph or telephone office which is mentioned as a bureau in the list of telegraph offices published in the Post and Telegraph Guide for the time being, as well as any such bureau specifically constituted.

2. The following are the charges to be paid by the public for the use of government telephones at a telephone bureau in the colony:—

3. Where the line used is not more than twenty-five miles long, a uniform charge of 6d. (12½ cents) for use of the same for any period not exceeding three minutes, and a further charge of 6d. for every additional three minutes or portion of three minutes.

4. Where the line used is over twenty-five miles long, the charges are 1s. (24½ cents) for use of the same for any time not exceeding three minutes, and a further charge of 1s. for every additional three minutes or portion of three minutes.

5. When subscribers are connected through an exchange to a bureau, or from a bureau to a subscriber, half the above rates will be charged if the applicant is a subscriber to the particular exchange through which it is desired to communicate.

6. When a message to the effect that any person is required at a telephone is sent to a bureau for delivery beyond the premises in which such bureau is situated, 3d. (6 cents) will be charged for delivery. These charges must be paid by the sender. Messages for addresses outside the ordinary delivery limits are subject to special charges for delivery, according to the extra expense thereby incurred.

7. Any one person may only use the wire for six minutes at a time—that is to say that if another person requires the wire, at the end of six minutes it must be given up. Should the wire not be asked for, then the person using it may continue to do so at tariff rate. On Sundays ordinary rates only are charged.

LONG-DISTANCE COMMUNICATIONS.

8. The following are the charges for the use of government telephones for the purpose of conversing over long-distance wires on Sundays, or at other times approved by the commissioner, usually between midnight and 8 a.m.:—

(a.) When the conversation takes place through exchanges which are open continuously, or through other exchanges or bureaux during the ordinary hours of attendance of switchboard or bureau attendants: For a period not exceeding six minutes, 2s. 6d. (61 cents); and a further charge of 2s. 6d. (61 cents) for every additional period of six minutes or portion of six minutes.

(b.) When special attendance of switchboard or bureau attendants out of ordinary hours of attendance is required, then for each switchboard or bureau attendant called upon to make the necessary wire connections: For every hour or less, 2s. 6d. (61 cents), in addition to the charges set forth in subsection (a.).

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9. No free conversations on public service are permitted over long-distance circuits.

PRIVATE WIRES.

CONDITIONS UNDER WHICH LINE WILL BE CONSTRUCTED, SUPPLIED WITH INSTRUMENTS AND MAINTAINED.

Cost of Construction.

Application should be made direct to the Superintendent of Electric Lines, Wellington, for any information regarding cost of construction and conditions under which private lines will be constructed or supplied with instruments.

Maintenance and Wayleave.

The charge for maintenance of each private line will be as under, payable yearly in advance, viz. :—

For the first mile or fraction thereof, £2 (\$9.74) per annum, and 10s. (\$2.44) for every additional quarter of a mile or fraction thereof.

If the wire cannot be erected on any existing poles, and therefore entails the erection of new poles, then for such new line the maintenance will be at the rate of £4 (\$19.48) per annum for the first mile or fraction thereof, and £1 (\$4.87) for every additional quarter of a mile or fraction thereof.

Use of Line.

The applicants must only use the line for their own *bona fide* business, and on no account, directly or indirectly, allow the wire to be used for any purpose which might be construed into an attempt to defraud the department of its revenue.

Nearly all extensions of telegraph facilities to rural districts or new settlements are for telephone working. The majority of New Zealand offices at which telegrams are dealt with have telephonic communication only, and are carried on in a store, a schoolhouse or a settler's house, where the small post offices are kept. Many of these offices yield a revenue of under £10 (\$48.70) a year. A very large number of them (about 770) are what we call bureaux, in which provision is made for a settler either to send a telegram or speak over the same wire to the centre of his district, which usually has an exchange.

No measured service system is in vogue in New Zealand.

The greatest distance spoken over is, say, about 100 miles. Provision is not made for very long distances, only for districts. These districts are defined in accompanying map by a blue line inclosing each. But they may overlap, and after regular hours speech is permitted from an office in one district to an office in another, where practicable. We have a special service for night and Sunday over telegraph wires after telegraph offices are closed. This applies, however, almost solely to Auckland to Napier, Auckland to Wellington, Wellington to Napier, in the North Island, the exchanges in these places being open always. The distance from Auckland to Wellington is nearly 500 miles. Napier is, approximately, half way. *Vide* map. Wellington can also speak by telephone to Christchurch in the Middle Island when the telegraph offices are closed. The telegraph wire used includes 33 knots of submarine cable, and the length of the circuit is 270 miles. The wire on the land line, however, is No. 8 copper, or 400 pounds weight to the mile. Christchurch can in the same way speak to Dunedin, 240 miles distant, or to Invercargill, a further distance of 180 miles. Advantage is frequently taken of permission to converse after hours and on Sunday. The charge is 2s. 6d. (61 cents) for six minutes' use of the wire.

'Ericsson' and 'Western Electric' wall or table telephones, mostly bridging, are used by subscribers.

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Subscribers' lines are single, grounded circuits, but are being converted to metallic at the four principal centres. Some lines are iron and some copper. All overhead.

The managers are officers of the Post and Telegraph Department, and are not specially paid for services connected with telephones. Officers in charge of exchanges acting under supervising officers of the Post and Telegraph Department receive £220 (\$1,071.40) per annum; linemen, £125 (\$598.75) to £180 (\$876.60) per annum; supervising cadettes, £40 (\$194.80) to £120 (\$584.40); switchboard cadettes, £40 (\$194.80) to £80 (\$389.60).

The cost of equipment is as follows:—

Switchboards.

The four principal stations, Auckland, Wellington, Christchurch and Dunedin, are fitted with multiple switchboards of an ultimate capacity of 4,900 numbers. Cost, fitted up, about £5 (\$24.35) per number.

Smaller switchboards of various types—many made up here—cost £2 (\$9.74) per number.

Ericsson or Western Electric wall telephones—about £3 (\$14.61) each in England.

Ericsson or Western Electric desk telephones—about £3 10s. 0d. (\$17.05) each.

Wood poles, from £1 (\$4.87) each and upwards, according to size, 20 to 50 feet.

Wood cross arms, according to size, 6d. (12½ cents) to 1s. 6d. (37 cents) each.

Insulators and bolts, up to 1s. (24½ cents) each.

No payment is made for wayleave privileges.

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NEW ZEALAND—*Continued.*

EXTRACTS FROM THE ANNUAL REPORT OF THE POST AND TELEGRAPH DEPARTMENT OF NEW ZEALAND FOR THE YEAR ENDING MARCH 31, 1905.

TELEGRAPH AND TELEPHONE CONSTRUCTION AND MAINTENANCE. NEW ZEALAND CABLE SERVICES.

The cables across Cook Strait, including the Wanganui-Wakapuaka cable, have been periodically tested with satisfactory results. No faults have occurred during the last two years.

The cable connecting the Middle Island with Stewart Island continues in good working order.

It may be of interest to note that the four Cook Strait cables are quadruplexed. One is used direct to Dunedin and one to Christchurch. The other two are quadruplexed to Blenheim, and through repeaters there, Wellington is enabled to work on one a duplex circuit to Christchurch, and a duplex circuit to Greymouth, and on the other a duplex circuit to Nelson and a duplex to Wakapuaka, with Blenheim intermediate. Wellington has direct communication with these places in the Middle Island, as well as all important towns in the Wellington, Napier, Wanganui and New Plymouth districts; and also with Auckland.

These four cables are equal to sixteen single wires, and a single wire has a capacity in ordinary working of forty messages an hour. When quadruplexed the wire has four times the carrying capacity.

The Wanganui-Wakapuaka cable is duplexed, making it equal to two single wires.

TRUNK TELEPHONE WIRES.

Contrasted with the use that can be made of a telegraph wire, it is found that a trunk telephone wire has the very limited capacity of about fifty to sixty spoken communications a day; and where a telephone circuit, either metallic or single, is carrying
NEW ZEALAND.

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that volume of business there is a demand for an extra wire. Where there are other wires on the same poles, efficient communication requires the provision of a metallic circuit—that is, two wires; and where there is an existing single wire circuit for any length, and a second one is required, it is absolutely necessary to erect a metallic circuit to have each free from induction from the other. This points to the necessity of charges being made for spoken communications in proportion to the length of wire. This is the practice in England, America, and other countries. In England the charges are 3d. for twenty-five miles, 6d. for twenty-five to fifty miles, 9d. for fifty to seventy-five miles, 1s. for seventy-five to one hundred miles, and 6d. for every additional forty miles. The time allowed at the above rates is three minutes. With three minutes as the basis of charge, it is found from records made here that each spoken communication takes up the circuit for an average of nine minutes.

Before the department extends its trunk telephone facilities these facts will require consideration, and a preliminary scale of distance rates prepared. On ordinary telephone lines, which serve the largest number of offices in the colony—namely, 936 out of a total of 1,200 offices—used for the transmission of telegrams, the business that can be done is about twenty messages an hour, while spoken communications between subscribers or telephone bureaux average only six to seven an hour.

CHEAP TELEPHONE LINES.

Every effort is being made to reduce the cost of country extensions, consistent with safety to the public and a reasonable prospect of an uninterrupted service. The cost of poles is the largest item of expenditure, and by the use of a pole costing 10s. extensions may be made for about £20 a mile. Each extension must be dealt with, however, on its merits. Its remoteness from a lineman's station, the character of the country, fenced or open, the number of roads or gateways, whether sheep-country or cropping-country, have all to be considered, also whether long or short cartage of poles and material is necessary.

AUCKLAND DISTRICT.

Construction.

The following new lines have been erected during the year:—

	Miles of Pole.	Miles of Wire.
Waipa prison (lead off Waiotapu line)	0 $\frac{3}{8}$	0 $\frac{3}{8}$
Ngaruawahia to Te Akatea and Waingarō	16	16
Auckland to Newton and Mount Eden railway . . . . .	..	2 $\frac{1}{4}$
Cambridge Sanatorium	0 $\frac{7}{8}$	0 $\frac{7}{8}$
Auckland to Warkworth (diversion of Nos. 1 and 2 wires) . . . . .	..	96
Waiotemarama to Waimamaku	3 $\frac{1}{2}$	3 $\frac{1}{2}$
Hinuera (lead off Morrinsville-Putaruru line)	0 $\frac{1}{2}$	0 $\frac{1}{2}$
Cambridge to Cambridge West	1	1
Auckland to Atiamuri Junction (diversion of No. 3 wire) . . . . .	..	156
Tauranga to Te Puke diversion	13	26
Paengaroa Junction towards Matata diversion	18	18
Hamilton to Te Awamutu (diversion of No. 5 wire) . . . . .	..	18
Auckland—Manukau Heads (second wire) . . . . .	..	23
For Railway Department—		
Paeroa Railway to Puriri Railway	10 $\frac{1}{4}$	10 $\frac{1}{4}$
Totals	62 $\frac{1}{8}$	371 $\frac{1}{8}$

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Railway wires ceased to be maintained by this department from July 31, 1904:—

	Miles of Pole.	Miles of Wire.
Newmarket—Mount Eden telephone...	1 $\frac{1}{4}$	1 $\frac{1}{4}$
Mount Eden and Avondale signal repeaters... . . . . .	..	0 $\frac{3}{8}$
Auckland—Penrose telephones... . . . . .	..	7
“ blocks...	1	19 $\frac{3}{4}$
Auckland Railway crossing bells... . . . . .	..	0 $\frac{3}{4}$
Greenlane Racecourse platform... . . . . .	..	1
Newmarket signalbox tunnel... . . . . .	..	0 $\frac{3}{4}$
Auckland—Mount Smart telephone... . . . . .	..	7 $\frac{3}{4}$
Otahuhu Railway—Papakura Railway telephone...	10 $\frac{3}{4}$	10 $\frac{3}{4}$
Tuakau—Whangarata telephone... . . . . .	..	2 $\frac{1}{8}$
Huntly—Ohinewai telephone...	5 $\frac{1}{8}$	5 $\frac{1}{8}$
Paeroa Railway—Puriri Railway telephone...	10 $\frac{1}{4}$	10 $\frac{1}{4}$
Totals...	28 $\frac{3}{8}$	66 $\frac{3}{8}$

The total number of miles of poles and wire in this district, exclusive of those maintained by the Railway Department for their own use, is 2,063 $\frac{1}{2}$ and 5,608 $\frac{3}{8}$ respectively.

Maintenance.

The reconstruction of the Auckland—Doubtless Bay section was completed at the beginning of the year. Reconstruction of the section Otahuhu to Hamilton has been finished, and the line from Hamilton to Cambridge rebuilt. These sections are now in first-class order.

Nos. 1 and 2 north wires, which originally ran *via* Helensville, are now on the main line *via* Waiwera.

Another wire from Auckland to Atiamuri Junction (156 miles), taking the place of a wire *via* Thames and Mercer, has been erected, thus giving another direct wire to Napier and south.

The line, Tauranga—Te Puke, has been diverted from the coast to the main road, requiring the erection of 13 miles of poles and 26 miles of wire.

The Te Puke—Paengaroa Junction line has been entirely rebuilt and strengthened.

Maketu—Opotiki line.—This line, for a distance of 18 miles along the beach, has been diverted to the main road. The whole section is receiving a thorough overhaul, which will be completed early in the year.

Manukau Heads.—A second wire, 23 miles long, has been erected on the main south line, for the purpose of forming a metallic circuit to the junction of the Heads line, thereby eliminating induction. A transformer is inserted at that point, and the circuit continued on the single wire to the terminal office. This arrangement gives entire satisfaction.

The Paeroa—Waihi line is being rebuilt, and will be completed early in the year.

The Hikutaia Junction line towards Katikati is being diverted to within eight miles of Katikati, and will run through Waihi, connecting with the new line on to Paeroa, thus providing a much better route.

The Cambridge—Te Awamutu line, which carried one wire only and would require considerable attention to thoroughly repair, will be dismantled. The wire has been diverted to the King-country line from Hamilton.

Offices.

Ten new offices were opened in the district during the year, nine being connected by telephone, and one (Mount Eden Railway) by Morse instruments.

APPENDIX No. 1

Three offices were closed—viz., Waikowhai, Opitonui and Piriaka; whilst Omanaia was reopened.

The total number of offices open is now 271, 50 of which are Morse and 221 telephone.

Two offices, Newton and Whakatane, were converted from telephone to Morse, and one, Katikati, from Morse to telephone.

The Touranga, Whakatane and Mangonui offices have been refitted, whilst those at Dargaville, Cambridge and Te Awamutu have been fitted with duplex sets, and the Auckland office with two new quadruplex sets of instruments for the purpose of meeting the steadily increasing traffic.

Two small offices, Okete and Ardmore, were burnt down during the year, but communication was soon restored.

The ceiling of the Auckland operating room has been raised, and the ventilation considerably improved.

Telephone Exchanges.

The Auckland exchange is steadily increasing in numbers, there being on March 31 a total of 1,854 connections, an increase of 147 for the year. Of these, 1,773 are paying, 23 free, and 58 bureaux. There are also 387 extension telephones connected with the exchange. A new section of 300 numbers is being added to the switchboard, which will enable 2,400 connections to be dealt with.

One hundred and eight and one-half miles of poles and 1,951 miles of wire are utilized for the present connections.

A new exchange was opened at Hamilton. On March 31 there were 66 subscribers, requiring the erection of $4\frac{3}{4}$ miles of poles and 26 miles of wire.

Substantial increases at Rotorua and Whangarei, by 21 and 18 subscribers respectively, have taken place; whilst all the other exchanges show a slight increase over the number of connections last year.

The 7 exchanges are working satisfactorily. The total connections therewith number 2,215 (2,093 paying, 33 free and 89 bureaux). The poles and wire connected with the various exchanges aggregate, respectively, 138 miles and $2,117\frac{1}{2}$ miles.

Metallic Circuits.

On March 31 there were 285 subscribers connected by metallic circuit.

The work on the eastern side of the city, which embraces Otahuhu, Onehunga, Ellerslie, Epsom, Remuera and Parnell, and most of which required very long circuits, entailing considerable labour, is completed.

In the remainder of the city the work will be comparatively easy, and a much larger number of subscribers will be joined up in a shorter time.

WELLINGTON DISTRICT.

Construction.

The following new lines and wires were erected in this district during the year:—

	Miles of Pole.	Miles of Wire.
Inglewood to Halcombe (part of through wire, Wellington to New Plymouth) . . . . .	..	134 $\frac{1}{2}$
Shannon to Otaki (part of through wire, Wellington to New Plymouth) . . . . .	..	24
Gladstone to Te Wharau	14	14
Mangatera to Umutaoroa	4 $\frac{1}{2}$	4 $\frac{1}{2}$
Kilbirnie to Maranui (lead off Worsler Bay line)	0 $\frac{1}{4}$	0 $\frac{1}{4}$
Aramoho to Aramoho Railway	0 $\frac{1}{4}$	0 $\frac{1}{4}$

NEW ZEALAND.

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Construction—Continued.

	Miles of Pole.	Miles of Pole.
Martinborough to Hinakura	14½	14½
Waitara to Sentry Hill . . . . .	..	3¾
Utiku to Ohutu	0¾	1¾
Ngaurukehu (lead off Mataroa-Ruanui line)	0¼	0¼
Napier to Hastings (metallic circuit . . . . .	..	25
Northland (lead off Wellington-Karori line) . . . . .	..	0¼
Gisborne to Manūfuke (metallic circuit) . . . . .	..	16
Muriwai to Wharerata . . . . .	..	8
Patea to Whenuakura . . . . .	..	0¾
Petone to Hutt . . . . .	..	2½
Riverlea (lead off Eltham-Kaponga wire) . . . . .	..	..
Napier to Eskdale . . . . .	..	1
Woodville to Mangarawa	2	2
Douglas Road (lead off Toko-Strathmore wire) . . . . .	..	..
Wairoa to Opoutama (new route)	23	46
Telephone exchange to telegraph office, Wellington . . . . .	..	0½
Napier to Napier Park racecourse . . . . .	..	3
Otaki Railway to Otaki (loop lines) . . . . .	..	12
Levin to Shannon (new route)	9½	57
Palmerston North to Terrace End . . . . .	..	1
Whangamomona to Kohuratahi	4¼	4¼
Ormondville to Whetukura	3½	3½
Himatangi (bridged across Foxton-Palmerston N., metallic circuit . . . . .	..	..
Transferred from telephone exchange, Napier (for metallic circuits . . . . .	..	9¾
For Public Works Department—		
Mangaweka to Taihape	14	14
	—	—
Totals	90	404
	==	==
Lines dismantled—		
Whenuakura, from main line to old office . . . . .	..	2½
Wairoa to Oputama (old beach route)	21	42
Shannon to Levin (old route)	12	72
	—	—
Totals	33	116½
	==	==

The above operations resulted in a net increase of 57 miles of poles and 287½ miles of wire, making grand totals of 2,087¾ miles of poles and 7,330½ miles of wire maintained in this district, exclusive of those maintained by the Railway Department for their own use.

Ten private wires, principally in outlying districts, have been erected, aggregating 7¼ miles of poles and 10¾ miles of wire.

Maintenance.

The lines generally are in good order several sections enumerated below, having recently been overhauled; but the following sections still need attention: Wairoa-Mohaka, Wangaehu-Feilding, Pakipaki-Waipukurau, Waipukurau-Poranghau and Otaki-Wellington. The work will be taken in hand during the year.

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The following sections were overhauled and strengthened with extra or larger poles where necessary:—

	Miles.
Inglewood to Wangaehu	120
Nuhaka to Opoutama	7
Gisborne to Opoutama	43
Kaitoke to Upper Hutt	8
Pohui to Rangitaiki	50
Masterton to Castelpoint and Whakataki	45
Gisborne to Manutuke	8
Wellington to Hutt (partial)	8
Opoutama to Mr. Ormond's	5½
Nuhaka to Morere	6½
Otaki to Otaki Railway (reconstructed)	1½
Total	302¾

Heavy gales followed by a severe snowstorm in August last did much damage to the line on the high levels between Napier and Taupo.

Line faults are still caused by traction-engines, and threshing machines colliding with the wires, and also by persons felling trees, or throwing pieces of wire, over the lines.

Offices.

Sixteen new offices have been opened and three closed during the year.

A new Jack-knife testboard has been erected at New Plymouth, and the instruments refitted and rearranged to provide room for a forked quadruplex repeater set, which has been installed to work on the Wanganui—New Plymouth and New Plymouth-Auckland circuits. A full quadruplex repeater set has also been installed at Napier for repeating on No. 2 wire, between Wellington and Auckland.

A lineman is now stationed at Hastings.

A new permanent office has been erected at Eltham, and sledge offices at Te Horo and Kahukura, requiring the transfer of instruments, &c.

The name of the Te Arai Bridge office has been changed to Manutuke, and that of Dreyerton to Kopuaranga.

There are 334 offices in the district—61 Morse and 273 telephone.

Metallic Circuits.

The erection of two additional wires between Napier and Hastings has provided another metallic circuit for bureau purposes, and by coupling this circuit with the previously existing metallic circuit, a third metallic circuit has been superimposed on the other two, all of which are working very satisfactorily and carrying a large amount of work.

The section between Wellington and Otaki of the No. 3 Morse wire, Wellington to Palmerston North, and the Wellington-Otaki telephone wire, have been utilized to install a metallic circuit for bureau purposes between Wellington exchange and the Otaki post office, with intermediate offices bridged across the two wires. Telephonic communication on the circuit, 50 miles in length, is now practically free from induction from neighbouring wires, and the Morse superimposed over these is working very satisfactorily from Wellington to Palmerston North, with Otaki and Levin intermediate.

Telephone Exchanges.

One new sub-exchange was opened during the year at Kaponga, with 6 subscribers. The exchange at Otakeho was closed.

New switchboards have been fitted at Inglewood, Marton, Waitara, Eltham, and the exchanges at Masterton and Hastings have been refitted.

Thirteen telephones were destroyed by fire, 9 of them at Wellington.

The exchange at Hawera has been removed to a more suitable and commodious room on the first floor, and a new switchboard installed.

Considerable alterations to the lines at Hawera, Maniaia and Okaiawa were needed on account of the operations of the Hawera Electric Light Company.

New Plymouth was visited by a severe thunderstorm in August last, and by a whirlwind in December. The former did considerable damage to the switchboard indicator coils and line wires, and the latter damaged the lines considerably.

The extensive alterations to the lines in Wellington, on account of the installation of electric tramways, were completed early in January. The subscribers to this exchange continue to increase rapidly, the total number being 2,260, an increase of 157 for the year. Of these, 2,157 are paying subscribers, 49 free, and 54 bureaux.

In addition there are 519 extension telephones making a grand total of 2,779 instruments used. With the addition of the subsection of 300 numbers just received, the capacity of the exchange will be 2,700.

The poles and wire necessary to connect the present subscribers total 51½ miles and 2,119 miles respectively, irrespective of that connected with bureaux.

There are 30 exchanges in the district, all of which are working satisfactorily. The subscribers connected therewith aggregate 5,403, an increase of 535 for the year. Of this number 5,021 are paying, 11 are free, and 271 bureaux connected by 280 miles, 67 chains of poles and 4,045 miles, 45 chains of wire. Extension telephones at the various exchanges number 793, making a grand total of 6,205 telephones in use.

The alterations to the Wellington Exchange building, and the installation of the cable-drying machinery therein has been completed, and a large number of poles erected preparatory to the suspension of the lead-covered cables.

NELSON DISTRICT.

Construction.

The following new lines have been erected to connect the offices indicated hereunder:—

	Miles of Poles.	Miles of Wires.
Kaikoura to Kaikoura wharf.	2	2
McLeod's Terrace (lead off Okarito line) . . . . .	..	0½
Heathdale (lead off Brunner line).. . . . .	..	0½
Mainaroa (lead off Tadmor line).. . . . .	..	..
Hapuka (cut in on Kaikoura-Blenheim line)	1	1
Mount Hercules (lead off Okarito line)	0¼	0¼
Totals.	3½	3½
Lines dismantled—		
Belgrove section. . . . .	..	5
Railway wires, &c., ceased to be maintained by this department—		
Greymouth-Reefton section.	17	26
Westport-Conn's Creek section	10¾	10¾
Westport-Crane wharf.	0¾	0¾
Totals.	28½	37½

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The total mileages of poles and wires maintained in this district are 994½ and 2,788½ respectively.

Maintenance.

The following sections have been overhauled and strengthened : Takaka-Motueka, Motueka-Richmond, and Hokitika-Kumara. The Ahaura-Reefton section is in course of overhaul. A flying overhaul of the Okarito-Ross section has been made, but considerable work is necessary to make the line thoroughly efficient.

The Havelock-Pelorus bridge section was reconstructed, owing to the line having been washed away during a flood in March last year.

The encroachment of the Teremakau river on the roadway at several places on the Kumara-Taipo section necessitated a deviation of our line at these places.

The Haast river signalling-wire, which was washed away, was replaced in a less dangerous position.

Telephones were installed at the Big Wanganui and Wataroa rivers in place of the bells hitherto used. The lines in connection therewith were also strengthened.

The Reefton, Lyell-Longford section requires attention, but the lines generally are in good order. Very few interruptions to traffic have occurred during the year.

Offices.

Five new offices were opened and one (Awatere) closed, making 158 offices open, of which 23 are Morse and 135 telephone.

An extra set of Morse instruments has been put in at Picton to facilitate disposal of the traffic upon arrival of steamers.

Several offices have been removed to new premises and others refitted.

The Lyell building was struck by lightning on August 25 last, and the inside of the office, as well as the instruments, and part of the line were wrecked. Prompt measures were taken to restore communication and effect repairs.

The Collingwood office was burnt down on November 7.

Telephone Exchanges.

The exchanges in the district are in good working order. The subscribers number 901, an increase of 67 for the year. Of this number 774 are paying, 36 free, and 91 bureaux; 40 extension telephones are in use, making a total of 941 telephones, requiring 64½ miles of poles and 436½ miles of wire.

CHRISTCHURCH DISTRICT.

Construction.

The following new lines and wires were erected:—

	Miles of Poles.	Miles of Wires.
Ashburton to Longbeach and Flemington, <i>via</i> Winslow..	16½	23½
Temuka to Geraldine (metallic trunk circuit) . . . . .	..	15
Amberley to Balcairn. . . . .	..	4
Woodend to Waikuku . . . . .	..	4½
Spotswood (fork off Cheviot-Mendip line)	0½	0½
Ahoka-Kaiapoi-Woodend (circuit made metallic) . . . . .	..	11½
Duvauchelle to Akaroa (trunk wire) . . . . .	..	6
	—	—
Totals.	16½	64½
	=	=

The construction of the metallic trunk circuit between Glenavy and Waimate to connect with the Oamaru-Glenavy circuit was commenced on March 28.

The total mileage of poles in the district is 921½, and of wire 3,553½.

1—d—23½

Maintenance.

The overhaul of the line between Timaru and Christchurch has been completed to a point half a mile north of Roleston. Every fifth pole is doubled to increase the stability of the line.

Four miles of the Rangiora-Amberley line has been reconstructed to give facilities for the erection of additional wires. Minor line maintenance has been attended to where necessary.

Offices.

Eleven new offices have been opened and one (Castle Hill) closed, a new office in place thereof being opened at Craigieburn.

A new brick building at Kaiapoi was opened on December 19.

At Temuka and Geraldine circuits have been rearranged. Those stations now work Morse to Timaru superimposed over the metallic trunk wire, and are no longer in circuit on No. 8 wire. This practically gives Christchurch another clear wire to Timaru.

Sydenham has been converted from a telephone to a Morse station.

There are 164 offices in the district—61 Morse and 103 telephone.

Telephone Exchanges.

New sub-exchanges were opened at Geraldine and Duvauchelle.

A large amount of reconstruction work has had to be done in Christchurch city in consequence of the introduction of electric tramways, and also owing to increased business, thus necessitating the use of larger poles.

There are 1,647 connections to the Christchurch exchange—1,563 paying, 39 free, and 45 bureaux, an increase of 168 for the year.

A new subsection of 450 numbers is being erected, which will bring the capacity of the exchange up to 2,400.

A 2-horse power motor has been installed to take the place of the gas-engine for charging the batteries.

The Timaru exchange has increased by 37 subscribers, there being 243 connections. Ashburton has 130 subscribers, an increase of 12.

Other exchanges show slight increases over last year. The total number of subscribers is 2,236—2,075 paying, 52 free, and 109 bureaux—an increase of 262.

There are 411 extension telephones, 364 of which are connected with the Christchurch exchange.

All exchanges are working satisfactorily.

DUNEDIN DISTRICT.

Construction.

The following extensions have been carried out during the year:—

	Miles of Poles.	Miles of Wire.
Kurow to Otematata and Omarama	32	32
Seacliff to Puketeraki	0½	2¾
Invercargill to Winton (metallic circuit) . . . . .	..	37½
Gorge Road (lead off Waimahaka line)	0½	0½
Owaka to Owaka Valley, Tahatika and Purekireki	13	13
Winton to Lochiel . . . . .	..	4
Taieri Beach to Akatore	7	7
Clinton to Ashley Downs and Clydevale	9½	15
Omakau to Lauder . . . . .	..	5
Oamaru to Glenavy (Waimate metallic trunk) . . . . .	..	29¾

For Public Works Department—

	Miles of Poles.	Miles of Wire.		
Lauder to Chatto Creek	13	13	}	19½
Heriot to Edievale	6½	6½		

Totals 81¾ 166

APPENDIX No. 1

The total length of lines at the end of the year was 1,876½ miles of poles and 4,422 miles of wire.

Maintenance.

No interruptions of any consequence occurred during the year. Some 600 miles of line were overhauled. The lines generally are in good order.

Offices.

Fourteen new offices were opened and two (Waimatua and Ida Valley) closed, leaving 273 offices open—viz., 69 Morse and 204 telephone stations.

Telephone Exchanges.

A steady increase of subscribers to the Dunedin exchange has taken place, bringing the total connection to 1,702, an increase of 123. Of these, 1,641 are paying, 22 free, and 39 bureaux.

There are 386 extension telephones, an increase of 50 since last year.

Two sections, of 450 numbers each, have been added to the switchboard, which will provide for 2,950 connections.

The work of installing the metallic circuit system in Dunedin is now in hand. A large number of circuits should be converted during the year.

The subscribers to the 22 exchanges in the district numbered 2,668, an increase of 189. Including extension connections, there were 3,155 instruments.

Of the ordinary connections, 2,414 are paying, 44 free, and 210 bureaux.

The Oamaru exchange is being refitted with new annunciators.

The total mileage of poles connected with the exchanges amounts to 142½, and of wire 2,121½.

TABLE NO. 22.—Return of the cost of Maintenance of Telegraph Lines for the year ended March 31, 1905.

District.	No. of Miles.	Travelling expenses of Inspectors and Linemen.		Extra Labour.		Cost of Material purchased.		Value of Material issued from Stores.		Salaries of Inspectors and Linemen.		Total Cost of Maintenance.		Average Cost per Mile.	
		£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.
Auckland.....	2,063½	1,202	1 2	3,960	6 11	4,938	5 11	2,605	11 2	2,558	0 0	15,264	5 2	7 8	0
Wellington....	2,087½	1,452	12 1	3,856	0 5	5,262	16 5	626	7 7	3,071	0 0	14,268	16 6	6 16	8
Nelson.....	994½	897	15 3	1,786	5 2	216	19 7	1,211	3 6	1,583	0 0	5,695	3 6	5 14	6
Canterbury...	921½	668	1 10	926	7 2	327	7 0	1,532	13 6	1,832	0 0	5,286	9 6	5 14	10
Otago.....	1,876½	854	16 2	1,337	3 4	1,055	2 1	750	9 11	1,428	0 0	5,425	11 6	2 17	10
Cables....	7,943½	5,075	6 6	11,866	3 0	11,800	11 0	6,726	5 8	10,472	0 0	45,940	6 2	5 15	8
Stores.....	283 knots.	8	16 1	953	15 2	14	0 11	585	1 6	400	0 0	1,961	13 8	6 18	8
Totals.....	5,191	18 1	13,132	3 4	13,024	13 0	7,311	7 2	11,409	0 0	50,069	1 7

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TABLE No. 23.—Statement showing the Expenditure on and the cost of Telegraph construction during the financial year ended March 31, 1905.

Line.	Expenditure.			Material from Stores.			Total Cost during the Year.		
	£	s.	d.	£	s.	d.	£	s.	d.
Telephone exchanges,—									
Ashburton.....	7	4	6	101	16	5	109	0	11
Auckland.....	4,893	16	3	10,103	18	11	14,997	15	2
Blenheim.....	0	11	0	76	1	10	76	12	10
Cambridge.....	12	15	3	262	7	8	275	2	11
Christchurch.....	1,085	10	0	2,449	9	0	3,534	19	0
Dannevirke.....	47	4	4	220	1	11	267	6	3
Dunedin.....	914	7	11	9,594	6	9	10,508	14	3
Feilding.....	15	14	2	300	6	0	316	0	2
Gisborne.....	120	15	6	603	3	7	723	19	1
Greymouth.....	21	12	5	167	5	9	188	18	2
Hamilton.....	205	7	7	174	19	4	380	6	11
Hawera.....	68	5	10	293	13	7	361	19	5
Hokitika.....	12	5	1	39	6	7	51	11	8
Invercargill.....	91	15	7	329	0	0	420	15	7
Masterton.....	78	5	7	460	16	11	539	2	6
Napier.....	171	12	8	802	16	1	974	8	9
Nelson.....	26	16	6	278	5	1	305	1	7
New Plymouth.....	14	4	6	200	2	6	214	7	0
Oamaru.....	134	14	1	195	18	10	330	12	11
Pahiatua.....	13	7	6	53	13	3	67	0	9
Palmerston North.....	119	11	10	630	0	11	749	12	9
Rotorua.....	19	10	9	82	4	8	101	15	5
Stratford.....	5	13	0	153	5	1	158	18	1
Thames.....	4	3	6	50	2	0	54	5	6
Timaru.....	236	15	4	584	12	2	821	7	6
Waihi.....				108	14	4	108	14	4
Waipawa.....				110	17	2	110	17	2
Wanganui.....	99	18	1	385	12	8	485	10	9
Wellington.....	1,229	4	10	14,442	8	2	15,671	13	0
Westport.....	21	1	6	100	10	6	121	12	4
Whangarei.....	29	11	6	68	10	5	98	1	8
Total exchanges.....	9,701	16	7	43,424	8	1	53,126	4	8
Kaitaia-Herekino.....	133	4	2	76	5	11	209	10	1
Omapere-Waiotemarama.....	98	8	0				98	8	0
Waiotemarama-Waimamaku.....	54	12	3	18	6	8	72	18	11
Howick-Whitford.....	95	4	9				95	4	9
Ngaruawahia-Te Akatea-Waingaro.....	200	10	4	42	2	0	242	12	4
Hinuera.....	15	16	1	5	13	10	21	9	11
Cambridge-Cambridge West.....	17	12	2	12	2	9	29	14	11
Kaiteratahi-Te Karaka.....	13	1	0	3	3	2	16	4	2
Gisborne-Manutuke (Te Arai Bridge).....	45	14	0	163	17	5	209	11	5
Muriwai-Wharerata.....	36	13	6	77	4	10	113	18	4
Waitara-Sentry Hill.....	5	9	9	0	14	4	6	4	1
Whangamomona-Kohuratahi.....	10	4	10	133	8	5	143	13	3
Toko-Tutitawa-Punuihakau.....	2	15	0	47	18	0	50	13	0
Wanganui-Taihape.....	0	7	6	692	18	5	693	5	11
Mangaweka-Taihape.....	33	3	4	1	17	1	35	0	5
Hunterville-Koeke.....	220	2	8	84	8	6	304	11	2
Aramoho-Aramoho Railway station.....	0	12	6	5	11	0	6	3	6
Wellington-New Plymouth.....	245	13	1	484	2	2	729	15	3
Napier-Hastings.....	26	16	10	209	6	7	236	3	5
Dannevirke-Mangatera-Umutaoroa.....	34	16	6	101	13	4	136	9	10
Ormondville-Whetukura.....	67	15	3	25	10	5	93	5	8
Woodville-Mangarawa.....	45	19	2	15	6	7	61	5	9
Pahiatua-Mangamaire.....	0	13	0	14	3	0	14	16	0
Gladstone-Te Wharau.....	143	16	6	8	18	4	152	14	10
Martinborough-Hinakura (Pahaoa).....	146	19	11	63	0	6	210	0	5
Kaikoura-Hapuku.....	20	19	10	42	9	5	63	9	3
Kaikoura-Kaikoura Wharf.....	24	3	6	73	17	5	98	0	11
Cheviot-Spotswood.....	3	1	2	5	8	1	8	9	3
Amberley-Balcarn.....	98	13	10	27	3	7	125	17	5
Woodend-Waikuku.....	6	1	6	26	11	9	32	13	3
Duvauchelle.....	5	5	0				5	5	0
NEW ZEALAND.									

TABLE No 23.—Statement showing the expenditure on and the cost of Telegraph construction during the financial year ended March 31, 1905.—*Continued.*

Line.	Expenditure.	Material from Stores.	Total Cost during the Year.
	£ s. d.	£ s. d.	£ s. d.
Ashburton-Waterton-Longbeach.....	284 18 3	325 16 3	610 14 6
Lowcliff-Hinds.....		70 19 4	70 19 4
Geraldine-Trunk.....	72 12 6	244 5 3	316 17 9
Kurow-Otematata-Omarama.....	325 5 5	152 1 0	477 6 5
Queenstown-Long Gully.....	5 12 6	5 7 4	10 19 10
Oamaru-Waimate.....	50 6 11	298 4 3	348 11 2
Ophir-Poolburn.....	36 19 5	38 7 7	75 7 0
Seacliff-Puketeraki.....	26 8 0	20 8 6	46 16 6
Mosgiel-Momona.....	0 10 0		0 10 0
Woodside-Manugaatua.....	1 10 3	20 3 9	21 14 0
Taieri Beach-Akatore.....	152 9 2	36 8 11	188 18 1
Winton-Lochiel.....	12 16 2	24 6 10	37 3 0
Heriot-Edievale.....	41 19 6		41 19 6
Balclutha Trunk.....	0 10 0		0 10 0
Clinton-Ashley Down-Clydevale.....	11 0 4		11 0 4
Owaka-Purekireki.....	336 3 3	81 8 10	417 12 1
Nuggets-Tokata.....	2 3 6	9 11 0	11 14 6
Invercargill-Mabel Bush.....	93 7 6	30 0 5	123 7 11
Invercargill-Winton.....	175 11 4	183 8 1	358 19 5
Invercargill-Gorge Road.....	9 7 7	5 18 4	15 5 11
Te Tua-Tuatapere.....	26 0 0	0 16 10	26 16 10
	13,221 15 1	47,435 4 1	60,656 19 2
Purchase of material.....	66,076 0 0		
Total expenditure 1904-5.....	79,297 15 1		
Total expenditure to 31st March, 1904.....	1,053,692 9 6		
Total Expenditure out of Public Works Fund to 31st March, 1905.....	£1,132,990 4 7	Total cost of lines during 1904-5..	£60,656 19 2

No. 279c.

NEW ZEALAND—*Concluded.*

Telephone Charges in Australian States before Federation and in New Zealand.

State.	Service for Distances up to One Mile from Exchange.	Charge per Annu m
		£ s. d.
New South Wales (Sydney and suburbs).....	{ Business ..	9 0 0 (\$43 83)
	{ Private residence ..	5 0 0 (24 35)
New South Wales (country).....	{ Business ..	8 0 0 (38 96)
	{ Private residence ..	5 0 0 (24 35)
Victoria (Melbourne and suburbs).....	{ Business ..	9 0 0 (43 83)
	{ Private residence ..	5 0 0 (24 35)
Victoria (country).....	{ Business ..	7 0 9 (34 09)
	{ Private residence ..	5 0 0 (24 35)
Queensland (throughout whole State).....	{ One rate up to half-mile ..	6 0 0 (29 22)
	{ Every additional half-mile.....	1 5 0 (6 09)
Tasmania (throughout whole State).....	{ Business ..	6 0 0 (29 22)
	{ Private residence ..	4 10 0 (21 92)
Western Australia (throughout whole State).....	{ Business ..	7 0 0 (34 09)
	{ Private residence ..	5 0 0 (24 35)
South Australia (throughout whole State).....	{ Business ..	10 0 0 (48 70)
	{ Private residence ..	5 0 0 (24 35)
New Zealand.....	{ Business (continuous service)...	7 0 0 (34 09)
	{ Private ..	5 0 0 (24 35)
	{ Business (limited service) ..	5 0 0 (24 35)

NEW ZEALAND.

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Proposed Commonwealth Telephone Charges under Toll System.

Subscribers Connected.	Annual Ground-rent.	Free calls covered by Ground-rent.	Extra Calls (each).		
			1 to 1,000.	1,001 to 5,000.	5,001 to 20,000.
	£ s. d.		s. d.	s. d.	s. d.
1 to 5,000.....	*4 10 0	300	‡0 1	a0 0½	b0 0¼
5,001 to 20,000....	†5 0 0	300	‡0 1	a0 0½	b0 0¼

* \$21.92. † \$24.35. ‡ 2 cents. a 1 cent. b ¼ cent.

No. 280.

CAPE COLONY.

GENERAL POST OFFICE,
CAPE TOWN, CAPE OF GOOD HOPE,
July 20, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
Chairman, Select Committee on Telephone Systems,
Ottawa.

SIR,—In reply to your letter of May 1 last, requesting statistics, &c., for the information of the Select Committee on Telephone Systems convened by the Parliament of Canada, I have much pleasure in appending replies to the list of questions forwarded by you, which I trust will prove of service to the Committee.

I am, sir, yours truly,

S. R. FRENCH,
Postmaster General.

No. 280a.

ANSWERS TO QUESTIONS.

The long-distance lines and local exchanges are owned and operated by the government.

There are in Cape Colony 26 miles of trunk or long-distance lines, costing £7 10s. 0d. (\$36.53) per mile of single wire. The long-distance system comprises 23 miles of poles, and 92 miles of separate circuits. The toll charges are ½d. (1 cent) per mile, with a minimum charge of 1s. (24½ cents) for three minutes' conversation.

The long-distance lines are copper, metallic circuit, weighing 150 pounds to the mile of single wire.

The total cost of the long-distance lines has been £253 (\$1,232.11) per mile. The cost of operation and maintenance is merged in operating and maintenance of general system.

The capital is provided by government loans. An average charge of 4 per cent as interest is paid to treasury by post office. Ten per cent is set aside for depreciation.

In the case of subscribers who have made deposits for long-distance service, monthly accounts are rendered. In the case of any other persons—whether subscribers or non-subscribers—using public call offices, cash payments are required.

CAPE COLONY.

APPENDIX No. 1

The population of Cape Colony is 2,409,804: European, 579,741; coloured, 1,830,063.

The total number of subscribers is 2,648, distributed as follows:—

Cape Town, exchange area.	1,287
Port Elizabeth, exchange area.	559
Kimberley, exchange area.	313
East London, exchange area.	215
Grahamstown.	94
Kingwilliamstown.	71
Queenstown.	56
Cradock.	27
Mossel Bay.	26

2,648

		European.	Coloured.
Cape Town and suburbs, exchange area.	169,641	103,887	65,754
Port Elizabeth, exchange area.	34,879	23,021	11,858
Kimberley and Beaconsfield, exchange area.	45,021	17,100	27,921
East London, exchange area.	25,220	14,674	10,546
Grahamstown.	13,887	7,283	6,604
Kingwilliamstown.	9,506	5,897	3,709
Queenstown.	9,616	4,157	5,559
Cradock.	7,762	3,054	4,708
Mossel Bay.	4,206	1,657	2,549

The annual subscription to telephone exchanges for lines within a mile radius from any exchange centre is:—

EXCHANGE CENTRES.

Day service—

	£	s.	d.	
Private residences.	7	0	0	(\$34.09)
Business establishments.	9	0	0	(\$43.83)

Day and night service—

Private residences.	7	10	0	(\$36.53)
Business establishments.	10	0	0	(\$48.70)

EXCHANGE AREAS.

(For the use of all the exchanges within an area.)

Day service—

	£	s.	d.	
Private residences.	10	0	0	(\$48.70)
Business establishments.	14	0	0	(\$68.18)

Day and night service—

Private residences.	11	0	0	(\$53.57)
Business establishments.	15	0	0	(\$73.05)
For every quarter of a mile beyond the mile limit	1	0	0	(\$4.87)

In rural districts private wire connections to the nearest post office or railway station can be provided. In the latter case permission is obtained from the railway department for the fitting of the apparatus on the station premises and arrangements made for attendance, by the renter. The following are the terms on which connections are erected where exceptional expenditure is incurred in planting poles, &c., viz.:—

CAPE COLONY.

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The applicant has the option of repaying (a) cost of erection and of (b) recovery, in a lump sum, or in equal annual instalments spread over three, five or more years and to pay during the period of repayment (under agreement) (c) 10 per cent per annum on material for depreciation (d) 5 per cent per annum interest on material less depreciation and (e) 5 per cent per annum interest on the cost of erection less repayments calculated as if charges were payable at the end instead of at the beginning of each year of the agreement. These charges are additional to the tariff private wire rental which is as follows:—

	Metallic Circuit.			Single Wire.		
	£	s.	d.	£	s.	d.
For a line not exceeding half a mile in length per annum	2	0	0 (\$9.74)	1	10	0 (\$7.31)
For every additional quarter mile or portion thereof, per annum.	1	0	0 (\$4.87)	15	0	(\$3.66)
For the use and maintenance of apparatus—						
Telephones, each.				2	0	0 (\$9.74)
Switchboards.				7	6	(\$1.83)
Extra bells, each.				5	0	(\$1.22)
Junction switches.				7	6	(\$1.83)
Indicators numbers, each.				7	6	(\$1.83)

For a private wire led into a post or telegraph office, £5 (\$24.35) per annum is charged for clerk's services in addition to the ordinary rental charges. No exchanges have been opened in rural districts.

The subscribers' telephones are Ericsson's magnetos. The subscribers' lines are metallic-copper; $\frac{3}{8}$ overhead, $\frac{3}{8}$ underground. The amount expended on the system to date is £198,681 (\$967,576.47). The revenue for 1904 was £38,162 (\$185,848.94). The expenditure for 1904 was £42,158 (\$205,309.46) (exclusive of interest) or £46,738 (\$227,614.06) (inclusive of interest). Profit, excluding interest and depreciation, £1,036 (\$5,045.32). Loss, including interest and depreciation, £8,575 (\$41,760.25).

The following are the scales of pay:—

Engineer assistants—Electrician and fault clerks, 1st class, £300 (\$1,461) per annum by £20 (\$97.40) annually to £400 (\$1,948). 2nd class, £180 (\$876.60) per annum by £15 (\$73.05) annually to £285 (\$1,387.95).

Foremen of indoor construction men and instrument fitters, from £190 (\$925.30) per annum to £250 (\$1,217.50) per annum.

Instrument fitters, instrument fitters and draughtsmen, from £120 (\$584.40) per annum to £180 (\$876.60) per annum.

Night operators and learners assisting fitters from £60 (\$292.20) per annum to £116 (\$564.92) per annum.

Outdoor staff—Supervising foremen from £190 (\$925.30) per annum to £250 (\$1,217.50) per annum. Supervising allowance, 8d. (16 cents) 1s. 4d. (32½ cents) 1s. 11d. (47 cents) 2s. 7d. (63 cents), or 3s. 3d. (79½ cents) per day.

Foreman of outdoor construction gangs from £190 (\$925.30) per annum to £250 (\$1,217.50) per annum.

Line fitters, leading hands, cable joiners from £120 (\$584.40) per annum to £180 (\$876.60) per annum.

Learners assisting fitters from £60 (\$292.20) per annum to £116 (\$564.92) per annum.

Substitutes for linemen—Pay not to exceed 7s. 8d. (\$1.86) per diem.

European labourers from £60 (\$292.20) per annum to £108 (\$525.96) per annum.

Coloured or native labourers from 3s. (73½ cents) to 7s. (\$1.70) per diem.

Operating staff—Female supervisor, £200 (\$974) per annum. No fixed scale. Female operators, £60 (\$292.20) per annum by £10 (\$48.70) annually to £120 (\$584.40).

APPENDIX No. 1

All material is obtained through the Agent General at prices quoted in tenders called for. Practically British post office figures plus freightage and landing (approximately 33½ per cent).

The magneto ring through system is adopted in all exchanges.

The government pays the Cape Town corporation a nominal compensation of 1s. (24½ cents) per pole planted. Elsewhere no payment is made. There is also a mutual arrangement between the government and the Cape Town corporation electric lighting department in regard to the use of government poles at 1s. (24½ cents) per attachment, and also with the tramway company whereby the government is permitted to top tramway poles for the purpose of carrying aerial wires.

No. 281.

TRANSVAAL COLONY.

GENERAL POST OFFICE,
JOHANNESBURG, TRANSVAAL COLONY,
August 9, 1905.

The Chairman, Select Committee on Telephone Systems,
Ottawa.

SIR,—With reference to your letter of May 1 last, regarding the telephone system of this colony, I beg to forward herewith answers to the list of questions on your inclosure.

I am, sir, your obedient servant,

J. FRANK BROWN,
Postmaster General.

No. 281a.

ANSWERS.

Johannesburg has a population of 80,000. The telephone system is owned and operated by the government of the Transvaal Colony, and comprises 1,500 subscribers. There is one switchroom, or central office, with 1,486 direct lines. 85 outside extension telephones and 190 inside extension telephones connect with these direct lines.

The rates for business and residence telephones are:—

Within a radius of 2 miles, £20 (\$97.40) for the first connection, £17 10s. (\$85.23) for the second, and £15 (\$73.05) for the third and subsequent connections. Outside 2 miles radius, £2 (\$9.74) for each ¼ mile or portion thereof. Outside extensions, according to distance, £5 (\$24.35), and £2 (\$9.74) per ¼ mile. Inside extensions, £5 (\$24.35) per annum. There is no measured service at present.

The service is continuous. Non-subscribers are charged sixpence (12½ cents) for a three minutes' conversation.

When telephone exchanges in different towns are connected by trunk lines, such lines may be used for conversations at the following charges:—

For every conversation not exceeding three minutes with any telephone renter:

(a.)	Within a radius of 5 miles.	1s.	(24½c.)
(b.)	Beyond 5 miles, but within a radius of 20 miles.	1s. 6d.	(36¾c.)
(c.)	" 20 " " 30 "	2s.	(49c.)
(d.)	" 30 " " 40 "	2s. 6d.	(61c.)
(e.)	" 40 " " 50 "	3s.	(73c.)
(f.)	" 50 " " 70 "	3s. 6d.	(85c.)

TRANSVAAL COLONY.

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Sixty miles is the greatest distance over which subscribers can converse at present. Subscribers' stations are equipped with L. M. Ericsson & Company's wall and table telephones. The lines are metallic circuit, copper. All overhead at present.

One hundred and eleven thousand nine hundred and twenty pounds (\$545,050.40) has been expended on the system. (*Note.*—This does not include the amount put into the system by the late Z.A.R., the figures in connection with which are not available.)

The revenue is £44,100 (\$214,767). The total expenditure, including maintenance and depreciation, is £20,600 (\$100,322) per annum, leaving a surplus last year of £23,500 (\$114,445).

The wages paid are: Foremen, £1 to £1 5s. (\$4.87 to \$6.09) per day; instrument men, 15s. to 19s. (\$3.66 to \$4.63) per day; wiremen, 15s. to 19s. (\$3.66 to \$4.63) per day; switchboard operators, £100 to £150 (\$487 to \$730.50) per annum.

The cost of equipment is as follows: Central exchange switchboard (six sections), mounted for 2,040 lines, ultimate capacity 3,600, including distribution and relay boards, &c., £4,500 (\$21,915); wall telephones, £3 7s. 6d. (\$16.44); desk telephones, £3 8s. 3d. (\$16.62); lead-covered paper insulated cable, from £190 to £800 (\$925.30 to \$3,896) per mile, 26, 52, 102, 204, 306 pairs; H.D. copper wire, 8d. (16½ cents) per lb.; poles, all iron, parallel, 24 feet to 40 feet, 52s. to 120s. (\$12.67 to \$29.22), tapered, 20 feet to 30 feet, 35s. to 84s. (\$8.53 to \$20.46); cross-arms, oak, 4-wire, 40d. (81 cents), channel iron, 6s. 6d. (\$1.59), tubular iron, 12-wire, 7s. 10d. (\$1.91); porcelain insulators, 6d., 8d. and 1s. 1d. (12½ c., 16½ c. and 26½ c.); bolts, 6d., 7d. and 1s. 9d. (12½ c., 14½ c. and 43c.); earthenware ducts (local manufacture), 5½d. (11 cents) per foot.

The government of the Transvaal colony owns and operates the long-distance lines; these are all metallic circuit, copper, 150 and 200 lbs. per mile. The method of collecting revenue from long-distance users is:—

- (1) Payment in advance of an annual charge of £20 for unlimited use; and
- (2) Payment of monthly accounts secured by fixed deposit.
- (3) Cash payment of Telephone Call Offices.

There has been no competition. The system is full lamp signal, semi-central energy, double lamp supervisory multiple board. The connections have been arranged so that it can be converted to full central energy working so soon as the lines in the central areas are placed underground. It is now being worked on what is known as the 'ring through' system, and is giving every satisfaction.

APPENDIX No. 1

No. 282.

CEYLON.

OFFICE OF THE POSTMASTER GENERAL AND DIRECTOR OF TELEGRAPHS.
GENERAL POST OFFICE, COLOMBO, June 27, 1905.

Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General, and Chairman of Committee on Telephone Systems,
Ottawa, Canada.

SIR,—I have the honour to acknowledge the receipt of your letter of May 1, 1905, and to annex hereto a memorandum furnishing replies to the questions asked in the list inclosed with your letter.

I am, sir, your obedient servant,

H. L. MOYSEY,
Postmaster General and Director of Telegraphs.

No. 282a.

ANSWERS TO QUESTIONS.

The telephone system at Colombo (population 160,000) is owned and operated by the Ceylon government.

The system has 158 subscribers, 129 of whom have direct lines. There are 15 outside extension and 18 inside extension telephones.

The rates are as follows:—

	Per annum. Rs.
For an exchange connection within one mile from the exchange.	125 (\$40.50)
For every quarter mile beyond a distance of one mile from the exchange.	25 (\$8.10)
For a private line, per mile.	100 (\$32.40)
For every additional quarter mile.	25 (\$8.10)
For each telephone supplied with a private line.	25 (\$8.10)

The distances are measured by the nearest practicable route.

The rates for private lines apply to any part of Ceylon.

The rates include all charges for maintenance.

The service is continuous. There are no call offices or trunk lines, the longest line being about 6 miles.

The instruments used are various; chiefly 'Western Electric' pattern. The lines are metallic circuit; copper, 100 pounds per mile, and bronze. All overhead.

The amount expended on the system to date is Rs. 193,278 (\$62,622).

The revenue per annum is Rs. 31,997 (\$10,367) (including paper revenue from government lines, Rs. 10,400).

The total expenses per annum are (including maintenance and depreciation), Rs. 25,118 (\$8,138).

The amount of surplus last year was Rs. 6,879 (\$2,229).

The wages paid are: Chief inspector, Rs. 1,800 (\$583.20). foreman, Rs. 1,080 (\$349.92); instrument inspector, Rs. 660 (\$213.84); wiremen, Rs. 204 (\$66.10); operator, Rs. 600 (\$194.40) per annum.

CEYLON.

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No. 283.

STRAITS SETTLEMENTS.

COLONIAL SECRETARY'S OFFICE,

SINGAPORE, July 11, 1905.

The Chairman, Select Committee on Telephone Systems,
House of Commons, Ottawa, Canada.

SIR,—With reference to your letter of May 1 last, addressed to Mr. C. P. Buckell, Superintendent of Telegraphs, Penang, on the subject of the method of working the government telephone system in that settlement, I am directed to inclose herewith, for your information, the answers to your queries, which have been drawn up by Mr. Buckell.

I have the honour to be, sir,

Your obedient servant,

E. L. BROCKMAN,

Acting Colonial Secretary, Straits Settlements.

No. 283a.

ANSWERS TO QUESTIONS.

(NOTE.—The figures quoted are Straits Settlements currency, those in brackets being Canadian currency.)

The Penang Telephone System is owned and operated by the government of the Straits Settlements, the population of which is 240,000.

The system has 301 subscribers, and three exchanges, namely, Central Exchange and one sub-exchange on the island of Penang, and one sub-exchange at Butterworth, province of Wellesley, the number of subscribers connected to each being 181, 105 and 15 respectively. Each subscriber has a separate direct line of No. 16 copper metallic circuit. There are 11 inside extension telephones.

The rates are in Penang: Business telephones, \$7.50 (\$3.38) per month within municipal limits (which is about four miles from the central exchange) and \$1 (45 cents) per month extra for every additional mile or part of a mile. Residence telephones, \$5 (\$2.25) per month within the municipal limits, plus the same additional charge for distances beyond. Inside extensions, \$2 (90 cents) per month for each telephone.

In the province of Wellesley the rate is \$11 (\$4.95) per mensem for a connection within one mile of the exchange, and \$1 (45 cents) per mensem extra for every additional mile or part of a mile. The service is continuous.

We have no call office, and there is no demand for one. Subscribers have an unlimited service, and can converse over a distance of 44 miles.

There are three kinds of telephones in use, namely:—

1. The Western Electric Company's wall pattern sets, with Delville transmitter on arm and double pole receiver.
2. Pedestal desk sets with L. M. Hunning's Delville transmitter and double pole receiver, manufactured by the same company.
3. L. M. Ericsson & Company's ornamental wall pattern sets with double pole receiver.

All lines at present are overhead.

The total amount expended in construction up to December 31, 1904, was \$93,409 (\$42,034.05). The exchange was opened on March 1, 1901.

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The total receipts for 1904 were \$18,151.81 (\$8,168.31). The estimated revenue for the current year is \$21,000 (\$9,450).

For the current year, the estimated expenditure, including depreciation at 10 per cent, is about \$14,402 (\$6,480.90). In addition to the annually recurrent expenditure, \$14,110 (\$6,349.50) is being expended on extensions.

The surplus last year was eight thousand nine hundred and sixty-five dollars (\$4,034.25). A copy of the return showing receipts and expenditure is attached. In addition to the annually recurrent expenditure shown in that return, a sum of \$16,929 (\$7,618.05) was spent on extensions to exchange.

The superintendent of telegraphs is paid an allowance of \$600 (\$270) per annum for managing the telephone exchange. The inspector of telegraphs, for services in connection with the exchange receives an allowance of \$240 (\$108) per annum. The mechanic is paid a salary of \$300 (\$135) per annum. There are four linesmen. One at \$180 (\$81) per annum, and three at \$144 (\$64.80). There are fourteen operators, one at \$300 (\$135) per annum, and thirteen at \$240 (\$108) per annum.

The cost of equipment is as follows: Central switchboard, £263 5s. (\$1,282). It is a 315-way metallic circuit switchboard. At present 181 lines are connected to it.

At the sub-exchanges there are three switchboards in use, viz.: two 105-way boards and one 50-way board. The former (including test jacks and lightning arrestor) cost £99 15s. (\$485.79) each, and the latter £50 (\$243.50).

The wall telephone, supplied by Messrs. Ericsson & Company, cost £3 3s. (\$15.34) each. Those supplied by the Western Electric Company cost £3 0s. 6d. (\$14.73). Desk telephones, £2 15s. (\$13.40).

Hard drawn copper wire, No. 16, £2 11s. 2d. (\$12.47) per mile.

Heavy poles: Iron, 40 feet, £12 (\$58.44); 35 feet, £8 10s. (\$41.40); 25 feet, £3 (\$14.61).

Light poles: Iron, 22 feet, £1 8s. (\$6.81); 20 feet, £1 4s. (\$5.86); 18 feet, £1 0s. 6d. (\$4.99).

Wooden poles are not used.

Iron arms (made locally) for carrying 8 wires, \$3.55 (\$1.60) each, for carrying four wires \$2.50 (\$1.13). Wooden arms are not used.

Insulators with bolts and nuts complete, 7½d. (15 cents) each.

The above quotations do not include freight, &c. We have no long distance trunk lines.

The foregoing information conveys a fairly good idea of the method of working the system, but little can be added concerning it.

The switchboards in use are of the pattern known as 'Inclosed Cabinet Double Cord Switchboard.' Each of the electro-magnets of the switchboards is protected from lightning by a carbon lightning arrestor and a fusible coil; these have been found to be very effective. Although the lines are never put to earth (*i.e.*, grounded) no damage by lightning has been done to the switchboards since the exchange was opened four years ago. The same can be said regarding the subscribers' telephones. Each of these is protected by two lightning arrestors, namely, the usual mica arrestor attached to the instrument and a serrated arrestor, in two sections, attached to a hardwood base, the two sections being connected by means of spirals of thin silk covered copper wire. Each subscriber's instrument and each operator's set is provided with a separate speaking battery of three volts.

No. 283b.

STRAITS SETTLEMENTS—*Concluded.*

RETURN showing actual receipts and cost of working of the Penang Telephone Exchange for the year 1904.

Receipts:	Amount (Straits Settlements Currency).	Expenditure.	Amount (Straits Settlements Currency).	Amount (Canadian Currency).
	\$ cts.		\$ cts.	\$ cts.
Subscriptions received.	18,151 81 (\$8,168 31)	Personal emoluments	2,709 25	1,219 16
		Other charges.	1,000 00	450 00
		Depreciation (10 p.c. on \$34,372.80—1903 acc.	3,437 30	1,546 79
		Depreciation (10 p.c. on \$20,405.11).	2,040 50	918 22
		Balance of receipts over expenditure.	8,964 76	4,034 14
Total	18,151 81 (\$8,168 31)	Total	18,151 81	8,168 31

AUSTRALIA.

No. 284.

(See also Nos. 295 and 296.)

POSTMASTER GENERAL'S DEPARTMENT,
MELBOURNE, August 23, 1905.

The CHAIRMAN,
Select Committee on Telephone Systems,
Ottawa, Canada.

SIR,—With reference to your communication of May 1 last, addressed to Mr. T. Howard, assistant electrical engineer for this department in Victoria, asking that you be furnished with certain particulars respecting the telephone service in that state, I have the honour to forward herewith the desired information which has been supplied through the deputy postmaster general, Melbourne.

I have the honour to be, sir,

Your obedient servant,

ROBT. T. SCOTT.

Secretary.

No. 284a.

ANSWERS TO QUESTIONS.

In reply to the inquiries, dated May 1, 1905, I beg to submit the following information:—

The population of Melbourne (capital, state of Victoria) is 508,540. That of the state, 1,210,304. The telephone system is owned and operated by the government. The system comprises 8,429 subscribers. The number of switchrooms are: In the

AUSTRALIA.

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Metropolitan network, 13; in the country, 11. The central exchange has 4,400 lines. There are 7,053 direct lines with one telephone, and 3,240 extension telephones. The telephones are supplied by the government as part of the service. Subscribers pay rent only, but in some instances several years' rent in advance is required.

The rates are as follows: Business, Metropolitan, £9 (\$43.83) per annum. Country, £7 (\$34.09) for a line up to 1 mile radially.

Residence, £5 (\$24.35) in each case.

Outside extensions, each half mile from subscribers' first station, £1 (\$4.87) per annum, plus £2 (\$9.74) per annum for telephone.

Inside extensions, telephones, £2 (\$9.74) per annum. Drops, 10s. (\$2.44) per figure per annum.

1d. (2cent) calls are under consideration for small thickly populated city areas.

The metropolitan area is 10 miles from centre. The country area, 5 miles.

The service is continuous; the exchange is never closed.

The charge to non-subscribers for local conversations is 3d. (6 cents) per area for three minutes' use of service.

The long-distance charges are:—

	First 3 minutes.		Each extra 3 minutes.	
	s.	d.	s.	d.
25 miles	6	(12½ cents)	4	(8 cents)
50 "	10	(20½ cents)	6	(12½ cents)
75 "	1 2	(28½ cents)	9	(18½ cents)
100 "	1 6	(36¾ cents)	1 0	(24½ cents)
125 "	1 10	(45 cents)	1 2	(28½ cents)
150 "	2 2	(52 cents)	1 5	(34¾ cents)
175 "	2 6	(61 cents)	1 8	(41 cents)
200 "	2 10	(69 cents)	1 10	(45 cents)

The greatest distance spoken over is about 250 miles.

Branching type Ericsson is now the standard subscribers' telephone. There are still a number of the series Berthon-Aders in use.

The subscribers' lines are mostly single with common returns in large cities where affected by electric trams and electric light, 100 lb. copper; 200 lb. iron for country.

About 60 per cent of the plant is underground in central exchange with underground work at all the principal exchanges in metropolitan area and in country.

The amount expended upon the system to date is £872,203 (\$4,247,628.61).

The revenue in 1894 was £36,134 (\$175,972.58). In 1904, £81,593 (\$397,357.91).

The surplus last year was £7,040 (\$34,284.80).

The wages paid are:—

Managers and certain postmasters, £300 to £400 (\$1,461 to \$1,948) per annum.

Foremen, £162 (\$788.94) maximum.

Instrument fitters, £114 to £138 (\$555.18 to \$672.06).

Linemen, £156 (\$759.72) maximum.

Switchboard operators, £110 per annum (\$535.70) after three years' service.

The cost of equipment is as follows:—

Metallic circuit standard switchboards, 100 lines, £51 5s. (\$249.59).

Wall telephones, £3 1s. 2d. (\$14.90).

Desk telephones, £3 6s. (\$16.08).

Lead covered cable, £160 to £180 (\$779.20 to \$876.60) per mile for 26 pair cable.

Copper wire, £70 per ton (\$15½ cents per pound). Iron wire, £11 15s. (2¼¢ cents per pound).

Wood poles vary from 12s. 6d. (\$3.05) to £4 10 (\$21.92) according to length and dimensions. Iron pipe poles for branch lines, 18s. 6d. (\$4.51).

Cross arms, 4 feet 10 inches x 3 inches x 3 inches, 2s. (49 cents)

Insulators, 3d. to 6d. (6 to 12½ cents). Bolts, 5d. (10½ cents) per lb.

Underground construction: solid system. Red gum timber box, cables laid in dry sand. Cost, 1s. (24½ cents) per foot.

The long-distance lines are owned and operated by the government. The regulations governing the service are too various to put in detail, but they are of the usual character for such services.

The telephone is superimposed upon the telegraph lines, which are 400 lb. iron, and the system is used very largely for simultaneous telephony and telegraphy. An adaptation of the Van Rysselberghe system with certain improvements is employed.

The long-distance lines are constructed of 100 and 200 lb. copper wire. Metallic circuit in all cases are employed.

Subscribers using long-distance service must deposit, say, £1 (\$4.87), as a guarantee of collection to cover their talks from any particular exchange.

There is no competition. In 1887 the government intended to compete with the then existing company, but the latter sold out to the government. Rates were then reduced 25 per cent, from £16 to £12 (\$77.92 to \$58.44) and from £12 to £9 (\$58.44 to \$43.83) in 1894.

History.—Service instituted by a company in 1881. In 1897 the government took control by purchase.

Line construction.—Like all other exchange installations, this was started on the basis of single wires for subscribers' lines. In many instances these have been retained, but in larger centres common returns are being exclusively used. All junction and trunk lines are metallic circuits, and two country exchanges are wholly double wire throughout.

Exchange boards.—Standard and series multiple boards intermixed with branching boards, the latter having self-storing drops, pilot lights, and automatic registers. Outgoing junctions are multiplied. 'Call' wire not used.

Traffic.—In Central Exchange:—

Number of subscribers per position	75
Number of subscribers' calls per position	1,049
Number of subscribers' calls per line	14

Power plant.—Holtzer Cabot motor generators for the ringing current, accumulators for transmitters and self-storing drops.

Subscribers' batteries.—Leclanche type, but dry cells will shortly supersede these.

Subscribers' telephones.—Combination micro-telephones are most favoured. These were formerly of the Berthon type. Swedish form of Ericsson is now becoming the most used for new lines.

Air lines.—Poles varying in length from 25 to 50 feet of the best red-gum or gray box. Top pins have hitherto been used, but are to be abandoned. Aerial cables—28 to 104 wires—are largely used in all city works.

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No. 285.

NORWAY.

THE DIRECTOR-GENERAL OF THE TELEGRAPH ADMINISTRATION OF THE KINGDOM OF NORWAY.

CHRISTIANIA, September 8, 1905.

Sir WILLIAM MULOCK,

Postmaster General and Chairman of the Select Committee on Telephone Systems,
Ottawa, Canada.

SIR,—I have the honour to acknowledge the receipt of your letter of May 1 last, and to furnish you with enclosed lists of answers.

I am sorry to say that to some of the questions a detailed and full answer cannot be given for want of material, and some other questions cannot be answered at all for the same reason.

Your list of questions addressed to Mr. J. U. F. Bugge, inspector of Norwegian Telegraphs, has by him been handed to me, as he has no dealing with any telephone system of especial importance. I have answered this list of questions as to the telephone system of Christiania, the largest of my country.

According to your demand, I only refer to the number of question.

I have the honour to be, sir,

Your obedient servant,

ABILD,

ad interim.

No. 285a.

ANSWERS TO QUESTIONS

By far the greatest number of trunk lines in Norway are owned and operated by the government, which now has a continuous system of long-distance lines over the greater part of the country.

On March 31, 1904, the length of long-distance lines was 8,069 kilometres (5,011 miles); of wires, 29,269 kilometres (18,176 miles). The average cost of these lines cannot be stated. But it is generally calculated, that a single wire of long-distance line costs about 350-400 kr. (kroner) (\$93.80 to \$107.20) per kilometre (3,281 feet, about $\frac{5}{8}$ mile).

The total length of pole lines is 7,682 kilometres (4,770 $\frac{1}{2}$ miles). Most of the long-distance lines are metallic circuits.

The long-distance charges are as follows:—

For geometrical distances to 15 km. (9 $\frac{1}{2}$ miles), kr. 0.15 (4 cents) per period of conversation of 3 minutes. Under certain circumstances kr. 0.10 (2 $\frac{1}{2}$ cents) for distances below 10 km. (6 $\frac{1}{2}$ miles).

For geometrical distances from 15 to 50 km. (9 $\frac{1}{2}$ to 31 miles), kr. 0.25 (6 $\frac{1}{2}$ cents) per period.

For geometrical distances from 50 to 100 km. (31 to 62 miles), kr. 0.35 (9 $\frac{1}{2}$ cents) per period.

For geometrical distances from 100 to 150 km. (62 to 93 miles), kr. 0.50 (13 $\frac{1}{2}$ cents) per period.

For geometrical distances, from 150 to 250 km. (93 to 155 miles), kr. 0.75 (20 cents) per period.

For geometrical distances from 250 to 400 km. (155 to 248 miles), kr. 1.00 (27 cents) per period.

For geometrical distances from 400 to 550 km. (248 to 341 miles), kr. 1.25 (33 $\frac{1}{2}$ cents) per period.

For geometrical distances, above 550 km. (341 miles) kr. 1.50 (40 cents) per period.

The subscribers' lines are in systems of late years exclusive metallic circuits; but in the older systems partly single lines, partly metallic circuits. In the last-mentioned systems the conversion from single lines to metallic circuits is proceeding. The subscribers' lines are generally made of bronze wire of 1.25 or 1.5 mm. (No. 17 and 18 S.W.G.), exceptionally of iron wire of 2mm. (No. 14 S.W.G.). Only in the largest systems (Christiania and Trondhjem) are the lines underground in the more central parts of the towns.

The long-distance lines are copper wire of 2.75, 3.3, 4 or 4.5 mm. (Nos. 12, 10, 8 and 7 S.W.G.), iron wire of 3.17 or 4 mm. (Nos. 10 and 8, S.W.G.), and as a rare exception bronze wire of 2 mm. (No. 14, S.W.G.) in diameter.

The total cost of the long-distance lines at the end of the financial year, April 1, 1903—March 31, 1904, was 7,181,200 kroner (\$1,924,829.60).

The cost of operating the long-distance telephone lines separately cannot be given. The cost of operating the telegraph and long-distance telephone lines together was for the financial year April 1, 1903-March 31, 1904, 1,405,700 kr. (\$376,727.60), and the cost of maintaining the telegraph and long-distance telephone lines and stations together for the same year, 536,100 kr. (\$143,674.80). No interest is specially paid. But the whole net revenue is paid into the fisc. The net gain of telegraphs and telephones for the financial year above mentioned was 944,900 kr. (\$253,233.20). The surplus of the government telegraph and long-distance telephone lines, for the year, April 1, 1903-March 31, 1904, was 513,000 kr. (\$137,484).

By means of different electromagnets, the long-distance lines are used for simultaneous telephony and telegraphy.

There are altogether about 200 local telephone exchanges in Norway, and of these the government owns and operates 27, most of which are in towns. The other systems are operated by private local companies.

The population of Norway on December 3, 1900, was 2,240,032.

On January 1, 1904, there were 15,541 local subscribers in the government telephone systems, with 220 public call offices.

The number of subscribers in the chief cities and towns are as follows: Government systems on May 31, 1905, Christiania, 12,549; Trondhjem, 1985. Systems of private companies at the end of the year 1903: Bergen, 2,994; Stavanger, 986; Drammen, 1,031.

The populations of these places are as follow: Christiania, on December 31, 1904, 222,373; Trondhjem, on December 31, 1902, 39,132; Bergen, on December 3, 1900, 72,251; Stavanger, 30,613; Drammen, 23,093.

The rates for local subscribers are: In Christiania, 80 kr. (\$21.44) per annum; in Trondhjem, 70 kr. (\$18.76) per annum; for metallic circuit and one ordinary apparatus with ordinary furniture. The radius covered by subscription is, for both systems, 1,500 metres (4,921 feet), in a straight line from the central exchange. For farther distances there is in Christiania a surtax of 7.50 kr. (\$2.01) per annum, for each 500 metres (1,640 feet), or fraction of this distance, exceeding the radius above mentioned. In Bergen, 72 kr. (\$19.30) per annum for single wire: for metallic circuit a surtax of 16 kr. (\$4.29) per annum. Besides the subscribers must purchase their own apparatus. In Stavanger, 30 kr. (\$8.04) per annum for service and for maintaining of the lines and apparatus, which are owned by the subscribers. In Drammen, 70 kr. (\$18.76) per annum for single wire and one ordinary apparatus with furniture.

The following are the numbers of subscribers in some of the smaller places:—Government systems on January 1, 1904: Sarpsborg, 221; Bodo, 175; Tromso, 150; Narvik, 125; Levanger, 97; Brevik, 95, and Voss, 69. Systems of private companies at the end of the year 1903: Fredrikstad, 760; Christiansand, 690; Skien, 486; Christiansund, 274.

The population of these places on December 3, 1900, was: Sarpsborg, 6,922; Bodo, 4,877; Tromso, 6,996; Narvik, 3,023; Levanger, 1,542; Brevik, 2,302; Voss, 1,000; Fredrikstad, 14,635; Christiansand, 14,666; Skien, 11,394; Christiansund, 12,060.

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The rates in these places are as follows: Sarsborg, 50 kr. (\$13.40); Bodo, 40 kr. (\$10.72); Tromsø, 60 kr. (\$16.08); Narvik, 60 kr. (16.08); Levanger, 30 kr. (\$13.40); and entrance fee, 20 kr. (\$5.36); Brevik, 40 kr. (\$10.72), and Voss, 40 kr. (\$10.72) per annum, for metallic circuit, or single wire, and one ordinary apparatus with furniture, all within the limits of the town or within a radius of 1,000 metres (about $\frac{3}{4}$ miles), from the exchange. In the private system of Fredrikstad, 60 kr. (\$16.08) for business telephones, 50 kr. (\$13.40) for residence telephones, and 43 kr. (\$11.53) for municipal telephones, per annum. In Christiansund, 60 kr. (\$16.08); Skien, 60 kr. (\$16.08), and Christiansund, 50 kr. (\$13.40), or 45 kr. (\$12.06) per annum for single wire and one ordinary apparatus with furniture.

When a rural community wants a long-distance telephone station, the government will, if it is found to be expedient, establish such a station. The conditions made by the government before the laying of the line, are the following:—

The community guarantees free rooms, lighting, fuel, messenger and telephone operator for the station. The people of the district either use the station as a call office, or what is most usual, they construct their own lines, which are connected to the switchboard for a fixed payment of 5 kroner (\$1.34) per annum. On January 1, 1904, there were 1,743 subscribers connected to the government long-distance toll stations. It is of still greater importance that the private telephone companies (the shareholders of which are generally all of them subscribers to the company) apply for connection with the government stations. On the other hand connection can be demanded by the government. The number of the private companies' subscribers, the towns included, was at the end of the year 1903, 20,310, with 1,275 public call offices and 574 exchanges. The government has about 630 stations for toll service in the rural districts.

In the system of Christiania, a subscriber has to pay a surtax of 10 kr. (\$2.68) for each 1,000 calls, or fraction of that number exceeding 6,000 calls.

A subscriber can as such on his subscription fee only converse within the system with which he is connected. But long-distance conversations can be exchanged over a distance of about 1,200 kilometres (745 miles).

The lines of private companies systems are generally single, of iron or bronze.

Of the lines of the government local telephone systems at the end of the year, April 1, 1903-March 31, 1904, 31,365 kilometres (19,477 $\frac{3}{4}$ miles) were underground, 19,156 kilometres (11,895 $\frac{3}{4}$ miles) overhead, and 145 kilometres submarine (90 miles).

The total amount expended on the government local systems is 4,564,200 kr. (\$1,223,205.60). For the financial year, April 1, 1903-March 31, 1904, the revenue was 1,082,400 kr. (\$292,763.20); the total expenditure, depreciation excluded, was 660,500 kr. (\$177,014); and the profit was 431,900 kr. (\$115,749.20).

The wages paid are: Manager of Christiania telephone system, 10,000 kr. (\$2,680). Engineers from 2,200 to 4,500 kr. (\$589.60 to \$1,206) per annum. Foremen, 120-160 kr. (\$32.16 to \$42.88) per month. Instrument men and wiremen, 20 to 25 kr. (\$5.36 to \$6.70) per week, and telephone operators, 480 to 960 kr. (128.64 to \$257.28) per annum. Lady managers of the central exchange, 1,200, 1,400 or 2,000 kr. (\$321.60, \$375.20 or \$536) per annum.

The working of the government systems is very satisfactory.

The government has free way-leave facilities in towns. But in the rural districts the government must pay for its way-leave privileges, generally from 2 kr. to 5 kr. (54 cents to \$1.34) per pole-room.

No. 285b.

NORWAY—*Concluded.*

CHRISTIANIA TELEPHONE SYSTEM.

Christiania, Norway, has a population of 222,373 (census of December, 1904). The local telephone service has been owned and operated by the government since January 1, 1901, and comprises 10,452 subscribers, connected to 9 switch-rooms (exchanges). Of these two are within the town, one central and one branch, and 7 rural.

NORWAY.

The town exchanges have respectively 8,660 and 790 subscribers.

The 7 rural exchanges have 1,002 subscribers.

The total number of telephones is 12,549, including 2,097 extension telephones.

All instruments are supplied and owned by the government. Subscribers do not contribute anything beyond the annual rental for either line or instrument.

Subscribers in the town pay 80 kroner (\$21.44) per annum, within a radius of 1,500 metres (4,921 feet, about $1\frac{5}{16}$ miles) from the central exchange, and an additional subscription of 7.50 kr. (\$2.01) for every 500 metres (1,640 feet) exceeding the radius of 1,500 metres. Rural subscribers pay 60 to 80 kr. (\$16.08 to \$21.44), plus 10 kr. (\$2.68) for every 500 metres (1,640 feet) of line measured from the exchange, to which they are connected.

For outside extensions, 30 kr. (\$8.04); for inside extensions, 20 kr. (\$5.36).

The service is continuous, day and night, including Sunday.

Ten ore ($2\frac{3}{4}$ cents) per conversation is charged to non-subscribers at pay stations for local service.

Subscribers have service over about 45 kilometres (28 miles) within the telephone system of Christiania alone. The central exchange of the town is connected with the 'inter-urban' trunk-line exchange of the government, and thus any subscriber may get internal trunk line communication (from the apparatus in his home or office) with all the towns and most of the rural districts south of Namsos—over distances up to 750 kilometres (465 miles).

Subscribers' stations are equipped with ordinary wall-telephones of L. M. Ericcsons and 'Elektrisk Bureaus' pattern with fixed microphone or combined hand-set (hand microtelephone). Desk-telephones with combined hand-set are also frequently used. Leclanche-cells and 'dry batteries.'

The lines are partly single, partly metallic circuits, within the town bronze, outside the town chiefly of iron wire. Total length of single lines, 11,500 kilometres (7,014 $\frac{1}{2}$ miles) of metallic circuits, 17,750 kilometres (11,022 $\frac{3}{4}$ miles).

The proportion of underground and overhead construction is : Underground, 30,334 kilometres (18,837 $\frac{1}{2}$ miles), overhead, 16,592 kilometres (10,303 $\frac{1}{2}$ miles) taken a single wire.

The total cost of the Christiania telephone system to date is, 4,026,032 kr. (\$1,078,976.58). The revenue for last year was 945,490 kr. (\$253,391.32). The expenditure, 587,400 kr. (\$157,423.20); leaving a surplus of 358,090 kr. (\$95,968.12).

The wages paid are: Manager, 10,000 kr. (\$2,680) per year. Foremen, 120 to 160 kr. (\$32.16 to \$42.88) per month. Instrument and wiremen, 3-4 kr. (80 $\frac{1}{2}$ cents to \$1.07) per day. Switchboard operators, 40 to 80 kr. (\$10.72 to \$21.44) per month.

The cost of equipment is as follows:—

Wall telephones, about 43 kr. (\$11.53). Desk telephones, about 43 to 65 kr. (\$11.53 to \$17.42).

Lead covered paper insulated cable: The type usually employed contains 256 pairs of wires (256 metallic circuits), price about 7 kr. (\$1.88) per metre (39 $\frac{1}{2}$ inches).

Bronze wire of 1.25 mm. diameter costs about 1.35 kr. (36 $\frac{1}{2}$ cents) per kilogramme (2 $\frac{1}{2}$ pounds). Iron wire of 2 mm. and 3.17 mm. employed. Price about 0.25 kr. (6 $\frac{3}{4}$ cents) per kilogramme (2 $\frac{1}{2}$ pounds).

Only wooden poles are employed. Price, 20 to 70 kr. (\$5.36 to \$18.76) for lengths of 40 to 70 feet.

No wooden arms are used. Iron arms with bolts for 6, 8 or 10 wires. Prices respectively, 3.50, 4.50 and 5.50 kr. (94 cents, \$1.21, \$1.48).

Cement blocks with ducts for 12 cables about 19 kr. (\$5.09); for 20 cables, about 22 kr. (\$5.90). The digging and filling of the trenches and the laying of the blocks, &c., are included in the prices given above. Manholes cost about 500 to 700 kr. (\$134 to \$187.60), according to the dimensions.

These prices will, of course, vary considerably according to the nature of the soil, &c. When, for instance, blasting is required, or frequent obstructions in the form of gas and water pipes are encountered, the prices are correspondingly increased.

APPENDIX No. 1

The first telephone company working in Christiania was the International Bell Telephone Company (concessions granted by the municipality). Within one year of this company's start in Christiania (1880), a local competitive company was formed. This competition resulted in reduction of the rates. In 1885 both systems were purchased by a new local association, 'The Christiania Telephone Company.' In 1901 the system was bought by the government.

For a general description of the central exchange see 'Elektroteknische Zeitschrift,' Heft 13, 1897. For outside work (local) see Bennett's 'Telephone Systems of the continent of Europe,' pages 296-303. The underground plant consists of cement-ducts with paper insulated, lead-covered cables after the 'Hultmann system.'

No. 286.

DENMARK.

TELEGRAPH DIRECTORATE,
COPENHAGEN, DENMARK, August 19, 1905.

Select Committee on Telephone Systems,
c/o Sir WM. MULOCK,
Postmaster General, Ottawa.

SIR,—In reply to your letter of May 1 last, I have the honour to send you herewith inclosed a list containing my answers to your questions concerning telephone service in Denmark.

I am, sir,

Your obedient servant,

N. R. MEYER.

No. 286a.

ANSWERS TO QUESTIONS.

The Danish government owns and operates the long-distance lines. These lines cover 2,410.64 kilometres (1,497½ miles), of which 2,181.65 kilometres (1,355 miles) are pole routes, carrying 6,514.49 kilometres (4,046 miles) of separate circuits.

The rates for long-distance service are charged according to the distances, and are as follows:—

	Kroner. Ore.		
Under 50 kilometres (31 miles)	0	25	(6½ cents)
From 50 to 100 kilometres (31 to 62 miles)	0	35	(9½ cents)
“ 100 “ 150 “ (62 to 93 miles)	0	50	(13½ cents)
“ 150 “ 200 “ (93 to 124 miles)	0	75	(20 cents)
“ 200 “ 300 “ (124 to 186 miles)	1	00	(27 cents)
“ 300 “ 400 “ (186 to 248 miles)	1	50	(40 cents)
Over 400 kilometres (248 miles)	2	00	(54 cents)

Subscribers' lines in Copenhagen are metallic; bronze wire. In the provinces grounded; iron.

2.5, 3, 3.5, 4 and 4.5 mm.

The total cost of the long-distance lines is 4,167,000 Fres. (\$804,231).

The operating expenses cannot be drawn up, as the operation and maintenance is connected with the operation and maintenance of the telegraph lines.

The capital expended belongs to the state. The surplus cannot be stated exactly, but it amounts to about 8 per cent of the spent capital.

The charges and fees are collected directly from the correspondents and users of the lines, if required, by means of postal collection order.

DENMARK.

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Simultaneous telephony and telegraphy is used (relay, shunt or Morse system) on the trunk lines, but chiefly for the announcement of the telephonic conversations.

The local exchanges belong to and are operated by joint-stock companies in possession of concessions.

The population of Denmark is 2,500,000.

The total number of local telephone subscribers is 36,200.

The following are the principal towns and number of subscribers:—

Towns.	Population.	Number of Subscribers.
Copenhagen with suburbs.....	476,806	19,391
Aarhus.....	51,814	2,395
Aalborg.....	31,457	1,650
Odense.....	40,138	1,336
Kolding.....	12,516	983
Randers.....	20,057	913
Horsens.....	22,243	824
Vejle.....	14,592	658

The rates charged are different in the various parts of the country.

In Copenhagen it is for a private (residence) telephone, 90 kr. (\$24.12) a year, and for a business telephone, 129 kr. (\$32.16) a year.

In Aarhus it is 65 kr. (\$17.42) a year.

In Odense it is 125 kr. (\$33.50) a year.

In Aalborg it is 65 kr. (\$17.42) a year.

The subscription covers:—

In Copenhagen: The city with its suburbs.

In Aarhus and Aalborg: The town and its surrounding.

In Odense: The island of Fionie.

The following are a few of the smaller towns and villages with population and number of subscribers:—

—	Population.	Subscribers.
Holbæk.....	4,574	235
Hjørring.....	7,901	285
Haslev.....	2,546	137
Brønderslev.....	2,852	62

The rates in these places are:—

In Holbæk, 40 kr. (\$10.72).

In Hjørring, 50 kr. (\$13.40).

In Haslev, 40 kr. (\$10.72).

In Brønderslev, 50 kr. (\$13.40).

The subscription covers:—

In Holbæk: The town.

In Hjørring: The town.

In Haslev: The town.

In Brønderslev: The town and its surrounding.

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If the distance from the exchange to the subscriber exceeds 2 kilometres (1 mile, 428 yards), an excess fee of 28 kr. a year per kilometre, 3,281 feet, about $\frac{5}{8}$ miles) is collected.

No account can be given of the number of telephones in rural districts.

Long-distance service is given throughout Denmark, Sweden and Norway, also with Germany as far as Frankfurt M.

The subscribers' telephones comprise: The common 'Bell' receiver and granular carbon transmitter and Magneto-Bell with two dry cells for battery.

All long-distance lines are metallic circuit of copper; shorter distance lines are metallic as well, partly of bronze, partly of steel. The sizes of wire used being 2.5, 3, 3.5, 4 and 4.5 mm. (Nos. 11, 10 $\frac{1}{2}$, 9, 8 and 7 S.W.G.).

The proportion of underground and overhead construction is: Underground and cable, 291 kilometres; overhead, 29,980 kilometres.

The total amount expended on the companies' lines is 19,922,038 Frcs. (\$5,339,-106.18).

The revenue per annum is:—

	Frcs.	
Government long-distance service.	544,247	(\$145,858.20)
Companies with concessions, local service..	4,775,390	(\$1,279,804.52)

The wages paid are as follows:—

Managers from 2,400-3,200 kr. to 3,600-4,800 kr. (\$643.20-\$857.60 to \$964.80-\$1,286.40) a year.

Foremen, 1,200 to 1,650 kr. (\$321.60 to \$442.20) a year.

Instrument men, 1,334 to 1,500 kr. (\$357.51 to \$402) a year.

Wiremen, 2.75 to 4 kr. (74 cents to \$1.07) per day.

Telephone operators, 800 to 2,000 kr. (\$214.40 to \$536) a year.

The cost of construction material is as follows:—

Switchboards, 200 lines, 4,900 Frcs. (\$945.70). 30 lines, 1,000 Frcs. (\$193).

Wall telephones, 72 Frcs. (\$13.90). Desk telephones, 105 Frcs. (\$20.27).

Wire, 2.08 Frcs. per kilogram (\$20 per 110 lbs.).

Poles, 7.5 metre (24 $\frac{1}{2}$ feet) top-end 130 mm. diam., 10.65 Frcs. (\$2.05).

Poles 7.5 metre (24 $\frac{1}{2}$ feet), top-end 160 mm. diam., 13.50 Frcs. (\$2.61).

Poles, 8.5 metre (27 $\frac{1}{2}$ feet 10 $\frac{1}{2}$ inches) top-end 130 mm. diam., 14.05 Frcs. (\$2.71).

Poles, 8.5 metre (27 $\frac{1}{2}$ feet 10 $\frac{1}{2}$ in.), top-end 160 mm. diam., 16.80 Frcs., (\$3.10).

Poles, 10 metre (32 $\frac{3}{4}$ feet), top-end 180 mm. diam., 22.75 Frcs., (\$4.40).

Poles, 12 metre (39 $\frac{1}{4}$ feet), top-end 180 mm., diam., 30.30 Frcs., (\$5.85).

Iron arms for 10 wires, 8.30 Frcs. (\$160).

Frames for 8 wires, 7.15 Frcs. (\$1.38).

Telegraph insulators, 0.32 Frcs. (6 $\frac{1}{2}$ cents) and 0.41 Frcs. (8 $\frac{1}{2}$ cents).

Iron hooks for same, 0.37 Frcs. (7 $\frac{1}{2}$ cents).

Telephone insulators, 0.19 Frcs. (3 $\frac{3}{8}$ cents).

Iron bolts for screwing insulators on iron arms and frames, 0.30 Frcs. (6 cents).

There has been no competition at any time.

Up to ten towns are coupled on to the same trunk line with relay on shunt. All shunts on the trunk line have a resistance of 2,000 ohms.

The government does not pay anything for way-leave facilities.

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No. 287.

(Translation.)

GRAND DUCHY OF LUXEMBURG.

POST OFFICE AND TELEGRAPH DEPARTMENT.

LUXEMBURG, June 3, 1905.

Sir WILLIAM MULOCK,
Postmaster General, and Chairman of the Commission on Telephones,
Ottawa, Canada.

SIR,—I have the honour to acknowledge reception of your favour of May 1 last, in which you ask for information regarding the conditions, administrative as well as technical, of the telephonic service in our country.

Since the inauguration of our telephonic system, in 1895, the technical installations have undergone but slight improvements, and remain more or less in the same primitive state, as at the beginning.

As that condition is no longer in accord with the requirements of the present service, my department proposes to subject the entire technical system to a radical reformation. As, however, that question is still under consideration, it is impossible for me at present, to impart to you any useful information on the subject. On the other hand, I believe that your commission can have no interest in being acquainted with the present condition of our obsolete installation.

As to the administrative part of the service, I subjoin hereto a copy of the Grand Ducal decree of March 31, 1905, regulating anew the telephonic service.

This document contains all that is necessary to give you information of a useful kind regarding the conditions of our service.

Kindly accept, sir, the assurance of my highest esteem.

Director of the Post Office and Telegraph Department.

No. 287a.

(Translation.)

GRAND DUCAL DECREE, OF MARCH 21, 1905, ON THE TELEPHONE SERVICE.

LUXEMBURG, 1905.

We, Adolphus, by the grace of God, Grand Duke of Luxemburg, Duke of Nassau, &c., &c., &c., having considered article 6 of the law of February 20, 1884, regarding the telegraph and telephone service, and after giving audience to our council of state, and on the report of our General Director of Finance, and after deliberation with the government in council, have decreed, and do decree, that our decree of February 3, 1894, regarding the telephone service, is repealed, and replaced by the following resolutions:—

I. EXTENSION OF THE SERVICE.

Article 1.

The government is authorized:—

(1) To extend, within the limits of the budget grant, the telephone systems created by the state, as the exigencies of the service, or the interests of the public may require.

(2) To set up main stations, in the offices of the public administrations, or of various public officials, free of charge, if these arrangements are justified by the interests of the general public.

In cases where a public official asks for the setting up of telephonic arrangements in his private residence, which are to be used for private purposes, and also for official matters, the government will allow this to be done, on payment of the subscription amount specified for a supplementary station.

LUXEMBURG.

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II. PRINCIPAL STATIONS.

Article 2.

Every subscriber's station that is connected by a direct wire to a government telephone bureau, or to a public call station, erected by a municipality, is to be considered a principal station.

Article 3.

As a general rule, subscribers' stations are to be connected to the nearest government telephone bureau, unless it should be found preferable, in the interests of the service, to connect with some other bureau. A subscriber has no claim to ask connection with any other than the nearest telephone exchange, although the management may grant such a request, if the subscriber can show that this arrangement is for his urgent interests; and if, from the point of view of the service, no special difficulty stands in the way.

Article 4.

The annual subscription charge for a principal station is fixed as follows: During the first five years, 100 fr. (\$19.30); during the following years, 90 fr. (\$17.37).

If the station is more than 1,500 metres ($\frac{1}{2}$ mile) distant, in a straight line, from the telephone exchange, then the subscriber must pay an additional annual charge of 3 fr. (58 cents) for every 100 metres (110 yards) or fraction thereof, of additional length of line. This is to be calculated according to the road used for construction of their line, without figuring any special expenses.

Those subscribers whose residences are situated in the same section of the municipality as the telephone exchange, do not have to pay this additional charge, however distant they may be from the telephone exchange. But in the case of isolated houses which are more than 1,500 metres ($\frac{1}{2}$ mile) distant, the additional charge must be paid.

III. SUPPLEMENTARY STATIONS.

Article 5.

The subscriber can, for his own personal use, or for the use of any person in his service, be permitted to have set up, in the residence, or adjoining buildings where the principal station is located:—

(a) One or more supplementary stations, which are to be connected with the principal apparatus.

(b) One or more supplementary bells.

(c) A telephone switch-board.

The management may also sanction the setting up of a supplementary station, in some other building than that in which the principal station is located; if the latter is situated in the same ward as that in which the telephone exchange is located. In this case, also, the supplementary station must be connected to the wire of the principal station; and can only be used by the subscriber himself, or some person in his employment.

Article 6.

The annual charge for subscribers is fixed, as follows:—

(a) For a supplementary station, during the first five years, 40 fr. (\$7.72); during the following years, 30 fr. (\$5.79). If the supplementary station is more than 100 metres (110 yards) distant, in a straight line from the telephone exchange, then the subscriber must pay an annual additional charge of 3 fr. (58 cents) for every 100 metres (110 yards) or fraction thereof, of additional length of line. The distance is to be estimated, according to the regulations laid down in Article 4, paragraph 2.

(b) For a supplementary bell, 5 fr. (97 cents).

(c) For a switch-board, 2.50 fr. (48 cents) for each number. All the subscription charges, and additional charges, connected with a supplementary station, are to be paid by the person using the principal station.

IV. GENERAL REGULATIONS.

Article 7.

The post office and telegraph management, undertakes at its own expense:—

(a) To set up telephone lines, for the purpose of connecting subscribers with the telephone exchange and the supplementary stations with the principal apparatus.

(b) To set up, in a place to be designated by the subscriber, the necessary apparatus and materials for communication between the principal apparatus and the supplementary apparatus, and also with the Central Telephone exchange, and by means of the latter, with all the other subscribers of the home country, and with other countries.

(c) To keep in repair the lines and apparatus that have been supplied to the subscriber.

The costs of renewing the electric battery for the transmitter, must be borne by the subscriber, and is to be reckoned at 3 fr. (58 cents) for each battery.

The battery must be renewed as soon as the management may consider it necessary to do so.

Article 8.

The management decides as to the particular kind of apparatus which is to be supplied to the subscriber.

For the setting up of moveable or desk stations, a charge, once for all, of 30 fr. (\$5.79) is required, over and above the yearly subscription charge.

Should the subscriber desire to have his wall station (which is in good condition for service) exchanged for one of the same, but of a newer type, which may have been introduced by the management, then for this exchange, he must pay a charge of 20 fr. (\$3.86).

Article 9.

When a subscription has been concluded, then the management is obliged to set up the station as soon as circumstances will permit; but the management will not assume any obligation, or incur any responsibility, for delay in setting up the station.

Article 10.

The place appointed for the apparatus must be dry and clean. The subscriber is bound, at his own expense, to make any improvements and arrangements for protecting the apparatus that may be considered necessary by the management.

If the subscriber does not furnish a suitable place for setting up the apparatus, then the setting up may be refused, or only carried out with the stipulation that any resulting damage must be paid for by the subscriber.

The stipulation, which also includes any expenses of making good any interruptions that may be occasioned through the defective location of the station, must be stated in the contract of subscription.

Article 11.

The subscriber is forbidden to take the apparatus asunder, or to make any alterations either in the apparatus or in the wires. He is specially forbidden, either temporarily or permanently, to connect or to allow to be connected, any other apparatus or wires with those of the management.

The management may, however, if it should be considered advisable, sanction the connecting of private apparatus to those of the government, under certain stipulations to be fixed for the particular case.

The subscriber is responsible for all the consequences that may arise from the non-observance of the regulations given in this article.

Article 12.

The subscriber is bound to protect from all damage, the apparatus furnished to him, as well as the wires that are led into his residence.

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He is responsible for any damage occasioned to the management through his own fault or the fault of another, and for any repairs necessary on account of such damage; as well as for any damage done by fire or water.

Article 13.

Any derangement in the apparatus or wires, as well as interruptions in the service, are to be reported at once to the manager of the telephone exchange.

No claim for refunding of charges, on account of interruptions in the service, will be considered, unless notice of such interruption is at once given to the central office; and unless the interruption is continuous for 15 days afterwards.

Article 14.

If a subscriber has two or more principal stations situated within the district of one and the same telephone exchange, then he may desire to have the stations connected with one another during the hours when the exchange is shut.

The subscriber may also ask to have his principal or his supplementary stations connected with one another by a special wire. In this case, he will have to pay an annual subscription charge of 3 Frcs. (58 cents) for every 100 metres (110 yards) or fraction thereof, of the special wire.

Article 15.

The annual subscription charge, specified in Articles 4, 6, 14 and 17, is to be paid in advance in two equal instalments, on January 1, and July 1 of each year.

Public administrative bodies, or corporations, which owing to their system of keeping accounts, may desire another mode of payment, may be permitted to pay the subscription charges in advance, quarterly or yearly.

In cases where the management may deem it necessary to safeguard its interests, the subscriber may be required to pay, in advance, the subscription charges, as well as all additional expenses, for the whole term of subscription; or demand that he should furnish a solvent security.

When a telephone station is set up during the course of a half-yearly term, then the charge will be fixed according to the time yet to run.

Article 16.

In cases, where through change of residence, or any other cause, the moving of the apparatus or the line, places the subscriber in another class of subscription, entailing a higher charge, the additional charge is to be reckoned from the day that the station is moved; and it is to be estimated according to paragraph 4, of the preceding Article 15.

Article 17.

The subscription is only for the use of the subscriber, the members of his family who reside with him, and persons who in any capacity are in his service.

The subscriber is prohibited from renting out the station supplied to him, or to transfer the uses of it, in any way whatever. Neither is he permitted to allow another person to transmit individual communications by means of the station. However, subscribers who agree to pay to the management an additional annual charge of 25 Fr. (\$4.83) may allow other persons to use their telephone arrangements..

All communications which are subject to charges, must be paid by the subscriber; who may have the same refunded from the person transmitting them.

Moreover, the subscriber is prohibited from either undertaking to transmit to other persons the instructions sent to them by their correspondents, whether these be subscribers or non-subscribers, or to allow a particular individual to be called to his station, in order to hold telephone communications with him.

V. THE MOVING OF STATIONS.

Article 18.

When a subscriber requires to have his apparatus and lines moved, the expenses resulting from this are to be defrayed by him, and are fixed as follows:—

A. Principal and supplementary stations—

	Frcs.
(a) Moving within the same room	4 (77c.)
(b) Moving within the same premises.	7 (\$1.35)
(c) Moving to other premises, situated within the area of the same telephone system.	18 (\$3.47)
(d) Moving to other premises, situated within the area of another system.	25 (\$4.83)

B. Supplementary bell.

The moving is done, free of charge, if done at the same time when the principal or supplementary station is moved. If otherwise, a charge of 3 Frcs. (58 cents) is made.

The request for removal must be made in writing, to the manager of the telephone exchange, at least 15 days before the same is desired.

The required charge, specified above, must be handed in at the same time, to the manager of the bureau.

VI. CONVERSATIONS.

Article 19.

The subscriber, together with the persons specified in Article 17, can carry on telephone communications during the hours of service at the central station:—

(a) Free of charge, with every other subscriber of the systems erected, or to be erected, in the Grand Duchy of Luxemburg.

(b) By paying the specified charges.

(1) To hold communications with all the public call stations, both government and municipal, of the Grand Duchy.

(2) With non-subscribers.

(3) With every subscriber, and with every public call station, of other countries, that may be connected with the telephone service of the systems of the Grand Duchy.

Further, the above mentioned persons may transmit any communication to the central bureau, which will be forwarded, either by express messenger, by the post, or by telegraph. In this case, over and above the specified charges for forwarding by express messenger, by post, or by telegram, the subscriber must pay a telephone charge of 10 centimes (2 cents) for each communication, or for each telegram.

The same charge is incurred by a subscriber who receives telegrams coming to his address, through the medium of the central office.

Article 20.

The telephone offices, as also the managers of the municipal public call stations, undertake to call to the public call stations, any persons that may be required by subscribers and non-subscribers.

The charges for conversations in public call stations, government or municipal, within the same system, or with another system of the Grand Duchy, is fixed as follows—provided that the persons to be called reside in the locality where the call station is situated:—

	Centimes.
(a) For connection desired by a non-subscriber with a subscriber.	25 (5c.)
(b) For every other connection made.	50 (10c.)

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No charge is required for any communications that a subscriber may have to make regarding the service, to the manager of the telephone exchange to which he is connected.

The charge is fixed for three minutes' conversation, or fraction thereof. If the conversation is carried on longer than three minutes, then 25 centimes (5 cents) is required for each additional period of three minutes, or fraction thereof.

The telephone employees, as also the managers of the government or municipal public call stations, are strictly prohibited from transmitting by telephone private communications, which they may have received from another person.

Article 21.

If the person to be called to a government or municipal public call station, has his residence outside the district where the public call station is situated, then, besides the charge specified above, (under *b*), an additional charge for express messenger is required, according to the following rates:—

	Centimes.
(a) For a distance of 1,500 metres ($\frac{1}{8}$ mile)	50 (10c.)
(b) For a distance of more than 1,500 metres ($\frac{1}{8}$ mile) and up to 3,000 metres ($\frac{1}{4}$ miles)	75 (15c.)
(c) For a distance of more than 3,000 metres ($\frac{1}{4}$ miles) and up to 3,000 metres ($\frac{3}{8}$ miles)	100 (19c.)
(d) For every kilometre ($\frac{5}{8}$ mile), or fraction thereof, more than 5,000 metres ($\frac{3}{8}$ miles)	20 (4c.)

The above charges are doubled after 5 p.m. from November 1 until March 31, and after 8 p.m., from April 1 until October 31.

The distances are reckoned according to the map of distances, that was approved of on March 8, 1889.

Article 22.

All charges are collected from the person who has asked for the connection to be made. If this person is a subscriber then the collection is made by the postman during his usual rounds; or if the person has deposited an advance sum at the central bureau, a monthly deduction is made, from this sum. If the person is a non-subscriber, then the charge is made when the connection is asked for.

If the connection is desired from a public call station with a subscriber's station, then the charge is due, from the moment that the call station is placed at the disposal of the person calling up, after response has been received from the subscriber's station and the connections made ready for conversation.

In this case the charge is incurred, no matter what person responds from the subscriber's station.

If the connection is desired from a public call station, or from a subscriber's station with a public call station, then the charge is due from the moment when the public station called up is placed at the disposal of the person desired, after the necessary connections have been made for conversation.

The time spent in calling up the various stations is not included in the estimation of the charges.

If the person called to the public call station does not come there, then the person calling up, must pay any charges that may be due for messenger service.

Article 23.

Every demand for conversation is free of charge when, on account of failure in the telephone service, the connection asked for cannot be made. If the charge has already been made, then it must be refunded.

A reduction in the charges can only be granted, when proper communication between the connected stations is impossible, owing to some fault in the telephone

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arrangements, on condition, however, that request is made, at once, to the central stations or public call stations concerned, to verify this impossibility.

Any later claim for reduction of charges is not considered.

Article 24.

Every person desiring conversation, must give the number and the name of the subscriber, with whom the connection is required.

Article 25.

The actual duration of a conversation must not exceed three minutes, if other persons are waiting to converse. In this case, after the lapse of the three minutes, the connection is broken off by the bureau, and the person in question can only have a new connection made after the other requests waiting for conversations have been granted.

VII. SUBSCRIPTION CARDS.

Article 26.

Every subscriber who has a principal station, by presenting a written request, will receive, free of charge, a subscription card, for himself, or for a person in his service, designated by him by means of which he may converse, free of charge, in all the government or municipal public call stations, with all the subscribers of all the telephone systems of the Grand Duchy.

At the request of the subscriber, the administration will give to his partners in business, his agents, or employees, who reside in the district of the same telephone exchange, on payment of 12.50 Frs. (\$2.41) in advance, for each card, subscription cards, which may be used for one year, in the manner above stated. All cards are strictly personal. They must not be given or lent to another person, under penalty of being withdrawn. In all cases, the price paid for cards is retained by the management.

The term during which a gratis card is valid, ends with the termination of the period for which the subscription contract was made. If the contract is renewed, the management will give a new gratis card for the new term of subscription. The cancelling of a contract before the period of subscription has terminated, also cancels the subscription card.

Cards lost or destroyed, whether received gratis or paid for, will only be replaced before the term of their duration have expired, by the subscriber paying a charge of 2 Frs. (39 cents).

VIII. GENERAL CONDITIONS OF SUBSCRIPTION.

Article 27.

Every request for subscription must be made in writing to the manager of the nearest telephone exchange, who will make the necessary arrangements, and supply all desired information.

The management reserves the right to make, only after March 1, all connections that may have been requested between November 1 and March 1.

The new subscriber must sign a contract of subscription in which the manner of the telephone arrangements to be made, and the obligations of the subscriber, are accurately specified. The signing of the contract implies the acceptance of all regulations, both legal and official, that relate to the telephone service.

Subscription contracts are concluded for a period of not less than 5 years, if the distance between the subscriber's station and the central bureau, is less than 1,500 metres. In every other case, the duration of the subscription (which must not be less than 7 years) will be fixed by agreement between the subscriber and the management. These terms only begin on the day when the telephone is ready for service.

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The subscriber is bound by the contract, as soon as it has been signed by him; but the management is not bound by the contract, until it has obtained the approval of the general director of the service concerned.

Each contract is written out in duplicate, of which one copy is retained by the subscriber.

IX. THE CANCELLING OF CONTRACTS.

Article 28.

The contracts are renewed by a tacit mutual understanding, unless they are dissolved in advance by one or other of the contracting parties. Notice of withdrawal must be given in writing not later than three months before the termination of the contract.

In no case can the subscription charges be returned, for a half-yearly term which has commenced.

After having given notice of withdrawal within the specified time, if the subscriber should then still desire the use of his apparatus, for some time after the contract has expired, the management may prolong the term of subscription until the end of the half year following the one on which the contract expires; if the subscriber pays, in advance, the charges required for the additional period of time desired.

Article 29.

The management may permit the cancelling of the contract before the term of subscription has expired, in the following specified cases:—

- (a) On the decease of the subscriber.
- (b) On removal to a foreign country.
- (c) On retiring from business, or change of occupation.

If, in any of the above cases, the subscription has continued for at least 5 years, then the cancelling takes place without any cost to the subscriber; otherwise he must pay as compensation forfeit money two-fifths of the subscription charges still due, up to the termination of the five years.

If the telephone arrangements of a subscriber has called for the erection of a special line, for which an additional charge is required, as specified in Articles 4, 6 and 14, then the subscriber, besides the above specified compensation, must pay the whole additional charge due up to the time when the contract agreed upon terminates.

If, in exceptional cases, the management should consider it advisable, approval may be given to cancel the contract, without any cost to the subscriber, if another party declares his readiness to take over the telephone arrangements, under the following conditions:—

- (a) The apparatus must remain in the same room.
- (b) No interruption must take place in the payment of the necessary subscription charges.
- (c) The new subscriber must sign a contract, and is responsible to the management for all the charges that may have been incurred by his predecessor.

In every other case, not specified in the present article, the cancelling of the contract can only take place through the special disposition of the general director of the telephone service concerned.

The contracts that have been concluded, before this present 'decree' comes into force, can be cancelled, without any cost to the subscriber, if the first expenses of erection had to be borne by the subscribers. But in no case, can the first expenses of erection paid by a subscriber be refunded.

The cancelling of a contract of subscription for a principal station implies also the cancelling of every contract relating to supplementary stations that are connected with the principal station.

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X. HANDBOOK FOR THE USE OF SUBSCRIBERS.

Article 30.

* * * * *

Further copies will be supplied to subscribers and non-subscribers at cost price.

The lists of subscribers (directories) must contain only the names of the subscribers, a succinct statement of their profession, or occupation, and their place of residence.

Announcements, recommendations (*i.e.*, advertisements) and the like, are not allowed.

If a subscriber desires to appear in the lists, under different designations, he must pay a yearly charge of 2 Fr. (39 cents) for each additional insertion.

XI. RESPONSIBILITY OF THE GOVERNMENT.

Article 31.

The government does not assume any responsibility regarding communications sent by telephone.

XII. BREACHES OF AGREEMENT.

Article 32.

The management has the right to remove the apparatus and lines which have been placed at the disposal of the subscriber, for the following causes:—

(1) If the subscriber has not paid, before the first day of the coming half-year, the subscription charge that is due, as well as any other charges that may have been incurred by him.

(3) If he has used the telephone for communications that are forbidden by the penal laws, or the general regulations; or if he has contravened any of the special rules laid down by the post office and telegraph department.

(4) If any damage done to the telephone arrangements can be attributed to the wilful act of any of any of the persons specified in Article 17.

Article 33.

Every contravention of the rules laid down in the present regulations, will be punished according to penalties enacted in Article 1 of the Law of March 6, 1818.

XIII. VARIOUS REGULATIONS.

Article 34.

The subscribers who have concluded their contracts, upon the basis of the regulations of our Decree of February 3, 1894, will continue to pay the former subscription charges, but only up to the time when their contract expires.

The present subscribers, who, on the basis of Article 6, paragraph 2 of our Decree of February 3, 1894, have paid once for all, the cost of erecting their connecting line, are released during the term of their present contract, from paying the annual additional charges for the distance traversed by their line, as specified in the two last paragraphs of Article 4, and Article 6*a* of the present Decree.

Article 36.

Our Director General of Finances is charged with carrying out the present Decree.

M. MONEGAST,

The General Director of Finances.

For the Grand Duke, his representative,

WILLIAM,
Hereditary Grand Duke.

LUXEMBURG, March 21, 1905.

LUXEMBURG.

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(The following papers, selected from amongst those sent by the General Postal and Telegraph Department of the Netherlands, have been translated for the information of the Committee, the originals are on file in the Committee room and may be referred to at any time) :—

No. 288.

(Translation.)

GENERAL POSTAL AND TELEGRAPH DEPARTMENT OF THE NETHERLANDS,
THE HAGUE, June 5, 1905.

The DIRECTOR GENERAL,

SIR,—In answer to your letter of May 1 last, addressed to Mr. A. Kruyt, Inspector in Chief of the Netherlands telegraphs, I have the honour to inform you that the local telephonic systems are established and operated either by the municipality (commune), or by companies, or by individuals, on the authority of a royal charter.

The local systems extend:

(a) In the case of privileges accorded to a municipality, to the territory of that municipality, and further to the territories of the neighbouring municipalities, if they come within a circle having a radius of five kilometres (3 miles) measured from a point fixed by the government.

(b) In the cases of other privileges, to the territory lying within a circle with a radius of five kilometres (3 miles), measured from a centre fixed by the government.

In virtue of Article 21 of the law on telegraphs and telephones, copies of which are enclosed, the privileges (concessions) at present in force are to be replaced by new privileges, drafted in conformity with Article 2 of that law, which has not yet been done.

As soon as the provisions of those new privileges shall be decided upon, I will forward you a copy thereof.

As to the tariff for the subscribers to the local systems, I will take the liberty of referring to the synopsis published by the International Bureau of Telegraphic Departments in No. 3, Year 1905, of the *Telegraphic Journal* (*Journal Télégraphique*).

In 28 of the local systems there is an additional price fixed, to be paid once, for the setting up of the circuit, varying from 10 florins (\$4.02) to 50 florins (\$20.10).

The principal kinds of telephonic instruments in use on the local systems are: 'Ericsson,' (Stockholm, Sweden), Antwerp Telephone Manufacturing Company, and Stock & Co.

For lack of data, I cannot answer the questions mentioned under Nos. 2, 5-8 and 20-26 of the interrogatory.

In general, the local lines are double wires, bronze or copper. The offices that use a single connecting wire are not allowed to have inter-local conversations.

The establishments and operation of inter-local telephonic lines constitute a state privilege.

The local wires are made of hard copper of 2.5 and 3 M. in diameter; they are used exclusively for the purposes of telephonic communications.

Herewith is also a telephonic guide for the Netherlands, containing the royal decrees and orders regulating the telephonic service, as well as the occupations and names of the subscribers.

Accept, sir, the assurance of my cordial best wishes.

G. J. C. A. POP,
Postmaster-General.

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No. 288a.

(Translation.)

THE HOLLAND TELEPHONE SERVICE.

INTERNATIONAL CONNECTIONS.

Traffic with Belgium and Germany.

The names of all the stations admitted to international traffic and the charges are given in the lists in pages 32 to 86.

The regulations of service for interlocal traffic (pages 3 to 9 apply) also to the international traffic.

The stations are opened on Sundays and holidays, from 12.30 p.m. till 1.30 p.m. (Greenwich time) in Amsterdam, Arnham, Baarn, Dort, the Hague, Greninger, Haarlam, Hilversurn, Leeuwarden, Nimeguen, Rotterdam and Utrecht.

PUBLIC CALL STATIONS.

Public call stations for interlocal, *i.e.*, local and international traffic are situated:—

(a) In all the government telephone offices, enumerated in Regulations of Service, pages 3 to 9.

(b) In the branch office at Scheveningen during the bathing season.

(c) In the places specified in this directory, before the lists of the names of subscribers belonging to each telephone system.

STOCK EXCHANGES.

Regulations for local and international traffic:—

Amsterdam—

Monday, Wednesday and Friday 9.30 a.m. till 3.10 p.m.

On the other days of the week 12.40 p.m. till 3.10 p.m.

Rotterdam—

Monday 8.40 a.m. till 1.40 p.m.

On the other days of the week 12.10 p.m. till 3.10 p.m.

MANNER OF CALLING FOR AND CARRYING ON TELEPHONE CONVERSATIONS.

I. Interlocal and International Service.

(a) Conversations through the Central Station of a local system:—

The speaker calls up the central station in the manner specified by the management of the system and asks for connection with the 'Government Telephone.' As soon as the government bureau has responded, the conversation is announced according to this form: No. with No. at As soon as called for the name of the speaker, and that of the person to be called up is added to the above. The government telephone operator answers the request for conversation with the words, 'I shall call you up,' whereupon the caller hangs up the telephone on the hook, and waits until he is called up. As soon as the connection is ready, the person waiting is rung up and required to converse.

When the conversation is finished, the ring-off signal is given in the manner specified for the system.

(b) Conversations through direct connection with the government telephone bureau:—

The caller rings up the government telephone bureau, and states his request to the official. The conversation proceeds according to the manner specified above. The ring-off signal is given by quickly turning round the handle of the apparatus at least twice. Subscribers converse with each other, on the understanding that they are to be notified as soon as the three minutes' period of conversation is at an end; but this

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understanding is not correct. The telephone operator is not bound to give notice when the three minutes' time has terminated. The person using the 'phone is therefore, for his own interest, to notice when the three minutes have terminated, and give the ring-off signal as soon as the conversation is finished, to announce that the connection can be broken off. If he neglects to do so, then he can be charged for the whole time, from the commencement of the conversation, up to the moment that the government bureau breaks off the connection.

II. *Traffic with Stations that are directly connected with the Government Telephone Bureau—see pages 23-28.*

(a) *Between the connected stations:—*

The subscriber rings up the government bureau, by turning the handle twice, then he takes down the telephone from the hook, puts it to his ear and states the desired number. As soon as the response 'forwards' is given, as the sign that the connection has been made, he hangs the telephone on the hook again, and rings up again. Thereafter, the conversation can begin. When the conversation is finished, the ring-off signal is given, by turning the handle around twice. If the person called up is engaged in conversation with some other person, the person calling is notified of this, whereupon he hangs up his telephone on the hook; and after a few minutes rings again.

(b) *Conversations from a public call station with subscribers having direct connection.*

The official arranges for the connection, in the same manner as is prescribed above, for the inter-local traffic—see Ib.

REIMBURSEMENTS.

Reimbursement of the whole charges for interlocal conversations or non-entry upon the register of charges takes place:—

(1) When a call is broken off before it reaches the designed station.

(2) On account of imperfect connections, provided the person calling up notifies the government bureau at once of the circumstance, and the complaint should be found to be correct.

The half of the charges will be collected:—

(1) When a call is broken off after it has been given at the desired bureau.

(2) When a desired connection has to be broken off because no answer is obtained, either from the station of the person calling, or from that of the person called up.

(3) In the case of conversations with frequenters of the stock exchange, as soon as the card, by which the person called up is summoned to the phone, is handed to the messenger, at the exchange, appointed to deliver these cards; no matter whether the person called up is in the exchange, or not, or whether he responds to the call, or not. But as soon as the person called up, has announced his readiness to carry on the conversation, the full charge will be collected, even although the person calling up does not wish to go on with the conversation.

Royal Decree, of June 9, 1904. (State papers, No. 117.)

We, Wilhelmina,

By the Grace of God, Queen of the Netherlands,

Princess of Orange-Nassau, etc., etc., etc.

Duly considering article 16 of the telegraph and telephone laws (State papers, 1904, No. 7)—and discerning that new regulations are needed for the telephone service—on the Report of our Minister of Trade and Industry, Van Waterstaat, of April 19, 1904, No. 1346, concerning Post Offices and Telegraph Department—and having heard the Council of State (the advice of May 10, 1904, No. 30)—and taking into consideration the further report of our afore-mentioned minister, of June 4, 1904, No. 1917, on Post Offices and Telegraph Department, have approved and sanctioned:—

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That at the commencement of July 1, 1904—by revoking the Royal Decrees of September 16, 1897 (State papers, No. 200)—of December 28, 1897 (State papers, No. 267)—and of December 24, 1900 (State papers, No. 216)—the following Statutes shall come into force, regarding the telephone service :—

Article 1.

Conversations are to be carried on, in the order of announcement. But this order may be broken in upon, for conversations claiming right of precedence. These are :—

(a) The conversations of ministers or officials authorized to transmit government telegrams.

(b) Conversations on important matters of service, by ministers or officials, authorized to transmit government telegrams, relating to the telegraph or telephone service.

(c) Urgent conversations.

Article 2.

When an interlocal conversation is called for, with a person who is engaged in a local conversation, then this local conversation must be broken off, before the interlocal conversation is called for and carried on.

Article 3.

Persons carrying on interlocal conversations, are allowed 3 minutes to converse with the person called up. Should they desire to prolong the conversation, at the termination of the 3 minutes, then this is granted, during a new period of 3 minutes. At the end of the 6 minutes, the conversation may be continued for various periods of 3 minutes each, if no other person has called for the phone, or if there are not more than 2 connections made between the government telephone stations concerned. Otherwise the charge for 'urgent conversations' must be paid.

Article 4.

If no response is given to a call, inside of two minutes, then the connection is broken off.

Article 5.

District or individual local telephone systems are permitted, on the conditions contained in the concessions granted for the erection and operation of the local telephone systems, and with due regard to the regulations laid down by our Minister of Trade and Industry, Van Waterstaat, regarding the interests of the interlocal telephone systems.

Article 6.

Besides the local telephone systems, specified in article 5, stations belonging to persons, may be directly connected with the interlocal government telephone offices. If a local telephone system exists at the place where the government bureau is situated, with which this connection is desired, then the person concerned must apply to the management of the local system, for the making of the connection between his station and the government bureau in question, and also for the maintaining of this connection.

When there is no local system, then stations belonging to individuals, at the request of the persons concerned, may be connected, by the state management, to some government bureau designated by the Director General of the Post Office and Telegraph Department; after this request is submitted to the decision of our Minister of Trade and Industry, Van Waterstaat. For each station, situated not further than 500 metres from the bureau designated, 25 fr. (\$4.83) per year, must be paid; and for more distant stations, 3 fr. (58 cents) additional, per year, for every extra 100 metres (110 yards) or fraction thereof; to be continued for not less than five successive years, upon the conditions which may be considered necessary for the service,
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by the aforementioned director general. These connections will not be made by the government, if compensation must be given for using the property of another person; or if unusual expenses have to be incurred; unless the person concerned pledges himself to pay the same. Those whose stations, in places where there is no local telephone system, have been connected directly with the government telephone bureau, in the manner described above, may exchange mutual conversations, for 2½ centimes (½ cent) per conversation, to be paid by an advance sum of not less than 1 fr. (19½ cents). In like manner, permission is given, in the public call station of the government bureau, to have local conversations with those connected directly to the said bureau, by paying 10 centimes (2 cents) in advance for each conversation, of three minutes or less. The state will not be responsible for any damage that may arise through the existence of these connections.

Any changing or extending of the arrangements which the government has made for the station of the person connected with the government bureau, may be done by, or for, the person in question; but only with the knowledge and approval of some government official appointed for this purpose, by the aforementioned director general.

Article 7.

The charge for an interlocal conversation of three minutes or less, is 30 centimes (6 cents); and for an urgent interlocal conversation of three minutes or less 1 fr. (19½ cents). These charges are paid before the conversation is held. For any extension of this time, lasting three minutes or less, 30 centimes, and 1 fr., respectively, must be paid. When an interlocal connection is broken off, if no response has been given to the call, the half of the charge is paid back. The subscribers of a local telephone system who wish to carry on regular interlocal conversations from their stations, pay for the costs thereof a certain sum in advance, which is to be fixed by the Director-General of the Post Office and Telegraph Department. Subscribers who have not done this can, nevertheless, carry on interlocal conversations, but must pay for these conversations, 10 centimes for each conversation, over and above the charges specified in paragraph 1 of this article. The charges incurred for the conversations mentioned, are collected on account. Any negligence in paying this account at sight (on presentation) may preclude the subscriber from the privilege of carrying on any further interlocal conversations, except in the public call stations.

Article 8.

In each government telephone or telegraph bureau, by the payment of 10 centimes (2 cents), a telephone 'call-up-message,' may be presented, for the purpose of asking a person, whose station is not connected with the bureau, to endeavour to get into telephonic connection with the sender of the 'call-up-message.'

If this person called up should reside beyond the radius of free delivery from the government telephone bureau, to which the message is sent, then the sender of the 'call-up-message' must also pay for the delivery by messenger, the amount appointed by the government telephone management. The charge for an interlocal conversation is incurred by any person who desires the conversation, no matter whether the call is made by sending a telegraph message or a telephone call-up.

Article 9.

From the sums paid in advance (mentioned in Articles 6 and 7), there are deducted the charges for all the conversations carried on from the stations of the persons who pay these sums; as well as the charges for the 'call-up-messages,' mentioned in Article 8, which have been made from the stations of the persons in question.

The accounts kept by the government telephone bureau are final on this point.

Our Minister of Trade and Industry, Van Waterstaat, is charged with the carrying into effect of these resolutions, which are to be incorporated into the state papers, and a copy of which must be handed to the council of state.

WILHELMINA,

THE LOO, June 9, 1904.

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Further resolutions regarding the interlocal telephone service, enactment by the Director-General of the Post Office and Telegraph Department, of June 23, 1904—No. 11668:—

USE OF THE TELEPHONE.

Article 1.

Under the conditions specified, in the Royal Decrees of June 9, 1904 (State Papers, No. 117), the interlocal telephone service may be used by:—

(a) Any one who comes to a public call station of the interlocal government telephone service, or who is called there, by a telegraph or telephone 'call-up-message.'

(b) Subscribers to local telephone systems, which have central stations connected with a government telephone bureau, if the management of the Post Office and Telegraph Department is satisfied that the owner or owners of the local system has complied with the conditions relating to the interlocal traffic, and the telephone transmission of telegrams, which were laid down when the government concession was granted for the setting up and operation of the local system.

(c) Persons whose stations are directly connected with an interlocal government telephone bureau.

The persons mentioned under letters (b) and (c) are permitted to send and receive telegrams by means of the telephone.

ADVANCE SUMS PAID IN.

Article 2.

The subscribers mentioned under letter (b) and the persons mentioned under letter (c) of the above Article 1, may come to the director of the government telegraph office at any place where an interlocal government telephone is located, and sign a call-ticket, and pay in to the director a sum of not less than 5 fr. (97 cents).

This advance payment serves to defray the expenses of:—

(a) Using interlocal telephone lines.

(b) Telephone 'call-up messages.'

(c) Telegrams sent by telephone, and for writing down the same, and also for the persons mentioned in Article 1 (c); and, if necessary, for local telephone conversations.

Persons who have paid in an advance sum, as specified above, and who wish to keep up the same, have to see to it that it is renewed, when it is depleted by charges for conversations, telegrams and telephone 'call-up-messages,' &c., to the minimum limit of 1 fr.

The persons mentioned in (Article 1, c) who wish to carry on exclusively local conversations, need only pay an advance sum of 1 fr., and renew the same when it has been depleted to the minimum limit of 25 centimes (5 cents).

CONVERSATIONS.

Article 3.

Conversations are reckoned to begin at the moment when response is received from the station called up, no matter whether the person called up is present or not. When request is made, at a government telephone bureau, to carry on a conversation, at a later point of time, than when the request is made, then this will be granted, under the condition that the conversation is made according to the successive order of requests for conversation that have been made by other persons.

No promise can be given regarding the time when a conversation can be made.

PUBLIC CALL STATIONS.

Article 4.

Two persons may be allowed in the public call stations at the same time. One of them may leave the station during the conversation and come back again. But if both

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persons leave the call station, or when there is only one person present, then the conversation is considered as finished, and the station is assigned to the next person waiting.

DURATION OF CONVERSATIONS.

Article 5.

No limit is assigned to conversations by state officials who have the right to send off government telegrams, or telegrams relating to the telephone or telegraph service.

Article 6.

Each conversation requested from the station belonging to the subscriber to a local telephone system, or requested by a person whose station is directly connected with an interlocal government telephone bureau, is considered to have been requested by the subscriber or the person in question.

Article 7.

Those who pay in these advance sums have always the right to ask back the same; which they can receive, after deduction of the amount owed by them to the state.

Article 8.

When a local telephone system is set up in any of the places referred to in Article 6, paragraph 4, of the Royal Decree of June 9, 1904, and when this system is connected with the government telephone bureau of the same place, then those persons whose stations are directly connected with the government bureau will no longer be permitted to carry on local conversations through the government bureau.

These persons, however, are permitted to send from their stations that are connected with the government bureau telegrams and 'call-up-messages,' and to carry on interlocal conversations.

The conditions upon which the stations of persons (in places where there is no telephone system) may be directly connected to the government interlocal telephone bureau:—

Ratified by virtue of Article 6 of the Royal Decree of June 9, 1904 (State Papers, No. 117)—by order of the Director General of the Post Office and Telegraph Department, of August 18, 1904—No. 15638.

GENERAL REMARKS.

Article 1.

The request for connection is to be written and sealed, and presented to the Minister of Trade and Industry, Van Waterstaat; and must contain the name, occupation and address of the person in question, together with the description of place where station is to be set up, as well as the date when the connection is desired.

Article 2.

When the request is granted, the person concerned sends two copies, signed by him, of the form, printed at the end of these articles, to the Director General of the Post Office and Telegraph Department; and he receives one of the copies back, with the signature of the Director General.

Article 3.

The connection is made by uniting the wire and the 'phone which the Director General of the Post Office and Telegraph Department considers necessary for the telephone service. The management of the Post Office and Telegraph Department agrees, on the request of the person concerned, to make any necessary alterations in the connection, and to connect supplementary 'phones, on payment of the necessary costs, specified in the form mentioned above.

Article 4.

The subscriber must allow all the arrangements to be made in his station and connections which may be considered necessary by the Director General of the Post Office and Telegraph Department. If the property does not belong to the subscriber, then he must make the necessary arrangements with the owner; and must furnish a guarantee to the state against all claims which might be made by the owner on any work that has been done in making the connection.

ALTERATIONS, ETC.

Article 5.

The state will arrange for prompt removal, when required on account of any building operations or alterations in the residence of the subscriber; or if the subscriber should have to change his residence; when request is made for the same, the subscriber to pay the necessary expenses.

CHANGE OF RESIDENCE.

Article 6.

The Director General of the Post Office and Telegraph Department will see that, in the event of change of residence, the 'phone and connections will be transferred, if notice is given at least 30 days in advance.

TRANSFER OF STATIONS.

Article 7.

The subscriber is permitted, with approval of the Director General of the Post Office and Telegraph Department, to transfer his station to another person.

DURATION OF AGREEMENT.

Article 8.

The agreement is to last for five successive years, counting from the day when the connection was made. But this term will always be prolonged one year more, if written notice is not given to the Minister of Trade and Industry, Van Waterstaat, at least six months before the termination of the last year of the term.

TARIFF (CHARGES).

Article 9.

The charges begin to be incurred as soon as the station is set up, and are collected every half year, on January 1 and July 1, along with any charges that there may be for supplementary work done. The receipt must be received from the director of the head office of the government telephone bureau, to which the station is connected. If the connection is made during the course of a half-yearly term, or if the agreement should terminate during the course of a half-yearly term, then only the full months will be considered during which the station has been in use.

Article 10.

If, on account of change of residence, any modification should be made in the term of payment, then this modification will come into force on the first day of the month following that on which the connection was transferred to the new residence and placed at the disposal of the subscriber.

UP-KEEP AND USE OF THE TELEPHONE.

Article 11.

The connection is kept in repair by the government. Any repairs on the wire, or on the apparatus, which are not necessitated by faulty construction, when making the connection, or insufficient up-keep, must be paid for by the subscriber.

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Article 12.

A proportionate compensation will be paid for any interruptions that may take place in the service, when these should continue for a longer period than thirty days, if according to the judgment of the Director-General of the Post Office and Telegraph Department, such interruptions are not owing to the fault of the subscriber. The state, however, is not responsible for any possible damage (loss, injury, &c.) which may result from interruptions.

Article 13.

The subscriber has to be careful that the station, connections, &c., situated within his premises, are not damaged in any way.

Article 14.

It is not permitted (except by the knowledge and sanction of the official appointed for this purpose by the Director-General of the Post Office and Telegraph Department) to connect any other 'phone to the wires, or to use the 'phone for any other purpose than what was specified in the form of application.

Article 15.

The subscriber must see to it, that no rude or insulting expressions are used towards the telephone employees, or in conversations with others, or in remarks made about the telephone service, in any conversations.

Article 16.

If the subscriber fails to pay his account at the specified time, the director-general is authorized to exclude him from the telephone service, while still holding him liable to the terms of his agreement.

Article 17.

The station and connections can be removed, in consequence of neglect or wilful damage done, or in consequence of deliberate defiance of any of the foregoing regulations, without giving any legal or other right to the subscriber to claim any compensation, and without taking into consideration the amount of charges already paid.

ACCESS TO THE STATION.

Article 18.

For the sake of inspection, repairing, replacing, or removing of station or connections, and for seeing that these regulations are observed, the subscriber must give permission to the persons appointed to attend to the government telephone service, to have access, between the hours of 8 a.m. and sunset, to the places where the station is set up, and where the wires are led in.

FORM OF APPLICATION.

The undersigned, desiring a direct connection to be made by the government, between his premises.....(1) and the government telephone bureau, pledges himself to the government to observe all the regulations that have been given, or may be given, regarding this undertaking; and, further, that when he shall ask for any extensions or alterations to be made by the state, in his telephone arrangements, he will pay for the same, according to the rates specified in the accompanying list, which are therefore to be considered as being included in this agreement.

(2) the of 19 .
(3)

(1) Location of premises, with, as far as possible, description of the section and number given by government survey. (2) Residence of person. (3) Signature of person.

Materials, &c.	Costs.	Terms of payment.
1 For the second and following apparatus—		
<i>a</i> In the same room, as principal telephone, per telephone	10 fr. (\$1.93) per year..	January 1 and July 1
<i>b</i> In another room, but on the same premises ..	15 fr. (\$2.90) " ..	" 1 " 1
2 Table station (desk station)	2.50 fr. (48c.) " ..	" 1 " 1
3 Extra bell (sounder).....	1.50 fr. (29c.) " ..	" 1 " 1
4 Switch.....	1 fr. (19½c.) " ..	" 1 " 1
5 Second telephone.....	1 fr. (19½c.) " ..	" 1 " 1
6 Shifting an apparatus—		
<i>a</i> On the same premises, into another room.....	5 fr. (97c.) once for all.	On 1st day of following calendar half-year.
<i>b</i> Within the same room	2.50 fr. (48c.) " ..	" "
7 Shifting an extra bell—		
<i>a</i> On the same premises, into another room.....	2.50 fr. (48c.) " ..	" "
<i>b</i> Within the same room	1.50 fr. (29c.) " ..	" "
8 Expenses of work done, in the event of change of residence, or in consequence of building, &c., alterations being done on premises.....	The actual cost once for all.....	" "

Royal Decree, of August 1, 1904 (State Papers, No. 202)—to supplement the Royal Decree of June 9, 1904 (State Papers, No. 117)—containing regulations whereby, through co-operation of the municipalities, connection can be effected with government telephone offices, on behalf of the Interlocal Telephone Service.

WE WILHELMINA, by the Grace of God, Queen of the Netherlands, Princess of Orange Nassau, &c., &c., &c.; giving attention to Article 16 of the Telegraph and Telephone Laws (State Papers, 1904, No. 7)—and considering it desirable, as supplementary to the Royal Decree of June 9, 1904 (State Papers, No. 117), containing regulations regarding the telephone service—to lay down these regulations, whereby, through co-operation of the municipalities, connection can be effected with government telephone offices, on behalf of the Interlocal Telephone Service—at the report of Our Minister of Trade and Industry, Van Waterstaat, on post offices and telegraphy, and having heard the Council of State (advice of July 19, 1904, No. 13)—and having given attention to the further report of our aforementioned minister, of July 26, 1904, No. 2512, on the Post Office and Telegraph Department;

Have approved and consented to ratify the following:—

Article 1.

In the government telephone bureaux, to be designated by our Minister of Trade and Industry, Van Waterstaat, at the request of the municipal authorities, opportunity will be given to the general public to carry on interlocal conversations. In so doing, the regulations must be observed which are given in the following articles.

Article 2.

The municipality places at the disposal of our Minister of Trade and Industry, Van Waterstaat, and maintains to his satisfaction:—

(1) A place, sufficiently large, and adequately furnished, lighted and heated, in the government telephone bureau, for the setting up of the arrangements necessary for the interlocal telephone service.

This place may be the same as that in which the government telephone service is carried on.

(2) An open public call station, in which the general public can carry on conversations. The municipality also makes arrangements for the erection of a suitable arrangement, on or near the government telephone offices, for the fastening of the wires of the stations that are to be connected with the government telephone bureau.

APPENDIX No. 1

Article 3.

The government furnishes supplies of forms for accounts, receipts, &c., necessary for the telephone service, and all printed forms required for sending and receiving messages, &c.

Article 4.

The municipality must, to the satisfaction of our Minister of Trade and Industry, Van Waterstaat, bear the costs of looking after and keeping in order the arrangements that have been made for the interlocal telephone service. The official in charge of the government bureau, or his representative, may be charged with this duty.

Article 5.

The arrangements, referred to in Article 1, for the carrying on of interlocal conversations, as soon as they are set in operation, cannot be abrogated without the approval of our aforementioned minister. So long as this approval is not obtained, the municipality is bound to comply with the regulations given in these articles.

Our aforementioned minister is charged with the carrying out of these Decrees, which are to be placed in the State Papers; and a copy of which shall be sent to the Council of State.

WILHELMINA.

THE LOO, August 1, 1904.

REGULATIONS RELATING TO THE INTERNATIONAL TELEPHONE SERVICE.

CONNECTIONS.

(1) The International telephone connections exist between the places in Holland, Belgium and Germany mentioned in this directory, in pages 32 to 86.

REGULATIONS REGARDING USE.

(2) The international telephone service can be used:—

- (a) In stations connected by double wires to the local central station of the telephone system concerned.
- (b) In public call stations set up in the various municipalities.
- (c) By persons whose stations are directly connected by double wires to the interlocal government telephone bureau, which is also open to the international telephone service.

CHARGES.

(3) The following tables (directory, pages 32 to 86) give a list of the Holland government telephone bureau, and also the foreign places with which there are connections; with the rates specified for each conversation of 3 minutes or less.

When the charges are not given, in any of the vertical columns, then the Holland government telephone bureau, mentioned at the side, has not yet been connected to the foreign place mentioned at the top of the column.

In the places marked with a x, the local telephone system has not yet been admitted to international traffic; but there are connections from the public call station of the government telephone bureau, and from the stations directly connected with the bureau.

In the traffic with Germany, urgent conversations are granted by paying three times the amount of charges specified on the lists.

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FURTHER INSTRUCTIONS.

(Directory, page 87.)

LISTS OF THE NAMES OF SUBSCRIBERS.

(4) Foreign telephone directories, for public use and reference, are to be found in some stations, and in the stock exchanges at Amsterdam, Rotterdam and Utrecht.

In the stations where these directories are not to be found, the necessary information can be obtained.

REQUESTS FOR INTERNATIONAL CONVERSATIONS.

(5) In requesting an interlocal conversation from a public call station, the person desiring to do so fills up a form (Telephone form No. 3), and pays the charges desired.

The same regulations contained in Article 4, 'Further Resolutions regarding the Interlocal Telephone Service,' apply also to the international service.

(6) The regulations given regarding the asking for and the carrying on of interlocal conversations, and the manner of paying for the same, apply also to the international traffic.

CONVERSATIONS TO AND FROM FOREIGN PLACES.

(7) The subscriber who desires to carry on an international conversation, has to give the name of the place desired and the telephone number of the person to be called up.

If the number is not known by the subscriber, then the official at the telephone bureau, at his request, will look it up in the directory and tell him, requesting him at the same time, to note it down, so that he may be able to give it when again requesting conversation.

This manner of procedure is necessary for the systematic ordering of the service; but is of most benefit to the person concerned, because thereby waste of time will be avoided by repeated hunting after numbers, and the latter asking to look up the same number will also be avoided.

CONVERSATIONS WITH THE STOCK EXCHANGES.

(8) At the request for an international conversation with a frequenter of the stock exchange the government telephone bureau will at once have a messenger sent, appointed for this purpose, to the stock exchange, with a ticket (Telephone form No. 3), to be handed over to the person who has been called up. If the person called desires to hold the conversation wished for, then he will be admitted, in his turn, to the call-station, without having to fill up the usual form (Telephone form No. 3).

On Wednesdays, when request for conversations is made with persons in the exchange at Brussels, it must be particularly stated whether the person to be called up is to be found in the stock exchange, at the Place de la Bourse; or in the Business Exchange at the Rue de la Duquesnoy.

ORDER IN WHICH CONVERSATIONS WILL BE GRANTED.

(9) Connections will be given in the following order:—

- (a) Conversations of ministers and officials, authorized to send off government telegrams.
- (b) Conversation on urgent matters of business or telephone service.
- (c) Urgent conversations—only allowed in traffic with Germany.
- (d) Ordinary conversations and conversations on non-important matters.

The ordinary conversations are granted, according to the order of time, when requests are made for the same.

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BEGINNING OF THE CONVERSATION.

(10) The conversation is reckoned to begin:—

- (a) For conversations between subscribers or persons whose stations are directly connected with a government bureau—as soon as response is received from the station called up.
- (b) For conversations from a public call station—from the moment that the station is placed at the disposal of the person desiring to carry on conversation, consideration being given to the directions mentioned under letter *a*.
- (c) For conversations with a person in a public call station, or between two persons, both in public call stations—from the moment that the connection has been made, and the station placed at the disposal of the person called up.

DURATION OF THE CONVERSATION.

(11) The specified charge for the complete conversation, from start to finish, is estimated for a limited period of three minutes.

As soon as a conversation has lasted six minutes, the connection is broken by the bureau concerned, after notifying the speaker, if this can possibly be done.

If the connection is made from a public call station, then the conversation must end after the lapse of three minutes, unless the person agrees to pay an additional charge.

The payment of these charges may be required at once.

The duration of government conversations is unlimited.

PAYMENTS.

(12) The charges for each international conversation (taking into consideration the regulation given in Article 9 of the Royal Decree of June 9, 1904 (State Papers, No. 117), is incurred by the person from whose station the conversation is requested; and that, as soon as the desired conversation is considered to have begun, according to section 10 of the present regulations.

(13) No charges are incurred, and charges paid will be refunded if:—

- (a) If when a connection is asked for and made, no proper connection can be procured with the person called up, on account of some defect in the telephone service.
- (b) If the defective working of the telephone wires makes a conversation impossible.

In this case the government telephone bureau concerned is bound to have this statement corroborated by telephone.

When the charges are refunded, then the declaration, printed on the back of 'Telephone form No. 3,' must be filled up and signed by the person who receives the reimbursement.

HOUR OF CLOSING.

(14) The telephone bureaux are not allowed to finish the service until all the conversations have been exchanged that have been requested before the hour for closing up.

SUBSCRIPTIONS.

(15) During the night, subscribers' conversations that have been arranged for beforehand may be carried on, at certain times.

The minimum duration of any such conversation is 6 minutes. The subscription, which must be paid in advance, can begin any day, and is agreed upon for one month, to be reckoned from the 1st or the 16th.

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When the subscription is desired any time between these dates, then for each day, one 30th of the monthly charge is added to the amount to be paid on the month following.

The subscription is tacitly prolonged from month to month; but always by advance payments; but can be mutually given up, if written notice is given not less than 8 days before the termination of the period of subscription running on at the time in question.

The charges for monthly subscription, for traffic with Belgium are:—

(1) For frontier traffic between places not more than 40 km. (25 miles) from each other:—

18 fr.	(\$3.48)	for a daily use of phone, lasting 6 minutes.
27 fr.	(\$5.21)	“ “ “ 9 “
36 fr.	(\$6.95)	“ “ “ 12 “

(2) For each distance of more than 40 km. (25 miles):—

43.50 fr.	(\$8.40)	for a daily use of 'phone, lasting 6 minutes.
65.25 fr.	(\$12.60)	“ “ “ 9 “
87 fr.	(\$16.79)	“ “ “ 12 “

The account for subscription charges is sent in by the director of the government telegraph bureau concerned on the day before the beginning of each month, during which the subscription runs.

The charges for receipt stamps must be paid by subscriber.

If, in consequence of interruptions in the service, the connections cannot be made for the subscribers at the specified times; then the opportunity will be given, as far as possible, for them to carry on the desired conversations during the night following.

If this cannot be done, then the subscriber will receive back, if he so desires, one 30th of his subscription charges, for that month.

(16) In requesting the abovementioned subscriptions, which, in the meantime are only granted for the service with Belgium, application must be made, in writing, to the director of the government telegraph office of the place in question.

No. 288b.

(Translation.)

HOLLAND—*Continued.*

EXTRACT FROM JOURNAL TELEGRAPHIQUE, No. 3, 1905.

(Referred to in the letter of the Dutch Postmaster General on page 1597.)

The establishment and operation of the interlocal and the international telephone lines, are a state privilege.

The local telephone wires are set up and operated either by the particular districts, or by companies, or by private individuals, on the authority of a royal grant.

The local wires extend:—

- (a) For the grants given to a district, to the territory of this district, and, besides, to the territory of the adjacent districts, in so far as they are situated within a circle covering a radius of 5 km. (3 miles) drawn from a centre fixed by the government.
- (b) For the other grants, to the territory situated within a circle covering a radius of 5 km. (3 miles) drawn from a centre fixed by the government.

According to the stipulations of the grant, the rates of subscription, and all the other charges, are submitted to the royal sanction.

The charges for interlocal communications, collected for the benefit of the state, are fixed as follows:—

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For 3 minutes conversation, or less, between 11.40 a.m. and 3.40 p.m. (Greenwich time) 1 fr. (20 cents.)

During other hours, 50 centimes (10 cents.)

For urgent calls double these rates is collected.

The charges for international communications are, for 3 minutes conversation, or less:—

(1) For Belgium:—

- (a) Within the connections of the neighbouring zone, up to a distance of 40 km. (25 miles), in a straight line, 1.25 fr. (25 cents).
- (b) For every distance over 40 km. (25 miles) 3 fr. (60 cents). Urgent calls are not granted.

(2) For Germany:—

- (a) Within the connections of the neighbouring zone, up to a distance of 40 km. (25 miles), in a straight line, 1.25 fr. (25 cents).
- (b) Within the connections of the four zones, into which Germany has been divided:—

In the first zone.	2.50 fr. (50 cents)
" second zone.	3 fr. (60 cents)
" third zone.	3.50 fr. (70 cents)
" fourth zone.	4 fr. (80 cents)

For urgent calls, three times the amount of these rates is collected.

In the connections with Belgium, there exists a rule of subscription granting, at fixed hours, at least one conversation per day, of double the usual time.

Subscriptions must be made for, at least, one month. The charges per month are as follows:—

(1) Within the connections of the neighbouring zone, up to a distance of 40 km. (25 miles), in a straight line, 37.50 fr. (\$7.50) for daily use of 6 minutes; and 56.25 fr. (\$11.25) for daily use of 9 minutes.

(2) For every distance above 40 km. (25 miles), 90 fr. (\$18) for daily use of 6 minutes, and 135 fr. (\$27) for daily use of 9 minutes.

TARIFF FOR SUBSCRIBERS TO THE LOCAL SYSTEMS.

System.	Owner.	Yearly Subscriptions.	PUBLIC STATIONS.	
			Minutes.	Charges.
Alfen	The Riga & Gourve Telephone Co.	70 fr. (\$14), increased 70 centimes (14c.) for every 100 metres (110 yds.) of line up to 2.60 fr. (52c.) according to number of stations on same line.	5 Station at Oudhorn. 5 Station at depot.	35 cent. (7c.) 20 " (4c.)
Alkmar.	J. Pot	120 fr. (\$24) for a station in the district. Outwards, the charge is increased 6 fr. (\$1.20) for every 100 metres (110 yds.) between the station and limits of the district.	—	—
Almelo.	The Bell Netherlands Telephone Co.	80 fr. (\$16), increased by 20 fr. (\$4) for subscribers desiring to have the right of interlocal conversations.	3	20 cent. (4c.)
Amesfoort	" "	See Almelo.		

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TARIFF FOR LOCAL SYSTEMS.—*Continued.*

System.	Owner.	Yearly Subscriptions.	PUBLIC STATIONS.	
			Minutes.	Charges.
Amsterdam	The municipality..	180 fr. (\$36)	5	50 " (10c.)
Apeldoorn.....	" "	80 fr. (\$16) for a station within a radius of 2½ km. (1½ mile) in a direct line from the central office. Outwards, the charge is increased by 6 fr. (\$1.20) for each additional 100 metres (110 yds.).	3	20 " (4c.)
Arnhem.....	" "	90 fr. (\$18) for a station within the district; 200 fr. (\$40) for a station outside the district.	5	20 " (4c.)
Assen.....	" "	90 fr. (\$18) for a station within a radius of 3 km. (1¾ miles) in a direct line from the central office. Outwards, the charge is increased by 5 fr. (\$1) for each additional 100 metres (110 yds.). The maximum of increase is 100 fr. (\$20).	5	30 " (6c.)
Baarn.....	The Bell Netherlands Telephone Co.	80 fr. (\$16) for a station within the district of Baarn; and within a radius of 1½ km. (¾ mile) in a direct line from the central office. For a station in the district of Baarn, outside this radius, the charge is increased by 2 fr. (40c.) for each 100 metres (110 yds.) over and above this radius. For a station outside the district of Baarn, the charge for the section of line within the district of Baarn is increased by 6 fr. (\$1.20) for each additional 100 metres (110 yds.). Besides this, a charge of 20 fr. (\$4) is added when the subscriber desires to have the right of interlocal conversations.	3	20 " (4c.)
Bois-le-Duc.	General Telephone Co. (the so-called Ribbink, Van Bork & Co.)	70 fr. (\$14) for a station inside the city limits. A maximum of 150 fr. (\$30) for a station outside the city limits.	3	20 " (4c.)
Breda.....	" "	70 fr. (\$14) for a station within the district; 150 fr. (\$30) for a station outside the district.	3	20 " (4c.)
Bussum.....	The Bell Netherlands Telephone Co.	<i>See Almelo.</i>		
Delft.....	General Telephone Co. (the so-called Ribbink, Van Bork & Co.)	70 fr. (\$14) for a station within the district. A maximum of 150 fr. (\$30) for a station outside the district. A charge of 20 fr. (\$4) over and above is made when the subscriber wishes to have the right of asking for interlocal conversations.	3	20 " (4c.)
Deventer.....	" "	90 fr. (\$18) for a station within the district; 150 fr. (\$30) for a station outside the district; 70 fr. (\$14) for a station within the district, connected before the introduction of the above rate of charges. This is increased by 20 fr. (\$4) when the subscriber desires to have the right of asking for interlocal conversations.	3	20 " (4c.)

APPENDIX No. 1

TARIFF FOR LOCAL SYSTEMS—*Continued.*

System.	Owner.	Yearly Subscriptions.	PUBLIC STATIONS.	
			Minutes.	Charges.
Doesburg.....	The municipality..	90 fr. (\$18) for a station within the district. Besides this, the charges are increased by 6 fr. (\$1.20) for each 100 metres (110 yds.) between the stations and the limits of the district.	3	0 cent. (4c.)
Dordrecht.....	The Bell Netherlands Telephone Co.	See Almelo.		
Edam.....	The municipality..	80 fr. (\$16) for a station within the district, and inside a radius of 2 km. (1¼ miles) in a direct line from the central office; 100 fr. (\$20) for a station within the district outside this radius; 100 fr. (\$20) for a station outside the district, with an increase of 6 fr. (\$1.20) for each 100 metres (110 yds.) between the station and the limits of the district.	3	0 " (4c.)
Eindhoven.....	The municipality..	70 fr. (\$14) for a station within a radius of 1½ km. (¾ mile) in a direct line from the central office. Besides this, the rate is increased by 6 fr. (\$1.20) for each additional 100 metres (110 yds.)	5	20 " (4c.)
Enschede.....	" "	70 fr. (\$14) for a station within the district; 100 fr. (\$20) for a station outside the district, and within a radius of 3 km. (1⅞ miles) in direct line from the central office. Besides this, the rate is increased by 20 fr. (\$4) for each additional ½ km. (⅜ mile.)	3	10 " (2c.)
Flushing.....	General Telephone Co. (the so-called Ribbink, Van Bork & Co.)	See Deventer.		
Gouda.....	The Gouda Telephone Co.	80 fr. (\$16) for a station within a radius of 1 km. (⅔ mile) in a direct line from the central office. Besides this, the rate is increased by 1 fr. (20c.) for each additional 100 metres (110 yds.)	3	20 " (4c.)
The Hague.....	The municipality..	130 fr. (\$26) for a station within the district. (130 fr. (\$26) for a station within any part of the districts of Voorburg and Ryswyk. Besides this, the charge is increased by 10 fr. (\$2) for each additional 100 metres (110 yds.) The minimum is 160 fr. (\$32).	5	20 " (4c.)
Groningue.....	The Bell Netherlands Telephone Co.	See Almelo.....		
Haarlem.....	" "	" "		
Helder.....	J. Pot.....	120 fr. (\$24) for a station within the city limits. Besides this, the rate is increased by 6 fr. (\$1.20) for each additional 100 metres (110 yds.)		

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TARIFF FOR LOCAL SYSTEMS—*Continued.*

System.	Owner.	Yearly Subscriptions.	PUBLIC STATIONS.	
			Minutes.	Charges.
Helmond.....	The municipality..	70 fr. (\$14) for a station within the district. Besides this, the charge is increased by 6 fr. (\$1.20) for each 100 metres (110 yds.) between the station and the limits of the district.	5	20 " (4c.)
Hengelo.....	The Bell Netherlands Telephone Co.	80 fr. (\$16) for a station within a radius of $1\frac{1}{4}$ km. ($\frac{3}{4}$ mile) in a direct line from the centre. Besides this, the charge is increased by 2 fr. (40c.) for each additional 100 metres, (110 yds.). Moreover 120 fr. (\$4) is charged additional, when the subscriber wishes to have the right of asking for interlocal conversations.	3	20 " (4c.)
Hilversum	" "	80 fr. (\$16) for a station within a radius of 2 km, ($1\frac{1}{4}$ miles) in a direct line from the centre. Besides this, the charge is increased by 2 fr. (40c.) for each additional 100 metres (110 yds.). Moreover, 20 fr. (\$4) is charged additional, when the subscriber wishes to have the right of asking for inter local conversations.	3	20 " (4c.)
Hoogezand.. ..	" "	See Hengelo.....		
Hoorn.....	" "	" "		
Leeuwarden	The General Telephone Co. (the so-called Ribbink Van Bork & Co.)	See Deventer.....		
Leiden	" "	See Breda.....		
Maasluis.....	The Bell Netherlands Telephone Co.	See Almelo.....		
Maastricht	The municipality.	90 fr. (\$18) for a station within the district. Besides this, the charge is increased by 3 fr. (60c.) for each 100 metres (110 yds.) between the station and the limits of the district	3	20 " (4c.)
Meppel	The municipality..	70 fr. (\$14) for a station within the district, and within a radius of 3 km. ($1\frac{1}{4}$ mile) in a direct line from the centre; 100 fr. (\$20) for a station within the district, outside this radius. For a station outside the district 100 fr. (\$20) with an increase of 6 fr. (\$1.20) for each 100 metres (110 yds.) between the station and the limits of the district.	3	20 " (4c.)
Middelbourg.....	The General Telephone Co. (the so-called Ribbink Van Bork & Co.)	See Deventer.....	—	—
Nimegue	J. W. Kayser.....	70 fr. (\$14) increased by 20 fr. (\$4) when the subscriber wishes to have the right of asking for interlocal conversations.		

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APPENDIX No. 1

TARIFF FOR LOCAL SYSTEMS—*Continued.*

System.	Owner.	Yearly Subscription.	PUBLIC STATION.	
			Minutes.	Charge.
Oldenzaal.....	The municipality..	70 fr. (\$14) for a station within the district. Besides this, the charge is increased, according to the choice of the subscriber, by 3 fr. (60c.) for each 100 metres (110 yds.) between the station and the limits of the district, or there is collected once for all, a charge of 16 fr. (\$3.20) for each 100 metres (110 yds.) between the station and the limits of the district	5	20 " (4c.)
Oss.....	A. Jurgens.....	150 fr. (\$30) for a station within the district	3	20 " (4c.)
Purmerend.....	The municipality..	70 fr. (\$14) for a station within the district, and inside a radius of 1 km. ($\frac{5}{8}$ mile) in a direct line from the centre. 90 fr. (\$18) for a station within the district, outside this radius. 70 fr. (\$14) for a station outside the district and within a radius of 1 km. ($\frac{5}{8}$ mile) in a direct line from the centre. For a station outside the district, and outside this radius, the charge is increased by 6 fr. (\$1.20) for each additional 100 metres (110 yds.)	5	20 " (4c.)
Rhenen.....	"	90 fr. (\$18) for a station within a radius of 250 metres, (275 yds.) in a direct line from l'Hotel-de-Ville (City Hall). For a station outside this radius, the charge is increased from 1.20 fr. (25c.) to 4 fr. (80c.) for each 100 metres (110 yds.) between the station and the central office	3	20 " (4c.)
Roosendaal.....	"	90 fr. (\$18)	3	30 " (6c.)
Rotterdam.....	"	132 fr. (\$26.50) for telephones in private residences. 180 fr. (\$36) for business telephones	5	20 " (4c.)
Rurmonde.....	The Bell Netherlands Telephone Co.....	See Almelo.		
Schiedam.....	"	See Almelo.		
Sliedrecht.....	The municipality..	100 fr. (\$20) for the central part of the district. Besides this, the rate is increased by 6 fr. (\$1.20) for each additional 100 metres (110 yds.)	3	20 " (4c.)
Tiel.....	Firm of Gauverit & Kanter.....	80 fr. (\$16) for a station connected with a single wire (grounded circuit). When the subscriber desires a double wire, (metallic circuit) the charge is increased by 10 fr. (\$2) for each 800 metres ($\frac{1}{2}$ mile) of line..	3	50 " (10c.)
Tilbourg.....	The General Telephone Co., (the so-called Ribbink, Van Bork & Co.)	80 fr. (\$16) for a station within the district. 150 fr. (\$30) for a station outside the district	3	20 " (4c.)
Utrecht.....	The Bell Netherlands Telephone Co.....	See Almelo.		
Veendam.....	"	80 fr. (\$16) for a station within a radius of $1\frac{1}{2}$ km. ($\frac{3}{4}$ mile), in a direct line from the centre. Besides this, the rate is increased by 2 fr. (40c.) for each additional 100 metres (110 yds.) Moreover, an extra charge of 20 fr. (\$4) when the subscriber wishes to have the right of asking for interlocal conversations	3	20 " (4c.)

TARIFF FOR LOCAL SYSTEMS—*Concluded.*

System.	Owner.	Yearly Subscriptions.	PUBLIC STATIONS.	
			Minutes.	Charges.
Velsen.....	"	<i>See</i> Almelo.		
Venlo.....	The municipality.	70 fr. (\$14) for a station within the district. Besides this, the charge is increased by 6 fr. (\$1.20) for each 100 metres (110 yds.) between the station and the limits of the district. 50 fr. (\$10) for a station connected with the branch office at Tegelen.....	5	20 " (4c.)
Waardingen.....	The Bell Netherlands Telephone Co.....	<i>See</i> Almelo.		
Wageningen.....	The municipality..	70 fr. (\$14) for a station within a radius of 3 km. (1 $\frac{3}{4}$ mile) in a direct line from the centre. 100 fr. (\$20) for more than 3 km. (1 $\frac{3}{4}$ mile) up to 4 km. (2 $\frac{1}{2}$ miles), 120 fr. (\$24) for more than 4 km. (2 $\frac{1}{2}$ miles) up to 5 km. (3 $\frac{1}{10}$ miles).....	5	20 " (4c.)
Wijkby Druustede Winschoten.....	"	<i>See</i> Rhenen. 70 fr. (\$14) for a station within a radius of 750 metres (825 yds.) in a direct line from the central office. Beyond this radius, the charge is increased by 6 fr. (\$1.20) for each additional 100 metres (110 yds.)...		
Zaandam.....	The Bell Netherlands Telephone Co.....	<i>See</i> Almelo.	5	20 " (4c.)
Zeist.....	The firm of Gauverit & Kanter..	80 fr. (\$16) for a single wire station grounded circuit. When the subscriber wishes a double wire, metallic circuit, the charge is increased:—(a.) For a distance up to 1 $\frac{1}{2}$ km. ($\frac{9}{10}$ mile) between the station and the central office, 10 fr. (\$2). (b.) For a distance of more than 1 $\frac{1}{2}$ km. ($\frac{9}{10}$ mile) up to 3 km. (1 $\frac{3}{4}$ miles) 20 fr. (\$4). (c.) For a distance of more than 3 km. (1 $\frac{3}{4}$ miles) 20 fr. (\$4) and, besides, 70 centimes 14c. for each 100 metres (110 yds.) of line over and above 3 km. (1 $\frac{3}{4}$ miles)....	3	50 " (10c.)
Zutphen.....	The Zutphen Telephone Co.....	For a station within the district:— 70 fr. (\$14) for single wire grounded circuit. 90 fr. (\$18) double wire metallic circuit. For a station outside the district, these rates are increased by 6 fr. (\$1.20) for each 100 metres (110 yds.) between the station and the limits of the district.....		
Zwolle..	The General Telephone Co. (the so-called Ribbink, Van Bork & Co.)	<i>See</i> Deventer.	3	20 " (4c.)

October, 1st, 1905.

NOTE.—The Canadian value of the above figures is calculated on the following basis: 2 francs (French) = 1 florin (Netherlands) = 40 cents.

APPENDIX No. 1

No. 289.

SWITZERLAND.

(The following papers, selected from amongst those sent by the Swiss Board of Telephone Directors, have been translated for the information of the Committee. The originals are on file in the committee room and may be referred to at any time.)

(Translation.)

THE SWISS TELEPHONE BOARD OF DIRECTORS.

BERNE, June 7, 1905.

Sir WILLIAM MULOCK, Postmaster General,
Chairman of Select Committee on Telephone Systems,
Ottawa.

HONOURABLE SIR,—In reply to your letter of May 1, of this year, we furnish you herewith, so far as we possibly can, the information you desire; and send you also, under a separate cover, several pamphlets, the contents of which, we trust, will be useful to you.

With the highest esteem,

THE SWISS TELEPHONE BOARD OF DIRECTORS,

Per *L. Vanoni*.

No. 289a.

(Translation.)

ANSWERS TO QUESTIONS.

For the connection of all the wires within the country into one system there are 687 so-called interurban exchanges, and for connections outside Switzerland there are 33 international exchanges.

The length of all the wires, interurban and subscribers' lines taken together, is 15,791.5 kilometres (9,806½ miles). Frequently interurban and subscribers' lines, and also telegraph lines, are united on the same line of poles. Of the above, 15,164.6 kilometres is overhead, and the length of underground conduits with one or more ducts (pipes) is 626.9 kilometres.

We give the following approximate cost of lines, per kilometre, from the Budget estimates:—

SWITZERLAND.

4-5 EDWARD VII., A. 1905

I.—OVERHEAD WIRES.

(NOTE.—One franc equals 19:3 cents; one kilometre equals 3,281 feet, about $\frac{1}{5}$ of a mile.)

	Materials and Tools.	Wages.	Carriage (freight) and Sundries.	Total.
1. Bronze wires of 1.5 mm. (No. 17 S.W.G.)—				
(a) 1 loop (metallic circuit) with new poles..	645 Fr.	150 Fr.	45 Fr.	840 Fr. (\$162.12)
(b) 1 loop (metallic circuit) on existing poles	178 "	53 "	24 "	255 " (\$ 49.22)
2. Bronze wires of 2 mm. (No. 14 S.W.G.)—				
(a) 1 loop (metallic circuit) with new poles.	687 "	194 "	36 "	917 " (\$176.98)
(b) 1 loop (metallic circuit) on existing poles.	218 "	66 "	18 "	302 " (\$ 58.29)
3. Bronze wires of 3 mm. (No. 10½ S.W.G.)—				
(a) 1 loop (metallic circuit) with new poles..	890 "	194 "	36 "	1,120 " (\$216.16)
(b) 1 loop (metallic circuit) on existing poles	421 "	66 "	18 "	505 " (\$ 97.47)
4. Bronze wires of 4 mm. (No. 8 S.W.G.)—				
(a) 1 loop (metallic circuit) with new poles.	1,145 "	150 "	45 "	1,340 " (\$258.62)
(b) 1 loop (metallic circuit) on existing poles.	676 "	51 "	23 "	750 " (\$144.75)
5. Bronze wires of 5 mm. (No. 5½ S.W.G.)—				
(a) 1 loop (metallic circuit) with new poles..	1,471 "	149 "	45 "	1,665 " (\$321.35)
(b) 1 loop (metallic circuit) on already exist- ing poles.....	1,005 "	52 "	23 "	1,080 " (\$208.44)

II.—UNDERGROUND LINES.

Approximate cost per pair of wires (metallic circuit) per kilometre (3,281 feet) of cable laid. (Cost of duct or pipe not included):—

Interurban cable, 1.8 mm. (No. 15 S.W.G.).....	450 fr. (\$86.85)
Local subscribers' cable 0.8 mm. (No. 21 S.W.G.), lead covered and steel armoured.....	112 fr. (\$21.62)
Local subscribers' cable 0.8 mm. (No. 21 S.W.G.), lead covered only.....	95 fr. (\$18.36)

Approximate cost per metre (110 yards) of cable ducts or pipes:—

Iron pipes.....	6 fr. (\$1.16)
Conduit of pipes of 150 mm. width (6 inches).....	20 fr. (\$3.86)
“ 200 “ (7 $\frac{7}{8}$ inches).....	25 fr. (\$4.83)
“ 250 “ (9 $\frac{1}{8}$ inches).....	30 fr. (\$5.79)
“ 300 “ (11 $\frac{1}{8}$ inches).....	35 fr. (\$6.76)
“ 350 “ (13 $\frac{1}{8}$ inches).....	40 fr. (\$7.72)
“ 400 “ (15 $\frac{1}{8}$ inches).....	45 fr. (\$8.69)
“ 450 “ (17 $\frac{1}{8}$ inches).....	50 fr. (\$9.65)
“ 500 “ (19 $\frac{1}{8}$ inches).....	55 fr. (\$10.62)

Length of interurban telephone pole lines:—

(a.) Length of pure telephone lines.....	4,917 kl. (3,053 $\frac{1}{2}$ miles)
(b.) Length of mixed lines.....	1,696 kl. (1,053 $\frac{1}{4}$ miles)

Total..... 6,613 kl. (4,106 $\frac{3}{4}$ miles)

‘Pure telephone lines’ are those which carry telephone lines only whether inter-urban, or interurban and subscribers’ wires together.

‘Mixed lines’ are those which carry both telephone and telegraph lines.

Total length of circuits of interurban lines (the reserve conductors of the inter-urban cable not included):—

(a) Single wire lines	163 kilometres (101 $\frac{1}{4}$ miles)
(b) Metallic “	19,173 “ (11,906 $\frac{1}{2}$ “)
Total	19,336 “ (12,007 $\frac{3}{4}$ “)

APPENDIX No. 1

Total wire length of interurban lines (metallic circuits counted as two wires), 38,509 kilometres (23,914 miles).

The subscribers' circuits have been for several years entirely made of bronze wire, of 1.5 mm. For longer lines and for those in more exposed situations, bronze wire of from 2 to 3 mm. in diameter are used. There are still, in the Swiss telephone system, a great number of subscribers' circuits made of bronze wire, of 1.25 mm. diameter, but these are gradually being changed. Of the 47,314 subscribers' circuits there were at the end of 1904 still about 2,200 of single wire (grounded) laid through to their central or switch station. On account of the extent of high tension current plants all over the country, and the influence exercised thereby on the telephone lines, it has been resolved gradually to introduce for the telephone system exclusively the double wire, or metallic system.

For the interurban, or long-distance, connections, bronze wire, of from 3, 4 or 5 mm. diameter is used, according to the length and purpose of the lines. The interurban connections are, during the last few years, being constructed entirely of double wire. There are still fourteen lines of single wire, existing from the older regime.

The expenses of the telegraph and telephone lines (the new constructions) are placed to the construction account. This amounted to 16,144,341 fr. (\$3,115,858) at the end of 1904. The interest paid is, at present 3½ per cent (3½ per cent of the capital on December 31, 1903).

The yearly amount of sinking fund for construction account is 15 per cent (15 per cent of the capital on December 31, 1903).

The charges for interurban calls, as well as the charges for local calls, are noted down by telephone girl clerks. A careful account is kept for each single subscriber, and the total amount is paid in every month, through the post office.

During the last few years we have begun to use simultaneous telephony and telegraphy on the interurban lines, employing the 'Cailho' system. When the insulating conditions are good on these lines, this arrangement has been quite satisfactory.

The arrangement and control of the public telephone system exclusively belongs to the federal government.

The population of Switzerland, according to the census of December 1, 1900, was 3,315,443.

The total number of telephone subscribers in Switzerland is 47,314 (one telephone to 70 inhabitants).

The number of subscribers in and the population of the larger towns in Switzerland, are as follows (according to census of December 1, 1900):—

	Subscribers.		Population.
Zürich	6,339		150,000
Geneva	4,692	City of Geneva..... 59,437	
		Surrounding districts 45,359	
			104,796
Basel	3,894		109,161
Berne	2,488		64,227
Lausanne	1,935		46,732
St. Gallen	1,610		33,116
Lucerne	1,206		29,255
La Chaux-de-Fonds	1,047		35,968
Nuenburg	749		20,843
Winterthur	715		22,335
Biel	701		22,016
Schaffhausen	545		15,275
Montreux	523	Le Châtelard..... 8,986	
		Les Planches..... 4,533	
		Veytaux..... 625	
			14,144
Vevey	482		11,781

SWITZERLAND.

4-5 EDWARD VII., A. 1905

The number of subscribers in, and the population of, some of the smaller towns in Switzerland, are as follows (according to census of December 1, 1900):—

	Subscribers.	Population.
Davos.....	292	8,089
Chur.....	266	11,532
Glarus.....	211	4,877
Morges.....	169	4,421
Langenthal.....	145	4,799
Thalwil.....	103	6,791
Locarno.....	87	3,603
Herzogenbuchsee.....	58	2,533
Moudon.....	39	2,683
Heiden.....	22	1,670
Zweisimmen.....	17	2,072
Anderer.....	10	499

The facilities supplied to rural districts are:—

1. When only one connection is desired—

(a.) The usual subscriber's station, with this difference, viz.: that instead of an individual subscriber the district is a subscriber.

(b.) The district or municipal telephone station (see articles 4, 9, 11 and 15, of 'the Federal Laws,' and section 7 of the statutes).

2. When several connections are desired—

(a.) The switch station (see section 8 of the statutes).

(b.) The automatic circuit-changing-switch (see section 9 of the statutes).

There are in Switzerland, 3,800 public telephone stations, 351 central stations, 326 switch stations, 879 district stations.

The 'measured service' system of charging for telephone calls (in addition to the annual rates stated in article 12), is the universal system. The charges are:—

(a.) For local traffic, 5 centimes (1 cent) per call, time not limited. (Exception is made in the case of district and public call stations.)

(b.) In interurban or long-distance traffic, for a call of three minutes' length, for a distance, measured in a direct line from one central station to another, up to 50 kilometres (31 miles), 30 centimes (6 cents); up to 100 kilometres (62 miles), 50 centimes (10 cents); over 100 kilometres (62 miles), 75 centimes (15 cents).

The following articles referring to rates have been taken from the parliamentary decrees of the Swiss Federal Assembly as printed on pages 1623-1626.

Article 12.

Subscribers to telephone stations (over the whole Swiss telephone system) have to pay the following annual rates, in addition to the toll charges set forth herein:—

A. For traffic between the stations of a telephone system (Article 6).

(a.) From the date of admission (Article 6) until the commencement of the next calendar year, and, in like manner, during the first year thereafter following, 100 Fr. (\$19.30).

(b.) For the second year, 70 Fr. (\$13.51).

(c.) For the following years, 40 Fr. (\$7.72).

(d.) When the station is more than 2 kilometres (1 mile, 394 yards) distant from the Central Station, a yearly additional charge of 3 Fr. (58 cents) is asked for every 100 metres (110 yards) additional length of single wire, and 4.50 Fr. (87 cents) for every 100 metres (110 yards) additional length of double wire.

The federal parliament, after consideration of the interests of the majority of the population, will fix, in each district, the point of departure from which the distances are to be measured.

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APPENDIX No. 1

The appointed rates, specified above, under *a* and *b*, are to be paid in advance, half-yearly, on January 1 and July 1.

The charges for the already existing stations will be reduced, according to the length of time that they have been in use, according to the application of the above rules, specified under *b* and *c*.

(*e*) For each connection, within local traffic, an extra charge of 5 centimes (1 cent) will be collected.

(*f*) For mountain connections, special conditions are made, according to the existing circumstances.

B. Charges for writing down and forwarding messages or phonograms (see Article 7*c*).

(*a*) For 1 centime per word (1 cent for five words) besides a general fixed charge of 20 centimes (4 cents) with occasional reduction of the total charge.

For distances of more than one kilometre, the additional charge fixed for the telegraph traffic will be collected over and above.

(*b*) For sending or receiving a telegram by telephone (Article 7*d*), the charge will be 10 centimes (2 cents).

The yearly charges and dues for special accommodations, such as switch-arrangements, combined connections, supplementary stations (or apparatus) and the like, as also the charges for conceded telephone connections, and changing of stations, are fixed by parliament.

The registers of connections of phonograms and telegrams, unless proof of mistakes can be furnished, are authoritative for the reckoning of charges due.

Article 13.

In municipal stations and public call stations, the following rates are charged:—

(*a*) The charges for conversation with the stations of one's own system (Article 9 and Article 7 (*a*), are reckoned according to the duration of connection, in this manner, that for a period of three minutes, or a part thereof, 10 centimes (2 cents) is charged.

(*b*) For messages taken down and forwarded (phonograms), the rule applies, contained in Article 12, *Ba*.)

(*c*) For sending telegrams, the rule applies contained in Article 12, *Bb*).

Article 14.

Refers to long-distance rates which are already given on page 1620.

Article 15.

When the revenue resulting from the telephone traffic permits of it, the parliament shall introduce a reduced scale of charges. The parliament is further authorized, in the interests of remote-lying districts, desiring to have connection with the larger centres of traffic, to introduce a reduced scale of charges.

Article 16.

The management undertakes, at its own expense, the setting up and up-keep of the telephone arrangements, and also to see to the prompt removal of any interruption of the traffic. If any interruption of traffic, which is not the fault of the subscriber (Article 8), should continue longer than 5 days, then the charges paid (Article 12) will be refunded, according to the further length of time that the interruption may continue.

Article 92 of the statutes regarding the telephone system decrees that interurban calls, which require more than 3 central stations (switch stations not considered) are generally not to be allowed from 9 a.m. till 4 p.m. over lines where a great amount of traffic is carried on.

Moreover, in our country the conversations on the telephone are not limited by distance. The greatest distance, *i.e.*, the length of lines used, within Switzerland, is about 500 kilometres (310½ miles).

The systems most generally in use at the present time are:—

The transmitter—'Solid back' and 'Delville.'

The receiver—'Bell.'

The following is the proportion between underground and overhead lines and wires:—

INTERURBAN AND SUBSCRIBERS' LINES (TAKEN TOGETHER).

	Length of line (Route).	Length of Wire.
Underground.	Kl. 626 (389 miles)	Kl. 161,816 (100,488 miles)
Overhead.	Kl. 15,164 (9,417 miles)	Kl. 80,311 (49,873 miles)
Total.	Kl. 15,791 (9,806 miles)	Kl. 242,127 (150,361 miles)

The route length of the underground lines is exceedingly small, in comparison with the overhead lines. This proportion is explained from the fact that in laying cables it is possible to combine a very large number of conductors on one section of line. There are sections where more than 100 cables, with various numbers of conductors, are laid, in several tubes (pipes).

Amount expended on system, 33,401,409 fr. 57 centimes (\$6,446,472).

Revenue per annum, 6,797,486 fr. 35 centimes (\$1,411,913).

Total expenditure per annum, including management, operating expenses, maintenance and depreciation, 7,441,502 fr. 22 centimes (\$1,433,210).

The rate of wages per day, for workmen on lines, and stations, are regulated as follows:—

Foremen, from 6 fr. (\$1.16) to 8 fr. (\$1.54½).

Squad foremen, from 5 fr. (96½ cents) to 7 fr. (\$1.35).

Workers on line, from 4 fr. (77 cents) to 6:50 fr. (\$1.25½).

Foremen pole men, from 6 fr. (\$1.16) to 8 fr. (\$1.54½).

Pole men, from 4:50 fr. (97 cents) to 7 fr. (\$1.35).

You will find stated below the prices of the apparatus and materials mentioned by you. These prices are understood for delivery, freight paid, to the station at Berne:—

Switchboard for 40 lines, 625 to 685 francs (\$120.62 to \$132.20).

Switchboard for 50 lines, 700 francs (\$135.10).

Switchboard for 100 lines, 1,200 francs (\$231.60).

	Lines.	Capacity.	Francs.	\$
Multiple switchboards—	240	1,920	3,165	610.84
	360	2,880	13,200	2,547.60
	450	3,150	19,700	3,700.10
	450	9,900	21,000	4,053.00

Interurban switch for 5 to 10 circuits, from 400 to 700 francs (\$77.20 to \$135.10).

Sub-exchange switchboards—

10 lines, single circuits. 120 fr. (\$23.16)

10 " metallic circuits. 140 fr. (\$27.02)

20 " single circuits. 170 fr. (\$32.81)

20 " metallic circuits. 210 fr. (\$40.53)

Switchboard for 25 lines, single or metallic, 400 to 500 francs (\$77.20 to \$96.50).

Subscribers' wall telephone, with 'Solid back' transmitter, two receivers, two batteries, 100 francs (\$19.30).

Subscribers' wall telephone, with 'Delville' transmitter, two receivers and one battery, 90 francs (\$17.37).

Subscribers' desk station, with 'Solid back' transmitter and two receivers, 90 francs (\$17.37).

Swedish desk station with hand combination micro-telephone, complete, 100 fr. (\$19.30).

APPENDIX No. 1

Price per kilometre (3,281 feet) of cable with paper insulation, and lead sheath, diameters of conductors 0·8 mm. :—

Cable, with lead sheath only—

Pairs of wires	10	20	100	200
Price (francs)	1,400	2,090	6,350	12,000
" (dollars)	270.20	403.37	1,225.55	2,161.60

Lead sheathed cable with steel wire armour—

Pairs of wires	10	20	100	200
Price (francs)	2,000	3,000	8,200	14,500
" (dollars)	386.00	579.00	1,582.60	2,798.50

Bronze wire—Price per 100 kilogrammes (220³/₁₀ pounds)—

Diameter (mm.)	1·5	2	3	4	5
Price (francs)	252·25	242	240	240	240
" (dollars)	48.68	46.70	46.32	46.32	46.32

Creosoted wood poles—

Length .. (metres)	8	9	10	11	12	14	15	16	17	18	19	20
" (feet)	26	29 ¹ / ₂	32 ³ / ₄	36	39 ¹ / ₄	46	49	52 ¹ / ₂	55 ³ / ₄	59	62 ¹ / ₄	65 ¹ / ₂
Price (francs)	10	11·50	14	20	23	27	35	40	45	50	54	57
Price (dollars)	1.93	2.22	2.70	3.86	4.44	5.21	6.76	7.72	8.68	9.65	10.42	11.00

Price of insulators without bolts or pins—

Number	1	2	7	8
Price each (centimes)	39	28	17	40
" (cents)	8	6	3 ¹ / ₂	8

In 1880, permission was accorded for the setting up of a local telephone system in Zurich, the only one of its kind. This local system was carried on from 1883 till 1885 by the 'Zurich Telephone Company,' but was acquired, through purchase, by the federal government, on January 1, 1886, which, from that date has had sole control of the entire telephone system of Switzerland. As the Swiss federal parliament had definitely decided that the telephone system should be carried on by the government, as far back as at the end of 1880, the purchase of the Zurich private system must therefore be regarded as only a measure taken to promote the development of the Swiss telephone system.

As far as possible, the routes selected for our telephone lines are along the railway lines and the public thoroughfares—along railway lines almost entirely, for the inter-urban wires. When it is absolutely necessary to use private property for the suitable erection of lines, in many cases permission is obtained from the proprietor to set up poles, without asking compensation. In other cases, a payment is made, once for all, according to mutual agreement. On an average, this payment amounts to about 5 francs (96¹/₂ cents) per pole.

SWITZERLAND—Continued.

No. 289b.

(Translation.)

FEDERAL DECREES.

The Swiss Federal Assembly, in accordance with Article 36 of the constitution, and after consideration of a message from the Federal Council, of November 13, 1888, decrees as follows:—

Article 1.

The construction and operation of the telephone plant, forms a part of the telegraph system (Art. 36 of the constitution), and is assigned to the business department of the telegraph management. The provisions of the federal penal code relating to the telegraph system, apply also to the telephone system.

SWITZERLAND.

Article 2.

For the accommodation of the telephone traffic, there is appointed:—

- (a) The telephone wires in particular localities.
- (b) The district (municipal) stations.
- (c) The trunk lines or connections.

Article 3.

Any one has the right to desire to become a subscriber in an existing telephone system, in so far as the installing and connecting of the desired station within the premises designated, can take place without hindrance or expense.

New lines are set up as soon as the taking of stations is guaranteed by a written agreement on the part of intending subscribers.

Public call stations are erected in a system, when, according to the judgment of the federal parliament, a necessity exists for the same. Those who have stations will have to bear a share of the expenses for rent and service, according as the federal parliament may decide.

Article 4.

Municipal stations in municipalities having no connection with the telephone or telegraph systems of another district, will be set up under the following stipulations:—

(a) The municipality in question pays the charges fixed by Article 12 of these laws.

(b) The municipality furnishes suitable premises and permits an official nominated by the district and appointed by the Post Office and Railway Department to take charge of the service, the district to bear the expenses of the same.

(c) The legally-appointed rates are estimated and collected by the parliament.

(d) The municipality receives, by way of compensation for its outlay, a share of the charges collected, the same to be estimated by parliament; and is further entitled to receive, besides the legal telegraph charge, and the amount specified in Article 12, B, (b), and Article 13 (c), an additional payment of 15 centimes (3 cents) for every despatched telegram, the municipality itself to collect the above. Incoming telegrams, with the exception of express charges, are to be delivered free.

Article 5.

The parliament decides the question as to which systems are to be connected with one another. The parliament is entitled to require a fixed minimum amount, as a guarantee, from municipalities desiring such connection, towards expenses of connecting line. Connections are not allowed to be made when thereby the traffic on the existing lines, or the erection of more important connections, is encroached upon.

Article 6.

The privileges and duties of subscribers begin on the day following the setting up a station in thorough working order. By giving notice, a month in advance, any subscriber may declare his intention of withdrawal. Should withdrawal take place during the course of the first year, a compensation of 40 fr. (\$7.72) is required. If during the second year, 20 fr. (\$3.86), is required. Should the distance between a station and the central station amount to more than 2 kil., there is required besides a compensation for the length of line—in the first year, 30 fr. (\$5.79); in the second year, 20 fr. (\$3.86), for every additional 100 metres.

Article 7.

Every subscriber has the privilege:—

- (a) To have intercourse with the stations of his own system.
- (b) To have intercourse with the stations of the connected systems.
- (c) To send communications to the central station, which will be written down and sent by messengers to the address given. These are termed 'phonograms.'

(d) To send off and receive telegrams, by means of the central station, when the same is connected with the telegraph bureau. The management does not guarantee to

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APPENDIX No. 1

the subscriber the continuance of the other stations of his system, nor those within the connected systems. (Letters *a* and *b*).

Article 8.

The subscriber is bound to guard his station, and the connections existing inside his premises, against all damage, and is responsible for any loss accruing to the management through his own fault or another's fault.

Article 9.

The municipal stations connected with a system, as well as the public call stations, can be used by any one, with the same privileges that belong to the other stations of the system, as set forth in Article 7. The other municipal stations, as in the case of the public telegraph offices, have to provide for the sending and receiving of telegrams.

Article 10.

The connected lines serve for the intercommunication of the various stations belonging to the connections. (Article 7-*b*.) The management will not be responsible for delays and interruptions that may supervene, when a connection is desired, that passes through intermediate stations. In this connection, see Article 16.

Article 11.

Requests to use the public stations, as well as municipal stations, and the connected lines (Article 7-*b*) are granted according to order of announcement. If other persons are waiting, next in order, to use the line, the duration of a conversation must not exceed three minutes; and the same person is only entitled to two successive conversations. Official conversations, by political and police officials, must, when desired, take the precedence of all others, and also will be allowed unrestricted duration.

(For articles 12-16, see pages 396 and 397.)

Article 17.

Officials and employees are bound to keep secret all telephone traffic. Any infringement of this rule will, in the case of minor offences, be punished; and, in graver cases, will be punished according to the criminal laws. The parliament is authorized to dismiss the offenders.

Article 18.

The telephone operator must write down at once the wording of messages sent in for delivery (Article 7-*c*) as well as telephoned telegrams (Article 7-*d*), and to telephone the same back to sender, asking him if it is correctly taken down. Transmission to the address given cannot take place until the correctness of the message has been approved by the sender.

Article 19.

When the necessity of the traffic demands a readjustment of a system, or an individual connection, then the management is always obliged to make known the existing arrangements a month in advance.

The management is authorized to remove a station, at any time, without compensation, when the subscriber, after a month's grace, fails to comply with a demand for payment of rates due by him, and, to do likewise, when the subscriber, in spite of warning given, makes a wrong use of the telephone, or allows a wrong use of it to be made, to the annoyance of the telephone employees. In this last case, the removal of the station takes place after an official examination has been held by the Post Office and Railway Department.

Article 20.

The parliament is authorized to grant concessions for the setting up of telephone connections, which are independent of the public telephone arrangements, and the use of which is restricted to special individuals. If the property of another person is not

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to be infringed upon, in the setting up of the above-mentioned connection, then a concession is not necessary.

Article 21.

The granting of a concession does not include any rights in relation to the use of another property, whether of the state, or of the municipality, or of private individuals; and therefore the person obtaining the concession must himself obtain the necessary permission from the proprietor, and come to an agreement with the same, regarding any compensation that may be required.

Article 22.

A concession will only be granted, when through the carrying out of the same there is no infringement made upon the public telephone and telegraph systems, either in their arrangements or traffic, or in their further development. Such concessions may, at any time, be revoked without granting compensation.

Article 23.

The parliament will enact the statutes requisite for the carrying of these laws into effect.

Article 24.

The federal parliament is instructed, on the basis of the resolutions of the federal laws of June 17, 1874, regarding the public vote on federal laws and decisions, to make known the present laws, and fix the point of time when they are to come into force.

Decided thus by the National Council, at Berne, on June 22, 1889.

*President, H. HABERLIN,
Recorder, RINGIER.*

Decided thus by the Council of the States.

*President, C. HOFFMANN,
Recorder, SCHATZMANN.*

The foregoing federal laws, publicly made known on July 13, 1899*, regarding which no public vote was asked, are to be incorporated into the federal code, and are to come into force on January 1, 1890.

BERNE, October 16, 1889.

In the name of the Swiss federal parliament.

*Federal President, HAMMER.
State Chancellor, RINGIER.*

*See Federal Blue-book, 1889, volume III., page 884; and 1894, volume IV., page 792.

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SWITZERLAND—*Continued.*

289c.

(Translation.)

STATUTES OF SEPTEMBER 24, 1895, RELATING TO THE TELEPHONE SYSTEM.

The Swiss federal parliament, in carrying into effect the federal laws, of June 27, 1889*, and December 7, 1894, relating to the Telephone System, and in response to the request of the Post Office and Telegraph Department, decrees as follows:—

I.—THE ADMISSION OF SUBSCRIBERS.

(*'Federal Laws,' Articles 3, 5, 6 and 7.*)

ARTICLE 1.—A written declaration of intention to subscribe must be given to the management, which will make all necessary arrangements, and supply all information desired.

ARTICLE 2.—The subscriber has to sign a declaration of subscription, in which is accurately specified the mode of setting up telephone, and the obligations of the subscriber; as also all necessary stipulations regarding withdrawal.

This declaration will only be valid for carrying into effect, after it has been approved of by the telegraph management (board of directors).

ARTICLE 3.—The signing of the declaration of subscription, includes the recognition of all laws and regulations regarding the telephone system.

ARTICLE 4.—The declaration of subscription is only valid for the person, or the business firm, whose name is signed to it; and therefore no transfer can take place to another person, or business firm.

In particular cases, the management retains the right to decide whether, at the removal of a subscriber, the right may be granted to another to use the station. In cases where sanction is given, the following conditions are to be fulfilled:—

(a) The station must remain on the same premises.

(b) No interruption must take place in the payment of charges.

(c) The new subscriber has to sign the declaration of subscription, and is responsible to the management for all charges and dues that may still be owing by his predecessor.

ARTICLE 5.—A subscriber may be allowed, at the same time, two or more connections at the same central station, in which case the legal yearly rates must be paid for each connection, no matter whether the use has been continued, or only occasional. No reduction can therefore be made for several subscriptions paid by the same person, or the same firm, or for stations only used occasionally.

ARTICLE 6.—No subscriber nor municipal station is allowed to have simultaneous connections at several central stations. Subscribers at one and the same place, must all subscribe to the same system. Exceptions can only be made when the same are justified by special circumstances, on which the telegraph management will decide.

ARTICLE 7.—It also belongs to the management to decide as to whether a group of subscribers are to be considered as belonging to an existing system, or are to be regarded as separate system.

As a rule, independent systems are only to be formed when at least ten subscribers are guaranteed, in the locality in question, or in the district around it, and when the distance from the nearest central station is more than 10 kilometres.

ARTICLE 8.—The period of subscription for lines of more than 5 kilometres, shall be at least 10 years; no matter whether it be a case of the connection of a subscriber's

*See 'Federal Code,' Volume XI., page 256, and Volume XV., page 122.

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station or a municipal station, or a switch station, with the central station, or whether it may be a branch wire, or an independent (trunk wire) connection.

ARTICLE 9.—The period of subscription for branch wires, and independent trunk wire connection of not more than 5 kilometres in length is, for up to 2 kil., 2 years; and over 2 kil., 4 years.

ARTICLE 10.—In the case of junction lines of more than 5 kilometres, as well as branch wires and independent connections (trunk lines), of more than 2 kilometres, the management can demand adequate personal security for the performing of the obligations of contract. The same holds good, without regard to the length of the junction line, in the case of subscribers whose real place of residence or principal business is in a foreign country, or whose integrity is highly doubtful.

ARTICLE 11.—In the case of mountain lines, the management retains the right, in each particular case, to fix special conditions, according to Article 12 A (f) of the 'Federal Laws.'

II.—SUBSCRIPTION RATES AND EXTRA CHARGES FOR DISTANCES.

(*'Federal Laws,' Article 12.*)

ARTICLE 12.—The graduated scale of rates, fixed in Article 12, of the 'Federal Laws,' apply to the already existing subscriptions, in the sense that these will have all the complete periods of six months, during which they have been in existence, credited to them, up till January 1, 1896. Fractions of six months will not be reckoned. Every two full periods of six months (along with any fraction of that time, that there may be) will entitle the subscriber to a reduction of 30 fr. (\$5.79) per year, from the maximum rate of 100 fr. (\$19.30) down to the minimum of 40 fr. (\$7.72).

The new subscribers will also gradually receive reduction of charges, according to the same rules.

ARTICLE 13.—For the calculation of the yearly extra payments for distances, of more than 2 km., the central point is not necessarily to be at the central station, which, in many places is not at all in the centre of the municipality, but is to be fixed by the management at a point which suits the interests of the majority of the population.

ARTICLE 14.—From this fixed central point outwards, the distance, up to 2 km., is to be measured in a straight line (air line); beyond this, however, the distance is to be estimated according to the actual length of the nearest public road, which is in use at the time when the agreement is made; no matter whether this road is made use of for the setting up of the line or not.

In like manner, the basis of calculation in measuring the length of branch lines and independent conceded lines, is to be according to the entire length of the nearest public road then in use.

III. SPECIAL KINDS OF SUBSCRIPTION.

(a) Supplementary Instruments and Connections with branch lines (Federal Laws, Article 12).

ARTICLE 15.—If an individual subscriber should require special supplementary apparatus, or branch connections, then these are subject to the following yearly rates:—

- (1) For a complete telephone station, with a single circuit-switch, 20 fr. (\$3.86).
- (2) An indicator drop, 2 fr. (39 cents).
- (3) An annunciator-board, with 2 indicator drops (without bell, see Nos. 5-7), 8 fr. (\$1.55).
- (4) For every additional annunciator-board, 5 fr. (97 cents)
- (5) For a large extension bell, with switch, 10 fr. (\$1.93).

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(6) A medium extension bell, with switch, 6 fr. (\$1.16).

(7) A small extension bell, with switch, 4 fr. (77 cents).

(8) For every bell attachment, 1 fr. (19½ cents).

(9) For every 100 metres (110 yards) or fraction thereof, of single line wire, inside or outside of a building, 3 fr. (58 cents).

For double line wire, inside or outside of a building, 4.50 fr. (87 cents).

Any other supplementary apparatus that may be required, will be charged for by the management, according to the circumstances of the case.

ARTICLE 16.—Branch lines (wires) running from a subscriber's station, to a point outside of the same house or property, are only permitted when thereby the general development of the lines of the system is not encroached upon. The management will decide on this point. These are to be distinctly refused in the following cases:—

(a) When the wires run in the direction of a central station, or a switch station.

(b) When they cross the main lines (wires).

(c) When they call for 2 or more wires of various lines, or cable lines.

The management has the right, at any time, to cancel branch lines.

ARTICLE 17.—Branch lines are only permitted to one subscriber, and are only for his own use, and in relation to his own business; and are not for the use of another person. An exception is granted regarding the use, when the branch station is installed in the same house in which the subscriber's station is set, which is connected with branch station.

ARTICLE 18.—Branch stations to places situated within the territory of systems other than the one to which the subscriber belongs are, as a rule, not granted. In cases where an exception is made, the management will fix special stipulations.

b.—INDEPENDENT CONNECTIONS.

ARTICLE 19.—The management also undertakes to set up and maintain, for subscribers, connections that are independent of the usual wires, in so far as the existing technical arrangement and the interests of the development of the system, will permit this to be done.

Such connections, in regard to their arrangements, are subject to the same stipulations as the branch wires.

ARTICLE 20.—The yearly rates for independent connections, are reckoned for the entire length of line, upon the basis of Articles 14 and 15. The duration of the period of subscription will be on the basis of Articles 8 and 9.

ARTICLE 21.—Independent connections will be set up, only between the various premises of one and the same subscriber; and are only to be used for his own business or social convenience.

ARTICLE 22.—Two independent connections belonging to different persons or firms are not to be connected with each other. The subscriber to the same can then only hold intercourse with each other through the central exchange station.

ARTICLE 23.—Any infringement of the stipulations of Articles 21 and 22 will be treated as a breach of the laws.

c.—TEMPORARY SUBSCRIPTIONS.

ARTICLE 24.—Temporary subscriptions are granted during special occasions, such as festivals, expositions, and the like.

These do not pay the usual subscription charges, but will, of course, pay the entire costs for setting up and taking down the line and the apparatus (wages, depreciation of materials and cost of transportation), as well as the legal charges for conversions, phonograms and telegrams.

If for such facilities branch wires or independent connections should be required, then besides the cost for setting up and taking down again of connections, there will have to be paid the charges fixed in Article 15, regarding the duration of these connections.

D.—SUBSCRIBERS WITHOUT STATIONS.

ARTICLE 25.—When, through an agreement made with an adjoining country the connecting line of a subscriber, belonging to a Swiss telephone system, passes beyond the frontier, then the Swiss telephone management will undertake to set up and maintain the line only as far as the frontier. The further extension of the line, the furnishing of apparatus, and the up-keep of all the arrangements in the other country are, according to circumstances, to be done either by the subscriber himself or by the telephone management of the neighbouring country.

ARTICLE 26.—Subscribers' stations beyond the frontier pay the legally fixed rates, and in addition any charges that may have to be paid by the Swiss management to the management of the neighbouring country. Any additional length of line will be reckoned by the Swiss management only up to the frontier.

ARTICLE 27.—Subscribers' stations beyond the frontier may be used for local conversations, and also for interurban conversations, in so far as different arrangements do not exist between the two managements. Telegrams and phonograms are not allowed.

ARTICLE 28.—The management retains the right to cancel at any time the connection with stations beyond the frontier, either permanently, or for a time, without paying any compensation.

E.—REDUCED SUBSCRIPTIONS AND FREE SUBSCRIPTIONS.

ARTICLE 29.—For state subscriptions and municipal subscriptions the reduction of rates to 40 fr. (\$7.72) at the commencement will be granted, when the stations are set up in the official premises, and paid for on the score of official duties. Establishments operated under the direction and at the expense of the state or the community, which aim at making profit (such as banks, loan offices, gas, water and electric works, and the like) are excluded from this concession.

ARTICLE 30.—Every provincial government and every district jurisdiction within whose official jurisdiction there exists a system of wires with at least 30 paid-for connections with the central station has a claim to receive one free subscription. Switch stations and the connections of these with the central station are not here to be considered. When the number of direct connection paying rates, exceeds 500, then a further free subscription is granted for each 500 or fraction thereof.

ARTICLE 31.—In cases where subscriptions are reduced, or are given free, supplementary apparatus and branch connections as well as conversations, phonograms and telegrams, are charged for in the same way as in the case of ordinary subscribers.

IV.—INSTALLING AND ALTERING OF STATIONS.

(*'Federal Laws,' Articles 3, 5 and 8.*)

ARTICLE 32.—The subscriber has to make arrangements that the bringing in of the wires and the setting up of the station can be executed without hindrance or expense in the premises assigned for the purpose. He has also to make any necessary arrangements with the proprietor so that the management shall have to incur no expenses for cutting down branches of trees or fixing up supports for wires.

If, in consequence of the peculiar construction of a house some considerable damage may be unavoidable in bringing in the connections, the expenses arising therefrom must be borne by the subscriber.

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ARTICLE 33.—The management decides as to the manner of bringing in the wires to the station. Should the subscriber or the proprietor ask for some other kind of connection, then the former has to incur the resulting additional cost. He has also to bear the expenses of any alteration in the arrangement of the wires, which may be necessary on account of architectural alterations or the bringing in of high tension current services on the premises, or in the inside of the house in which the station is placed.

ARTICLE 34.—The place appointed for setting up the apparatus must be clean and dry, and have sufficient light. The subscriber is obliged, at his own expense, to make any necessary improvements or arrangements for safeguarding the apparatus, that may be considered necessary by the management. If there is no suitable place available for setting up the station, then the installing of the same may either be refused or granted only on the condition that the subscriber must pay the expenses of any damage which may result sooner or later.

In the declaration of subscription, a proviso shall be incorporated binding the subscriber to be responsible for expenses of removing interruptions that may supervene, through the defectiveness of the locality.

ARTICLE 35.—The subscriber is to bear the expenses of any special supplementary arrangements, prescribed by the management, such as wall-brackets, supports and the like; and also for any closets (cabinets) desired by him.

ARTICLE 36.—The management decides as to the kind of telephones to be supplied to subscribers. For setting up movable stations (desk stations), besides the legal rates of subscription, a payment once for all of 30 fr. (\$5.79) is required. If a subscriber should desire the exchange of his wall station (which is still in good working order) for a newer kind of the same, which may be used by the telephone system (as, for instance, another kind of microphone system), then he must pay for the same a compensation of 20 fr. (\$3.86).

ARTICLE 37.—The management will not be responsible for the setting up of a station within a specified time, after the subscriber declares his intention of joining; but everything possible will be done so far as the circumstances permit, to comply with the wishes of the subscriber.

ARTICLE 38.—The subscriber is prohibited, without special permission from the management, to take the telephone apart, or to make any alterations either in it or in the connecting wires. Neither must he connect, or allow to be connected, any other telephone or wires, with those belonging to the management, either permanently or temporarily. All such connections can only be obtained from the management, through the usual rules of subscription.

The subscriber is responsible for all consequences that may arise from the non-observance of these rules.

ARTICLE 39.—The responsibility of the subscriber for any damages (as set forth in Article 8 of the 'Federal Laws'), has reference also to any damages from fire or water; and therefore the subscriber himself must attend to the insuring of his station, if it is necessary.

V. USE OF STATIONS.

(*'Federal Laws,' Articles 8 and 19.*)

ARTICLE 40.—A subscriber is allowed, at his own responsibility, to let his station be used by other persons (see Articles 8 and 19 of the 'Federal Laws,' and Article 147 of the present 'Statutes'). However, the joint use of branch lines and independent or conceded connections by more than one person is forbidden. Any failure to comply with these requirements will be prosecuted as a breach of the laws.

ARTICLE 41.—In using the stations, the subscribers must attend to the rules laid down by the management, and to the instructions of the officials and employees of the

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central stations. All expenses arising from non-observance of the existing rules (for inspection, &c.) are to be borne by the subscriber.

ARTICLE 42.—When interruptions take place, first of all, the management of the system concerned is to be notified by letter; and only when no response is given, is application to be made to the central management at Berne. The same rule applies in the case of any complaints regarding the service at a central or a switch station.

VI. PUBLIC CALL STATIONS.

(*Federal Laws, Articles 3, 9, 11 and 13.*)

ARTICLE 43.—Public call stations are appointed for the same use of the general public, as belongs to subscribers of the other stations. These stations are divided into two classes, namely:—

(a) Subscribers' stations, which are authorized for public use.

(b) Call stations, which are erected by the management exclusively for the public service.

ARTICLE 44.—In the case of the call stations of Class *a*, the subscriber is obliged to place his station at the service of any one, and is responsible to the management for good attention to service, and for correct payment of charges. Moreover, the subscriber retains all the rights and responsibilities of any ordinary subscriber.

ARTICLE 45.—Call stations of Class *b* are set up where the management judges it to be necessary, and where there is no subscriber to take charge of the public service (Article 43*a*).

ARTICLE 46.—The call stations of both classes are not fixed to special hours of service; neither are they bound when request is made, to call non-subscribers to the telephone.

ARTICLE 47.—Those who have charge of public call stations of Classes *a* and *b* collect the charges fixed by Article 13 of the 'Federal Laws,' and receive for their service the following shares:—

(1) For local traffic the half of the charges for conversations, *i.e.*, 5 centimes (1 cent) for each conversation of 3 minutes.

(2) For interurban traffic an additional sum of 10 centimes (2 cents) for each conversation of three minutes.

(3) A commission of 10 centimes (2 cents) for every phonogram.

(4) An additional sum of 10 centimes (2 cents) for every telegram.

The remainder of the charges collected is to be handed over to the management.

ARTICLE 48.—Public call stations may only be set up in buildings where an hotel service or tavern business is carried on, when the place appointed for the telephone is separate from the hotel or tavern premises or is provided with a closet (cabinet).

VII.—MUNICIPAL STATIONS.

(*Federal Laws, Articles 4, 9, 11 and 13.*)

ARTICLE 49.—Municipal stations are divided into two classes, namely:—

(1) Those connected with a telephone wire system.

(2) Those who are only connected with a telegraph office.

For both classes the municipality in question undertakes the duties specified in Article 4 (a) and (b) of the 'Federal Laws.'

For the duration of the contract entered upon, the rules apply which are specified in Article 6 of the 'Federal Laws,' and in Article 8 of the present 'Statutes.'

ARTICLE 50.—The officials nominated for municipal stations are responsible to the management, and must, if they are not already post office or telegraph officials, furnish a security to be fixed by the Post Office and Railway Department. This security may be taken over (guaranteed) by the municipality.

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ARTICLE 51.—The rules specified (in Article 48 of the present 'Statutes') regarding the setting up of stations in hotels or taverns, apply also in the case of municipal stations.

ARTICLE 52.—The management undertakes the expenses of the first setting up of station and the instruction of officials, but the expenses of any transfer (shifting) of station, as also the instruction of every subsequent official, are to be borne by the district.

ARTICLE 53.—Municipal stations that are connected with a telephone wire system (Class 1, see Article 49, of the present 'Statutes') are open to any one for the same privileges which belong to the subscribers of the other stations, according to Article 9 of the 'Federal Laws.' Consequently local and interurban conversations, phonograms and telegrams may be transmitted from these stations. If the place in which the municipal station is located is provided with a telegraph office, then the latter must take over, exclusively, the telegraph service. An exception may be made, by the telegraph management, in the case of very scattered districts, where the telegraph office and the municipal station are far apart from each other.

ARTICLE 54.—The municipal stations receive the following share of the charges collected (which are the same as those fixed for the public call stations) for taking charge of the telephone service, and for local delivery:—

(1) For local traffic, the half of the charges for conversatons, *i.e.*, 5 centimes (1 cent) for each conversation of three minutes' duration.

(2) For interurban traffic, an additional charge of 10 centimes (2 cents) for each conversation of three minutes' duration.

(3) A commission of 10 centimes (2 cents) for every phonogram.

(4) An additional charge of 10 centimes (2 cents) for every telegram that is sent off. The remainder of the charges is to be handed over to the management.

Besides this, the municipality can, if it chooses, collect a further charge of 15 centimes (3 cents) for every telegram sent off, which is to be the same amount for all persons. The decision arrived at by the district on this point is to be made known by letter, to the central station, for the approval of the telegraph management.

ARTICLE 55.—The delivery of telegrams coming in is to be free of charge up to a distance of 1 kilometre ($\frac{5}{8}$ mile) unless there should be special charges owing (*c.o.d.*, &c.). For longer distances the regular express charges are collected, *viz.*:—

From 1,001 up to 1,500 metres ($\frac{5}{8}$ to $1\frac{1}{8}$ mile), 25 centimes (5 cents).

From 1,501 up to 2,000 metres ($1\frac{1}{8}$ to $1\frac{1}{4}$ miles), 50 centimes (10 cents).

Also, for every additional kilometre ($\frac{5}{8}$ mile), 50 centimes (10 cents), in so far as these charges have not been paid in advance by the sender, or if the telegram is not to be forwarded by mail.

ARTICLE 56.—Municipal stations, connected with a telephone wire system (Class 1), according to the decisions of the 'Federal Laws' of December 7, 1894, will receive consideration up to January 1, 1896, and will only have to pay the charges corresponding to the period during which they have been in operation.

ARTICLE 57.—Municipal stations that are connected with a switch station are treated with reference to the 2 kilometre (1 mile 394 yards) length of free line, like the other subscribers, who have connections, and have, like the latter, to share in the general expenses of connecting the line with the central station.

If the municipal station should also be a switch station, then the claim to receive 2 km. (1 mile, 394 yards) length of free line is not to be considered, as the line connecting with the central station will be charged for according to its entire length. (See Article 64 of the present 'Statutes'.)

ARTICLE 58.—Municipal stations, of Class 2, which are only connected with a telegraph office have, as a rule, to take entire charge of telegrams; and, of course, under the conditions laid down in Articles 54 and 55 of the present 'Statutes.'

If, by way of exception, these stations should also require to be used for conversations, then this can only take place, when permission is accorded by the telegraph management. In this case, the legal rates for interurban conversations (see Article 14 of the 'Federal Laws') are to be collected by the management; and persons using the telephone have themselves to settle with the subscribers for the trouble they may be put to.

ARTICLE 59.—The already existing contracts, made with municipal stations of Class 2 are to be cancelled when the 'Federal Laws' of December 7, 1894, come into force, after 6 months preliminary notice has been given; and, if desired, are to be renewed upon the basis of the new regulations.

The municipality in question will receive back part of the share of expenses contributed previously towards the building of the line. This share will be estimated according to the time during which the contract would, under ordinary circumstances, still be in force.

VIII. SWITCH STATIONS.

ARTICLE 60.—Groups of subscribers may be connected with a central station by means of a switch station; in cases where a direct line is not practicable, the management will decide on this point.

ARTICLE 61.—The management will fix the locality and appoint the person to take charge of the switch station. The management will pay to this person for attending to the service an amount to be fixed according to the number of conversations. This person may also be a subscriber to a municipal station, when connection with the post office a telegraph service is not available. If the official at the switch station is also a subscriber to a municipal station, then the traffic belonging to the same will not be considered, when the management fixes the amount to be paid for attending to the service.

In very exceptional cases, where it is only a question of connections for individual subscribers, the management may adopt different rules for the switch service; and may leave the choice of person to attend to service, as well as the amount to be paid to him, to be decided by the subscribers; the management retaining the right to approve of the same.

ARTICLE 62.—The person entrusted with the service of the switch station, whether a subscriber or not, is for this service, under all circumstances, placed under the telegraph management; and has not only to comply with all instructions regarding service and keeping of accounts, but is also responsible for keeping secret all telephone communications, according to Article 17 of the 'Federal Laws,' of June 27, 1889. He is subject to all legal and administrative decrees relating to the disciplinary punishments and the responsibilities of the federal officials.

ARTICLE 63.—The arrangements needed for the switch service will be supplied free by the management. If the person in charge is also a subscriber, then for his own use of the same telephone, the yearly subscription will be reduced 20 Fr. (\$3.86), which sum will be cancelled as soon as he desires a special telephone for his own use. No compensation will be allowed to the person in charge of station for the place taken up by the switch apparatus.

ARTICLE 64.—The subscribers connected through the switch station have to pay, in common, the legal charges for the expenses of the line, for the whole length of line connecting them with the main system; and the customary two free kilometres will be reckoned from the switch stations outwards, for each individual subscriber.

ARTICLE 65.—The subscribers choose a delegate, who is authorized to be the representative of the management for them, in all matters pertaining to their group. He has to undertake the general expenses of the line, and to attend to the further charges due by the rest of the subscribers. He has to provide two bondsmen (securities) for the fulfilment of his obligations, if the security is not taken over by the district.

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ARTICLE 66.—If, at the request of the subscribers, one or more additional lines are set up between the switch station and the main system, then the subscribers have to undertake for each individual line, the legal yearly compensation (expenses); and furnish security for the same.

ARTICLE 67.—Each subscriber belonging to a switch station must pay, besides the legal yearly rates for the station, any additional charges for distances, also a yearly contribution of 20 Fr. (\$3.86) towards the expenses of switch station service. This additional charge is to be specified in the declaration of subscription.

ARTICLE 68.—The expenses of shifting the switch station and its central support (bearer), if necessary, fall to the group of subscribers connected therewith.

ARTICLE 69.—New subscribers may, at any time, join a switch station, with the stipulation that they must share in the common expenses, in the same manner as the other subscribers belonging to the group. Contrary agreements among the subscribers are not admissible.

ARTICLE 70.—The subscribers belonging to a switch station pay also the same general rates as ordinary subscribers and are bound by the ordinary stipulations relating to withdrawal.

All conversations held by the subscribers among themselves, as well as those with the main system, are therefore subject to charges.

ARTICLE 71.—The management itself will decide as to the suitable time for introducing any alteration called for in the foregoing regulations into the present organization of the existing switch stations.

IX.—AUTOMATIC SWITCHES.

ARTICLE 72.—The employment of automatic switches (circuit-changing switches) for groups of not more than five subscribers, for the purpose of connecting with the central station, must be left to the judgment of the management.

ARTICLE 73.—The subscribers connected with an automatic switch, must provide a suitable place, free of charge, for setting up the switch, and for the bringing in of the wires.

ARTICLE 74.—If the automatic switch is situated within 2 kilometres from the central point, then the subscribers connected therewith pay the usual yearly rates. Stations situated more than 2 kilometres have to pay the additional legal rates specified for extra length of wires from the central point.

ARTICLE 75.—If the automatic switch station is situated in a direct distance of more than 2 kilometres from the central station, then the subscribers have to pay in common for the whole branch line, from the central station up to the automatic switch, the rates specified for extra length of lines in Article 12, A (d) of the 'Federal Laws.'

The rules laid down in Article 65 of the present 'statutes,' apply also to the person appointed to be the representative of the group of subscribers, and to the security to be furnished for the same.

ARTICLE 76.—Each subscriber of the class specified in the foregoing Article 75, must pay for the expenses and up-keep of the switch station, a fixed yearly sum of 10 fr. (\$1.93), which is to be specified in the declaration of membership. Moreover, these subscribers will be treated in the same way as all the other subscribers of the system, and each one of them will receive the customary 2 kilometres of free line, reckoned from the switch station outwards.

X.—INTERURBAN CONNECTIONS.

(*'Federal Laws,' Articles 5 and 14.*)

ARTICLE 77.—Interurban lines are those which connect two different telephone systems together. —See Article 7 of the present 'Statutes.'

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ARTICLE 78.—For the use of these connections, the appointed rates are to be paid which are specified in Article 14 of the 'Federal Laws,' along with any additional charges, for public call stations, and district stations, which are specified in Articles 47 and 54 of the present 'Statutes.'

ARTICLE 79.—Municipalities which desire the setting up of an interurban connection, may be required to furnish a guarantee for a definite yearly minimum revenue from the charges for conversations.

ARTICLE 80.—The amount of guarantee will be fixed in the proportion of 50 fr. (\$9.65) for each kilometre or fraction thereof of the length of line.

The duration of the guarantee will be at least ten years. Should the guarantee not be renewed at the end of this period, and if the revenue from the line does not come up to the guaranteed amount, then the management may make any arrangements that may be deemed advisable regarding the line.

ARTICLE 81.—The management has the right, at any time, to set up additional wires on any existing line, as well as to carry the conversations of other wire systems over this line, without any alteration in the guaranteed sum being called for, because of such arrangements. Any falling off of the traffic over a line does not call for any reduction of the guaranteed sum that was originally fixed.

ARTICLE 82.—In estimating the revenue, the charges for conversations will be credited to the wire system which is first called for when the conversation is arranged for, at the original central station.

Examples.—A conversation, Chaux-de-Fonds-Zurich, is counted for the Chaux-de-Fonds-Berne line. A conversation Lausanne-Intertaken, is counted for the Lausanne-Berne line. A conversation Zofingen-Bash, is counted for the Zofingen-Aaran line. A conversation Heris-au-Winterthus is counted for the Heris-au-St. Gallen line.

XI.—CONVERSATIONS.

(*'Federal Laws,' Articles 10, 11, 12, 13 and 14.*)

ARTICLE 83.—All conversations carried on, both within a particular telephone system as well as those over the interurban connections, are to pay charges according to Articles 12 A (e), 13 and 14, of the 'Federal Laws,' with the exception of the official communications of the telegraph management, and also the post office management, when mutual agreements are made on this point.

Reduced subscriptions and free subscriptions receive no free conversations; but the unrestricted conversations over branch lines and independent connections are, of course, free of charge.

ARTICLE 84.—The duration of local conversations, from subscribers' stations is generally unlimited; and the charge of 5 centimes is, therefore, collected without regard to the length of time. Exception is made in the case of stations connected by a switch station (Article 86). However, the central station is entitled to terminate any connection which has lasted for 5 minutes, when it is evident that no more conversation is being carried on.

ARTICLE 85.—The duration of local conversations, from municipal stations and public call stations is to be 3 minutes, as in the case of interurban conversations, according to Article 13 of the 'Federal Laws.'

ARTICLE 86.—The rules contained in Article 11 of the 'Federal Laws,' apply to the use of branch lines, between switch stations and the central station of the system, to which these belong. Therefore such connections can not be used longer than 6 minutes by the same person; when other persons are waiting to use the telephone.

ARTICLE 87.—The subscriber whose name is entered for a connection to be made, is to be notified by the central station, as soon as the line is ready for him. If he does not respond at once, then his name is scored out, and the line is placed at the disposal of the next in order waiting. It is not permitted to make arrangements, in ad-

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vance, for the use of a line at some special time; neither can a subscriber enter his name at the same time for several successive conversations over the same line.

ARTICLE 88.—If a connection is taken up, at both ends, and another wire is not available, then the exchange of conversations must take place in alternating order; so that when a conversation is finished, in one direction, the subscriber in the opposite direction will have the right to speak.

ARTICLE 89.—The duration of a conversation begins at the moment when the subscriber who has been called up, responds; and ceases at the moment of ringing off. The control of the duration of conversation is exercised by the central station of the system to which the station belongs, which is calling.

ARTICLE 90.—If a subscriber's station, when called up, has responded, the conversation is charged for, no matter whether the subscriber himself is present or not. This rule applies both to local as well as interurban traffic.

ARTICLE 91.—The subscriber who, on account of the improper handling of his telephone, or through neglect of the official instructions regarding use of same, &c., causes delay, or makes a conversation impossible, can be charged for the length of time taken up, according to the rates fixed for same.

ARTICLE 92.—Interurban conversations, which require the use of more than three central stations (switch stations not reckoned) are, as a rule, not to be permitted over wires having heavy traffic, between 9 a.m. and 4 p.m.. Such connections, moreover, are only to be granted when the same can be made without loss of time; and the management will not be responsible for the obtaining of such conversations. If such conversations are not effected, and the calling up should have reached the fourth central station, and has been answered by the same; then for making these connections between the systems the legal charge must be paid for 3 minutes' conversation, for the distance up to the last-reached central station.

Every further attempt to obtain connections will be treated in the same way, if the conversation cannot be effected, and if it is to be charged for. Subscribers, or public call stations, who ask for the above connections, are to be always reminded beforehand of these special stipulations, particularly as far as the charges are concerned.

ARTICLE 93.—Municipal stations and public call stations are, as a rule, not to be called up, except the person with whom the conversation is desired is present at the station, through having been notified beforehand, by letter, telegram or phonogram, &c. If such an arrangement has not been made, then the call-up will only be made if the person desiring to hold conversation, binds himself to pay the charges for the entire time that the line is in use, or is placed at his disposal; even if the conversation should not be effected. The time will be reckoned from the moment that the response is received from the station desired, until the same has rung off. If the connection, or (in the case of several central stations being required) one of the lines required, is desired, from the other end, then the connection is to terminate after the lapse of 6 minutes; and a subsequent renewal of the same will only be granted by asking and paying for a new conversation, if the traffic will admit of this. If the person called up should not come to the telephone until after the termination of the connection, and desire the renewal of the same, then this request will only be granted on the payment of the charges for a new conversation.

XII. PHONOGRAMS AND TELEGRAMS.

(*Federal Laws, Articles 7, 9, 12, 13, 13b and c, and 18*).

ARTICLE 94.—Phonograms, whether they are sent from a subscribers' station, a public call station or a municipal station, can only be exchanged between the stations of one and the same system; and will therefor not be transmitted over any interurban connections.

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In transmitting the phonograms to the addresses given, the central station will employ either the telegraph bureau or a public call station, in so far as this latter signifies its readiness to do so, or it will employ the municipal station concerned.

ARTICLE 95.—Telegrams are only to be sent off by means of the telephone in this manner: The telegram must be telephoned direct, or through the central station, to the telegraph office situated within the telephone system, and be forwarded by the latter in the customary way, to the point required. An interurban telephone connection cannot be used for this purpose.

ARTICLE 96.—If a subscriber's station, or switch station, is situated in a different locality than the central station, and if this locality has a telegraph bureau, then the telegrams must be despatched by the same; and in this case, the transmission of telegrams by means of the telephone is not admissible. An exception may be granted when the subscriber resides at a great distance from the telegraph bureau, in which case the telegram must contain this clause, inserted before the address: 'Telephoned by' with the address of the sender, which additional clause is counted in the charges.

ARTICLE 97.—If the central station is connected with a telegraph bureau, then the subscriber may ask that the telegrams sent to him at the telegraph bureau be transmitted to him by telephone, by paying the legal rate of 10 centimes. Such request is to be given by letter. The further forwarding of telegrams must take place inside the radius of delivery by messengers, and beyond this by mail.

If an express messenger is paid for in advance when the telegram can be forwarded by means of the telephone, then the receiving bureau must pay back the express charges to sender, by means of an official telegram. If the subscriber should be called for 15 minutes, without responding, then the telegram is to be forwarded at once in the usual way. The time of waiting will be prolonged to 30 minutes, if express charges are sent along with the telegram.

ARTICLE 98.—Telegrams arriving for a place having a municipal station, but no telegraph bureau, will be telephoned to this district station through the central station, or the telegraph bureau, for transmission to the addresses given.

ARTICLE 99.—The public call stations are not obliged to take charge of delivering incoming telegrams, and may only do so when an agreement is made with the persons concerned.

ARTICLE 100.—In the transmission and delivery of telegrams and phonograms by telephone, it is obligatory that the message must be checked by the sender. See Article 18, of the 'Federal Laws.'

ARTICLE 101.—The management will be under no responsibility for the telephonic receiving and transmitting of telegrams and phonograms, notwithstanding what has been decreed regarding such telegrams in the 'Federal Laws,' of June 22, 1877, and in the Federal Statutes of July 30, 1886.

XIII.—CHANGING (SHIFTING) OF STATIONS.

ARTICLE 102.—If a subscriber desires the changing or the moving of his station within the same house, or premises, then he must pay the resulting expenses, and also the cost of any new materials used.

ARTICLE 103.—For moving a single station into another house, or premises, a fixed charge of 20 fr. (\$3.86) is made. If a telephone arrangement already exists in the new residence into which the subscriber moves, then the subscriber has merely to pay the actual costs of moving the station, including the expenses of disconnecting his former station, when this is necessary.

ARTICLE 104.—If the connection broken off with the central station has a length of more than 2 kilometres; then, besides the actual cost of moving station, the subscriber must pay the compensation fixed in Article 6, paragraph 3, of the 'Federal Laws.'

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When the connecting line is more than 5 kilometres long, then the compensation for withdrawal must be paid, specified in Article 120 of the present 'Statutes.'

ARTICLE 105.—If the new residence is more than 2 kilometres distant from the central point, then the charge for subscription is increased, according to the legally fixed additional charges for long distances.

ARTICLE 106.—In the case of subscribers' stations, with branch connections, the charge will be 20 fr. (\$3.86) for any station requiring to be shifted into another residence. Exception will be made in cases where two or more stations are moved from one and the same house, into another single house, in which case the charge of 20 fr. (\$3.86) will only be required for one of these stations; and for the others, only half this amount for each one. When only stations immediately connected with the central station, 'middle stations,' are to be moved into another house, then besides the charge of 20 fr. (\$3.86), an additional charge of 10 fr. (\$1.93) will be collected for every branch wire.

ARTICLE 107.—If the moving of a branch wire of not more than 2 kilometres, takes place within the first two years; then, besides the above-mentioned charges, a compensation must be paid for the whole length of wire that is broken off, at the rate of 10 fr. (\$1.93) for each 100 metres. For a distance of more than 2 kilometres the rules apply relating to compensation for withdrawal, which are specified in Article 120, of the present 'Statutes.'

ARTICLE 108.—In all cases, specified in Articles 102 to 107, of the present 'Statutes,' the subscriber has to pay the additional charges of any travelling expenses, or extra wages of officials and workmen, as well as the costs of transport, for persons or material.

ARTICLE 109.—The new arrangement will be regarded as a continuation of the one broken off, and the subscriber will retain all his former privileges, under the foregoing stipulations (Articles 102 to 108) and with the understanding that no interruption will take place in the payment of the subscription charges.

ARTICLE 110.—When a subscriber gives up his station, in order to take up at once a new station in another system, he can only retain the privileges resulting from the duration of his period of subscription, by paying all expenses for the setting up of the new line, and the fixing up of the new station, and by continuing to pay his subscription, without interruption. If the subscription should not have lasted two complete years, then besides the foregoing he will also have to pay the expenses of disconnecting his former station, and its connecting wire, if this should be necessary.

ARTICLE 111.—In order to secure the prompt transfer (shifting) of a station, a written request must be sent in. In the case of wires up to 2 km. in length, this must be done two weeks in advance, and at least four weeks in advance, when the wire is more than 2 km.

XIV.—ALTERING OF SUBSCRIPTIONS.

ARTICLE 112.—When a subscriber desires a branch station to be changed into a direct connection with the central station, then he is to be dealt with as a new subscriber. If this change takes place through the decision of the management, then the duration of the branch station will be reckoned for the new connection with the central station.

ARTICLE 113.—When a person, holding a combined subscription, desires to change his branch station into a direct connection with the central station, and to give up his 'Middle Station,' (*i.e.*, direct connection) or convert it into a branch station, then the new connection will be considered as a continued subscription, if the subscriber pays the costs of alteration specified in Articles 103 to 108, of the present 'Statutes,' as well as any compensation for withdrawal that may be required for the 'Middle Station,' *i.e.*, direct connection.

The same rules apply when a single subscription is changed into a combined one, if the locality is at the same time connected with the central station, and the former

connection broken off with the central station, and the old station changed into a branch station.

XV. WITHDRAWAL OF SUBSCRIBERS.

(*'Federal Laws,' Article 6*).

ARTICLE 114.—Intention of withdrawal must be made by letter. When a subscriber withdraws, then any amount of subscription already paid for the time of non-use will be refunded. This will only be done, however, if a month's notice has been given beforehand, and the legal compensation paid, specified in Article 6 of the '*Federal Laws,*' should withdrawal take place within the first two years. Where there are lines with double wires then the amount of compensation to be paid on withdrawal will be 45 Fr. (\$8.69) per 100 metres (110 yards) extra length in the first year; and 30 Fr. (\$5.79) per 100 metres, extra length, in the second year: see '*Federal Laws,*' Article 12 A. *d.* When the declaration of subscription contains special stipulations regarding the duration of subscription, then Article 120 of the present '*Statutes*' comes into application.

ARTICLE 115.—The date when the station was opened for service, from which the subscription rates commence, applies also for the computation of any compensations that may have to be made: see '*Federal Laws,*' Article 6.

ARTICLE 116.—If a subscriber gives up his station before it is opened for traffic, then he must refund to the management any expenses for erecting the same, that may have been incurred. If any travelling expenses may have been incurred in connection with the collecting of rates, or arranging the matters connected with the declaration of subscription, then these are also to be refunded.

ARTICLE 117.—Articles 115 and 116 apply also to branch connections.

ARTICLE 118.—If a subscriber, before the termination of the second year of subscription, gives up supplementary apparatus ('phone) or branch connections, which may have been set up in the same house or premises that contains the connection with the central station; then he must pay the costs of setting up and taking down again; and also any charges for transport for persons or materials. The value of materials used is not reckoned.

ARTICLE 119.—Supplementary apparatus ('phone) and branch connections, situated outside the house or premises that is connected directly with the central station are, up to 2 kilometres length of line, to be treated according to rules contained in Article 6 of the '*Federal Laws,*' in the sense that the compensation for withdrawal specified in paragraph 3 will be reckoned for the whole length of the branch connection. The same rules apply for independent connections up to 2 kilometres.

ARTICLE 120.—When a subscription, entered upon for 10 years (see Article 8), is given up before the time, as also a branch line, or an independent connection of more than 2 kilometres length, which calls for 4 years' subscription (Article 9); then besides the compensation for withdrawal, fixed in Article 6, paragraph 2 of the '*Federal Laws,*' the whole amount agreed upon for extra length of line must be paid for time of contract that has still to run.

XVI.—JOINING AGAIN OF A FORMER SUBSCRIBER.

ARTICLE 121.—A relinquished subscription may again be taken up by the same person, with the same privileges as before, if the subscriber pays:—

- (1) Any charges that may still be owing from the old subscription.
- (2) The amount of subscription for the period of interruption.
- (3) The costs of taking down, and setting up station again, if this should have been required. An allowance will be made for any compensation paid by him, according to rules specified in article 6, paragraphs 2 and 3 of the '*Federal Laws.*'

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ARTICLE 122.—When the subscriber refuses to pay the charges specified above, on article 121, Nos. 2 and 3, then he can only be received as a new subscriber; that is to say, he must forego all rights which he had as a former subscriber. Should he also refuse to pay any charges still owing from the former period of subscription, then he will not be received as a subscriber any more, either in the same telephone system or in any other Swiss telephone system.

XVII.—HOURS OF SERVICE AT THE CENTRAL STATIONS.

ARTICLE 123.—The day service of the central stations, of classes I. and II., begins, during the summer, at 7 a.m., and during the winter at 8 a.m., and continues in both cases until 9 p.m. However, the Post Office and Railway Department is authorized to prolong the day service of the central stations of both the above-mentioned classes in cases where the conditions of the traffic justify such a step.

ARTICLE 124.—The hours of service of the central stations of class III. and of switch stations, are arranged according to the hours of service at the post office or telegraph bureau, combined therewith. If these are not combined with a post office or telegraph bureau, then the hours of service will be limited from 7 or 8 a.m. until noon; 2 to 6 p.m., and 8 to 8.30 p.m. A prolongation of the hours of service may be granted when circumstances permit of it, and when the subscribers or the district authorities pay the extra expenses of service.

ARTICLE 125.—Municipal stations connected with a telegraph bureau have the same hours of service as the telegraph bureau of class III., with the exception that the Sunday service will be limited according to the rules laid down by the federal decrees of January 9 and May 27, 1874. The limitation of the Sunday service in the case of a district station that is connected to a telephone system is subject to the preliminary agreement made by the district authorities, and the approval of the telegraph management.

ARTICLE 126.—When the officials at a central station or a switch station, with limited hours of service, are summoned to service at the 'phone during the time that they are off duty, then they must do so, but they are entitled to a special payment of 50 centimes (10 cents), for each conversation (without regard to the duration thereof), whether the conversation be effected or not. The stipulations are reserved, contained in Article 136, of the present 'Statutes.'

ARTICLE 127.—The hours of service at the central stations are specified at the beginning of the lists of the subscribers connected with the same.

XVIII.—NIGHT SERVICE.

ARTICLE 128.—Central stations having at least 300 subscribers' wires coming in have full night service. Where this arrangement has been introduced on the basis of decrees, it will continue henceforth.

ARTICLE 129.—Systems having less than 300 stations, such as municipal and switch stations may have, as far as circumstances permit, a partial night service, in this sense, that an official may be awakened during the night, by an electric bell, and called to attend to the service. When this arrangement is desired for central stations of Class III. or switch stations by the subscribers or by the municipal, then these must be responsible for the expenses arising from this, and must themselves make arrangements with the official, who attends to the service, regarding any extra payment.

ARTICLE 130.—The service within a particular telephone system, having only a partial night service, besides the regular salary appointed for the hours of service, is subject to the following charges for the extra service and remuneration of officials:—

(a) For every conversation during the first hour after closing time or during the first hour before opening time, 25 centimes (5 cents).

(b) During the other night hours, 50 centimes (10 cents).

ARTICLE 131.—Interurban conversations must pay the night charges specified above in Article 130, for each central station without full night service, called up.

ARTICLE 132.—Both in local and interurban traffic the night charges will be collected, no matter whether the subscriber who has been called up responds or not. But, if failure to effect conversation arises from the non-response of a central station, then no charge can be collected.

ARTICLE 133.—The night charges collected are to be divided equally between the central stations called into requisition.

ARTICLE 134.—For phonograms and telegrams, telephoned during night hours, besides the fixed charges specified in Article 130, there will also be collected the special rates fixed for telegraph night service. An exception will be made, in cases where the telegraph and telephone service is attended to by the same person. In such central stations, the telephone night charges, specified in Article 130 will not be collected, but only the telegraph night charges.

ARTICLE 135.—When fires break out at night, the fire department and the police station must be served first of all, and the other stations according as it is possible.

ARTICLE 136.—The regulations laid down in the Federal Statutes of July 30, 1886, in so far as these relate to the special telegraph service, in cases of political disturbances, public calamities, riots, conflagrations, floods, and the like, apply also to the telephone service.

XIX.—COLLECTION OF CHARGES AND REIMBURSEMENTS.

(*Federal Laws, Articles 12, 16 and 19.*)

ARTICLE 137.—Subscription rates are collected in advance, half-yearly, on January 1 and July 1 (Article 12, of the 'Federal Laws'). Rates for stations set up during the half year are reckoned from the time that they are set up till the termination of the half year. As a rule the collection is made without notifying the subscribers beforehand by letter. When such notification is sent, it is a summons for payment, in accordance with Article 19, paragraph 2, of the 'Federal Laws.'

ARTICLE 138.—When the half-yearly payments, or other charges owing, are not paid within a month from the date of notification, then the station will be removed. After the negligent subscriber has received special notice to this effect, at least eight days before the month's grace has expired.

ARTICLE 139.—When a station is removed because of the non-payment of charges owing, then the subscriber is also responsible for the compensations specified in the 'Federal Laws,' Article 6, paragraphs 2 and 3.

ARTICLE 140.—Should a subscriber only settle his account after the management has issued orders for the removal of his station, then he must pay any expenses that may have thereby been incurred.

ARTICLE 141.—If the security (standing) of a subscriber should appear doubtful through being always behindhand in settling his account, or through other circumstances, then an adequate security may be required for the fulfilment of his obligations; if this has not already taken place from other reasons. See Article 10, of the present 'Statutes.'

ARTICLE 142.—Charges for local and interurban conversations, phonograms and telegrams, are summary, and must always be paid at the end of the month, when account is sent in through post. If such accounts are not regularly paid without delay, then the central station may demand a deposit equal to the monthly account, and the renewal of the same each month. If the subscriber refuses to comply with this demand then the central station has the right to refuse to make further interurban connections, or to transmit further telegrams for him.

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ARTICLE 143.—The register of accounts kept at the central stations are authoritative for the reckoning of charges owing ('Federal Laws,' Article 12), unless contrary proof can be furnished. If an differences should be found between the account when it is sent in and the entries kept by the subscriber, the account must be paid, notwithstanding, but with the understanding that investigation will be made, and, if necessary, extra charges refunded. The central station, by way of exception, may send to a subscriber a detailed account to explain any differences existing between the general account and the items entered by him, but the central station is not obliged to do this regularly.

ARTICLE 144.—The reimbursement of subscriptions, on account of long interruptions in the telephone service ('Federal Laws,' Article 16) will be made by the management.

ARTICLE 145.—Subscribers are to be notified beforehand, when lengthened periods of suspension of service, or frequent short interruptions are to be expected, on account of important alterations being made in the lines, or in the central stations. When subscribers' lines are broken down by heavy snow falls, fires, &c., then the subscribers are to receive proper notification of the probable duration of such interruptions in the service.

XX.—MISUSE OF TELEPHONES (OFFENCES).

(*'Federal Laws,' Article 19, paragraph 2.*)

ARTICLE 146.—Those in charge of municipal stations or public call stations, are required to prevent as far as possible any offensive (insulting) expressions being made to employees at the central stations, or to subscribers, and to note down the offending persons, in order that the management may take proceedings against them. An investigation may also be ordered by the management, in those cases where offences of this kind have taken place in a subscriber's station, situated in a public place.

ARTICLE 147.—Each subscriber is personally responsible for taking care that his station is not misused, through offensive (insulting) expressions being made to telephone employees or officials, or to subscribers (Article 40, of present 'Statutes'). For such cases, the management will proceed according to appointed measures specified in the 'Federal Laws,' Article 19, paragraph 2.

XXI.—CONCESSIONS.

(*'Federal Laws,' Articles 20, 21 and 22.*)

ARTICLE 148.—Independent telephone connections, the erection and operation of which is not undertaken by the management in the usual way of subscription, and the erection of which requires the use of the property of another person, need to have a concession (grant). 'Federal Laws,' Article 20.

ARTICLE 149.—For every conceded telegraph or telephone connection, a yearly concession charge of 5 Fr. (97 cents) for each kilometre or fraction thereof of line is collected by the government, and also a charge, once for all of 20 Fr. (\$3.86) for investigation of the petition, and issuing the act of concession. The concession charge will not be required when the connection (line) is to be used exclusively for public purposes.

ARTICLE 150.—A concession is also necessary for the erection of electric bells, electric clock lines, water-gauges (water-gauge indicators) and the like; however, in such cases, only a charge of 5 Fr. (97 cents) once for all, will be collected.

ARTICLE 151.—The setting up or the operation of a telegraph or telephone line, for which no concession was sought, or which is used for the other purposes than that specified in the concession, will be treated as a breach of the laws.

ARTICLE 152.—The officials of the telegraph management must have free access to all the arrangements of conceded lines, for the purpose of examination and inspection.

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ARTICLE 153.—The granting of a concession does not include the right to use the property of another person for setting up the line.

ARTICLE 154.—A conceded telegraph or telephone connection must only be used exclusively for the business and domestic purposes of the person receiving the concession. Any other kind of use, will be treated as a breach of the telegraph rules.

ARTICLE 155.—Concessions may be cancelled at any time by the management, without any compensation being given; and the person who has received the concession may withdraw from the same by giving notice a month beforehand.

ARTICLE 156.—A new concession must be obtained for any branch line that is to be connected to a conceded line already existing; as also for any alteration in or shifting of an existing line, as well as the transfer of the same to another person.

XXII.—TELEPHONE DIRECTORIES.

ARTICLE 157.—Each subscriber receives from the management, gratis, a copy of the instructions and a list of the subscribers connected with his system, or group of systems, together with the supplements. Moreover, the lists of subscribers of the various systems, or group of systems will be sold to subscribers and non-subscribers for 50 centimes (10 cents).

ARTICLE 158.—The lists of subscribers are only to contain the names of the subscribers, the concise statement of their business, and the address of where station is placed. Recommendations or solicitations are not allowed.

ARTICLE 159.—If a subscriber wishes to appear on the list, under two or more headings, then for the second and every further entry, he must pay a yearly charge of 2 Fr. (40 cents). The entry of a subscriber on the list of any other system than his own, is not admissible. As a matter of course, non-subscribers are not allowed to appear in the list, not even if they can be called to the 'phone, through a municipal station, a public call station or a subscriber.

ARTICLE 160.—The management decides as to the arrangement of the lists, as well as to the date of issue of new lists or supplements. Should a new list or supplement not be issued within a definite time after a new subscriber has joined, this circumstance will give him no right to any compensation; neither does any inaccuracy or printer's error in the lists call for any compensation.

ARTICLE 161.—The present 'Statutes' are to be incorporated into the 'Official Code,' and will come into force on January 1, 1896.

ARTICLE 162.—The post office and railway department is charged with the execution of the same.

In the name of the Swiss Federal Parliament.

BERNE, September 24, 1895.

ZEMP,
Federal President.

RINGIER,
Chancellor of the Confederation.

APPENDIX.

Federal Decree (of April 5, 1904), relating to the alteration of Article 80, paragraph 1 of the 'Statutes relating to the Telephone System.'

The Swiss parliament, at the desire of its post office and telegraph department, decrees:—

Article 80, paragraph 1, of the 'Statutes relating to the Telephone System,' of September 24, 1895, is altered, and now reads as follows: 'For the amount of guar-SWITZERLAND.

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antee, a round sum will be accepted, as may be computed from the probable length of line, without taking into consideration the number of wires at the rate of 50 Fr. (\$10) per kilometre, or fraction thereof. Any differences in length that may arise subsequently when building the line, or by subsequent alteration of route, are not considered. The already existing agreements of guarantee remain unchanged.' Paragraph 2 of Article 80 remains unchanged.

The new alteration passes into effect on April 1, 1904.

In the name of the Swiss parliament.

BERNE, April 5, 1904.

COMTESSE,
Federal President.

RINGIER,
Chancellor of the Confederation.

No. 289d.

SWITZERLAND—*Continued.*

(Translation.)

Federal Laws of July 2, 1897, regarding the wages of officials and employees.

The Swiss Federal Parliament, after due consideration of a message from the Diet, of November 6, 1896, in modifying the legal decrees regarding the wage system of officials and employees, decrees as follows:—

I.—GENERAL RULES.

ARTICLE 1.—In so far as special laws do not obtain the following classes of salaries with minimum and maximum, are specified for the federal officials and employees:—

I. Class.. . . .	6,000 frs.	(\$1,158)	to	8,000 frs.	(\$1,544)
II. Class.. . . .	5,000 frs.	(\$965)	to	7,000 frs.	(\$1,351)
III. Class.. . . .	4,000 frs.	(\$772)	to	5,500 frs.	(\$1,061.50)
IV. Class.. . . .	3,500 frs.	(\$675.50)	to	4,500 frs.	(\$868.50)
V. Class.. . . .	3,000 frs.	(\$579)	to	4,000 frs.	(\$772)
VI. Class.. . . .	2,000 frs.	(\$386)	to	3,500 frs.	(\$675.50)
VII. Class.. . . .			up to	2,500 frs.	(\$482.50)

The salary of an employee of the 7th Class, who is of full age, and exclusively employed in the government service, shall be at least 1,200 frs. (\$231.60). For positions where very exceptional qualifications are required, the maximum amount fixed for Class I. may be exceeded by decree of parliament.

ARTICLE 2.—Parliament fixes the maximum salary for each single office and appointment, within the limits of the rates laid down in this law, when the proposal is made by the department concerned.

ARTICLE 3.—When any official or employee is appointed, the minimum amount of salary is given as a rule. However, special services in a former sphere of duty, particular qualifications, as well as the local conditions, are to be sufficiently taken into account. When an official or employee passes from a lower class into a higher class, or from one department of service into another, the salary drawn by him up to that point of time, shall at least be remitted to him.

ARTICLE 4.—Until the fixed maximum for any office or position, according to the foregoing Article 2, has been attained, the salary increases 300 frs. (5,790) for each three years term of service.

In cases of unsatisfactory discharge of duties or censurable conduct this increase of salary is to be wholly or partly set aside.

The entire salary of an official or an employee who serves in various departments is not to exceed the rates fixed for the particular class to which he has been assigned.

ARTICLE 5.—Official residences are carefully reckoned in the salaries, according to the scale of rents that obtain in the place of residence.

When official uniform is appointed for officials and employees, the government has either to supply the same gratis or to give a sufficient cash sum. The special rules relating to this point are decreed by parliament.

ARTICLE 6.—Officials and employees whose duties are either suspended or changed, to their loss or disadvantage, during their term of service, through laws or decrees of parliament, or rules based thereupon, have a claim for compensation. But if such changes come into force only at the termination of a period of service no claim for compensation will be entertained.

ARTICLE 7.—The officials and employees are only allowed to accept another situation or to discharge the duties of another occupation in so far as their official duties are not encroached upon thereby.

The federal parliament will fix the necessary rules applying to such cases.

II.—DIVISION INTO CLASSES.

ARTICLE 8.—The officials and employees of the federal government are classified in the following manner:—

(g) *Post Office and Railway Department—Telegraph Management.*

I. Class.—Director of telegraph department.

II. Class.—Assistant and deputy of the director. Head of the technical bureau. Inspectors of management. District telegraph inspectors. Controller

III. Class.—Secretaries and auditors, for I. class of the management. Managers in repair shops. Managers of supplies. Assistant district inspectors. Managers of telephony.

IV. Class.—Secretaries and auditors of I. class of the management.

V. Class.—Clerks and assistants of I. class.

VI. Class.—Clerks and assistants of II. class.

VII. Class.—Errand or messenger boys I. and II. class. Office hands, assistants and attendants of telegraph department.

Telegraph and Telephone Departments.

The following maximum and minimum rate of salary has been fixed for those employed in the telegraph and telephone departments:—

- (1) Telephone manager of I. class, 5,500 frs. (\$1,061.50).
- (2) Department manager, and service manager of the telegraph department, I. and II. class, and telephone assistants of I. class, 4,800 frs. (\$926.40).
- (3) Telegraph operators, of I. and II. class, and telephone assistants of II. class, 3,700 frs. (\$714.10). The minimum for above is 1,800 frs. (\$347.40).
- (4) Women overseers in telephone office, I. and II. class, 2,500 frs. (\$482.50).
- (5) Telephone girls, I. and II. class, 2,100 (\$405.30). The minimum is 1,200 frs. (\$231.60).
- (6) Employees of telegraph and telephone department of III. class, 1,000 frs. (\$193).

Over and above this, for the departments of class III., there is a commission paid for telegram despatches, and for telephone messages, which are reckoned according to traffic. Further, the Federal Parliament has the right to enact a decree for the readjustment of the above rates, if such action should be deemed requisite. The minimum rates of wages specified for employees of the telegraph and telephone department.

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ments, apply only to such officials and employees as are of full age, and who are exclusively employed in the service of these departments.

III.—FINAL DECREES AND MODIFICATIONS.

ARTICLE 9.—If new spheres of service should be created, by future decrees of parliament, the class-arrangement and rate of wages for the same, are to be fixed according to the decrees of these laws.

ARTICLE 10.—When a post becomes vacant through the death or sickness of the employee, the salary may be continued for a year. The parliament has the right to decide, in this matter, according to the circumstances of each individual case. The parliament will likewise decide which persons are entitled to receive a superannuation fund, and all claims or legal suits for debts, on the part of creditors, are excluded.

Officials and employees who are appointed for a temporary period of service, do not come under the application of the foregoing decrees, during the period of their temporary service.

ARTICLE 11.—The present statutes render nugatory all decrees and decisions that are contrary to the same.

ARTICLE 12.—The federal parliament is authorized, according to the statutes of the federal law, of June 17, 1874, regarding the public vote on the federal laws and decrees, to issue those present decrees, and to begin to put them in force.

Decreed by the Assembly of the
States, Berne, July 1, 1897)

President, RAS-CHIEN,
Recorder, SCHATZMANN.

Decreed by the National Assembly)
Berne, July 2, 1897. }

President, GRIESHABER,
Recorder, RINGIER.

The Swiss federal parliament decrees, that the foregoing Federal Laws, made public on July 7, 1897*, are to be incorporated into the Federal Code of Laws, and pass into force on January 1, 1898, with the exception of Article 10, which can be in effect from the present date.

In the name of the Swiss Federal Parliament.

Federal President, DEUCHER,
State Chancellor, RINGIER.

BERNE, October 11, 1897.

*See Blue-book for 1897, Vol. III., page 819.

No. 289e.

(Translation.)

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EXECUTIVE DECREE, of December 23, 1897, regarding the Telegraph Management, added to Federal Laws, passed on July 2, 1897, relating to the Salaries of Federal Officials and Employees.

The Swiss Federal Parliament, in carrying into effect the Federal Laws relating to the salaries of Federal officials and employees, passed on July 2, 1897, decrees, as follows:—

I.—GENERALLY.

ARTICLE 1.—The salaries of officials and employees of the telegraph and telephone departments will be estimated within the minimum and maximum rates fixed by the laws already laid down, and by this decree, according to the decisions of the present decree.

ARTICLE 2.—

(1) The salaries of the employees in the telegraph and telephone departments are to be augmented at the beginning of each three years' term of service. The right is reserved of inspecting yearly the commissions paid to employees in telephone central stations, of third class, and in switch stations. (Article 7, *e* and *f*.)

(2) In order that the above may be carried into effect the managers of each department have to hand in to the district inspectors a careful report concerning the services and the conduct of the employees over which they have charge. On the basis of these reports, and according to their own observation, the district inspectors have to submit their proposals, regarding the salaries of the officials and employees within their districts, to the head office.

ARTICLE 3.—

(1) Until the maximum amount of salary, fixed for any office or position has been attained, the salaries of officials and employees, who are neither guilty of unsatisfactory discharge of duties, nor of censurable conduct, will be increased, for each new term of service, as follows:—

- (a) For those who have served 30 months and more, during the term of service finished, 300 fr. (\$57.90).
- (b) For those who, during the term of service, finished, have been in service from 18 to 30 months, 200 fr. (\$38.60).
- (c) For those who have served from 6 to 18 months during the said time, 100 fr. (\$19.30).

The special rules appointed relating to the telegraph and telephone departments of Class 3, and the switch stations, are reserved.

(2) Officials and employees who have been guilty of unsatisfactory discharge of duties, or of censurable conduct, receive, according to the degree in which they have erred in duty or conduct, either no increase of salary or a smaller increase than that specified above, under Article 3, paragraph 1.

ARTICLE 4.—

(1) When an official or employee enters the telegraph or the telephone service, as a rule he is to receive the minimum amount of salary fixed for the post for which he has been chosen. Any exceptions made to Article 3, paragraph 1, must be based upon special reasons.

(2) In cases of promotion, or changing from one sphere of duty to another within the telegraph department, or in cases of changing from one department of government service into the telegraph department, the board of electors, who make the choice, fixes the amount of salary for the new sphere of duty, according to the principles laid down in the 'Federal Laws regarding wages,' Article 3, and after due consideration of the existing circumstances.

Employees or servants who have been appointed telegraph operators, without having had previous experience or training in the telegraph department, are not to be treated with any more consideration, than employees who have had experience and training in telegraph work.

(3) When changes are made because of partial or entire ill health, or by way of discipline, because of neglect of duty, censurable conduct, or unsatisfactory discharge of duties, the salary is to be again fixed by the board of electors, in accordance with the circumstances of the particular case.

ARTICLE 5.—The income accruing from duties in various departments of the government service is to be regulated according to Article 4, paragraph 3, of 'Federal Laws regarding wages.' This decision is to be applied as follows:—

(1) The officials and employees of the Post Office Department, of I. and II. Class, what at the same time have to attend to the telegraph or telephone service, receive no compensation for the same, but only the salary appointed for post office work. The

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payments usually made by the telegraph department for such services are, in such cases, paid into the post office account.

(2) Officials of the Post Office Department of Class III., *i.e.*, postmasters and those in charge of mail, who have also to attend to the telegraph or telephone service, will receive for such services the salary and commissions usually paid by the telegraph department. At the same time, such officials and employees are required to provide, at their own cost, and under their own responsibility, such help as may be necessary for the telegraph or telephone duties. The appointment of these assistants is subject to the approval of the post office and telegraph management. When an official or employee is not able to procure an assistant who can be approved by the department in question, then the post office management will provide an assistant, and, in such cases, will have the right to determine what amount the official or employee will have to give towards the salary of the assistant out of the income derived from the telegraph and telephone service.

ARTICLE 6.—The amount of salary fixed when an employee is appointed to a post, or at the commencement of a three-years term of service, can only be changed during the term of service, in the case of employees of the telegraph and telephone departments, of Class I. and II., and of the telegraph department, of Class III., in cases of promotion, setting back, or transferring to another post.

The commission for the telephone service is to be fixed anew each year.

II.—RATES OF SALARIES.

ARTICLE 7.—The rates of salaries for the officials and employees of the telegraph and telephone departments are fixed according to the following table:—

A.—Independent Telephone Offices, Class I.

(1) Managers of independent offices—that is, offices managed by a special official:—

(a) In the three largest systems of Basle, Geneva, and Zurich: Minimum 4,000 fr. (\$772); maximum, 5,500 fr. (\$1,061.50). The right is reserved to reorganize the management.

(b) In the other systems having more than 1,000 stations: Minimum 4,000 fr. (\$772); maximum, 5,000 fr. (\$965).

(c) In systems having from 500 to 1,000 stations: Minimum, 4,000 fr. (\$772); maximum, 4,800 fr. (\$926.40).

(d) In systems having less than 500 stations: Minimum, 4,000 fr. (\$772); maximum, 4,500 fr. (\$868.50). Here stations only are considered which belong to system at office over which manager is placed.

(2) Telephone Assistants—Class I:—

(a) Assistant manager: Minimum, 2,400 fr. (\$463.20); maximum, 4,500 fr. (\$868.50).

(b) Other telephone assistants of Class I: Minimum, 2,200 fr. (\$424.60); maximum, 4,200 fr. (\$810.60).

(3) Telephone Assistants—Class II: Minimum, 1,800 fr. (\$347.40); maximum, 3,700 fr. (\$714.10).

(4) Lady Overseers at Central Stations: Minimum, 1,500 fr. (\$289.50); maximum, 2,500 fr. (\$482.50).

(5) Telephone Girls: Minimum, 1,200 fr. (\$231.60); maximum, 2,100 fr. (\$405.30).

B.—Telegraph Department, Class I. and II., with or without Telephone System, in places with a population of 10,000 and over, the last Federal census, being the standard of calculation:

(1) Managers:—

(a) In the five largest telegraph stations of Basle, Berne, Geneva, St. Gallen and Zurich: Minimum, 3,000 fr. (\$579); maximum, 4,800 fr. (\$926.40).

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- (b) In the other telegraph stations, Class I., with or without telephone system: Minimum 2,400 fr. (\$463.20); maximum, 4,500 fr. (\$868.50).
- (c) In the combined telegraph and telephone offices, Class II., when the telephone has at least 200 subscribers: Minimum, 2,200 fr. (\$424.60); maximum, 4,500 fr. (\$868.50).

When the telephone has less than 200 subscribers: Minimum, 2,200 fr. (\$424.60); maximum, 4,200 fr. (\$810.60).

These salaries apply also when an official in a telegraph station of Class I. who is not a manager, has the charge of the telephone system.

- (d) In telegraph stations, of Class II., without telephone system: Minimum, 2,100 fr. (\$405.30); maximum, 4,000 fr. (\$772).

(2) Foremen of Telegraph Stations, Class I: Minimum, 2,100 fr. (\$405.30); maximum, 4,000 fr. (\$772).

(3) Telegraph operators: Minimum, 1,800 fr. (\$347.40); maximum, 3,700 fr. (\$714.10). For girl operators the maximum is limited to 3,300 fr. (\$636.90).

(4) Lady overseers at central stations: Minimum, 1,500 fr. (\$289.50); maximum, 2,500 fr. (\$482.50).

(5) Telephone girls: Minimum, 1,200 fr. (\$231.60); maximum, 2,100 fr. (\$405.30).

(6) Messengers and attendants: Minimum, 1,200 fr. (\$231.60); maximum, 2,300 fr. (\$443.90).

C.—*Telegraph Department, Class I. and II.*, with or without Telephone System, in places with less than 10,000 population:—

(1) Managers:—

(a) In telegraph stations, Class I.: Minimum, 2,400 fr. (\$463.20); maximum, 4,300 fr. (\$829.90).

(b) In telegraph stations, Class II.: Minimum, 2,100 fr. (\$405.30); maximum, 3,800 fr. (\$733.40).

(c) When the manager of a telegraph station of Class I. or II. has also charge of the telephone system, then the minimum and maximum amount of salary applies, which has been specified above, under B (1) (c).

(2) Telegraph operators: Minimum, 1,800 fr. (\$347.40); maximum, 3,500 fr. (\$675.50). For female operators the maximum is limited to 3,100 fr. (\$598.30).

(3) Lady overseers in central stations: Minimum, 1,500 fr. (\$289.50); maximum, 2,300 fr. (\$443.90).

(4) Telephone girls: Minimum, 1,200 fr. (\$231.60); maximum, 1,900 fr. (\$366.70).

(5) Messengers: Minimum, 1,200 fr. (\$231.60); maximum, 2,100 fr. (\$405.30).

D.—*Telegraph Department, Class III.*, with or without telephone service:—

(1) The salaries of the telegraph department, Class III., are arranged into six categories, according to the yearly number of their telegrams, with the following minima and maxima:—

	Minimum.	Maximum.
I. Less than 500 telegrams	200 fr. (\$38.60)	200 fr. (\$38.60)
II. 500 to 1,000 "	200 fr. (\$38.60)	280 fr. (\$54.04)
III. 1,000 to 3,000 "	240 fr. (\$46.32)	400 fr. (\$77.20)
IV. 3,000 to 5,000 "	300 fr. (\$57.90)	500 fr. (\$96.50)
V. 5,000 to 7,000 "	360 fr. (\$69.48)	600 fr. (\$115.80)
VI. Over 7,000 telegrams	500 fr. (\$96.50)	1,000 fr. (\$193.00)

The basis of calculation is the number of incoming telegrams during the year previous to appointment to post. The number of despatched telegrams is not reckoned.

(2) Officials of Categories II to VI. receive, after five years of service, and each further period of service thereafter, an increase of 20 to 25 per cent of the minimum rate fixed for the category in which they belong, until the maximum has been attained.

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In special cases, viz., in larger places and where there is heavy traffic, an exception may be made, and the amount of salary can, according to the circumstances of the case, be made higher than the fixed minimum rate. 'Season offices,' that is, offices which have a considerable traffic only during a few months of the year, are, as a rule, not to be placed higher than in Category IV. In cases where there is a decrease of traffic, the salary may be decreased at the commencement of a new term of service, according to the above rates of classification. Likewise, in cases of unsatisfactory discharge of duties, an increase may be withheld, or a decrease of salary may take place, according to the limits fixed by the categories applying to such cases.

Besides the amount of salary fixed, the employees of telegraph department, Class III., receive a commission of 10 centimes (2 cents) for each telegram handled by them, for which they have to defray the expenses of delivery, at their own cost. In cases where the management may deem it advisable to appoint and pay the messenger service, the commission is then granted only for despatched telegrams.

E.—Telephone Central Stations, Class III., with or without telegraph or post office service:—

(1) The salary for attending to the telephone system is fixed each year, and is regulated according to the business done during the previous year (calendar year), and the minimum is 200 fr. (\$38.60). The computation is made thus: Every outgoing interurban conversation, as well as every telephoned telegram, is reckoned at 10 centimes (2 cents), and every local and transit conversation at 2 centimes ($\frac{1}{2}$ cent); and the total amount is squared by the next cipher that can be divided by 4. Incoming interurban conversations and free conversations are not reckoned.

(2) When the central station is not combined with the telegraph or post office service, then, besides the salary reckoned after the manner above set forth an additional allowance of 240 fr. (\$46.32) yearly is given, which amount includes rent, lighting and heating of establishment.

(3) Central stations opened during the year, receive, until the period of the next revisal of salaries, the minimum salary of 200 fr. (\$38.60), and after the revisal the surplus will be estimated up to the day when station was opened.

The revised rates of salary come into force on April 1 of the year in which the revisal is made.

(4) The officials of the Post and Telegraph Departments are required to take over the telephone service, under the foregoing stipulations, when the telegraph and post office managements shall agree to instruct them to do so.

F.—Switch Stations.

(1) The remuneration fixed for those in charge of switch stations, are reckoned in the same manner as for central stations, Class III. The rules laid down in Section E apply therefore to the switch stations, with exception of the minimum amount of salary and the additional allowance.

(2) The minimum amount of salary for a switch station, will be estimated according to the total amount paid yearly by the subscribers for the telephone service, and, of course, according to the number of subscribers at the time when the revisal of salary is made.

ARTICLE 8.—(1) Managers of telegraph stations, Class II., who have no messengers appointed and paid by the management, will receive, for the employment of the messenger service, a commission of 10 centimes (2 cents) for every telegram coming in.

(2) For night service, the following extra remunerations will be allowed:—

(a) For entire night service in the telegraph bureaux, Class I., per official and per night, 3 fr. (58 cents).

(b) For entire night service at telephone central stations, per official, and per night, 2 fr. (38½ cents).

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- (c) For assistants during a portion of the time of night service, for case (a), 60 centimes (12 cents) per hour; for case (b), 40 centimes (8 cents). In both cases, however, not more than the amount paid for entire night service.
- Night service, required on account of public accidents, fires, floods, riots, &c., has no claim for special remuneration.
- (d) For occasional periods of night service in the telegraph and telephone departments of Classes I. and II., 15 fr. (\$2.90) per month. In combined departments, this remuneration is only paid once for both branches of service.
- (e) For the supply and up-keep of a bed for night service, in cases where one is required, the managers of the telegraph offices, of Class II., receive a yearly allowance of 30 fr. (\$5.79).

III.—DECREES REGARDING THE DATES WHEN DECREES SHALL PASS INTO EFFECT.

ARTICLE 9.—(1) The present statute comes into force on January 1, 1898. On this date all sums not in agreement therewith are cancelled, particularly the statute relating to the salaries of post office officials, of offices, Class I. and II., as also the salaries of telegraph officials of head offices and special offices, passed on July 11, 1882 (A. S., and F. VI., 294). Also the statutes relating to the salaries of telephone officials of July 21, 1891; the salaries of telephone officials, of March 12, 1896; the salaries of telegraph messengers, of March 12, 1896; also the statute regarding the remunerations for regular night service, in telegraph offices and telephone central stations, of December 15, 1892 (A. S. and F. XIII., 257).

(2) By this statute coming into force, on January 1, 1898, the salaries of all those employed in the telegraph and telephone offices, Class I. and II., will be newly fixed, whereby the following rules come into application:—

- (a) The time of service will be reckoned up till March 31, 1897.
- (b) Officials and employees who have served less than three years, will receive the minimum salary fixed for the category in which they are placed.
- (c) Officials and employees distinguished for satisfactory discharge of duties and good conduct, who have served three years or more, will have their past period of service estimated when the new amount of salary is fixed, in this manner, viz.: that for every three years of service the salary is to be increased 300 fr. (\$57.90) beyond the appointed minimum. Periods less than three years are not reckoned. In no case can the new maximum rates be exceeded.
- (d) The increase for the individual officials and employees, shall not in general exceed, at one time, the sum of 300 fr. (\$57.90). This decision will only be departed from in favour of:—
- (1) Officials and employees, whose present salary amounts to 300 fr. (\$57.90) less than the new minimum amount. In such cases the salary will be increased to the new minimum.
 - (2) Officials of the telegraph department, of Class I. and II., who, according to the Statute of July 11, 1882, would have received an increase of 360 fr. (\$69.48) on April 1, 1898. Such officials will receive an increase of at least the same amount.
- (e) In cases of unsatisfactory discharge of duties, or of censurable conduct, the new salary will be fixed at a lower rate, according to the degree in which discharge of duties or conduct have called for censure.

(3) The rules, under Figure 2, above, do not apply to officials and employees, who, on account of age, sickness, superannuation, or for any other personal reason, have not been able to fulfil the usual term of service.

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(4) The salaries of employees of the telegraph department, Class III. (apart from the telephone service, see Articles 6 and 7, *E* and *F*), will also be newly fixed, on January 1, 1898, according to rules laid down in Article 7 *D*.

(5) In all cases, where, in carrying into effect the new wage system, the previous salaries are higher than the rates laid down by the 'Federal Laws,' and the present 'Decree,' as a rule, no immediate reduction shall take place, but the right of readjustment is reserved for the next period of revising the salaries, in the event of a new appointment to the post.

No. 289f.

(Translation.)

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PARLIAMENTARY DECREES fixing General Regulations for Electric Construction
(July 7, 1899.)

The Swiss Federal Parliament, after consideration of a report and petition of the Post Office and Railway Department, decrees, in the meantime, the following regulations, for the setting up of low tension and high tension (Ger. weak current and strong current) arrangements:—

I.—LOW TENSION ARRANGEMENTS.

Safeguarding Lines and 'Phones.

ARTICLE 1.—In every low tension station, all the open wires coming in must be provided, as near as possible to point of entrance, with plate lightning arrestors and safety fuses for wires and 'phones.

The parliament reserves the right to grant exceptions. The safety fuse for wire is to be inserted between the open wire and the plate lightning arrestor and the safety fuse for 'phone between the conductor and the 'phone. Instead of this arrangement lightning guards may be employed with two unequal spark arrestors so that the longest spark-arrestor is laid parallel to the wire fuse, and the shorter parallel to the safety fuse for 'phone. In the central stations the safety fuses for wires and 'phones, as well as the plate lightning arrestors are to be mounted on separate sockets, and not on a common frame bed-piece.

ARTICLE 2.—When the wires are carried over to the cable lines, the safety fuses and plate lightning arrestors are to be inserted between the former and the latter; then the cable lines that run into the station are to be connected with the 'phones, by means of the safety fuses.

Specifications for Safety Fuses and Plate Lightning Conductors.

ARTICLE 3.—Safety fuses for wires and 'phones must be constructed as simply as possible, and in the following manner:—

- (a) So that in the fusing of the wires there may be no continued arc, or shunt off, on adjacent lines, and no scattering of melted metal, or falling down of burning pieces of fuse.
- (b) That, even in short circuits, these arrangements can break the contact of continuous currents of 1,000 volts, or alternating currents of 1,000 volts, back of the fuses, without continuous arc (voltair arc) and without risk of fire for the surroundings.
- (c) That these may also be handled, without danger, when there is excess current (high tension) voltage.

ARTICLE 4.—The fuses for wires and 'phones as well as the plate lightning conductors, are to be mounted on incombustible material, that is not hygroscopic, and of sufficient insulating capacity.

ARTICLE 5.—The fusible capacity is to be distinctly marked on the fuse cartridges.

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ARTICLE 6.—The fusible capacity is to be estimated, according to the following requirements:—

- (a) The wire fuses must on the one hand melt at the intensity of current that produces no risk of fire for the local wires (minimum diameter for copper of 0·5 mm.), and on the other hand, they must sustain the inductive action of the lightning. These fuses are to be constructed for a fusible capacity of 4 to 6 amperes. For places where cables are carried over, a fusible capacity is to be selected that may not endanger any of the cable conductors.
- (b) The fusible wires for 'phones are to melt at a fusible capacity that does not endanger the 'phone, *i.e.*, for 'phones and telegraph instruments from 0₂ to 0₃ amperes.

ARTICLE 7.—Fuses for electric lighting and motor service, as also for the storage current for microphone line-testers, &c., must correspond to the regulations laid down in Article 38, &c., regarding fuse for high tension currents.

ARTICLE 8.—The lightning guards must be adjustable and the fusible parts must be easy to change. The earth wire of the lightning guard must be arranged according to Article 27.

Placing of the Fuses and Plate Lightning Conductors.

ARTICLE 9.—Safety fuses or plate lightning conductors, of whatever kind, must not be placed in the telephone, telegraph or signal instruments, nor in the wall brackets, tables, or wooden frames, used for setting these up.

The right is reserved to grant exceptions.

ARTICLE 10.—In telephone central stations, or in the head offices for telegraph service or railway signal service, &c., the safety fuses and the plate lightning conductors must be placed as near as possible to the place where the wires are brought in, and be located in isolated boxes (compartments) that have been made fireproof, according to the requirements of Article 69.

ARTICLE 11.—In smaller stations (intermediate stations, switch stations, or subscribers' stations) the fuses and lightning plates, are to be placed as near as possible to the place where the wires are brought in. They must be easily accessible, but there must be no material near them that is easily combustible.

Leading-in Wires.

ARTICLE 12.—The leading-in wires for the central stations must be inclosed in fire-proof ducts or pipes.

The leading-in wires for smaller stations (intermediate stations, end, or subscribers' stations) must be constructed either of rubber-insulated wire, brought in through fireproof insulating tubes, or of lead covered cable, with artificial end pieces. For the walling-in of lead covered cable, plaster only must be used.

Oversight of Safety Fuses and Plate Lightning Conductors.

ARTICLE 13.—In large telephone central offices, head offices for telegraph, &c., the compartments (boxes) for fuses and lightning plates are to be watched. When contact of wires with high tension (excess current) lines is to be feared, *i.e.*, in the case of thunder storms, wind storms, heavy snow-falls, &c., the number of watchmen is to be increased.

In smaller central offices, the fuses and lightning plates are to be specially watched when contact of wires with high tension lines is to be feared, *i.e.*, in the event of thunder storms, wind storms, heavy snow-falls, &c.

ARTICLE 14.—In all important telephone, telegraph and signal stations, adequate fire extinguishing apparatus must be kept in readiness, both in the fuse boxes and in the operating rooms.

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Wires.

ARTICLE 15.—For low tension (minimum current) overhead lines, the minimum diameter and the minimum tenacity must be as follows:—

	Diameter. mm.	Tenacity. per mm ² in kg.
For bronze wire	Minimum 1.5	Minimum 70
“ “	“ 2	“ 60
For galvanized steel wire	“ 2	“ 140
“ “ iron wire	“ 3	“ 45

For other kinds of wires, the limit must be a diameter corresponding to absolute strength of the wire.

ARTICLE 16.—The sag (dip) of the low tension overhead lines, is to be regulated, so that by 20 degrees Celsius, and by consideration of the dead weight and the stretch, a three-fold security exists against breaking.

Poles.

ARTICLE 17.—Well creosoted wood is always to be used for the poles, at least in so far as the local conditions permit these to be procured without much additional cost, The diameter of pine poles must not be less than:—

	At the bottom.	At the top.
Poles 8 meters in length	18 cm.	12 cm.
“ 10 “	20 “	14 “
“ 12 “	22 “	15 “
“ 16 “	26 “	15 “
“ 20 “	30 “	15 “

The end of the pole is to be protected with a metal cap. The poles are to be sunk as deep as the nature of the ground will permit, and are to be well tamped, and if necessary to be fastened in with concrete, and, when necessary, are to be braced, or shored.

ARTICLE 18.—If stays (wire supports) are to be fastened to buildings, then this must be to parts constructed of masonry. Stays that are attached to inflammable parts of a building must be grounded outside of this building, according to Article 39. Where grounding is not possible, the stays are to be isolated from the inflammable parts of the building.

ARTICLE 19.—In the case of wooden poles, the date of their erection and their number, in the row, is to be distinctly and durably marked on them.

ARTICLE 20.—The lengthening of wooden poles by splicing several poles together is not permitted.

Bearing Capacity of the Poles.

ARTICLE 21.—The greatest weight of wires allowed for straight lines, with a space of 60 metres between the poles, is:—

For single poles	30 wires of 1.5 mm. diameter
“ double “	200 “ 1.5 “
“ triple “	300 “ 1.5 “

For straight lines, the distance between the poles is to be not more than 60 metres (66 yards). Where there are curves, the distance is to be less. An exception is made in the case of single poles, with not more than two wires. Here the distance can be lengthened to 80 metres (88 yards).

ARTICLE 22.—The distance between wire supports, placed on roofs, may be up to 100 metres (110 yards) in towns. Longer spans are only permitted in exceptional cases, viz.: when the wires have to be carried across rivers, where a shorter span is not pos-

sible. Where low tension lines have to be carried over high tension wires, the distance between poles or supports must be reduced, as far as possible according to the special regulations given in Article 88.

ARTICLE 23.—Cable pillars (poles) central supports, and so-called trestles and standards, must be so constructed, that even if the weight of the wires should be thrown to one side, there may be no danger of breaking or tilting over. Where supports are placed on roofs, careful attention must be given to the sufficient strength of the supports of the roof.

ARTICLE 24.—All iron or wooden poles, with cross-pieces (arms), are to be furnished at the first with the maximum number of cross-pieces (arms) specified for their construction. Any subsequent placing of insulators by screwing in, or by means of bridles (stays) or caps, is not admissible.

ARTICLE 25.—If the maximum number of wires specified for a pole should be exceeded, then the pole in question must be replaced by a stronger one.

ARTICLE 26.—The fastening of lines or supporting wires (stays) to parts of buildings of insufficient strength, such as chimneys, railings or lightning conductors, is expressly forbidden.

Earth or Ground Wires (Earth or Ground Circuits).

ARTICLE 27.—Copper must be employed for all the parts of earth circuits. The earth circuit wire (or ribbon) must have a cross section of not less than 10 mm². It must be well fastened and electrically connected in a suitable manner with the material to be grounded, and with the earth electrode. As earth electrode, there must be employed either a copper plate of at least $\frac{1}{2}$ m² surface, and 1 mm. thick, or an extensive water pipe system. Gas pipes must not be used either as earth plates or as earth circuits. The earth plates must be laid at a depth of at least 1 metre, in earth as damp as possible, or, best of all, in water. Where neither of these conditions is obtainable, the earth plate must be made larger.

Line Work, &c.

ARTICLE 28.—When any work is to be carried on, on low tension lines, where danger may arise or interruption through contact with lines or 'phones belonging to another low or high tension plant, then the owner of the plant that is to be erected or repaired, must:—

- (1) Take necessary measures to avoid mutual interruptions or accidents.
- (2) Notify the owners of the other plant, beforehand, of his intention. Then these must also take the necessary measures to avoid any accidents in their plant.

ARTICLE 29.—If low tension wires are to be removed (shifted) or to be employed for some other purpose, then the necessary measures for safety that have been prescribed, must, at once, be provided for such wires.

ARTICLE 30.—Wires that have been out of use for some time must either be removed at once, or they must be kept up and attended to in the same way as those in use. Such wires that are put out of circuit must be well electrically connected with each other and with the earth.

ARTICLE 31.—Provisional or temporary lines must always be avoided, as much as possible.

Inspection.

ARTICLE 32.—Lines, poles and earth wires must be inspected from time to time. There must be a frequent and careful inspection made of poles and lines, where the wires are carried over public squares, streets or railways; and also where there are crossings or parallel routes of different lines. Damaged poles and wires are to be promptly replaced before they become dangerous. The inspectors will decide as to the time when these must be replaced. The examination (testing) of the insulation of SWITZERLAND.

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wires, and of switchboards in the central stations must take place regularly and at fixed intervals, and a record must be kept of the same.

Charts of the Wires.

ARTICLE 33.—In order that the individual wires may be easily found, plans of wires, poles, &c., and drawings, plans, &c., must be made accurately for all low tension lines, and always be kept up to date.

ARTICLE 34.—Where low tension lines are set up in co-operation with the authorities of a particular district, arrangements must be made, in all places where there are overhead wires, to have members of the fire department entrusted with the care of the lines, and the work needed to be done on them.

II.—MAXIMUM CURRENT ARRANGEMENTS.

General Remarks.

ARTICLE 35.—High tension construction is classified as follows:—

- (a) Constructions with low tension where the highest working power (voltage) does not exceed 1,000 volts continuous current, or 1,000 volts alternating current.
- (b) Construction with high tension, which exceed the voltage mentioned under letter (a).

ARTICLE 36.—In maximum current constructions the following tensions are allowed:—

- (a) For setting up in a house: for arrangements which even inexperienced persons can attend to—250 volts, in a 2-wire system, twice 250 volts in a 3-wire system.
- (b) For setting up in factories: for arrangements which even inexperienced persons can attend to—250 volts in a 2-wire system; twice 250 volts in a 3-wire system. For arrangements where special precautions are necessary and are only to be handled by experienced persons—for these arrangements, higher tensions are used.

For the tensions (voltage) that is allowed in electric car wires, special regulations are given.

Safety Fuses Switches and Lightning Guards.

ARTICLE 37.—Wires and apparatus which through receiving strong currents, may be so heated that there may be risk of fire for surrounding objects, are to be protected with safety fuses, or automatic cut-outs (commutators for breaking contact) against such currents.

ARTICLE 38.—The construction and arrangement of the safety fuses must be so that when the wires melt there must be no short circuit, or prolonged arc, nor scattering of melting metal. The high tension safety fuses must be so placed that when they melt there may be no danger to persons nor damage to any parts of the constructions. The fuses must be also so arranged, that they can be changed, without danger, while the wires are being operated. Lines going out from the switchboard of the generating station are to be safeguarded at all the poles, excepting the central conductor, in the case of two or more wire constructions.

ARTICLE 39.—The safety fuses and automatic switches in the generating stations must be regulated according to the intensity of current in general use in the wires and arrangements that are to be safeguarded, and not according to the maximum intensity of current. The permissible amount of current must be marked on the fuses.

ARTICLE 40.—The switches and fuses are to be mounted on incombustible insulated material that is not hygroscopic. They must insure a good contact, and not become heated by the passage of the current.

For the breaking of the circuits which give off sparks at breaking contact, switches must be chosen whose contact levers do not remain standing in intermediate places.

ARTICLE 41.—In circuits with a tension of more than 150 volts, the fuses must be laid in on multipolar, with the exception of the central conductor, and null (zero) conductor, in the case of 3-wire systems and multiple systems. The strength of current for which they are constructed must be plainly marked on them. The current necessary to melt a fuse must be, at the most, three times the strength of the normal current used.

ARTICLE 42.—In every connecting (junction) point of a multiple wire system, where wires of different polarity are united into a so-called flexible cord, a unipolar safety fuse (fusible cut-out) must be inserted.

ARTICLE 43.—Every larger circuit and every branching-off wire where there is an intensity of current of three amperes and more, or which is of a greater length, must have multipolar safety fuses. Besides this, safety fuses are to be placed at all points where there is any real change in the cross section of the line.

ARTICLE 44.—The safety fuses must be laid in places that are easy of access, and where there is no easily combustible material.

ARTICLE 45.—If a large number of lamps are placed on a lighting apparatus, then these must be divided into groups of not more than 5 amperes of intensity of current, and each group must be provided with a multipolar safety fuse.

ARTICLE 46.—Every arc lamp circuit must be provided, at both poles, with a cut-out, and with a safety fuse.

ARTICLE 47.—Every high tension open wire must have a lightning guard at the ends at each pole. In the case of low tension arrangements, these must, at least, be provided at all poles in the machine (engine) stations, with lightning guards. The lightning guards must prevent the possibility of any continuous short circuit, or continuous earth contact. They must be capable of sustaining repeated discharges. In any apparatus where some parts are used up after a few discharges, arrangements must be so made that these parts can be changed, without risk, during the working of the wires. Further, the lightning guards must be set up so that they cannot take fire (ignite).

ARTICLE 48.—The earth wires (circuits) of the lightning guards are to be according to the specifications in Article 49. In using lightning guards, where there is a risk of a continuous short circuit, these must be provided, at each pole, with a special earth wire (circuit).

Earth or Ground Wires.

ARTICLE 49.—For all parts of the earth wires, copper must be used. The earth circuit wire must have a cross section of not less than 25 mm². It must be strongly united to and well electrically-connected with, the material to be grounded, and with the earth electrode. The earth circuit wires, like maximum current lines, must be kept separate from other wires, according to the rules. In the case of high tension arrangements the earth circuit wires of the lightning guards must be out of reach of contact. For the earth electrode, a copper plate must be employed, with a surface of not less than 1m², and a thickness of 1 mm., or an extended water-pipe system, or any mass of metal embedded in the earth, capable of sufficient conduction. In the case of earth wires for lightning guards, supporting wires and protecting wires, the surface of the earth plate may be lessened to $\frac{1}{4}$ m². Gas pipes must not be used either for earth circuits, or earth plates. The earth plates must be laid at a depth of at least 1 metre, in earth as damp as possible, or, best of all, in water. When neither of these is obtainable, the earth plate must be made larger.

Wires, Lines, &c.

ARTICLE 50.—In the case of wires for overhead lines the sag and the tenacity must be so arranged that at 20 degrees Celsius there must be at least a 5-fold security against SWITZERLAND.

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breaking, through attention being given to the dead weight. Copper wires with a diameter of 3 mm. must not be used. For other kinds of wires, the rule must be a diameter corresponding to the absolute breaking power. Copper wire up to 8 mm. diameter must have a tenacity of at least 30 kg. per mm². Should these have to be subjected to any other strain than their own weight, as, for instance, trolley wires or electric train wires, then their tenacity must be, at least, 35 kg. per mm².

ARTICLE 51.—Well creosoted wood is always to be used for the poles, at least in so far as the local conditions permit these to be procured without much additional cost. The diameter of pine poles must not be less than:—

	At the bottom.	At the top.
Poles 8 metres in length.	18 cm.	12 cm.
" 10 "	20 "	12 "
" 12 "	24 "	15 "
" 16 "	28 "	15 "
" 20, "	32 "	15 "

(Note.—1 metre=3.28 feet; 1 centimetre= $\frac{1}{2}$ one inch.)

The ends of the poles must be protected with a metal cap. The poles are to be sunk as deep as the nature of the ground will permit, and are to be well tamped, and, when necessary, to be fastened in with concrete, and, if necessary, to be braced or shored. If wire stays are to be fastened to buildings then this must be, when possible, to masonry. Stays that are attached to inflammable part of a building must be grounded outside of this building, according to Article 39. Where grounding is not possible, the stays are to be isolated from the inflammable parts of the building.

ARTICLE 52.—For bare overhead wires, the following maximum distance between the poles must not be exceeded for straight lines:—

- (a) For lines up to 100 mm² total diameter of copper wire, or corresponding weight of other wires, 50 metres distance.
- (b) For lines from 100 to 200 mm² total diameter of copper wire, or a corresponding weight of other wires, 45 metres distance.
- (c) For lines of over 200 mm² total diameter of copper wire, or a corresponding length of other wires, 40 metres distance.

For corners, sloping lines, and also where there are crossings with other lines, or with railways, or where the line is carried across roads, and in places where heavy loads of snow may come on the wires, the poles must be placed closer together, because of the heavier strain. Longer spans are only permitted under exceptional circumstances, as, for instance, when the lines are carried over rivers, where a short span is not possible.

ARTICLE 53.—In the case of wooden poles, the date of their erection and their number in the row, must be distinctly and durably marked on them.

ARTICLE 54.—The poles must be so placed that they may be secure against breaking down, careful attention being given that the strain is not on one side, and due regard had to wind pressure.

Corner poles must be three times stronger than the maximum strain calls for, even when any existing braces or shores are taken into account. The static estimation is a wind pressure of 100 kg. on each m² of the normal surface. For cylindrical bodies, such as poles and wires, $\frac{7}{10}$ of the pressure is to be estimated.

ARTICLE 55.—The lengthening of wooden poles by splicing several poles together is not admissible.

ARTICLE 56.—The fastening of lines or supporting wires to lightning conductors or similar supports of insufficient security, such as chimneys, railings, &c., is prohibited.

High Tension Lines.

ARTICLE 57.—In the construction of high tension lines, the following special regulations must be observed:—

- (a) The insulators or rods of high tension lines are to be distinguished by being coloured red.
- (b) In frequented places, besides the above-mentioned precaution, notices must be placed on the poles, calling the attention of the general public to the danger. These notices must also be always placed on bridge brackets, and supports placed on roofs, when these carry high tension lines. The notices must call attention to the danger of death through touching the lines in large distinct letters. Besides this, the owners of high tension electric plant are bound to post notices in the public places of the towns, &c., which they supply with electricity, warning the general public of the danger from wires, and giving instructions as to what must be done in the event of wires falling down.

ARTICLE 58.—High tension distributing lines which feed isolated centres of distribution, must be provided with cut-outs, at the points where the wires branch off from the main line. The most important distributing centres are to be connected by telephone with the primary station, in which case the telephone line may be mounted on the high tension line poles. In this case, the telephone and the floor in front of it, are to be insulated from the earth, or there must be inserted into the telephone wire, an insulated transformer (converter) for the high tension.

The telephone stations must be always easily accessible to the district police and the fire department. Further, every distributing district must have a thoroughly experienced man appointed, who, in cases of necessity, can attend to the cut-out (circuit breaker) for the high tension lines.

Paralleling and Crossing High and Low Tension Lines.

ARTICLE 59.—The parallel stretching of high and low tension lines on the same poles, must be avoided as much as possible.

In places where this cannot be avoided, the high tension lines must be carried above the low tension lines. The distance between the wires must not be less than 1 metre.

ARTICLE 60.—In the case of crossings between high and low tension lines, the high tension line is also to be carried above the low tension line. The crossing must either take place on the same pole, with a minimum distance of 1 metre between the two lines, or between two poles, placed as close together as possible, of the high tension line, with a minimum distance of 1·5 metres between both lines. Crossings of high and low tension lines of different workings (service) must be carried out in like manner.

ARTICLE 61.—In the case of parallel stretches as well as crossings, the falling down of the high tension wires, in consequence of the breaking of the insulators, or the falling out of insulator brackets, must be guarded against by special fenders (arms) which are separate from the insulator brackets, according to Article 95. The line wires must be fastened in such a way to the insulators that no sliding may take place in the tie (fastening).

Carrying High Tension Wires Over Squares and Streets.

ARTICLE 62.—In streets and public crossings a pole must be placed on either side of the street, and must be, if possible, suitably braced or shored, so that there may be no danger of the pole falling over on to the street.

There must be no parts of the wires soldered or welded, in either the low tension or the high tension lines, where these are near each other.

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ARTICLE 63.—High tension lines, carried over public squares, or along streets, are to be provided in like manner as in the case of parallel stretches and crossings with low tension lines, with fenders, or catching arms, which are constructed according to Article 95.

ARTICLE 64.—The line wires must be, at the lowest point, at least 6 metres from the ground, and, when carried over streets and thoroughfares, they must be, at least, 8 metres from the ground.

ARTICLE 65.—The distance between high tension wires and fruit trees, or accessible parts of buildings, must be so great that the wires cannot be touched, unless special means are employed.

Grounding, Insulation from the Earth.

ARTICLE 66.—The frames of machines, transformers and instruments ('phones) must either be well grounded (Article 49) or must be sufficiently insulated from the earth for the tension employed. When insulated plant is set up, then high tension dynamos must be surrounded with an insulated floor of wood, or other insulating material, so that they can only be reached from these floors, except where the approach is guarded by railings. The possibility must also be averted of touching at the same time insulated and non-insulated parts of the plant.

Where insulated high tension dynamos are bound with couplings to other machines that are not insulated, which produce no metallic connection, then the non-insulated machines must be grounded. Circuits of excitation of insulated high tension dynamos are to be regarded as parts of the latter. In cases where the construction is grounded, high tension dynamos, with all the metal parts of the plant that may be reached when in action (circuits excepted), must be well connected electrically.

Parliament reserves the right to grant exceptions to these rules.

ARTICLE 67.—Transformers (converters) which are only accessible to experienced persons, may be insulated without employing an insulated flooring around them; but this may only be on condition that an earth circuit (wire), according to Article 49, be inserted while in operation.

ARTICLE 68.—Iron poles and pillars for lines, are to be grounded, according to Article 49. Special lightning rod points or rods are unnecessary.

Erection of Transformers.

ARTICLE 69.—The placing of transformers and other high tension plant under houses, must be limited as far as possible. Where this cannot be avoided, then they must be isolated from the surroundings, in some fireproof arrangement. No combustible material must be used in the construction of these isolated arrangements. Moreover, these transformers, &c., under houses, must always, without exception or delay, be easily accessible to the telephone employees and the fire department.

Work on the Lines, &c.

ARTICLE 70.—When work is to be carried on, on excess (maximum) current lines, where danger or interruption may arise through contact with lines or apparatus belonging to another high or low tension plant, then the owner of the line that is to be erected or repaired must :—

(1) Take necessary measures to avoid mutual interruptions or danger.

(2) Notify the owners of the other plant beforehand of his intention. Then these must also take necessary measures to avoid any accidents in their plant.

ARTICLE 71.—No kind of repairs must take place, while the current is on, either on the lines or any of the parts through which the current passes, of high tension construction.

It is recommended, in all cases, to fasten to the line, between the source of current and the workmen, a short circuit wire that is led into the earth. This must always be done while the work is going on.

ARTICLE 72.—The handling of switches, and the changing of fuses, is not to be regarded as work in the sense specified, in the above regulations. In the central and under stations (transforming or converting stations) work may be done, under imperative circumstances, on the parts connected with high tension plant; but such work must only take place by the special order of the official in charge, and while either he or his representative is present to oversee it. No single person, without a helper, must at any time undertake such work.

ARTICLE 73.—If low tension lines are to be used later on for high tension then they must be altered according to the regulations provided for high tension lines.

ARTICLE 74.—Wires that have been out of use for some time must either be removed at once, or they must be kept up and attended to in the same way as those in use. Such wires that are put out of circuit must be well electrically connected with each other, and with the earth.

ARTICLE 75.—Lines that are only appointed for transitory use must be constructed in all details according to the above rules.

Working of Plant.

ARTICLE 76.—In every electric generating station and electro-motor station, there must be posted up:—

- (a) The general working rules of the plant.
- (b) The special rules of service for the station.
- (c) A diagram of the switches for machines and apparatus.
- (d) The regulations for help, in the event of accidents.

ARTICLE 77.—The measuring and controlling instruments must be read at regular intervals, and a report kept of the results. These reports must also contain a record of all important happenings relating to the working of the plant, and the results of periodic measuring of the insulation, and verifications and tests.

Inspection.

ARTICLE 78.—A regular careful inspection must be made of the lines and especially of the poles. Damaged wires and poles are to be promptly replaced before they become dangerous. In the case of dispute on this point, the inspectors will decide as to the time when replacement is necessary.

There must be a frequent and careful inspection of poles and lines where the lines are carried over public squares and streets, or railways, and also where there are crossings or parallel conduits of different lines.

The insulation of every high tension plant must always be kept as complete as possible, and be measured at stated intervals, and a record kept of the same. At the same time all earth wires (circuits) must be carefully inspected.

Underground Lines.

ARTICLE 79.—Protected or armoured cables may be laid in the earth, without further preparation. Unprotected cables are to be shielded with pipes (ducts) constructed of durable material. Central or negative conductors of multiple wire systems may be laid in the earth bare, without further protection.

ARTICLE 80.—High tension cables must be either protected or else be laid in special protective ducts, made of clay, cement, iron, or some similar material. High and low tension cables must not be laid in the same ducts. The laying of several ducts (tubes) made of clay, cement, iron, creosoted wood, &c., for high and low tension lines, in the same excavation, is admissible.

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Plans (Charts) of Wires, &c.

ARTICLE 81.—Diagrams of switches must be made for generating dynamos and sub-stations; diagrams of situation must also be made for far-leading wires and wire systems, with notification of the situation of sub-stations, transformers (converters) cut-outs, safety fuses, and lightning guards, and a copy of the same must be kept at the centre of control. Alterations must be always noted down in these diagrams, and notification of the same given to the controlling centre.

These plans must also show the tensions and consumption of currents of the transformers (converters) and electro-motors.

ARTICLE 82.—Where maximum current is set up, in cooperation with the authorities of a particular district, arrangements must be made in all places, where there are overhead wires, to have some members of the fire department entrusted with the care of the care of the lines, and the work required to be done on them.

III.—PARALLEL STRETCHING AND CROSSING OF MAXIMUM AND MINIMUM CURRENT LINES.

(1) *Parallel Stretching.*

ARTICLE 83.—(a) The parallel stretching of maximum and minimum current lines, on the same poles, must be avoided as much as possible.

(b) In places where this cannot be avoided, as, for instance, where the conditions of traffic, in the maximum current plant, necessitate the stretching of phone or signal wires along the posts, for the special use of the management; then the maximum current wires must be placed above the minimum current wires.

(c) The distance between the wires must not be less than 1 metre.

(d) Where special high tension and minimum current wires must be stretched along the same poles, then any falling down of the high tension wires, in consequence of the breaking of insulators, or the breaking or falling out of insulator brackets, must be guarded against by special fenders (arms), which are separate from the insulator brackets. The construction of these fenders (catching apparatus) must be according to the specifications in Article 95. The lines must be fastened to the insulators, as specified in Article 61. For telephone and signal lines, which are for the exclusive use of the management, these fenders (catching apparatus) may be omitted. The telephone and signalling stations, belonging to the aforementioned lines must be sufficiently insulated from the high tension lines, and be provided with insulated stands, so that even if the high tension current should penetrate into the instruments, there may be no danger in using them. Such telephone and signal lines are to be regarded as high tension wires, both on the poles, and in the buildings.

ARTICLE 84.—Where there are parallel stretches of minimum current, and high tension current wires on adjoining separate poles, care must be taken, as much as possible, to prevent the poles of the one line from falling over on to the other—by giving attention to the distance between the poles, and by making use of necessary supporting wires (stays) or shores, or by using iron poles, that are fastened in with cement.

(2) *Crossings—A. General Regulation.*

ARTICLE 85.—(a) For crossings of overhead maximum and minimum lines, care must be taken, where the surroundings permit, always to place the minimum tension lines below the maximum tension lines.

(b) Where urgent circumstances demand that the minimum current lines must be carried above the maximum current lines, the number of crossing places must be reduced as much as possible, by combining the crossing minimum tension wires into cables.

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- (c) In the case of parallel stretches or crossings of maximum and minimum current wires, that are laid underground, a distance apart of 50 cm. must be kept.

ARTICLE 86.—When minimum and maximum current wires cross each other, under no circumstances must the distance between the wires of both systems be less than:—

- 1 m. where wires cross on the same pole.
1'5 m. where the wires cross on open spans.

ARTICLE 87.—In the case of crossing on open stretches, that is, where it is not on the same pole, there must be no places in the wires that have been soldered or welded, either in the wires that cross, or in the adjacent span of the wires above. The wires, on the lines that are carried above the lower lines, must be fastened to the insulators in the manner described in Article 61.

ARTICLE 88.—(a) When minimum current wires are carried above maximum current wires, then only bronze or steel wires must be used, with a diameter of, at least, 2 mm.

(b) The span must, as a rule, not be longer than 30 metres, in the case of bronze wires; and in the case of steel wires 50 metres.

(c) The cross section and sag of the wires are to be estimated by 20° Celsius, for five-fold security against breaking, after allowing for the strain caused by dead weight.

ARTICLE 89.—The strength of the poles of the lines carried across must be so estimated that even if the strain of the wires should come on one side, at 20° Celsius, and due regard given to any stays, there must be, at least, a two-fold security against breaking.

B.—Crossing of minimum current lines, with low tension lines.

ARTICLE 90.—(a) In the case of crossing with poles (so-called pole lines) the preferable way for the carrying over of low tension lines, is to fasten the crossing lines on one common pole.

(b) Where this is not possible, and when the crossing must be made between the poles, or other fixed points, then this must be done with as short a span as possible for the line that is carried across.

ARTICLE 91.—For the carrying over of minimum current lines, further safety measures, such as safety wires, &c., are only necessary, where there are maximum current lines, which make use of the earth (ground), or the railway lines that are laid on the earth, for a return circuit (wire). Regarding work on the lines at crossing points, see Article 28.

C.—Crossing of Minimum Current Wires with High Tension Wires.

ARTICLE 92.—These crossings must not, if possible, take place by fastening both lines to the same pole, but with separate poles. At the same time, the wire that is carried across, must have as short a span as possible. When this is not possible, and when it is necessary to fasten both wires on the same pole, then, in cases where the high tension wires must be carried over below the other wires, there must be placed on the pole between the wires of both lines, a metallic catching apparatus, which, should the upper wires break, will prevent the possibility of these coming into contact with the lower wires. This fender, or catching apparatus, is to be grounded according to Article 49.

ARTICLE 93.—In all cases where minimum current lines are crossed by high tension lines, which are carried above, fenders, or catching apparatus, must be placed (according to Article 95) to prevent the falling down of the high tension wires, in case the insulators should break, or the insulator brackets should drop out.

ARTICLE 94.—Where minimum current wires cross above high tension wires, on a free span (open stretch), then either for the former there must be placed a three-sided

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fender or for the latter a fender closing roundabout. For these kinds of crossings places are to be avoided where the placing of fenders may cause danger.

IV.—CHARACTER OF SAFETY APPARATUS.

A.—Catching Arms, or Frames.

- ARTICLE 95.—(a) The 'catching arms,' or 'catching frames' (fenders, &c.), to protect against the falling down of the wires, through the breaking of insulators, the breaking or dropping out of insulator brackets, are so to be constructed of strong iron that in the event of the aforementioned accidents, there may be no possibility of the wires falling down from the poles and coming into contact with other wires.
- (b) For this purpose, the catching frames must be placed so as to close around, or the 'catching arms' must reach up above the insulators.
- (c) The minimum distance between the 'catching arms,' or the 'catching frames,' and the wires, must be 10 cm.

B.—Fenders (Guard Nets).

ARTICLE 96.—(a) The fastening frames of the fenders are so to be constructed, and so to be fastened to the poles, that the strain of the wires of the fender may not injure the frames, even when there is a heavy load of snow, and that the wire net may retain the formation necessary for catching the line wires.

- (b) The frames carry the necessary arrangements for the fastening of longitudinal wires, in the case of insulated fenders, to receive the necessary insulators, and in the case of grounded fenders, to procure a good electrical connection between the longitudinal wires and the earth.

ARTICLE 97.—The minimum distance between the fender and the frame for the longitudinal wires, must not be less (at any temperature) than 20 cm. in a horizontal direction; 40 cm. in a vertical direction.

ARTICLE 98.—(a) For the longitudinal wires of the fender (unless specially strong guys are used) there must be used galvanized steel wire, at least 3 mm. in diameter, and with a tenacity of 140 kg. per quadramillimetre (square millimetre). The distance between the longitudinal wires must not be less than 25 cm.

- (b) If two or more steel guys, of at least 4 mm. in diameter, are used for the fenders, then the diameter of other longitudinal wires may be reduced to 2 mm.
- (c) The guys and longitudinal wires must be provided with tension arrangements.

ARTICLE 99.—The cross wires must be of iron, steel or copper wire, of at least 1.5 mm. diameter.

ARTICLE 100.—The fastening of the cross wires and longitudinal wires must be done in such a way, with binding wire or special tinned cross sockets, that there may be no shifting (displacement) of the cross wires.

ARTICLE 101.—The fenders, and specially the longitudinal wires, must be insulated from the frames, in a manner suitable for the tension, or else be well grounded, according to Article 49.

ARTICLE 102.—The length of the fenders is to be limited, and sufficient allowance made for the sag of the wires, in cases where heavy loads of snow or ice are to be feared.

ARTICLE 103.—Where fenders are to be used, care must be taken to see that the poles are sufficiently secure, and, if necessary, to brace or shore them.

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V.—CROSSING OF RAILWAYS BY ELECTRIC LINES.

ARTICLE 104.—Where electric lines cross railways (which are on a different plane), as a rule the electric wires are to be carried over the railway line. Where the local conditions demand exceptionally high construction, or make such high construction difficult, the electric lines may be carried underneath the railway.

ARTICLE 105.—The crossing of railways with overhead maximum current lines is to be done as seldom as possible.

2. *Carrying Electric Lines over Railways.*A.—*General remarks.*

ARTICLE 106.—(a) The crossing must be effected with as little strain as possible on the poles that stand on or near the track; and, when possible, they (the poles) are to be at a right angle to plane (axis) of the track, and fixed in places where as short spans as possible may be had.

(b) Where the wires run obliquely across the track, then the oblique crossing may be affected by providing for as little side-strain as possible, and by avoiding sharp turnings.

ARTICLE 107.—In order that the very shortest spans may be had, the poles may be set up on the track itself, as near as the safety of the railway traffic and the signalling arrangements will permit.

ARTICLE 108.—The poles that stand on or near the track are so to be placed that they may be secure against breaking, even if all the wires on the adjoining span should snap. Calculation must be made regarding the strain resulting from the dead weight of the poles, and of the lines, as well as from wind pressure, without regard to any further relaxing that may take place through the strain coming on one side. The resultant calculation must allow for a two-fold (double) security against breaking.

ARTICLE 109.—Wooden poles must be so shored, or furnished with metal guys, that even if they should break at the base, they may be prevented from falling over on the track.

ARTICLE 110.—(a) The poles standing on or near the track are to be fixed in the earth by cement or other equivalent masonry.

(b) These foundations are to be so calculated that they secure the poles against falling over, even if all the wires on the neighbouring span should snap. Allowance must be made for dead weight of poles and lines, as well as wind pressure, without regarding any relaxing that may take place through the strain coming on one side. Calculation must be made for any stays that may be fixed, and the resultant calculation, considering the carrying support, as a whole, with its base standing free on the ground, without regard to any favourable earth pressure, must allow at least a single security against falling over.

(c) According to the foregoing calculations, the foundations of the guys must allow, at least, a single security against pulling out.

ARTICLE 111.—At the point where the electric lines cross over the railway, there must be no places where solder or welding is employed, either at this point or in the two neighbouring spans. For the fastening of wires to the insulators, the regulations, contained in Article 61, must be observed.

ARTICLE 112.—The height of the wires above the railway lines (making due allowance for sagging through being loaded with snow or ice) must be as much as can be allowed by the height of the track, the height of the signal or other wires that run along the track, and the observation of the signals.

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B.—Carrying over Low Tension Wires.

ARTICLE 113.—For carrying over low tension lines well creosoted wooden poles may be employed.

ARTICLE 114.—(a) In carrying low tension lines over railways, there must not be employed, either at the point of crossing, or in the two neighbouring spans, any steel or bronze wires with a diameter less than 2 mm., or any iron wire less than 3 mm. in diameter. Steel and iron wires must be galvanized.

(b) The cross section and hang (sag) of the wires must be so estimated, that at 20° Celsius, these give a five-fold security against breaking, calculation being made for the strain of their own dead weight.

C.—Carrying over High Tension Wires.

ARTICLE 115.—For carrying over low tension wires, well creosoted wooden poles may be employed; but for the above-mentioned high tension lines only iron construction must be employed, such as tube-posts, lattice posts, etc. The fastening of insulator brackets to pieces of wood inserted into the iron construction is admissible.

ARTICLE 116.—(a) At the points where the high tension wires cross, and in the two neighbouring spans, copper wire must be employed, with a diameter of at least 6 mm., and with an absolute tenacity (breaking strength) of at least 800 kg. for each wire.

(b) The cross section and hang (sag) of these wires are so to be estimated that at 20 degrees Celsius, there may be a 10-fold security against breaking, estimation being made for the dead weight of the wires.

ARTICLE 117.—'Catching arms,' or 'catching frames,' are to be placed on the poles that carry across the high tension lines, which shall prevent the falling down of the wires in the event of the breaking of the insulators, or the breaking or slipping out of the insulator brackets. These apparatus for catching are to be constructed according to Article 95.

ARTICLE 118.—Where electric wires cross each other at or near points where wires cross over railways, the aforementioned rules are to be observed, regarding minimum and maximum tension wires, and the crossing of the same.

*3.—Underground Crossings of Electric Wires.**A.—General Remarks.*

ARTICLE 119.—When underground crossings of maximum tension wires, under the railway track, are to be carried out, then this may be done by conducting wires or water-tight cables, laid in open ducts, or in iron pipes, or by water-tight cables laid in the earth.

ARTICLE 120.—Special ducts or cable lines, placed under the track, must be placed deep enough under the ties, that they do not interfere with the work to be done on the track, nor be injured by such work.

ARTICLE 121.—The ducts running underneath the track are so to be fixed in iron, cement, or masonry, that the solidity of the track and the security of the traffic are not in any way impaired thereby.

ARTICLE 122.—For the carrying of electric wires across railway tracks, it is permissible to make use of roads or streams which run underneath, when there is enough space to do so. Under all circumstances, the wires must be so placed that the necessary inspection and repairs on the railway track and bed may not be hindered. See Article 124.

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ARTICLE 123.—The supporting points for the ends of the overhead lines, where they are led into the earth, for underground crossings, are so to be estimated that with regard to the foundation alone, estimation being also made for the actual strain from weight of wires, dead weight and wind pressure, there may be a two-fold security against falling over, and in estimating for any stays that are set up, there may be a five-fold security against breaking.

B.—Underground Crossings of Maximum Current Lines.

ARTICLE 124.—The overhead lines are to be led into the underground ducts, and these ducts themselves are to be constructed and kept up in such a manner that neither the railway employees nor other persons may come into contact with any parts of the same, through which any current passes, except by using special means for so doing.

When roads or other frequented passages underneath the track are used for carrying maximum current wires, special care must be taken that the lines cannot be touched by those who pass along, except by employing special means. The regulations given in Article 122, are sufficient on this point. The regulations given in Articles 122 and 124 do not apply to electric car contact lines.

VI.—PARALLELING RAILWAYS WITH ELECTRIC LINES.

ARTICLE 125.—Parallel-leading of minimum and maximum current lines along railways, are to be carried out according to the general regulations given for minimum and maximum current lines, and, in exceptional cases, the poles may be set up on the railway ground, belonging to the track, due regard being given to the lines needed for the railway traffic, the observation of the signals, and the telegraph and telephone lines.

ARTICLE 126.—When wooden poles are employed for maximum current lines, then these must be so shored or stayed that if they should break at the base they may be prevented from falling over upon the track.

VII.—FINAL DECREES.

ARTICLE 127.—The present 'Decrees' come into force on August 1, 1899. On that date all former decrees in conflict with the same, will be repealed, especially the decree relating to the construction of telegraph and telephone lines, of December 7, 1889.

ARTICLE 128.—These regulations are to be observed, in all particulars, when constructing new electric arrangements. In applying these regulations to electric constructions that already exist, parliament will grant suitable delay or respite, and will permit modifications to be made.

ARTICLE 129.—The Post Office and Railway Department is authorized to carry these decrees into effect.

BERNE, July 7, 1899.

In the name of the Swiss Federal Parliament.

President, MULLER.

State Chancellor, RINGIER.

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No. 290.

GERMANY.

(The following papers have been selected from those sent from the Government Post Office and Telegraph Department of the German Empire, and have been translated for the information of the Committee; the originals are on file in the Committee Room and may be referred to at any time.)

(Translation.)

THE GOVERNMENT POST OFFICE DEPARTMENT,
BERLIN, June 28, 1905.

To Sir WILLIAM MULOCK,
Postmaster General, and Chairman of the
Select Committee on Telephone Systems.

HONOURABLE SIR,—In answer to your inquiries of May 1, regarding the telephone system of the German Government Telegraph Department, which were made to the former Under Secretary of State and acting Privy Councillor, Dr. Fisher, and the Privy Post Office Counsellor, Professor Dr. Strecker, and laid by them before the Government Post Office Department, I have the honour to send you a digest of the answers to the inquiries made to Dr. Fisher; and also some printed documents, which will supply you with more complete information regarding our telephone arrangements on this side; and, will, at the same time, answer the inquiries made to Professor Strecker.

On behalf of the Secretary of State,

SYDOW.

No. 290a.

(Translation.)

GERMANY—*Continued.*

CLASSIFICATION OF THE GENERAL TELEPHONE SYSTEM.

1. The telephone arrangements which have been provided by the government telegraph management and which are for the immediate service of the general public, constitute in their entirety, the 'General Telephone System.' These arrangements consist of:—

- (1) Local telephone systems.
- (2) Public telephone call stations (isolated).
- (3) Long-distance lines, or trunk (toll) lines.

Local telephone systems with not more than four principal stations, belonging to subscribers, are termed switch stations.

The individual parts of a local telephone system are:—

- (a) The exchange station (central office).
- (b) The subscribers' stations ('phones).
- (c) The wires connecting the subscribers' stations with the central exchange or with one another.

Several central stations are organized in a local telephone system, when the local conditions require this to be done. The lines connecting these central exchange stations with each other belong to the local system.

The exchange stations where the trunk (toll) lines connected with the long-distance service terminate, are, as a rule, considered as main exchanges.

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The telephone stations of the local system are divided thus:—

- (1) Subscribers' stations.
- (2) Public call stations.
- (3) Stock exchange stations.

Subscribers' stations are installed in the residences, business establishments or warehouses of those concerned, either as:—

- (1) Principal stations, or as
- (2) Supplementary stations.

In so far as different regulations may not be issued subsequently, the directions given for the public call stations apply both to the isolated public call stations, as well as to the public call stations in local telephone systems.

The wires of subscribers' stations are only to be connected with auxiliary stations in exceptional cases when special circumstances call for it. Long-distance (trunk) lines, are those lines (together with the necessary equipment connected therewith, in the exchange stations) by means of which the local systems are connected together. Regarding the switching on of isolated public call stations to the long-distance lines, see section 6. The long-distance lines may be used by subscribers, by public call stations, and by stock exchange stations, under the stipulations given in section 25. Regarding the restrictions in the case of automatic (slot machines) pay stations, see section 7. The telegraph lines are also made use of for long-distance telephone service.

Places with telephone systems which pay a common tax for mail delivery are admitted to service with one another, and with the principal centre. Nevertheless local systems in places which do not pay a common tax for mail delivery yet having mutual business or other interests with some principal centre, are, in individual cases, admitted to service with such principal centre. This is termed service with neighbouring places. In certain cases, telephone systems are united into one general system in places having common interests in matters of general business or industry. These are termed departmental (municipal or district) systems.*

These systems exist under the following names:—

- (1) Departmental system in the mining district.
- (2) Departmental system for Frankfort-on-Main and surrounding district.
- (3) Departmental system for the districts of Halberstadt, Oschersleben and Wernigerode, as also for the districts of Blankenburg (in the Harz Mountains), Quedlinburg and Thale (in the Harz Mountains).
- (4) Departmental system in the Hirschberg Valley.
- (5) Departmental system in the lower Rhenish industrial district of Westphalia.
- (6) Departmental system in the industrial district of upper Silesia, and
- (7) Departmental system in upper Lusatia, situated near Prussia and Saxony.

Special regulations are issued for subscribers in the departmental systems.

No. 290b.

(Translation.)

Answers to Questions.

The entire telephone system, within the German empire, is organized and operated by the government. The accompanying 'documents' will give full information regarding the telephone regulations, specified by the Government Post Office and Telegraph Department, for the whole German empire—with the exception of Bavaria and Wurtemberg.

* The service with principal centres, or the departmental service, is not extended to telephone systems, which have not yet been admitted to the area of a principal centre system, or a departmental system. See Article 18 of 'Regulations for carrying into effect the law relating to telephone rates.' Instructions No. 2, Part 2.

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versations, even when the subscriber is one who pays the appointed general or round (lump sum) charge for ordinary conversations.

Connections for urgent conversations have precedence before all others. These connections, however, must be made according to the order of their announcement.

A conversation can only be continued longer than six minutes, if no other request for conversation has been made. Special notice that the three or six minutes have elapsed will only be given to the subscriber from the central station, if he has expressly desired the connection to be broken off after the lapse of three or six minutes, when he made request for the connection.

The subscribers' circuits are made of strong bronze wire, of 1.5 mm., and are set up as metallic circuit or as single grounded lines; the changing of the latter to metallic circuits is now going on.

The long-distance lines are copper wire of the following sizes: 2, 3, 4, 4½ and 5 mm. (approximately, Nos. 14, 10, 8, 7 and 6 British standard wire gauges).

We have no approximate, reliable figures available as to the means employed for the cost, operation and maintenance of the trunk lines. We can only state that since 1880, 5 per cent interest has been paid on the capital expended for the entire telephone system arrangements, the trunk lines, and the local systems, including the costs for maintenance of the lines and apparatus, for payment of employees, for buildings, lighting and heating arrangements, &c.

ESTIMATING CHARGES, LONG-DISTANCE.

A.—Recording of Outgoing Conversations. Handling Night Connections. Estimating Charges.

32. Announcement cards, according to the form given in No. 20, in Appendix are used for noting down the conversations for which charges are required, which are requested from subscribers' stations, with neighbouring places, principal centres, municipal systems and long-distance service. These forms are supplied in pads of 100 with running numbers, and consist of two parts, the ticket of charges, on the left side, and the part to be detached, to the right. Larger central stations need to have several of these pads in use, at the same time; and in order to distinguish the one from the other have to mark them: Pad I., pad II., &c.

In every work room connected with the long-distance service, a sufficient number of these announcement forms are always on hand, at least for each day's service. At the commencement of forenoon hour of service, the name of the local bureau is either to be written or stamped on these forms. In stations where a greater number of forms are required, the name of the local bureau may be printed on.

The obligation to pay charges for the connections, begins as soon as the necessary connections have been made between the station of the person calling up and the station that has been asked for. Up to this moment, the person that has called up, may withdraw his request for conversation, without incurring any charges. No charges are collected for long-distance service, if no response is obtained from the station that is called up. When the connection has been made, if the station that has asked for the conversation does not respond, and if it is ascertained that the connection was all ready for service, then the charge for a single conversation is collected. For the special regulations regarding conversations to and from stations situated in stock exchanges, see Section 25, on page 520.

The reception of the request for conversation, is to be written down on the left side of the form, then the name of the bureau desired, the number and name of the person calling up, and the number of the person to be called up, as well as the time when request was made. Besides this, the employee who received the request must sign

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his name in the place specified for that purpose. The employee fills up the remainder of the form, after he has made the necessary connections. The name of the subscriber who calls up may be left out, if, according to the local conditions, it should not be of importance.

The writing is done with pencil. The forms that have been filled up, are to be gathered together, and arranged according to pads and numbers. In this way a check is kept on the exact number of forms, the correctness of the entries, and the exact rate of charges.

The amount of charges for each day, contained in each pad, is to be entered, not later than the day after the connections have been made, in a receiving register, according to the form given in No. 17 of the Appendix—'Telephone Charge Register.' So far as possible, this register is to be kept by an employee who does not attend to the telephone service, and is to be checked by the central bureau.

Postal agencies and auxiliary stations do not keep the 'Telephone Charge Register,' but send in the request forms, after entering them into the receipt book of the rural postman, at the earliest opportunity, to the clearing postal establishment which adds them to the forms belonging to its own service, and handles them as such.

After the charges have been entered in the books, the forms are divided into their two parts. The numbered parts are kept in their numbered order, and are handed over in pads to the head office of the Postal Department, to serve as vouchers for the 'Telephone charge register.' The tickets of charges, which compose the other half of the form, are arranged according to the names of the subscribers, and kept until the end of the month.

The foregoing regulations apply also to charges for single connections, made during the night, in local systems.

The 'telephone charge register' must contain also an account of the subscribers' charges for night calls, on the trunk lines, and the measured service charges, for regular night connections, made in local service. This is to be done by a special register to be added, as supplement to the 'telephone charge register,' and which is to be arranged in two divisions for the whole year, in the following order: *a.* Local service; and, *b.* Service with neighbouring places, principal centres, municipal systems, and long-distance lines. In the register, the names of the subscribers are to be entered on separate pages, and the charges paid by each to be entered under one account. The accuracy of the charges made are to be checked by an employee who is not employed in taking in the payments, and is to be attested by him in the register. This checking is to be done from a list kept of conversations in the central bureau, and connections that are required for various places. See paragraph 23, page 519. This is to be sent in, along with Register A, mentioned above, to the head office of the Postal Department. After the accounts have been balanced for the months from April to February, they are always returned to the central bureau, that a check may be kept on the register of the head office of the Postal Department, at the close of the fiscal year. Finally the register serves for reckoning the charges for conversations, which have been carried on by subscribers to supplementary telegraph arrangements, with persons who have been called to the public station of the local system.

All the charges mentioned above are, with Register A, to be settled monthly, on the month following that on which the charges have been incurred. That is to say, the charges incurred in April are to be settled in May, those of May to be settled in June, &c. Only those charges that have been incurred during March are to be settled at the end of the same month, viz., March.

For the entries of the monthly sums in the principal register, see paragraph 30, of the present 'Regulations.' For the collecting of charges, see paragraph 33, following after this.

B.—Registering charges received.

In every exchange telephone station the requests coming in from a distance for conversation, for which charges have to be collected, with subscribers, or with public

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call-stations, of the local system, are to be entered in a register termed 'Receiving Register for long-distance conversations,' according to the form given in Appendix 21, and which is to be renewed each month. Stations having several trunk lines may, according to the local circumstances, arrange a 'register' for each trunk line, or for several lines, as for example for neighbouring lines, lines with principal centres, and municipal lines. Bureaux that keep several 'registers' must mark on the outside of each the line or lines for which it is to serve. Postal agencies and auxiliary stations, which are not exchange stations, note down the requests for conversations, coming in from a distance, to be held with persons called to the phone, who live in the neighbourhood, in the 'telegram order book'; unless further instructions are given in the matter by the head office of the Postal Department. If deemed necessary, the head office of the Postal Department may give orders that a 'receiving register for long-distance conversations' should be kept.

The entries are made with pencil, in the 'receiving register.' They must be so complete, that the charges can be reckoned from them. Urgent conversations are to be marked with a *D*. Conversations for which the person called up has to be sent for, to come to the phone, are to be marked *XP*. When charges are not to be made for connections desired, then the reason for this must be plainly stated in the 'receiving register,' or in the 'telegram order book.'

At the end of the month, the 'receiving registers' are to be sent in to the head office of the Postal Department.

A special supervision has to be kept over the reckoning of charges in public call stations, which are not united with the exchange station; when the 'Receiving Register' is kept by the same employee who attends to the service.

Conversations from such call stations are to be regularly entered, by the central bureau in the usual announcement forms, no matter whether these conversations are local, or for long-distance lines; and when entered, the part on the section torn off, marked for the amount of charges, is to be scored through. In order that vouchers for the 'Telephone-charge Register' may be received complete, according to the numbered order, the detached portions of the above specified announcement forms are added to those for conversations that pay charges, from subscribers' stations, and the tickets of charges which compose the remaining part of the 'forms,' are the means whereby the amounts of charges are checked. Whether this is to be undertaken by the head office of the Post Office Department, or by the central stations concerned, will be specially decided, in each case by the head office of the Post Office Department.

The head office of the Post Office Department may appoint a more simple method of receiving local conversations for public call stations, that have a specially heavy local service, as, for example, in pads, after the manner of the 'receiving registers.'

C.—Service with Bavaria, Wurtemberg and Foreign parts.

The regulations given above, under *A* and *B*, apply generally also to the service with Bavaria, Wurtemberg and foreign parts.

Conversations with places outside the telegraph area of the empire are, therefore, to be entered in 'announcement forms,' in the same way as conversations within the empire. The parts of the 'forms' that are detached, are not to be separated into two classes, 'foreign' and 'domestic'; neither are two separate accounts to be kept of the charges for these conversations.

The head office of the Post Office Department has to receive, in each case, information as to how these charges are reckoned.

If it is necessary to keep a control of the charges received for conversations for service with Bavaria, Wurtemberg and foreign parts, in cases where there is no balance or clearing account kept with these places; then this will be best done, without the co-operation of the foreign telephone exchange, by the last central station concerned in making the connections, within the area of the empire telegraph arrangements, entering the conversations in the 'receiving register.' The head office of the Post Office
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Department will make the necessary arrangements in such cases. If exchange stations that have a direct connection with places outside the area of the empire telegraph arrangements, should find it necessary to exercise a control, then this must be reported to Post Office Department of the empire, with a statement of the special conditions.

COLLECTION OF CHARGES, LONG-DISTANCE.

33. The collection of subscription charges, lump sum and general charges (see paragraph 31); the charges for single conversations in service with neighbouring places, principal centres and trunk lines (see paragraph 32), including single conversations during night hours; the subscription for night calls (see par. 23, page 519), including the charges made for night connections in local service; for receiving communications through the telephone and forwarding the same to the address given (see paragraph 28) is carried out by handing over an account, folded after the form of an envelope, according to the form given in Appendix 22. In this account form there is to be entered, from the general register of charges and from the register for local charges, the lump-sum subscription charges, and the general subscription charges, as also the charges for local service, each quarter, when they become due (see paragraph 31, page 522).

The other charges are reckoned for the subscriber at the end of every month from the 'announcement forms' (paragraph 32), from the register of subscription charges for night calls, and from the telegram forms (paragraph 28), and entered in the account forms, to which are to be added the tickets of charges, and the telegram forms. In cases where the local conditions render it difficult to collect all the charges due, at the same time, separate account forms may be used for the different kinds of charges, or special forms may be employed, to suit the special circumstances.

Subscription charges for night calls, as well as for continuous night service, with neighbouring places, principal centres and municipal systems, are to be collected, at the periods when they become due, by using special account forms, in which is specified the duration of subscription, and, in the case of night calls, the length of time during which the connections were made.

As a rule the collection is made by the head office to which the telephone bureau is assigned. The charges due for stations connected with the railway service may, at the request of the railway management, be paid from the railway cash account, quarterly, in one lump sum, to the head office of the telephone exchange, where the head office of the Post Office Department is situated. In this case, the stations used in the railway service are to be entered in the register of charges kept by the telephone exchange, separately according to the various places where they are located, at the end of Register A. The post office clearing office or distributing office, has to arrange for the collection of the charges due from agencies and auxiliary stations, without any cost to the subscribers.

If the head office to which the exchange station has been assigned, is not able to collect the charges punctually, with the messenger service placed at its disposal, then the various distributing post offices must co-operate in the collecting when orders are given to do so, by the head office of the Post Office Department. The charges taken in by the distributing post offices must not be handed in to the telephone office in a lump sum, but always in a systematic order of accounts. The balancing of these accounts is done from the 'register of overplus and additional accounts.' For this purpose, the distributing post office sends in a statement of the amount of charges collected to the head office of the telephone exchange, which are transmitted as bills of delivery to the head office of the Post Office Department. Until these statements are sent in, the telephone exchange has to keep a register of the charges to be collected by the distributing post office, or central post office. This forms an appendix to the clearing account book kept with the head office of the Post Office Department, to be designated 'register of overplus, and additional accounts.'

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Each charge collected is first of all to be entered in the daily cash book, with the name of the subscriber, and the number of his station. The amount is also to be entered in the general register.

When the extent of the collecting service calls for it, registers are to be kept, according to the form given in Appendix 23, for the supervision of the punctual collection, and handing over of all kinds of charges; in which the subscribers belonging to the district of each collector, are to be entered, according to the numbers of their stations. The cashier has to enter in the day's receipts of the collectors into the register and give a receipt for the same.

Only the daily amounts are entered in the cash book. It is not necessary to enter the collected charges separately. When the collections are handed over to the cashier he has to satisfy himself that the accounts for charges not yet taken in are still in the hands of the collectors. When this examination cannot be carried out without interfering with the service, then a few accounts, taken at random, may suffice. The manager of the bureau will decide on this point. Registers after pattern given in Appendix 23, are also to be kept by the distributing post offices that may have to assist in the collecting of charges. When it is of advantage to the service, in handling the principal cash account, the registers may, by the direction of the manager of the bureau, be kept as a supplement to the daily cash book, until all the charges specified in them have been collected. Where this arrangement is not made, the amounts are to be entered provisionally in the account book for fluctuating amounts.

In the case of local systems having a large number of subscribers, the head office of the Post Office Department may appoint the use of differently arranged forms for the registers, and make other arrangements for collecting the charges, suited to the local conditions. In necessary cases, the head office of the Post Office Department may also appoint that the delivery of the charges collected by the messengers, is not to be at the head cash office, but at a branch cash office.

The collecting of single charges is not, in all cases, to be delayed until the end of the month. If the amount due by a subscriber up to the middle of the month, should amount to 100 m. (\$23.80), then as a rule the collection is to be made at that time. The head office of the Post Office Department may grant exception in this matter, and also in cases where a subscriber has a heavy run of traffic, orders may be given to collect at more frequent intervals.

The charges incurred by subscribers of questionable financial standing are to be collected when they amount to 10 m. (\$2.38). Charges are not collected in this way when an agreement has been made for delay.

Special attention must be given to see that all accounts to be cleared off by the end of March, are included in the accounts up to the time when they are sent off.

Special regulations are given for the collection of telephone charges within the area of the head Post Office Department of Berlin.

Regarding the manner of procedure in cases where charges are not punctually paid, see paragraph 34.

COLLECTION OF OUTSTANDING CHARGES; STOPPING THE USE OF STATIONS.

34. Should the subscriber not pay the charges incurred, at the time agreed upon, then he is to be requested, by letter, to settle his account after three days' grace. At the same time he is to be warned that the station will be stopped, or, if it is only a question of single charges, he is to be warned that no delay will be granted, and the compulsory measures will be taken to collect the amount that is overdue. If no response is given to this warning, then the station is to be closed up; or the time of respite is to be rescinded, and compulsory means are to be used for collecting the amount. A report need only be sent to the head office of the Postal Department, if it has not been possible to collect the outstanding charges, before the filling up of 'Register A,' in which they have to be squared off. In this case, in so far as the charges are

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reckoned in the general register, there is to be inserted, in the division for 'remarks,' opposite the charge or charges, a statement to this effect—'payment refused; reported 1-5-1902, etc. In the report the reason why charges could not be collected must be stated, and mention must be made as to whether the station can be transferred to another person, who is willing to pay the outstanding charges, and any other expenses that may be owing.

For further particulars, see instructions for carrying out Point 5 of the 'regulations' relating to telephone charges.

The foregoing regulations do not apply to the collecting of outstanding charges due by officials or corporations. If the charges are not paid at once by the corporation or official, after a reminder is sent from central bureau, then the matter is to be reported to the head office of the Post Office Department.

The threatening or the carrying out of compulsory measures is to be omitted, in the case of subscribers, whose financial standing and readiness to pay are beyond question, when the delay arises from exceptional circumstances, or from known reasons, such as absence from home for a time, or difference of opinion regarding some items of the account, etc.

When the central bureau, in such cases, does not succeed in arriving at an amicable settlement of the charges, at the time appointed, with the subscriber in question, then the matter is to be reported to the head office of the Postal Department.

When a conversation is called for, with a subscriber, whose station is closed up, it must only be stated that the connection cannot be made. Any further explanations are to be avoided.

REIMBURSEMENT OF CHARGES.

35. When charges are to be immediately refunded, in public call stations (see paragraph 24), then the amounts are to be entered in the 'Receipt Book,' and the reasons are to be stated, in the section appointed for 'remarks.' In the case of auxiliary stations, the charges refunded are not included in the accounts, but are marked 'free of charges.'

In all other cases, the refunding of telephone charges is subject to the approval of the head office of the Post Office Department. The charges paid back are to be handed over (discharged). The discharge cards (forms) are to be added, as vouchers, to the account for charges to be received. The charges to be refunded are to be handed over to the person receiving them, as far as possible, by the messengers of the telephone bureau concerned. If the business premises or the residence of the person is far off, then the handing over of the amount may take place when convenient. In all cases, the execution of these matters is to be in as simple a manner as possible.

SERVICE WITH BAVARIA, WURTEMBERG AND FOREIGN PARTS.

36. In so far as other orders are not issued, the foregoing regulations apply also to long-distance service with Bavaria, Wurtemberg and foreign parts.

The long-distance telephone lines are used for simultaneous telephoning and telegraphing, using the Hughes apparatus or sounder, according to the amount of telegraph traffic required to be transmitted over the telephone lines. The connections are arranged according to the principle of the 'Wheatstone bridge.'

According to the census of November 1, 1900, the population of the German Empire (not including Bavaria and Wurtemberg) was 48,021,641.

At the end of 1904 there were 319,556 subscribers, not including Bavaria or Wurtemberg.

We give, in the accompanying table, a statement of the extent of the government telephone system in the larger cities of the government telegraph jurisdiction.

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STATEMENT of the extent of the Telephone Systems in the largest cities of the German Empire, as on December 31, 1904.

No.	Name of the Local System.	PRINCIPAL STATIONS.				Supplementary Stations	Public Call Stations and Stock Exchange Stations	Total Number of Stations	Population (according to Census of Dec. 1, 1900).
		Unlimited Service.	General Charge and Conversation Rates (Measured Service).	Free.	Total.				
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1	Berlin	30,573	12,726	435	43,734	22,715	295	66,744	1,888,848
2	Hamburg	13,908	6,811	100	20,819	8,230	107	29,156	705,738
3	Leipzig	4,874	4,050	89	9,013	2,616	71	11,700	476,712
4	Dresden	4,454	3,802	108	8,364	3,428	63	11,855	452,797
5	Breslau	3,148	2,629	64	5,841	2,761	41	8,643	422,709
6	Cologne	4,356	2,970	58	7,384	2,594	70	10,048	372,529
7	Frankfort (M.)	5,412	3,231	75	8,718	3,701	37	12,456	288,989
8	Hanover	2,604	2,002	23	4,629	1,588	10	6,227	235,649
9	Magdeburg	1,798	1,683	27	3,508	1,191	24	4,723	229,667
10	Stettin	1,584	1,346	25	2,955	1,073	17	4,045	214,289
11	Düsseldorf	2,388	1,991	49	4,428	1,528	18	5,974	213,711
12	Chemnitz	1,591	1,608	50	3,249	1,117	24	4,390	206,913
13	Königsberg	1,215	1,004	45	2,264	873	27	3,104	189,483
14	Charlottenburg	3,715	1,319	32	5,066	2,282	5	7,353	189,305
15	Bremen	1,758	2,160	32	3,950	818	22	4,790	182,918
16	Essen	830	976	14	1,820	657	7	2,484	182,100
17	Altona	1,795	448	16	2,259	1,048	20	3,327	161,501
18	Elberfeld	1,124	1,135	19	2,278	878	7	3,163	156,966
19	Halle	1,034	1,110	26	2,170	720	13	2,903	156,609
20	Strassburg	748	1,455	28	2,231	624	18	2,873	151,041
21	Dortmund	948	1,002	25	1,975	664	22	2,661	142,733
22	Barmen	939	946	29	1,914	647	6	2,567	141,444
23	Mannheim	1,615	1,266	6	2,887	1,297	17	4,201	141,131
24	Danzig	736	753	33	1,522	596	16	2,134	140,563
25	Aix-la-Chapelle	1,003	1,122	31	2,155	712	10	2,878	135,245
26	Brunswick	821	963	20	1,804	445	16	2,265	128,226
27	Kiel	897	1,238	41	2,176	666	8	2,850	121,824
28	Posen	672	829	25	1,526	612	11	2,149	117,033
29	Erfeld	808	959	16	1,783	551	7	2,341	109,084
30	Cassel	1,049	1,008	63	2,120	553	5	2,678	106,034
31	German Empire, not including Bavaria and Württemberg	202,263	126,007	2,845	331,115	109,435	4,404	444,954	48,021,641

GENERAL REGULATIONS.

1. For every station in a telephone system a lump sum (unlimited service) charge is collected.

2. The rates charged for telephone connection depend on the number of subscribers' stations existing in the system in question at the commencement of each calendar year.

The unlimited service charges are as follows:—

In systems with not more than 50 subscriber's stations ..	80 m.=($\$19.04$)
In systems with from 50 to 100 subscriber's stations . . .	100 m.=($\$23.80$)
In systems with from 100 to 200 subscriber's stations . . .	120 m.=($\$28.56$)
In systems with from 200 to 500 subscriber's stations . . .	140 m.=($\$33.32$)
In systems with from 500 to 1,000 subscriber's stations ..	150 m.=($\$35.70$)
In systems with from 1,000 to 5,000 subscriber's stations ..	160 m.=($\$38.08$)
In systems with from 5,000 to 20,000 subscriber's stations .	170 m.=($\$40.46$)
In systems with more than 20,000 subscriber's stations . . .	180 m.=($\$42.84$)

The above is the annual charge for each station, which is not more than 5 kilo-

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metres (3 miles) distant from the central station. In systems having several exchange stations, this distance is reckoned from the main exchange station.

Subscribers who pay the unlimited service charge are entitled to allow their stations to be used, free of charge, by another person, for conversations with other subscribers of the same system.

The connecting area of a telephone system extends to a radius of 15 km. (9½ miles) from the central exchange.

3. In estimating the above charges, the basis is the number of existing subscribers' stations, at the commencement of the calendar year. The charge thus estimated, comes into force on April 1 following. Any changes made in this charge for the commencement of the year, are to be made known officially, in the places to which they apply.

In cases where, on the basis of the new regulations, the lump sum charges are increased, the subscribers are entitled to give up their stations when the increase of charge comes into force, by giving notice to this effect one month beforehand.

4. In places where there is no local system, a lump sum charge of 80 m. (\$19.04) is charged for each subscriber's station, which is not more than 5 km. (3 miles) distant from the exchange station.

5. In telephone systems where the unlimited service charge exceeds 80 marks (\$19.04), each subscriber is entitled, instead of the 'lump sum' or unlimited service charge, to pay a 'general' or measured rate charge for the use and maintenance of the 'phone, and for the erection and up-keep of the line, and also charges for each connection made—for at least 400 conversations yearly.

The 'general' or measured rate charge is as follows:—

In systems with not more than 1,000 subscriber's stations, 60 marks (\$14.28).

In systems with more than 1,000 and up to 5,000 subscriber's stations, 75 marks (\$17.85).

In systems with more than 5,000 and up to 20,000 subscriber's stations, 90 marks (\$21.42).

In systems with more than 20,000 subscriber's stations, 100 marks (\$23.80).

The above are the annual charges for each station, which is not more than 5 km. (3 miles) distant from the central exchange. In systems having several exchange stations, this distance is reckoned from the main exchange station. The charge for conversations is 5 pf. (1 cent) for each connection made.

The subscriber who pays charges for conversations may collect the charges from other persons who may use his station.

The subscriber has to make a declaration that he will pay charges for conversations, either when his station is set up, or at the latest, one month before the commencement of a new fiscal year. If he does not make this declaration, then he will be called upon to pay the lump sum charge. The regulations contained in paragraph 3 apply also to the general charges.

INSTRUCTIONS FOR CARRYING INTO EFFECT THE REGULATIONS GIVEN IN THE FOREGOING PARAGRAPHS, NOS. 1 TO 5.

For Paragraph 1.

(a) By the designation 'Telephone System' is understood the arrangements for the effecting of connections for conversations between stations which are connected to the same central station, or to the central stations of the same local system. Stations that are connected to exchange stations of different localities, can only form a uniform (united) telephone system, when this has been specially determined by the Government Post Office Department. Systems that are united to the service of neighbouring places, principal centres, and districts (departments or municipalities), form distinct independent systems.

(b) As a rule stations are to be connected to the nearest central station, unless the connection to some other than the nearest central station, should be found more conducive to the interests of the telegraph management. Premises that are more than 15 kilometres ($9\frac{1}{4}$ miles) distant from the main central station are not connected thereto. Only when a central station is removed to some other location, or when it is cancelled in the interests of the service, or amalgamated with some other central station, can existing subscribers, principal stations and supplementary stations, be connected to a central station, when the same is more than 15 kilometres ($9\frac{1}{4}$ miles) distant. Regarding the annual additional charges, and extra charges for costs of construction, in such cases, see paragraph 9 of the present 'regulations.'

Subscribers have no claim to be connected to any other central station than the nearest one. The head office of the Post Office Department is, however, authorized to grant requests for connection to some other than the nearest central station, inside the distance limit of 15 kilometres ($9\frac{1}{4}$ miles), if the person concerned can give valid reasons for his request; and if, from the standpoint of the management, no special difficulties are found to stand in the way.

Regarding the extra charges for costs of construction, in such cases, see paragraph 9 of the present regulations.

These regulations also apply in cases where, for the connection of the station, there are required—

- (1) a local telephone system, and a public call-station, or switch station.
- (2) two public call-stations, or switch stations.

In the case of (1) permission is granted to the subscriber to have his station connected with the local system, even when the connection with the local system requires a longer wire than the connection with the public call station: but the subscriber must pay the extra expenses incurred.

The regulations relating to the connecting of stations to some other, than the nearest central station, have no application to the connecting of stations in places where there are several central stations. The head office of the Post Office Department is authorized to refuse, from the start, the setting up of switch stations in places where there are public call-stations, when there are central stations in the immediate vicinity, to which subscribers' stations, in these places, can be conveniently connected. Extra charges for construction, as specified in paragraph 9 of the present regulations, are not to be collected in such cases.

A register of the places having public call-stations, which during the past quarter, have been excluded from being used as switch stations, is to be sent in, not later than the 20th of the first month of the new quarter, to the Government Post Office Department for telephone service. Only those public call-stations are to be specified in the register, that are situated outside of the 5 kilometre area of the existing telephone exchange stations. It is not necessary to post up notifications of these changes.

Public call-stations, situated in rural districts, which have been reported to the aforementioned bureau, as having been excluded from switch station service, are not again to be used for connecting subscriber's stations, without permission being given by the said bureau.

Stations that are beyond the limits of the government telegraph area, require the approval of the Government Post Office Bureau.

(c) Stations held according to the special regulations given for the telephone service in principal centres (with a yearly subscription of 200 marks (\$47.60), or for municipal (departmental) telephone systems, can only be connected to some other than the nearest exchange station of the local system, when the head office of the Post Office Department considers it advisable, in the interests of telegraph management, to make connections with some other than the nearest exchange station; and when the payment of lump sum charges for conversations in municipal service, or service with principal centres are appointed in both systems, the one in which the subscriber's station is located, and the one with which connection is requested.

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(d) When new telephone systems are organized, then, when request to this effect is made, the existing subscribers' stations may be connected to the nearer new exchange station, when those who make the request can show valid reasons for having these connections made; and if, from the standpoint of the management, no special difficulties stand in the way. In such cases no extra charges for construction are made; nor is compensation to be paid for the former connections.

(e) Alphabetical lists of the subscribers to each telephone system are printed. A copy of this list is given free to each principal station. Copies may be had at cost price, at the places mentioned, on the title-page of these lists. Names are to be inserted in these lists, in as concise a manner as possible. Not more than three printed lines are allowed for the free insertion of a subscriber's name and number. As a rule, the stations are only inserted in one place in the list. If they are to be inserted in several places, or if some reference is to be made to the first insertion, then a yearly charge of 5 m. (\$1.19) is charged for each additional printed line required.

Note.—If subscribers wish to procure the lists (directories) of other systems, or districts, which are wholly or partly connected with the area of service to which their stations belong, then they can obtain these, at cost price, through the post office of the district in which the subscribers reside. The lists are to be sent post free to this post office, and are to be marked 'post office matter.'

For Paragraph 2.

(a) The distance limit of 5 km. is to be measured in a direct line.

(b) Subscribers who pay the lump sum charge are not permitted to collect any compensation from other persons who may use their stations free of charge, either in the form of a compensation for the accommodation or in any other way.

For Paragraph 3.

(a) In estimating the number of subscribers' stations, only the principal stations are reckoned, and those stations are not considered, which do not pay a continuous subscription charge, such as stations connected with the post office service, etc. The number of supplementary stations is not counted.

(b) The announcement (of numbers, or of increased charges) is to be made during the month of January, and, as a rule, it is to be specially made for each local telephone system. It is to be inserted once, and if possible, free of charge, in a newspaper which is used by the district authorities, for making their announcements, for the locality where the exchange station is situated. Announcements are also to be sent to the other newspapers within the area of the telephone system in question, to be inserted, if possible, free of charge.

For Paragraph 4.

(a) Paragraph 4 applies only to cases where an exchange station is newly erected, in a place where, up till that time, there has been no exchange station, with subscribers' lines connected to it, whether a local telephone system, or switch station. In this case the same lump sum charge is collected, that has been appointed for systems with 50 subscribers' stations. This charge is collected for each station during the first year, without regard to the number of existing stations. At the beginning of the second year, the regulations contained in Paragraphs 2, 3 and 5 come into force.

For Paragraph 5.

(a) In the exchange stations, the stations of subscribers who pay the general charge, along with charges for conversations, are to be kept separate from the stations that pay the lump sum charge, and are to be connected to special annunciator boards (drop-boards). Where drop-boards with fifty numbers or less are used, and when the total number of stations is not large, this distinction need not be made. In this case, the stations that pay the general charge, and those that pay the lump sum charge, are to be specially differentiated in some way.

(b) The distance limit of 5 km. is to be measured in a direct line.

(c) The conversation charge of 5 pf. (1 cent) applies only to connections made during the day service, within the area of the same telephone system. See paragraph 10, of the present 'Regulations.' The 5 pf. is not collected along with the charges for service with neighbouring places, principal centres and long-distance lines.

(d) For the minimum number of 400 conversations only such conversations are reckoned for which the charge of 5 pf. (1 cent) has to be paid, and, consequently, conversations are here not estimated that have to pay higher charges, such as conversations with neighbouring places, principal centres and long-distance service, and conversations during night hours in local service. As to how far it may be granted to hold conversations in service with neighbouring places, for the charge of 5 pf., with the minimum number of 400 conversations, see 'Instructions,' pages 483, 494.

(e) The obligation to pay the appointed charges begins as soon as the station of the person calling up has been put into communication with the station asked for. For the point of time when the charge is incurred to or from supplementary stations, see the present 'Regulations.'

(f) The subscriber who pays conversation charges, can only collect the bare conversation charge from another person who may use his station. He is not permitted to receive any other charges, such as a compensation for the accommodation granted, or the like.

(g) For the transferring of subscribers, from the category of the general charges with added charges for conversations, to the lump sum charges, or *vice versa*, or from one category of the lump sum charges into another, the following regulations apply:—

(1) The subscriber has the right, at the time that his term of contract expires, to be transferred from the category of a general charge, with added conversation charges, to that of the lump sum charge, and *vice versa*, or from one category of the lump sum charge into another, if he declares his intention, within the time specified for giving notice that he intends to withdraw. The regulations in paragraph 5 of the foregoing 'Regulations,' do not apply in this case.

(2) Moreover, it is only permissible, before the term of contract expires, to be transferred from the category of the general charge, with added conversation charges, into that of the lump sum charge, or from a lower to a higher category of lump sum charges, when the subscriber is willing to pay the lump sum charge, or the higher category of lump sum charge, from the point of time at which the station was received (given over) in the fiscal year. The amount of the general charge already paid in, for the fiscal year, will be allowed for in the estimation of the lump sum charge. No allowance will be made for conversation charges already paid for the fiscal year; nor will those conversation charges be cancelled, which have been registered at the exchange station, up to the day when sanction for the transfer was given.

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LAW RELATING TO TELEPHONE RATES (DEC. 20, 1899).

Paragraph 9.

(a) For urgent long-distance conversations, three times the amount of ordinary charges are collected.

(b) For stations which, after notice has been given, are not used for at least eight consecutive weeks, the 50th part of the annual charge for unlimited service will be collected for every week that has begun during the time of use; and for every week of the remainder of the year, the 50th part of the annual charge for measured service will be collected.

(c) Subscribers of such neighbouring places as, by order of the State Chancellor, pay a common local charge for letters, may converse with the systems of the other neighbouring places, without additional charges. Should they wish to avail themselves of this permission, then they must pay the unlimited service charge, if this charge is appointed in one of the neighbouring systems, and if this charge is higher than in their own system. Subscribers paying the unlimited service charge are authorized to permit other persons to use their stations, free of charge, for conversations with subscribers of other neighbouring places with whom they themselves have permission to converse.

Paragraph 10.

The conditions for the use of the telephone service and the rates therefor are fixed by the State Chancellor in cases where previous regulations have not been provided. The Chancellor regulates the following charges:—

- (1) The additional charges to the usual unlimited service charges, and measured rate charges, for stations which are more than 5 km. (3 miles) distant from the central exchange station; also for the supplying of special apparatus, and for the use of specially costly lines.
- (2) The rates for night connections.
- (3) The rates for stations, which several persons are permitted to use in connection with one and the same line.
- (4) The rates for using public call-stations, and for transmitting telegrams through the telephone.
- (5) The rates for moving stations; or for removing stations before the term of subscription has expired.
- (6) The rates for connections in service with principal centres, with neighbouring places, and with municipalities, without infringing upon the regulations given in Paragraph 9, No. 3.
- (7) The rates for special telegraph arrangements, and supplementary telegraph arrangements.
- (8) The fixing of the lump sum charges for night connections.
- (9) The rates for using the lines for service with foreign countries: without infringing upon the decisions laid down in Article 52, paragraph 3, of the constitution.

The regulations of the Chancellor of State, on these points, are to be made known.

Paragraph 11.

The present law comes into effect on April 1, 1900. The first announcement of the unlimited service charges, and the measured rate charges, will be made on January 16, 1900.

The declaration referred to in Paragraph 5, section 5, to be made by the subscribers, has to take place, first of all, on February 15, 1900. Subscribers whose yearly rates were less before this law comes into force, than the unlimited service charge, fixed according to the regulations of this law, are entitled to give up their stations, up to April 1, 1900. The time for giving notice to this effect expires on February 15, 1900.

Paragraph 12.

As far as service with the interior of Bavaria and Wurtemberg is concerned, Paragraphs 1, 2, 3, 4, 5, 6, 7, 9, 10 and 11 of this law have no application.

Attested by Our Own Signature, and accompanying Royal Seal. Issued from the New Palace, December 20, 1899.

(L.S.)

WILLIAM, *Prince of Hohenlohe.*

INSTRUCTIONS

FOR CARRYING THE FOREGOING LAW INTO EFFECT.

For Paragraph 9.

For fixing the annual rates for stations that have only been partly used, the following rules are to be observed:—

For every week begun, according to whether the station has been used or not, the fiftieth part of the annual lump sum charge, or the annual general charge will be collected.

The number of weeks will be reckoned in this way: The total number of days of the current year during which the station has been in use, and the total number of days during which it has not been in use, will be divided by 7, and any fractions of 7 remaining over, will be counted as full weeks.

During the three first quarterly terms of the fiscal year, the full share of the annual lump sum charge must be paid. The balance must be paid in the last quarter of the fiscal year; or, if the station has been given up at an earlier period, at the last term of quarterly payment, for the period for which the station was signed for. If the time during which a station has remained unused passes over from one fiscal year into another, then the difference in the rates will be squared off in the new fiscal year.

The foregoing manner of reckoning the unlimited service charges and the annual measured rate charges for stations that have remained unused for a time, will also be applied to systems having not more than 50 subscribers, in the case of those stations which pay the lump sum annual rates, for service with neighbouring places and principal centres. Accordingly, stations of this kind, which, after notice has been given, have remained unused, for at least eight consecutive weeks, will have to pay, for every week that has begun, during the time of use, the fiftieth part of the annual unlimited service charge for service with neighbouring places or with principal centres; and, on the other hand, for every week of the remaining portion of the year, there must be paid the fiftieth part of the annual measured charge appointed for the place of residence.

Any charges for supplementary stations, or additional lengths of line, or for specially expensive lines, or magnetic bells, or for an additional microphone, are also to be charged for at the full rates during the time that the station has remained unused.

In the case of stations which pay the unlimited service charge appointed for service with municipal systems this charge will not be reduced for periods of time during which stations may have remained unused.

Regarding the right which subscribers have to hold conversations, under certain stipulations, with neighbouring places, by paying the appointed charge of 5 pf., see 'regulations' for telephone charges, No. 18, page 483.

For Paragraph 10.

The Regulations of the State Chancellor were issued on January 31 and March 26, 1900; on September 19, 1901; on January 9, 1902; and on February 18, 1904.

The 'Regulations' by the State Chancellor are to be found on page 479.

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SMALLER SYSTEMS.

In intimating the extent of the telephone systems in the smaller towns and villages, the mere population is not taken into account, but only the exigencies of the service, the particular local conditions, such as the situation in centres of industry, or in the rural districts, and so forth. There are even existing systems with only one subscriber.

The 'General Regulations' apply also to the rates charged, and the radius covered by subscription in the smaller telephone systems.

THE RECKONING OF DISTANCES.

In the case of auxiliary post and telegraph offices, it is to be taken for granted (in order to avoid tedious investigations, and until further information is forthcoming) that these, together with the head offices to which they belong, are situated within the same 'tax-square.' Therefore the 'tax-square' of the central office is also the standard for the auxiliary station, even when the public call station there situated belongs to the local area of a neighbouring telephone exchange station. Should inconveniences arise therefrom, in individual cases, then the head office of the Post Office Department must decide the matter.

RURAL DISTRICTS.

No special telephone arrangements have been made for the rural districts. The setting up of district systems takes place according to the general regulations, as also the erection of public call stations.

Public call-stations are set up in order that all persons may have the opportunity of using the telephone service. Public call-stations are located in the following places:—

- (1) In the public halls of post office or telegraph bureaux, and in auxiliary stations.
2. In rooms (places) that are supplied free, for this purpose, by the various municipalities, when needed.
- (3) With private individuals.

In local systems, the public call-stations are to be connected by junction lines to the nearest telephone exchange station. Independent public call-stations (see paragraph 1) are, as a rule, connected to the general telephone system by the ordinary wires (German has 'talking wires.'). Only in exceptional cases are they to be switched on to trunk lines, if there is a prospect that eventually they are to be organized into local telephone systems. They are not to be switched on to trunk lines that are used for long-distance service.

The head office of the Post Office Department will decide as to the setting up of public call-stations in local telephone systems. If the public call-station to be set up is more than 5 km. distant, in a direct line, from the central station, and situated outside of the municipality, where the local system is organized, then it will only be set up if the required guarantee is furnished. See paragraph 12 of the present 'regulations.' Public call-stations for the use of districts are subject to the same regulations, in the matter of guarantee. In all other cases, the setting up of public call-stations, in local systems, is to be regulated entirely according to the needs of the community.

Public call-stations in the care of private individuals, are always to have automatic apparatus, viz., slot-machines.

Public call-stations that are connected with junction wires, to the telephone system, have the same area of service as the subscriber's stations that are connected to

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the same exchange station. The charges specified in 'General Regulations,' Section 2, Part 2, page 42, paragraph 13, are to be collected for conversations with subscribers who belong to the same system, and also for service with neighbouring places and with principal centres. This applies also to those public call-stations that are switched on to ordinary lines, or trunk lines, and which are connected to the nearest exchange station, by one and the same ordinary line, or trunk line, without having connection with another independent exchange station, in so far as they are situated within the municipal area of the exchange station, or outside of this area, but no further than 5 km. in a direct line from the exchange station. When a public call-station, situated within the area of 5 km. is connected by ordinary or by trunk lines to several exchange stations, situated in different directions, then it is to belong to the jurisdiction of the nearest exchange station. If, in the using of such public call stations, difficulties should arise in the service of the ordinary lines, or of the trunk lines, then these public call-stations are to be connected, by special wires, to the exchange stations in question. For estimating the charges, in long-distance service, the point of departure (centre) is the exchange station, to the jurisdiction of which the public call-station belongs. For the special regulations relating to automatic stations, see paragraph 7 of the present 'Regulations.'

In all public call-stations there must be hung up, in some convenient place, a table showing how the phone may be used, and specifying the places with which service can be had, and giving a list of the various charges that are collected. The places are to be given in alphabetic order. The places with which conversations are granted only during certain hours, when there is less traffic on the lines (see paragraph 13) are to be differentiated by a cross, +, before the name of the place. The meaning of this sign (+) is to be explained by a remark at the bottom of the table. Space is to be left below each name, for additional names to be added. This list is to be enlarged, according as the area of service is extended. A form is given, in Appendix 2, as to how the above table should be drawn up.

In the case of public call-stations with an extensive area of service the above-mentioned table, of places and charges, may be dispensed with. Instead of this a summary (statement) of places, etc., connected with the public call-stations, is to be kept lying in the telephone-booth (call-box). Reference is to be made in this summary, to switches, connections, etc. As the area of the service is extended, it is only necessary to make the additions required. Special notices, either in the form of placards or table, are not necessary. See paragraph 13 of the present 'Regulations,' for information regarding the register that has to be kept in every public call-station, regarding the connections that can only be made at limited intervals and the hours during which conversations can be actually carried on in such cases.

Public call-stations having the usual telephone apparatus (not automatic) are to be designated by a square sign, placed near the entrance, on the outside of the building, made of strong sheet iron, 30 x 20 cm. and enamelled on both sides, with the inscription, in Roman letters, 'Public Call-Station.' (German 'Offenllliche-Fernsprechstelle.')

Information will be given by the Government Post Office Department where to procure these sign-plates.

In all public call-stations, that are connected with exchange stations, persons will be sent for upon request, to come to the telephone. The fixing of the area within which persons may be sent for to come to the public call-stations, is left to the head office of the Post Office Department. The extent of the area is to be so arranged, that 25 pf. (6c.) will fully cover the cost of sending for persons to come to the phone. Postal agencies or auxiliary stations are to be allowed, until further instructions from the head office of the Post Office Department, a maximum compensation of 25 pf. (6c.) for each case when persons are to be sent for to come to the phone. This compensation is only payable when subordinate employees, paid by the post office, during the appointed hours of service, are not at hand to call the persons

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in question. The charges paid, in this matter, are reckoned as messenger charges for the delivery of telegrams. In the case of exchange stations, when persons are to be sent for to the 'phone, the regulations relating to the fetching of telegrams apply.

The head office of the Post Office Department may appoint, in so far as the existing conditions may call for it, that post office agents and keepers of auxiliary stations, as managers of public call-stations, for long-distance lines, may receive and forward communications or orders coming from a distance for other persons residing in the neighbourhood. For the charges, see Section 2. The regulations relating to the charges for sending for persons to the phone, apply also to the compensation to be paid to the post office agents and keepers of auxiliary stations, for forwarding communications, and for reckoning up the amounts paid. This manner of procedure does not apply in the case of exchange stations. The employee, or other person, who is requested to forward communications to other persons, is at liberty to declare to the person making the request, either before or after the request is made, that he is not responsible for the night delivery of the same. This declaration is sufficient to exonerate employees, etc., from all responsibility in this matter.

The erecting of special telephone-booths (call-boxes) in exchange stations, for the telephone service of the public call-stations, is to be limited only to cases of urgent necessity. In cases where it may not be advisable to hang up the telephone apparatus uncovered, some simple arrangement is to be employed, such as curtains, and the like, suitable to answer the purpose.

Any permission that may have been granted to subscribers, in municipal telephone systems, to use the existing public call-stations, which belong to their system, free of charge, does not extend to the independent public call-stations that may be erected in the future.

Abundant opportunity is given to the rural districts to use the telephone connections, because the telegraph offices, in the smaller places, are connected by telephone wires with the universal telegraph system, and these telephone wires are so arranged that connections can be made with the general telephone system.

The greatest distance over which subscribers can converse is about 1,200 kilometres (745 miles).

At the end of 1904, the proportion of underground and overhead lines was:—

Underground	609,392 kilometres.
Overhead	404,985 "

We have no record of the expenditures for construction, maintenance and operation of the local system. In 1903 the whole amount taken in for subscriptions, charges, etc., was 50,915,670 marks (\$12,117,929.46).

The telephone exchanges are, as far as the service permits, either combined with the telegraph bureaux, or with the telegraph bureau and post office. When there are such combinations, the service is attended to, either by the post office, or the telegraph officials; or where there is a more extensive service, special female officials are employed, under the supervision of male officials.

Only the exchange stations of the most extensive service—telephone stations—are independent.

The managers of the telephone stations (call-stations) receive a yearly maximum salary of 6,900 marks (\$1,642.20); in Berlin, up to 8,100 marks (\$1,931.80). Foremen receive up to 4,740 marks (\$1,128.12); in Berlin, up to 5,340 marks (\$1,270.92). Telegraph operator girls, who after serving 9 years, are appointed as of full age and experience, receive up to their final appointment a daily allowance up to 3 marks (71c.), and afterwards a yearly salary up to 2,040 marks (\$485.52). Experienced instrument men receive a maximum salary of 2,740 marks (\$652.12).

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All the telegraph operator girls are appointed permanently and are entitled to a superannuation allowance.

Those employed on the construction—telegraph foremen, labourers, &c., are employed by the day. These foremen receive up to 4 marks and 50 pf. (\$1.07) daily. The labourers receive the daily wage usually paid to labourers in the district where they are employed.

The foremen have the qualification of officials, and can, in due time, be appointed to subordinate official positions.

The cost of instruments and construction material are based upon contracts and agreements with the persons who supply them, and are not made known.

The state has always had exclusive right to organize and operate the telephone service.

WAY-LEAVE PRIVILEGES.

The carrying of lines along private roads is only done in those cases where the owner of the private road gives permission to do so, without claiming any compensation.

The way-leave privileges for the erection of telegraph and telephone lines are regulated by the telegraph law of December 18, 1899, which is as follows:—

The telegraph management is authorized to use the usual roads of traffic for the telegraph lines that are for public service, in so far as the common use of these roads is not thereby infringed upon in any permanent way. 'Roads of traffic,' in the sense of this law, imply the public roads, squares, esplanades, bridges, and the public rivers and streams, together with the shores of the same that are used for public traffic. The air and earth spaces of the foregoing are also included. Telephone lines are included with telegraph lines.

2. In using the public roads care has to be taken to avoid any difficulties in the way of their up-keep, or any temporary entrenchment upon their common use. If any difficulties are put in the way of their up-keep, then the telegraph management has to furnish any additional expenses that may be necessary for their up-keep.

After the work has been finished on the lines, the telegraph management has to put the road in order again, as soon as possible, in so far as the persons or person in charge of the road, has not agreed to attend to this matter. The telegraph management has to reimburse the persons in charge of the up-keep of the road for expenses incurred by them in undertaking to put the road in order again, and also to make good any damage that may have been done through the work on the lines.

3. If it should turn out, after the line has been erected, that it entrenches upon the common use of the road in any permanent way, or hinders the carrying out of the work necessary for its up-keep, or stands in the way of the carrying out of any alterations intended by the road contractor, then the line must be changed, as far as may be necessary, or be entirely removed. When a public road ceases to be used, then the right to use it by the telegraph management also expires. In all these cases, the telegraph management has to carry out the alterations made necessary in the lines at its own expenses.

4. Trees planted on or near the public roads are to be spared as much as possible. Careful attention must be paid to the growth of the trees, as far as possible. Cutting off branches, may only be done in so far as this is necessary for carrying wires across or for the avoiding of any derangement in the wires. This cutting is to be avoided unless absolutely necessary.

The telegraph management has to give sufficient time to the owner of the trees, inside of which he can arrange to have the necessary branches cut down, under his own supervision. If the branches are not cut down, or not sufficiently cut down, within the time given, then the telegraph management has to do the cutting down. The tele-

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graph management has also authority to cut down branches when there is urgent necessity to prevent or to remove any interruption or derangement in the service. The telegraph management has to make good any damage done to trees, and has to pay any expenses of cutting down branches that may be done by request.

5. The setting up of the telegraph lines must be done in such a way that no existing arrangements may be interfered with—such as arrangements for maintaining the road, channels or sewers, water pipes, gas pipes, car rails, electric apparatus and the like. Any safety or protective arrangements that may be required, in such cases, must be paid by the railway management. The moving or the alteration of any existing special arrangements, like the above, may only be done by paying the necessary expenses. The moving or alteration can only be required, if it is otherwise impossible to use the road for the lines, and when it is possible to make this change without interfering with the purpose of the arrangements that may be moved or altered.

Over and above the foregoing stipulations, a public road must not be used for the telegraph, etc., lines, when the resulting expenses of moving or altering any of the existing arrangements are in excess of the costs of using some other public road, which is at the disposal of the telegraph management. These regulations apply also to any arrangements that may be in preparation, the carrying out of which is for the interests of the general public. A compensation, as specified, in paragraph 2, will only be given, in such cases, to cover the actual expenses that may have been incurred in making such preparations. Arrangements in course of preparation are to be understood as implying arrangements for which the plans have been fully drawn up, and which have received the approval of the person giving the orders for such plans; and, if necessary, the approval of the authorities concerned, and of the proprietor or any other person having the right of way for the road that is to be used.

6. Any special arrangements that may be made subsequently on the road, are to be carried out, as far as possible, in such a manner that the existing telegraph, etc., lines are not interfered with in any way. The telegraph management must, at its own expense, comply with any request made to move or alter the lines; if otherwise the carrying out of some special subsequent arrangement should be prevented, or hindered considerably; which have to be carried out by those in charge of the road for reasons of public interest—particularly for reasons of political economy, or for reasons of public traffic. The removal of a telegraph, &c., line may only be requested, when the same is not used exclusively for local service, and for service with neighbouring places, and principal centres, in cases where the line can be moved to some other suitable route, where the service is not infringed upon without the incurring of disproportionately higher expenses.

If the existing telegraph line has to be equipped with any protective arrangements, on account of any special subsequent arrangements to be made on or in the road, then the expenses arising therefrom must be borne by the telegraph management. Should the person charged with the up-keep of the road transfer his duty to another person, the telegraph management must reimburse to this person his share of the expenses incurred in the moving or altering of the line, or in the setting up of the protective arrangements.

Contractors for any other arrangements or undertakings than those specified in paragraph 2, must incur the expenses resulting from any moving or alteration of the wires, or from the setting up of any protective arrangements that may be required. The regulations contained in paragraphs 1-5 also apply to any subsequent alterations of any existing special arrangements or constructions in or on the public roads where telegraph, etc., lines are set up.

7. When about to make use of a public road or thoroughfare for the erecting or undertaking of new telegraph, etc., lines, or when about to carry out any important changes or alterations in existing telegraph, etc., lines, the telegraph management has to submit plans and specifications of the same. This plan must contain all the pro-

posed arrangements, such as the stretch of the line, the space required for the overhead or underground line; and, in the case of overhead lines, the distance between the poles and the height of the poles, in so far as this is possible. This plan has to be submitted to the proper authorities, in charge of the public road, whether this may be a federal state, a municipal corporation, or some other body possessing public jurisdiction, or to the person intrusted with the charge and up-keep of the road, or to the lower court of administration. These have, as far as possible, to inform the parties responsible for the maintenance of the road, of the nature and scope of the plans. In all cases where the moving or altering of any of the constructions, referred to in paragraph 5, is required, or when the derangement of such constructions is to be expected, the plan must be submitted to the contractor for such constructions.

The plan is also to be publicly exhibited in the post or telegraph offices of the districts through which the telegraph, etc., line is intended to pass, for the space of four consecutive weeks. The time of exhibiting this plan is to be made publicly known in one, at least, of the newspapers which is made use of for public announcements by the authorities of the district in question. The exhibiting of this plan may be dispensed with, in cases where the telegraph, etc., line is only to be carried overhead, above the public road.

8. The telegraph management is authorized to proceed with the carrying out of the plan, if no protest is lodged within four weeks, with the authorities who have publicly exhibited the plan, by the persons concerned.

The time during which protest may be made, begins for those to whom the plan is submitted, according to the regulations in paragraph 7, second section, as soon as the plan has been sent to them. For other persons concerned, the time of protest begins when the plan is publicly exhibited.

Protest can only be made on the ground that the plan violates any of the regulations contained in paragraphs 1-5 of this law, or comes short of any orders that may be issued on the basis of paragraph 18 of this law.

The local board of administration has to decide as to the validity of any protest that may be brought forward. Any complaint against the decision must be made to the district central authorities, within a period of two weeks' grace after the decision has been delivered, in so far as the district central authorities and the local board of administration are not one and the same. In all cases, the district central authorities have to hear the telegraph higher authorities before giving their decision. By request of the telegraph management, the decision given by the local board of administration may be declared to be final for the present. Should any such decision that has been declared final for the present (for the time being) be afterwards set aside, or be modified in any way, then the telegraph management is bound to make good any damage or loss that may have come to the person or persons who make the protest, through the construction of the telegraph, etc., lines.

9. At the request of the district central authorities, a copy or transcript of the plan is to be submitted to any public authorities or jurisdiction that may be designated by the said district central authority.

10. In cases where it may be found necessary to overstep the space specified for the lines, in the original plan, without making any actual alteration in the existing telegraph, etc., lines, and when thereby the trees in the vicinity are likely to be interfered with through cutting off branches, etc., then opportunity must be given to the proprietors of the trees to look after their interests before the proposed work is carried out.

11. The government telegraph authorities may commission the officials in charge of road construction, and the police authorities, to superintend and repair, provisionally, the telegraph, etc., lines, according as orders may be issued to that effect by the district central authorities. In such cases the telegraph management must pay a special compensation to such officials, after agreement with the authorities who are set over the said officials.

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12. The telegraph management is authorized to carry overhead telegraph, etc., lines over property or real estate, which is not a public road, in the sense of this law, in so far as the use of the said property, according to the conditions existing at the time when the line is set up is not infringed upon to any important extent. Should any such infringement supervene at a subsequent period of time, then the telegraph management must move or remove the line at its own expense. An encroachment upon the use of any property or real estate, which is only of a temporary nature, is not to stand in the way of the telegraph management setting up the overhead wires, but any temporary damage or inconvenience resulting therefrom must be made good. In like manner compensation must be given for any damages that may be done to the ground or its appurtenances through the setting up of the overhead telegraph, etc., lines.

Employees and persons commissioned by the telegraph management, who present themselves in that capacity, are authorized, for the carrying out of any necessary work on the lines (especially the preventing or removing of derangements or interruptions), to have access to the grounds or real estate, together with the buildings that are situated thereon, and the roofs of the same, with exception of the secluded living rooms, during the working hours of the day, after sending written notice beforehand, and damage resulting must be made good.

13. Any claims for damages or compensation that may be proffered on the basis of the regulations of this law are invalid, after the lapse of two years. This period of two years begins with the termination of the year in which the claim was proffered.

Claims for compensation, on the basis of paragraphs 2, 4, 5 and 6, are to be presented to the authorities, or jurisdiction that may be designated by the district central authorities. This authority fixes the amount of compensation provisionally. After the decision has been given, a month's grace is allowed, within which any legal proceedings (law-suit) may be instituted. For all other claims, the way stands open to institute legal claims immediately, or to begin legal proceedings.

14. The district central authorities have to decide as to what authorities in each federal state are to be considered subordinate and higher authorities, in the sense implied in this law.

15. The existing regulations and agreements relating to the rights of the telegraph managements to make use of the railway tracks for lines are not modified in any way by these laws.

16. 'The telegraph management' in the sense implied in this law is the government (Empire) telegraph management and the royal telegraph managements of Bavaria and Wurtemberg.

17. The regulations of this law do not have any application to telegraph, &c., lines which the military or the naval authorities may erect to serve their own purposes.

18. On consent of parliament, the State Chancellor may issue regulations on the following points:—

- (1) The limits of cutting down branches of trees.
- (2) As to what changes may be actually necessary in the telegraph, &c., lines, in the sense of paragraph 7, section 1, of the present law.
- (3) As to the individual requirements which are to be introduced into the plan, on the basis of the aforementioned paragraph 7, section 1.
- (4) As to the local survey that may be required by those concerned, and the costs arising therefrom.
- (5) As to the manner of procedure in the matter of claims and compensations, and the costs arising therefrom.
- (6) As to the amount of compensation to be granted to those in charge of road construction and police officials, for services rendered, in the interests of the government telegraph management.

19. The present law comes into force on January 1, 1900. The present law applies also to the existing lines of the telegraph management, which are used for public ser-

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vice (see paragraphs 16 and 17), and so far as contrary special agreements have been made.

Attested by Our Own Signature and by Our Own accompanying Royal Seal.

(L.S.)

WILLIAM,

Prince of Hohenlohe.

Issued from the New Palace, December 18, 1899.

INSTRUCTIONS REGARDING THE FOREGOING.

For Paragraph 1.

(a) The meaning of 'Telegraph lines for public use,' is the same as is used in the 'Penal Code for the German Empire,' sections 317 and 318. The lines referred to are, therefore, those that have been set up for general use; or those that are for the immediate use of the general public. In this class there is also to be included the lines connected with the main and the supplementary stations of the telephone systems, or the switch stations, and also the supplementary telegraph arrangements, as these last serve for connecting with the general telegraph system. Special telegraph arrangements which have no kind of connection with the general telegraph or telephone systems, only come under the category of paragraph 1 when they are for the special use of the general public, as, for example, fire department telegraph service, telegraph lines belonging to authorities in charge of dikes or embankments. Special telegraph arrangements which do not come under the category of paragraph (1) will duly be undertaken by the government telegraph management when the person concerned produces the approval of those in charge of the road, and the approval of the owner of the real estate, for the using of the public road, or the real estate, required for the setting up of the line in question.

(b) The 'common use of a public road' means the use which is free to every person, without any special permission, particularly the use of the same for walking, riding or driving. The use of the road for special constructions, such as street railways, car systems, arrangements for lighting, &c., does not come under the category of 'common use.'

(c) None of the three German telegraph managements are authorized, on the basis of paragraph 1, to set up telegraph, &c., lines on each others territory without the permission of the management affected. But when such permission has been obtained, any of the three managements (German Empire, Bavaria and Wurtemberg, paragraph 16) has the right, as declared by this law, even when the line to be erected passes through the territory of another telegraph management. The expression 'public roads, esplanades, squares, bridges, rivers and streams,' is to be understood according to the statute law (common law). Moreover, all public roads come under the category of this law, not only high-roads, and turn-pike roads, but also such as footpaths, &c., which only serve for a limited traffic. By the 'air space and earth space,' there is to be understood only the space existing in a straight line above and below the road, on a square with the surface of the earth. No side extension must be given to this space. The authority of the telegraph management for the using of the public road, extends to erecting, extending, maintaining, altering and removing the overhead and underground telegraph, &c., lines.

(d) In erecting and maintaining the telegraph, &c., lines, all possible attention must be given to the interests belonging to the road, whereby it is made serviceable for general use. Special care must be taken that the use of the road for telegraph, &c., lines, does not in any way infringe upon its use for other purposes. Also in cases where the special nature and purpose of the road has to be considered, calling for some attention to the manner in which the lines are to be constructed, all reasonable demands must be complied with. In cases where the person in charge of the road may have made some special arrangements in the public interests for aesthetic, &c., rea-

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sons, special consideration has to be shown to such arrangements. Should the public interests demand that on account of the special character of the road, the telegraph, &c., lines must be carried underground, or that the poles should be adapted to suit the character of the road, then all possible consideration should be given to these demands.

For Paragraph 2.

(a) In order to give those in charge of the road opportunity to look after their interests, while the work on the telegraph, etc., lines is being carried out, the officials in charge of the work on the lines must give notice before the work commences.

(b) If it is not possible to avoid hindering the proper maintaining of the road, either in a transitory or in a permanent manner, through making use of it for the telegraph, etc., lines, then the additional expenses, resulting therefrom must be refunded by the telegraph management to the persons in charge of the said road. This obligation, to refund extra expenses, applies to all the additional expenses caused to the persons in charge of roads, by the work that is done on the telegraph lines, whereby the work that they have agreed to do on the road, whether that may be the maintaining of the road in its present condition, or the improving of that condition, is made more difficult and expensive. In the interest of the government funds, the greatest possible care must be taken to avoid incurring such expenses, by any special manner of line construction.

For Paragraph 3.

(a) The reasons and manner of procedure for cancelling or moving the course of a public road are determined by the statute law (common law). This law is also authoritative, in so far as the road or river police authorities have to decide the question as to whether some change may be necessary in the telegraph, etc., lines, on account of hindering the common use of the road, as, for example, for the reason that there is a considerable increase in wagon and carriage traffic. Against the decisions of the road police authorities, &c., the legal measures, provided by statute law, may be employed, such as litigation between the management and the authorities. If district authorities have no authority in the matter, or do not take action, then any disputes that may arise, on the basis of paragraph 3, are to be decided according to common law.

(b) Just as the common use of a public road must not be permanently hindered by the telegraph, etc., lines; so, in like manner, there must be no hindering of work necessary to be done for the maintaining of the road. According to this regulation, a telegraph, etc., line must be altered, at the cost of the telegraph management, when without such alteration it would be impossible to construct the necessary drainage arrangements required for the interests of the road.

For Paragraph 4.

(a) If, in the construction of a telegraph, etc., line, an avenue of trees has to be pruned, or have branches cut down, and if the unimpaired existence of the said avenue of trees is in the public interests, then any disfigurement of the same has to be avoided as much as possible. If, in such cases, the telegraph, etc., line cannot be constructed without some considerable damage being done to the trees, or disfigurement, then, if at all possible, the road is not to be used for the lines, and the lines must be carried along some other road. Moreover, special care must be taken, when any cutting down of branches has to be carried out, to avoid all unnecessary damage to the growth of the trees.

(b) The owners of the trees should, first of all, be left to do the cutting down of branches. For this reason, in all cases, when such cutting is necessary, either in constructing or altering telegraph, etc., lines or arrangements, or in carrying out the yearly work required for the keeping of the lines in repair, the owners of the trees are to be requested to arrange for the necessary cutting down of branches, within a certain

time, which must be specified beforehand. If the cutting is not done, or not sufficiently carried out at the end of the specified time, then it must be done by the employees of the telegraph management. The costs of cutting down branches, in the interests of the telegraph management, are to be defrayed from the post office exchequer, under the conditions that such cutting is done solely for the purpose of keeping the spaces clear that are required for the telegraph, etc., lines. In so far as the cutting is done for the ordinary care of the trees, the resulting costs fall to the telegraph management. In so far as the trees that are planted along the public roads, belong to the authorities in charge of road construction, an agreement must be concluded, once for all, between the said authorities and the head office of the Postal Department, as to whether the said authorities will themselves undertake the necessary cutting down of branches, or leave over the matter to the telegraph management. Generally speaking, it will best serve the interests, both of the telegraph management as well as the authorities in charge of road construction, if the carrying out of the cutting down of branches necessary for the interests of the telegraph management be left to the telegraph management, and be carried out for the telegraph management, by some experienced person designated by the authorities in charge of road construction. For the cutting down of the branches to be undertaken by the owners of the trees, an employee of the telegraph management, such as an overseer of the line, may be appointed to be present while such cutting is being done, to give instructions as to the necessary extent of cutting required for the safeguarding of the telegraph, etc., service. If the cutting down of the branches has to be undertaken by the telegraph management, because the owners of the trees neglect to do so, or fail to accomplish it sufficiently, or when such cutting is urgently required, to prevent or to remove derangements in the lines, then such cutting must be carried out in a specially careful manner. Only knives, saws, or large shears must be used for the work. The use of adzes, or axes, must be avoided. In the case of large branches, in order to avoid the tearing off of the bark, the branch must, first of all, be cut into underneath, at the place where it is to be taken off. Cuttings of a more extensive nature are to be carried out by an experienced man, such as a gardener, etc. So far as possible, opportunity must be given to the owners of the trees to be present, when cutting is being done, or to have some one present to look after their interests.

When the telegraph management itself undertakes any cutting of branches, special care must be taken to keep strictly within the limits of 1 metre ($3\frac{1}{4}$ feet) from the lines. Any infringement of this rule renders the officials in charge of the cutting liable for any compensation that may have to be paid to the owners of the trees.

(c) The head office of the Post Office Department has to keep a register of the persons or authorities in charge of the up-keep of the roads that are used for the telegraph, &c., lines. The head office of the Post Office Department has also to keep itself informed, as much as possible, by those in charge of the public roads, as to the proprietary and leasehold rights, &c., of the trees that stand near the telegraph &c., lines.

(d) In case of any accidents that may happen to those employed to cut down branches the responsibility to give compensation falls to the telegraph, &c., management, in so far as the cutting has been done by special instructions from the telegraph management.

(e) If the telegraph management is authorized by some title or privilege outside the compass of this law, to request the removal of branches from trees standing on or near the public road or roads, without giving compensation, then, in so far as the cutting required falls exclusively within the limits or terms of the aforementioned title or privilege, no compensation is to be asked or given for the said cutting.

For Paragraphs 5 and 6.

(a) In so far as a contractor for constructing any special arrangements requires, according to the statute law, the sanction of the existing authorities, the rights of the GERMANY.

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district authorities remain unimpaired to lay down, according to their judgment, other conditions for the contractor, than those specified in paragraph 5 and 6, when the sanction is granted to him. But the agreement between the telegraph management and the contractor for the special arrangements, are not thereby to be altered to the prejudice of the telegraph management, unless the sanction of the telegraph management has been obtained.

(b) The regulations contained in Articles 4 and 8 of the Prussian law, of July 28, 1892 (Prussian Code, p. 225), regarding small railways and private railways connections, still apply, after the present law comes into force. Accordingly, before the construction and operation of small railways in the neighbourhood of any government telegraph, &c., arrangements, can be approved of, opportunity must be granted to the head office of the postal management for the district to inspect the technical arrangements which are to be constructed, upon the basis of Article 5 of the law relating to small railways, from the plans of construction; and opportunity must also be accorded to the said head office to give discretionary expression to the obligations which rest upon the contractor to safeguard the interests of the government telegraph management even when the railway line is to be constructed by those in charge of the up-keep of the public road. Moreover, the rules remain unimpaired according to which the head office of the Post Office Department must be heard, before the police authorities can sanction the construction of any arrangements for lighting or for setting up electric power lines. Further, in such cases stipulations must be inserted in the charter of approval (sanction) for the safeguarding of the government telegraph, &c., arrangements, lines, poles, &c., &c.

For Paragraph 6.

(a) In the erecting of new telegraph, &c., lines, special attention must be given to see that the telegraph, &c., lines, do not stand in the way of any special constructions that may be necessary on or in the public road in time to come.

(b) The regulations contained in Paragraph 6, section 1, are of universal application, and include any arrangements or constructions belonging to or undertaken by those in charge of the up-keep of the road. Moreover, such arrangements or constructions are to be carried out so as to interfere as little as possible with the existing telegraph, &c., lines.

Should measures have to be taken to safeguard the telegraph, &c., arrangements, on account of any arrangements or constructions that may be introduced, at a subsequent period, by those in charge of the road, then, in such cases, the resulting expenses must always be incurred by those in charge of the road. On the basis of the present law, the following privileges (rights) appertain to any special arrangements or constructions undertaken by the road authorities:—

(1) Should the necessary measures which have been made in the existing telegraph, &c., lines, to accommodate any special arrangements or constructions, necessary to be undertaken at a subsequent period by those in charge of the road, hinder considerably or prevent the carrying out of the said special arrangements or constructions, then the telegraph, &c., arrangements must give place to the special arrangements of the road authorities, at the expense of the telegraph management. The only exception, in such cases, is the exception specified in paragraph 6, section 2, regarding long-distance lines, viz., lines that are not exclusively used for local service, and service with principal centres and neighbouring places.

(2) If the telegraph, etc., arrangements cannot give place to the special arrangements or constructions of the road authorities, then the telegraph management must bear the cost of any protective arrangements which may be necessary in the subsequent constructions, &c. The protective arrangements which may be necessary in the subsequent special arrangements or constructions of the road authorities, and also those necessary in the existing telegraph, &c., arrangements, are determined by paragraph 6, section 1,

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According to the regulations referred to, the subsequent special arrangements or constructions, must be furnished with all the protective arrangements that can be introduced without interfering with the special purposes of the same. This includes, for instance, the use of fenders (protecting wire nets), safety wires (or protective wires), wooden bands or brackets, for the power wires of electric railways, the use of insulated conducting wires, the construction of shorter cable lines, which are not disproportionately expensive. If the end in view cannot be sufficiently attained by these means then the protective measures that may still be required, are to be applied to the existing telegraph, &c., arrangements, viz., by the inserting of fusible wires, the fixing of return wires, by the changing of the overhead lines into underground lines, where this can possibly be done without hindering the traffic. What has been said in the foregoing paragraph applies generally, and, therefore, to other arrangements besides those special arrangements, specified in paragraph 6, section 2, relating to the constructions of the road authorities. Therefore, if protective arrangements are not sufficient to safeguard the service of the existing telegraph lines, then the special subsequent arrangements or constructions of the road authorities, must not be carried out, in so far as the removal of the telegraph, &c., lines cannot be demanded, according to paragraph 6, section 2. As, according to paragraph 6, when a person in charge of the road hands over his duty to some person not in charge of the road, the telegraph management has to pay this said person for the share of the work done by him, for the removing or altering of existing lines, or for setting up protective arrangements, therefore the head office of the Post Office Department has to keep an exact register of the costs of such work.

(c) When those in charge of the road have to construct high tension lines, to be used exclusively for electric railways, then the general regulations regarding high tension arrangements, and the rules relating to the safeguarding of government telegraph and telephone arrangements, which, according to the regulations that have been laid down, have to be observed by the contractors, in the interests of the government telegraph management, both in the construction and operation of electric street railways and private lines, then the said regulations are to be supplied with a modifying clause, whereby the costs for the prescribed protective arrangements, in so far as these have to be applied to the existing telegraph arrangements, are to be borne by the telegraph management.

(d) The authorities in charge of the road have a preponderant interest, when their share of the joint property involved in the aforesaid special constructions, amounts to more than a half of the same.

(e) Any request made by the authorities in charge of the road, on the basis of paragraph 6, section 2, to remove existing telegraph arrangements, is to be decided between the telegraph management and the road authorities, apart from the approval of road police authorities. Differences of opinion must be settled in the ordinary legal way.

(f) As to the question about the costs being 'disproportionately high,' in the sense of paragraph 6, section 2, it must be understood that this does not refer to the proportion between the costs of the new arrangements or constructions, and the costs of removing the telegraph lines in question. The question to be decided is, whether the costs of removing the line, in each single case, according to the rules observed by the telegraph management in such cases, are so high that they cannot be borne by the telegraph management. Should the contractor for the said special constructions, or some other person interested, declare themselves ready to bear the 'disproportionately higher' costs, then the telegraph, etc., lines must give place to the 'subsequent special arrangements or constructions' of the authorities in charge of the road—under the presumption, of course, that some other suitable road is available for the telegraph, etc., lines.

For Paragraph 7.

(a) Before the plan is drawn up, an endeavour must be made to come to an understanding with the authorities in charge of the road, and other interested parties (such GERMANY.

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as the owners of the trees, the contractors for special constructions, etc.) regarding the construction of the line, in order to avoid, as much as possible, all objections that may be made against the plan. In order to prepare the way for such an understanding, the head office of the Post Office Department, or some person commissioned by the same, should at the earliest opportunity confer, verbally if possible, with the parties concerned. Even when local surveys are not requested by the parties concerned, such surveys should be proposed in necessary cases. It should be suggested to the parties concerned to be present at such surveys, in order to look after their own interests. If an understanding cannot be arrived at, then the plan is to be drawn up, in such manner as may be considered necessary by the head office of Post Office Department. The decision on the difference of opinion is to be held over until any later procedure on objections presented. Only in specially urgent cases, as, for example, when it is to be feared that otherwise some special construction may be carried out to the detriment of the line construction, must the plan be drawn up without previously consulting the road authorities, &c. The carrying out of the telegraph, &c., arrangements may be begun independently of the lapse of time required for drawing up the plans if the authority in charge of the road, or (in case the altering of some special construction is required, or the cutting down of branches may be necessary) the contractor for the special construction, or the owner of the trees have given their written permission. In this case the construction is carried out at the risk of the telegraph management, which may have to remove its construction, if protests should afterwards be presented, and be pronounced valid. The manner in which the plan is to be drawn up, is specified in Appendix 1, and in the 'instructions for carrying into effect the law relating to telegraph, &c., roads,' of January 26, 1900, which is printed in the present volume, at the end of the present 'instructions.'

(b) The road police authorities are not to be consulted in the drawing up of the plans. On the other hand, the authority which the police authorities have, according to the statute law, to request alterations in the telegraph, &c., arrangements, for road or traffic reasons, appertaining to the jurisdiction of the police, is not in any way impaired by the 'law relating to telegraph roads.' On the ground of this authority request may be made at any time, to make alterations in the telegraph, &c., arrangements, independent of the plans that are being drawn up, as also after the said plans are completed. For the same reason, no change is made by the present law, in the common law regulations which apply to the jurisdiction of the river (or stream) police authorities, as, for example, where a special permission must be obtained for setting up telegraph, &c., poles above the high water mark of a public river or stream. See also the 'Instructions' to paragraph 3.

(c) The announcement in the newspapers, is to be drawn up as briefly as possible and should be expressed somewhat in this way, viz.: 'The plans for the erecting of an overhead telegraph, &c., line, on the public road between and is exhibited in the post offices in in each post office, according to its district.' Besides the newspapers which are used for announcements by the district authorities, this announcement is also to be sent to the other newspapers in the neighbourhood of the post offices where the plans are on view, with a request to insert it free of charge.

For Paragraph 8.

- (a) The following protests may be urged against the plans:—
- (1) That the proposed telegraph, &c., lines permanently encroach upon the common use of the public road. See paragraph 1.
 - (2) That on account of the manner of construction proposed, the maintaining of the public is hindered more than is necessary; or that the transitory hindering of its common use will be prolonged more than is necessary. See paragraph 2.
 - (3) That some other manner of construction is possible, in order to have a greater sparing of the trees. See paragraph 4.

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- (4) That existing or proposed special arrangements will not be interfered with, or be deranged so much if some change is introduced into the proposed manner of the construction of the line. Paragraph 5.

These protests or objections may be urged by any person who has any interest in the matter. The circle of those who have the right to make such protests or objections is not limited by the present law.

(b) Should any interested person neglect to urge his protest within the specified time, then, on account of this neglect the claim to receive compensation for any loss or damage resulting from the construction of the line (according to the terms of the present law) is not limited, in any way. Should any protest be rejected as invalid when it has been presented for consideration, then the person bringing forward the said protest only loses the plea which he might have made valid in the ordinary manner of urging such protests.

(c) If the higher authority, before which the protest is urged, is not also the district central authority, then it is, as a rule, to be recommended that the head office of the Post Office Department, when transmitting the proceedings that have resulted from the urging of the protest, should recommend that the decision of the higher authority in question should be declared final for the time being. It must be decided, according to the circumstances of the case, as to how far the construction of the line is to be proceeded with, before the time given for presenting protests before the district central authorities has terminated, and before the said authorities have given their decision on the said protests. The decision, in the case of overhead lines, is to be pronounced by the head office of the Post Office Department, and, in the case of underground lines by the government postal direction.

For Paragraph 10.

(a) What kinds of alterations are really to be made are specified in the 'regulations' which were issued on January 26, 1900, and which will be found printed at the end of these present 'Instructions.'

(b) Regarding any scruples that may be held by the owners of the trees, the decision on the point (on the basis of paragraph 10) is not to be made by the higher administrative authorities, or by the district central authorities, but only the telegraph management.

(c) The regulations given in paragraph 4 apply to cases where branches are cut down and where compensation has to be given.

For Paragraph 11.

(a) Regarding the inspection and provisional repairing of the lines by those in charge of road construction, and by the police authorities, the following principles have been agreed upon, with the governments of the individual states that are situated within the area of the government telegraph management:—

- (1) The general postal direction of each district have to decide as to the stretches along which the aforesaid 'inspection and provisional repairing' of the lines is to be carried out. They will supply the necessary information regarding the agreements that have been made on this matter, to the authorities set over the road and police employees.
- (2) The commissioning of the road, etc., employees is done by the authorities that are immediately set over them, by handing over to the said employees instructions supplied by the telegraph management. The names of the said employees are to be supplied to the general postal direction by the authorities set over the said employees.
- (3) The general postal direction will fix the compensation to be given to the road, &c., employees for the 'inspection and provisional repairing' of the line, which, according to the instructions issued by the State Chancellor, for the carrying out of this law, amounts to from three to four marks (72 to 96 cents)

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for each km. per year. The general postal direction will fix the amount within these limits, according to the number of lines carried by the poles. The amounts granted in the absence of further instructions from the authorities set over the said employees, are to be paid directly to the said employees, either through the said authorities or by the general postal direction. The regulations given under (d) have reference to the granting of rewards to the road employees, &c., for supplying information regarding any persons damaging the lines.

- (4) The police are instructed by the authorities set over them to watch against all intentional serious damaging of the government telegraph, &c., lines. For arresting or giving the names of those who are guilty of doing such damage the police receive for each case a maximum reward of 15 marks (\$3.57), in the absence of any further instructions on this matter that may be issued by the general postal direction. The rewards are paid, after agreement with the authorities in charge of the police, and are handed over by them to the police.

For Paragraph 12.

(a) For deciding the question as to whether a proprietor is interfered with, in the use of his property, only the conditions that exist when the line is being constructed have to be taken into consideration. Should the use of the said property only be interfered with at a subsequent period, through some alteration being introduced into the conditions existing when the line was constructed, as for example, because the proprietor wishes to heighten his building or buildings over which the telegraph, &c., lines have been stretched, then the telegraph management, at its own expense, must remove the lines or alter them in such way that all interference with the use of the property is completely obviated. This especially applies to cases where the proprietor may erect some special constructions on his property, which are interfered with by the telegraph, &c., overhead lines. For such cases, the regulations specified in paragraphs 5 and 6, have no application.

(b) A temporary interfering with the use of the property may take place, when the measures appointed by the telegraph management are only of a temporary nature; such as the climbing on to roofs in order to stretch the telegraphs, &c., wires across, or when the proprietor, whose ordinary use of the property is not interfered with by the existing telegraph, &c., lines, has, by way of exception, to make use of his property for some temporary purpose, as for example, to set up a flag, &c., on some festive occasion, which is interfered with by the existing telegraph lines.

(c) The authority to have access to the property is only to be exercised on specially necessary occasions. The employees who have to obtain access to the property are to be furnished with letters of authority, and with notification forms, which are to be filled up and sent to the owner beforehand. The head office of the postal department has to furnish these letters of authority and the notification forms.

(d) Paragraph 12 does not confer any right to set up poles on buildings or private grounds; therefore, in each particular case the consent of the proprietor must be obtained.

For Paragraph 13.

(a) The regulation that all claims urged on the basis of this law, for which an administrative form of procedure has not been expressly provided, are to be handled by the present law, applies only to the urging of those claims which arise, on the basis of the present law, and which belong to the jurisdiction of the civil law. If, on the contrary, an order should be issued through the police by the authorities concerned in the matter, that, for instance, some alteration in the telegraph, &c., lines must be carried out, then, if the telegraph management protests against the said order, the question must be decided according to the special regulations which obtain in each individual federal state.

(b) The authorities before which claims for compensation are to be presented, may be seen from the lists given in Appendix 2.

For Paragraph 14.

Which authorities are to be considered 'higher,' and which 'lower,' will be seen may be seen from the lists given in appendix 2.

For Paragraph 15.

(a) The railway track, as such, is no public road. Its use for the purposes of the telegraph management is not to be determined by paragraphs 1-11 of the present law, but according to the special regulations which have previously been laid down and especially the parliamentary decrees of December 21, 1868, pages 5-7, or according to any existing concessions, or on the basis of any existing agreements. On the other hand, paragraph 12 of this law applies also to the railway track in so far as any other special agreements may not have been made.

(b) When railways are not run on their own special tracks, but along public roads, then they are to be considered as special constructions in the sense implied in paragraphs 5 and 6.

For Paragraph 17.

(a) Should the military or the naval authorities construct their own telegraph, &c. lines in co-operation with the government telegraph management, then the military or naval authorities have to take the necessary steps, laid down in the present law, in order to obtain permission to use the public roads for their lines.

For Paragraph 18.

The decisions of the State Chancellor were issued on January 26, 1900. They follow at the end of the present 'Instructions.'

For Paragraph 19.

(a) Any claims already existing before January 1, 1900, for or against the telegraph management on the basis of special agreements or arrangements, or on the basis of paragraph 12, of the telegraph law of April 6, 1892, are to be decided according to the previous law. This specially applies to claims for the expenses of constructing such protective arrangements as may have been necessary on account of any influencing of the telegraph service by high tension electric lines, previous to January 1, 1900.

(b) This telegraph law applies to all new telegraph, &c., lines which may be constructed after January 1, 1900, and also to the roads for which up to the present time there have been special agreements.

(c) For the telegraph, &c. lines already existing on January 1, 1900, that are used for public purposes, this new law only applies, in so far as special agreements of a contrary nature, have not been made, or in so far as such agreements have terminated either through having been revoked, or through mutual agreement. A presupposition for the application of this law is, therefore, first of all, the absence of special agreements, that is to say, agreements which determine something different from the terms of previous laws. For example, agreements do not stand against the application of this law, which, in regard to the present state roads, or the former state roads, that have come into the possession of the municipal authorities, only recognize the application of the Parliamentary Decree of 1869 (July 25); or those agreements which are made with authorities in charge of road construction, which trench upon the reservations of the aforementioned Parliamentary Decree. A special agreement is rather to be considered when through agreement, or concession, either the Parliamentary Decree is applied to conditions or circumstances for which it is not valid, or when instead of the Parliamentary Decree something different has been decided. These special agreements only exclude the application of this law to existing lines in so far as they contain something opposed to the same. Agreements are by no means to be considered as opposed, which only contain such provisions as the sanction to use a road for the construction of telegraph, &c., lines (without burdensome stipulations), or rules for GERMANY.

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specifying the course of the line, or regulations regarding the sparing of trees on or near the road, or regulations regarding the looking after the lines, by the employees of the road construction authorities.

On the other hand, there are contrary agreements, according to which the use of roads, &c., are only granted for special compensations, such as continuous payments, reduction of telephone charges, or with conditional or unconditional rights to cancel the privilege of using the said road; or agreements which lay down different rules from those of the law relating to telegraph, &c., roads, regarding the expenses for arrangements for protecting the telegraph, &c., constructions, against other special arrangements or constructions, or agreements which call for compensation for any damage done to gas, sewer or water pipes, according to some rule or obligation which goes beyond the regulations of the ordinary civil law.

This law cannot apply to the lines existing on January 1, 1900, on those roads regarding which the aforementioned special agreements have been made, and, indeed, in such cases all the regulations of this law are excluded. It is therefore apparent that the regulations relating to the use of public roads, form an integral whole. It is not, therefore, admissible to permit the right to cancel the use of any road, and yet, at the same time, to apply the regulations contained in paragraph 6 of this law. The previous right still applies to any new wires, or lines, that may afterwards be carried along any of the lines existing on January 1, 1900, that are not subject to the present law.

(State Code, p. 7.)

REGULATIONS RESPECTING THE LAW RELATING TO THE USE OF ROADS FOR TELEGRAPHS, ETC.

(Issued on January 26, 1900.)

By the approval of parliament, the following regulations are issued on the basis of paragraph 18, of the 'Law relating to the use of Roads for Telegraphs, &c., of December 18, 1899. (State Code, p. 705.)

(1) Branches are to be cut down in such a manner that the lines are at least 60 centimetres (2 feet) distant from all the surrounding branches. No cutting down of branches can be requested, exceeding more than a circle of 1 metre (3¼ feet) in extent. Within these limits the cutting is to be done so far as may be necessary for the safeguarding of the telegraph, &c., service.

(2) Actual alterations of the telegraph, &c., lines, in the sense of paragraph 7, section 1, are:—

(A) In the case of overhead lines, when the poles (supports) are erected along the public roads.

(a) The changing of a line with single poles, into one with double poles.

(b) The supplying of the poles, for the first time, with arms or cross-pieces, which project more than 60 centimetres (2 feet) from the sides of the pole.

(c) The changing of the course of the line, especially the moving of the line from one side of the public road to the other side.

(B) In the case of overhead lines which are only carried across the public road:—

(a) The changing of the direction (crossing) of the line. If the alterations specified under A and B are only limited to single poles or supports, then they are not to be considered as actual alterations.

(C) In the case of underground lines:—

(a) The increasing, enlarging or moving of the conduits through which the cables are led.

(b) The increasing or changing of cables which have been laid (imbedded) in the ground.

The moving of short stretches, done by agreement with the authorities in charge of the up-keep of the road, and the contractor for the special arrangements or con-

structions, on account of which the moving is required, is not to be considered as actual alterations.

(3) The plan to be drawn up, according to paragraph 7, section 1, must, in detail, correspond to the following requirements: It must contain a chart of the road in which is shown the course of the proposed line, and from which it can be clearly seen what part of the road is to be used. Besides this, the following points are to be specified in the plan:—

- (A) In the case of overhead lines, when the poles are erected along public roads:—
 - (a) The medium (average) distance between the poles.
 - (b) The height of the poles proposed for the line, or for the individual parts of the same.
 - (c) A diagram of the nature, &c., of the poles to be employed.
 - (d) The crossings necessary. The minimum height of the lowest wire from the surface of the road. The minimum height of the lowest wire from the bottom of the pole.
- (B) In the case of overhead lines, which are only carried across public roads:—
 - (a) A diagram of both the side poles, *i.e.*, where they are to be placed.
 - (b) A diagram of the general structure of the pole.
 - (c) The minimum height of the lowest wire from the surface of the road.
- (C) In the case of underground lines:—
 - (a) The depth of the cable below the surface of the road.
 - (b) The nature and extent of the conduits (canals) in which the cables are to be embedded.

If it is required to move or alter existing constructions or arrangements, or constructions or arrangements in course of construction, which are needed for the interests of the general public, such moving or alteration is to be specified in the plans. The authorities who exhibit the plan for inspection, have to endorse it with their signature. The post or telegraph offices, where the plan is exhibited for inspection, must note down the date when it was opened for inspection.

(4) The telegraph management has to co-operate in a local survey, before the plans are drawn up, at the request of one of the persons concerned, to whom the plans are specially to be sent, according to paragraph 7, section 2. The telegraph management has to pay the expenses of this local survey. No compensation is allowed to the said 'persons concerned,' for their appearing or for their being represented before the authorities.

(5) The following regulations apply to the presenting of claims:—

- (A) The claim is to be submitted in writing, or by *procès verbal*. The written claim must state the facts upon which the claim is founded. The post and telegraph offices where the plan lies for inspection are also authorized to receive the claim, as well as the authorities who have exhibited it for inspection.
- (B) After the appointed time for making (presenting) claims has elapsed, the claims or protests (objections) against the plans are to be presented, on an appointed day, before a person delegated by the authorities concerned, in so far as the said authorities, who have exhibited the plan, may consider this advisable for clearing up the facts of the case, or suitable for arriving at a satisfactory understanding.
- (C) Those who have presented claims or protests should be invited to attend on the appointed day. Also those to whom the plan has been sent, according to paragraph 7, section 2, should be informed of this appointed day for hearing claims and protests. Those who appear will be heard and their claims and protests will be recorded. The person delegated has to hand in the proceedings when these are finished, to the authorities who have exhibited the plans.

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- (D) The authorities who have exhibited the plan, transmit the proceedings to the higher authorities, in so far as the claims or protests that have been presented have not been already withdrawn.
- (E) The higher authorities give their decision on the basis of the proceedings which have been sent in to them, and the results of any further investigations which may have been made by them. They transmit their decision to the authorities who have exhibited the plan, and also to the persons who have presented the claims or protests.
- (F) The complaint (appeal against the decision) is to be handed in, in writing, with the necessary vindication, to the higher authorities, whose decision is contested, or to the district central authorities.
- (G) The sending in of decisions is carried out according to the manner prescribed for delivering civil law summonses. See Code, sections 208-213, Statute-book, p. 410 ff.
- (H) Witness and experts who are called to attend when claims and protests are being considered, receive compensation according to the regulations for compensations for witnesses and experts, in the Statute-book, ed. 1898, p. 689 ff.
- (J) In the procedure for claims and protests, charges and stamps are not taxed. Any expenses arising from unproven claims or protests, are charged against the person or persons advancing such claims or protests. The other costs are borne by the telegraph management. The regulation contained under No. 4, paragraph 2, applies here.
- (K) In the procedure for claims and protests, it has to be decided officially who is responsible for the resulting expenses, and what shall be the amount of compensation for claims, &c. The costs are collected through the agency of the higher authorities, in the same way as the collection of municipal taxes, &c.
- (L) The presenting of claims and protests is to be promptly handled, in all instances.
- (6) When officials in charge of road construction and policemen are required to look after the lines, and effect any provisional repairs, they will receive from 3 to 4 marks (72 to 96 cents) per year, for each kilometre. For apprehending persons who are guilty of wilful or careless damaging of the government telegraph, &c., lines, the authorities in charge of the road construction and the policemen will receive rewards up to 15 marks (\$3.57).

BERLIN, January 26, 1900.

The State Chancellor,

VON PODBIELSKI.

No. 290c.

GERMANY—*Continued.*

(Translation.)

BERLIN, March, 1900.

REGULATIONS (of March 26, 1900, as amended up to December, 1904) for carrying into effect the law relating to telephone rates.

The following 'regulations' are issued by the State Chancellor on the basis of paragraph 10 of the 'law relating to telephone rates,' of December 20, 1899. See page 459.

I.—CONDITIONS FOR THE USE OF THE TELEPHONE SERVICE.

ARTICLE 1.—The hours of service in the exchange stations are fixed by the telegraph management.

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ARTICLE 2.—Persons desiring a principal or a supplementary station, in a telephone system, or in connection with a public call-station, or who wish to have their stations transferred to other premises, are required to produce, before such work is carried out, the written consent of the proprietor for bringing in the wires into the premises that are to be connected, and for installing the station in the said premises. This consent must extend to the fixing of all the arrangements that are necessary for the construction, maintaining and extension of the telegraph and telephone systems—such as poles, supports, &c. The presenting of this consent of the proprietors is the condition for installing or transferring of a telephone station.

ARTICLE 3.—The moving of a telephone station, within the area of the same telephone system, may be requested, if the foregoing regulations are complied with. It is not admissible to move a station to the area of another telephone system.

ARTICLE 4.—The subscriber is responsible for any damage done to the telephone apparatus, by himself, or by other persons, as well as for any damage done to the same by fire; and also for any loss arising from theft, within the limits of the building where the station is installed.

ARTICLE 5.—The telegraph management has the right to suspend the telephone service temporarily for all kinds of communications, or for certain kinds of communications. The telegraph management has the right to remove the station, without giving notice, for the following causes: for unpunctual payment of charges; for altering or tampering with the technical arrangements; or for wilful damaging of the apparatus by the subscriber, by members of his family, by inmates of his household, or by persons in his employ; for switching on 'phones or other apparatus, made by subscriber, without the consent of the telegraph management; for connecting up supplementary stations, without the previous notification of the telegraph management; or for unseemly conduct by persons using the 'phone, towards the operator in the exchange station.

The removing of the station, does not absolve the subscriber either from his responsibility, as specified in Article 4, nor from the obligation to pay the charges, up to the termination of the period of time fixed in Article 8.

ARTICLE 6.—The telegraph management is not responsible for any loss or inconvenience arising from suspension of the service, from derangements in the service, or from incorrect transmission of communications.

ARTICLE 7.—Special telegraph arrangements for the direct connection of the living and business rooms of the same person, or of the living and business rooms of various persons, and also supplementary telegraph arrangements for the direct connecting of living or of business premises to a telegraph office, will be constructed for short distances at the expense of the telegraph management, if no special difficulties arise therefrom, for the telegraph or telephone service. The special telegraph arrangements and the supplementary telegraph arrangements are constructed either according to the Morse system, the telephone system, or the Siemens' type-printing apparatus system.

The regulations given under Article 1 apply also to supplementary telegraph arrangements, and those given under Articles 2 to 6 apply also to special telegraph and supplementary telegraph arrangements. When a road has to be used for some special telegraph arrangements that are not for public purposes, then the applicant has to present the consent of the person in charge of the up-keep of the road.

The telegraph management will decide as to which telegraph bureau the supplementary telegraph arrangements are to be connected with, and also whether a supplementary telegraph arrangement is to branch off from the one telegraph bureau, and be connected with another bureau. The arrangements are only to be used by the subscriber, or the persons that are connected with his household or business establishment. The subscriber must not allow other persons to use the telegraph arrangements, either for payment or free of charge.

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No immediate (independent) service is permitted to be carried on between different supplementary telegraph arrangements, that are connected with the same telegraph bureau.

No supplementary telegraph arrangements, for telephone service, will be constructed in places where there is a telephone exchange station, or a public call-station. As soon as telephone exchange stations, or public call-stations are organized in the vicinity of telegraph bureaux with which supplementary telegraph arrangements are connected for telephone service, then the existing supplementary telegraph arrangements for telephone service will be converted into telephone stations.

ARTICLE 8.—The use of telephone stations and supplementary telegraph arrangements for service with the Siemens' type-printing apparatus has to continue, first of all, for the period of one year, from the day that these are handed over for service. The period of use for other supplementary telegraph arrangements is 5 years, and for special telegraph arrangements, 10 years from the day when these are handed over for service. If the end of this period does not correspond with the close of a yearly or quarterly term, then the period of service will continue until the termination of the quarterly term. If written notice to remove the arrangements is not handed in 3 months in advance, then the term of service will be prolonged indefinitely, with the right to send in written notice of giving up use of arrangements, which notice must only be given at the close of a quarterly term.

The 'regulations' given in paragraph 3, section 2, of the 'Law relating to Telephone Rates,' are not infringed upon by the present 'regulations.' The telegraph management reserves the right to release subscribers, at request, from their obligations, before the termination of the period of subscription; on account of the decease of the person using the service, on account of removing residence or business establishment to some other place, on account of retiring from business; or other reasonable causes.

Telephone stations may be installed for a shorter period of service than one year, in the case of expositions, and similar occasions. The telegraph management will fix the conditions and the rates for such stations.

II.—TELEPHONE RATES.

ARTICLE 9.—For telephone stations, which are more than 5 km. (3 miles) distant, in a straight line from the principal exchange station, a yearly additional charge is collected, which for every 100 metres (110 yards), or fraction thereof, of extra length of line is as follows:—

For single lines	3 marks (\$0.71)
For metallic circuits	5 marks (\$1.19)

The distance to be reckoned by the nearest road that can be used for setting up the line, without incurring any special costs, even if the line is actually carried round by some different road.

For telephone stations which are more than 10 km. (6½ miles) distant, from the principal exchange station, there will be charged, in addition to the costs for the extra length of line, an additional charge for cost of construction, which for every 100 metres (110 yards), or fraction thereof of line, measured according to the actual length of same, is as follows:—

For single lines	10 marks (\$2.38)
For metallic circuits	15 marks (\$3.57)

When request is made to have telephone stations connected to some other than the nearest exchange station, then besides the other charges to be made, an additional sum for cost of construction will also have to be paid for any extra length of line required within the 5 km. (3 miles) limit, according to the same ratio that is specified in the foregoing.

When, in the interests of the service, an exchange station is cancelled (discontinued) and amalgamated with another exchange station, the annual additional charges due by the existing subscribers' stations at the time that the two exchange stations are combined, and which are carried over from the former exchange station to the combined one, will continue to be reckoned according to the distance from the former exchange station, unless the reckoning, according to the distance from the combined exchange, should be more favourable to the subscriber. No extra costs for construction will be charged when existing stations are transferred in this manner.

ARTICLE 10.—For the use of specially costly lines, in addition to the other charges that may be due, a yearly additional charge of 10 per cent of the extra cost will be collected in an even sum of marks, without fractional pfennigs.

ARTICLE 11.—The yearly extra charge for fixing and maintaining an additional or several alarm bells, on the same premises where the station is installed, is 3 marks (72 cents) for each alarm bell. For fixing and maintaining an additional microphone (transmitter), 5 marks (\$1.19) is collected annually. For special alarm-bells, different from those ordinarily used by the telegraph management, there must be paid, besides the annual charge of 3 marks (72 cents), the actual costs of supplying, fixing, and maintaining same. For an extra receiver, supplied at the subscribers' request, the actual cost of same must be paid. The special alarm-bells and telephone receivers become the property of the subscriber.

ARTICLE 12.—The charge for a connection during night hours, in local service, and in service with neighbouring places, is 20 pf. (5c.). In local systems, not having night service, as also in service with neighbouring places, between two local systems, which do not both have night service, connections may be arranged for the course of the whole night. For arranging each connection of this kind, a charge of 20 pf. (5c.) must be paid. For connections of this kind, announced in advance, between the same stations, the unlimited service rates are 1 mark (24 cents) per month, and 2 marks and 50 pf. (60 cents) per quarter.

ARTICLE 13.—For conversations from public call stations, the charge per three minutes is 10 pf. (2½ cents) in local service, and in service with neighbouring places. In service with principal centres, the charge is 20 pf. (5 cents). For conversations in long-distance service, the charges specified in the 'Law relating to Telephone Rates,' are collected.

ARTICLE 14.—The charge for receiving communications by the exchange station, for the purpose of transmitting the same, is 1 pf. (½ cent) per word, the smallest amount charged being 20 pf. (5 cents). Amounts in excess of this are squared off by the next highest number divisible by 10. The ordinary specified charges for forwarding the said communications by the post, by express messengers, or by telegraph, are also collected. No credit accounts are allowed.

The charge for transmitting an incoming telegram to the subscriber, over the phone, is 10 pf. (2½ cents).

ARTICLE 15.—The charge for moving a telephone station, within the same room, is 4 marks (95 cents) for single lines, and 6 marks (\$1.43) for metallic circuits. For moving the same within the same premises, 6 marks (\$1.43) are charged for single lines, and 10 marks (\$2.38) for metallic circuits. For moving stations to other premises, 15 marks (\$3.57) are charged for single lines, and 25 marks (\$5.95) for metallic circuits.

If the new premises is more than 10 km. (6½ miles) distant from the principal exchange station, then the extra charges for cost of construction (according to Article 9) have to be paid for the new line necessary outside the distance limit of 10 km. (6½ miles) even if the former place where station was installed was also situated outside this distance limit.

ARTICLE 16.—The charge for removing telephone stations before the termination of the period of contract, is 15 marks (\$3.57) for each station. Besides this, the costs
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for the term of subscription yet to run, will also be charged for poles and lines that have to be taken down, *i.e.*, the corresponding share of costs of construction and of taking down arrangements.

These charges are not collected if the period of contract has run on to the time up to which the continuous charges for the telephone station have been paid in advance.

ARTICLE 17.—For installing and maintaining special telegraph apparatus and supplementary telegraph arrangements, the following annual charges are collected:—

For each apparatus, with the Morse system	50 m. (\$11.90)
For each apparatus, with the telephone system	20 m. (\$4.76)

When more than two of these apparatus can be connected with each other, a yearly additional charge of 10 marks (\$2.38) will be collected for each apparatus (instrument). For furnishing, fixing up and maintaining the (Siemens') type-printing apparatus, and the technical arrangements connected therewith, the expenses must be borne by the subscribers who have the special and supplementary telegraph arrangements. Only such type-printing apparatus will be permitted to be used as are sanctioned by the government telegraph management.

An annual charge of 10 marks (\$2.28) must be paid to the government telegraph management for each type-printing apparatus that is switched on (connected up). If more than two of these instruments can be connected with each other then an additional charge of 10 marks (\$2.38) must also be paid for each instrument.

When annunciator drops are employed, then a charge of 10 marks (\$2.38) will be collected for each drop connected with a line, no matter where the line leads to.

For each calling apparatus, connected with the annunciator drops, the charge specified in paragraphs 1 and 2 will be collected along with the additional charge.

For each km. (about $\frac{5}{8}$ mile) or fraction thereof, of line, there will be collected:—

For single lines on wooden poles	30 m. (\$7.14)
For metallic circuits on wooden poles	50 m. (\$11.90)
For single lines on iron poles and for single conductors in cables	45 m. (\$10.71)
For metallic circuits on iron poles and for double conductors in cables	75 m. (\$17.85)

The length of line is to be measured according to the nearest road that can be used for setting up the line, without any special costs, even if the line is actually carried round by some other way.

The regulations given under Articles 10, 11, 15 and 16, also apply to special telegraph arrangements and supplementary telegraph arrangements, with the Morse, or the type-printing systems, with the proviso that no special charges are to be collected for transmitting communications between the telegraph bureau and the supplementary telegraph station, over the lines (trunk lines). In the case of supplementary telegraph arrangements with the type-printing system, the half of the charges specified under Article 14 will be collected for transmitting communications between the telegraph bureau, and the supplementary telegraph station.

ARTICLE 18.—The rates for conversations in services with neighbouring places is 10 pf. (2½ cents), in service with principal centres, 20 pf. (5 cents) for each connection lasting not longer than three minutes.

In service with neighbouring places, subscribers who pay for measured service, may converse, by paying a charge of 5 pf. (1c.) for each conversation, lasting not longer than 3 minutes. If they wish to avail themselves of this privilege, then, if the measured service rates are higher in one of these neighbouring systems than in their own system, they must pay these higher measured service rates, instead of the lower rates fixed for their own system. Conversations thus carried on in service with neighbouring places, for the 5 pf. charge are counted to the 400 conversations yearly in local

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service, which have to be paid for by the subscriber, according to paragraph 5 of the 'Law relating to Telephone Rates.'

Subscribers in local systems, where there are no measured service rates, must pay a charge of 5 pf. for each conversation, in service with neighbouring places, with systems in which the measured service rates are 60 marks (\$14.28) yearly. If the measured service rates are more than 60 marks (\$14.28) annually, in one of the neighbouring places, then the subscribers in the local system where there are no measured service rates, may also converse, in service with neighbouring places, by paying 5 pf. (1c.) for each connection made. Should they wish to take advantage of this privilege, then, as an addition to the unlimited service rates, they must pay a yearly amount, equal to the amount over and above 60 marks (\$14.28) that is paid for the highest measured rates in the local systems that are connected with the service with neighbouring places.

The telegraph management will appoint and make known (without infringing upon Article 52, paragraph 3 of the 'Constitution of the Empire'), the unlimited service rates, for connections in service with principal centres, and for departmental (municipal) service, the rates for the use of long-distance (trunk) lines, during night hours, and the rates for the use of long-distance (trunk) lines, in service with foreign parts.

Subscribers who pay the unlimited service rates, in service with principal centres, are permitted to allow other persons to use their stations for conversations with subscribers in other places of the same principal centre system with whom they themselves are allowed to converse for the unlimited service rates. In departmental (municipal) service the regulations provided for the various departmental (municipal) systems apply.

Urgent conversations are granted from public call-stations, as in long-distance service, and in service with principal centres, as also in local service and in service with neighbouring places. The charge for an urgent conversation, lasting not longer than 3 minutes, is 30 pf. ($7\frac{1}{2}$ cents) in local service, and in service with neighbouring places, and 60 pf. ($14\frac{1}{2}$ cents) in service with principal centres.

ARTICLE 19.—If a telephone station, a special or a supplementary telegraph arrangement, is handed over for service during the course of a quarterly term, then the charges for the time up to the end of this quarterly term are due on the day that the apparatus service begins.

The additional costs for construction, the charges for special kinds of magnetic bells (alarm-bells), for extra telephone trumpets (receivers), as also the charges for moving stations, and for the premature removing of apparatus, have to be paid before the work is begun. The charges which cannot be estimated, quarterly, in advance, are due as soon as the necessary calculations are made to estimate the rates.

The subscriber who has a telephone station, a special or a supplementary telegraph arrangement, is responsible for all charges connected with the use of these arrangements. He has to pay all the charges, presented by the telegraph management, but has the right to demand the reimbursement of any charges that can be proved to be incorrect. He may collect, from other persons using his station for conversations, for which single charges have to be paid, the charges that are specified for such conversations.

ARTICLE 20.—When any interruption or derangement takes place in the service of a telephone station, a special or a supplementary telegraph arrangement, which is not caused by the fault of the subscriber, and if the said interruption or derangement continues longer than four weeks, after due notice of same has been given to the telegraph management, then no charges will be collected for this period. No charges will be collected for the time that service is suspended, according to Article 5, in the case of telephone stations, special or supplementary telegraph arrangements.

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III.—FINAL REGULATIONS.

ARTICLE 21.—The foregoing 'regulations' pass into effect on April 1, 1900. The contracts that have been already made regarding special telegraph arrangements, and supplementary telegraph arrangements, remain still in force up to the time when they can be dissolved, by giving notice of withdrawal from same. The telegraph management may, however, apply these regulations to existing special, or supplementary telegraph arrangements, at an earlier point of time, at the request of the persons concerned.

ARTICLE 22.—These regulations have no application to the internal service of Bavaria and the internal service of Wurtemberg.

On behalf of the State Chancellor,

VON PODBIELSKI.

BERLIN, March 26, 1900.

INSTRUCTIONS REGARDING THE FOREGOING REGULATIONS.

TO ARTICLE 2:—

(1) The requests for stations are to be written on an announcement form, as shown in Schedule No. 3, given at the end of these instructions (page 1720).

(2) The consent of the proprietor, which has to be presented with the request for stations, and the declaration by the telegraph management, in response thereto, are set forth in substance in Schedules 4 and 5 (page 1719).

(3) Each person, or business establishment, that makes request for a telephone station, is to receive full information, as to the general terms of subscription, according to the form given in Schedule 5*a* (page 1720). The points that do not apply to the particular case are to be scored out.

(4) If request is made for a telephone station for a house, the owner of which has already given a declaration of consent, in accordance with the previous regulations, a declaration, in accordance with the new form, must be required before the station can be installed, and the previous form of declaration must be cancelled.

(5) A special agreement, once for all, has been made with the Prussian railway management, regarding the buildings of the company in cases where supports for lines may have to be set up, on buildings belonging to the same, in connection with the installing of telephone stations. Consequently when stations are to be installed in such buildings, no written consent from the proprietor is necessary. In all other cases where telephone stations have to be installed in buildings belonging to companies or authorities, the written consent of the proprietor must be produced, as in the case of private buildings, according to the form given in Schedule 4. Any deviations from this rule must be sanctioned by the government post office direction.

(6) If the proprietor of buildings in which telephone stations have already been installed should refuse the free use of buildings for the setting up of roof supports, or for the extension of existing arrangements, notwithstanding that he had already given his consent for the erection of poles, &c., notice must not be given to relinquish stations, but efforts should be made, first of all, to prevail upon the proprietor to withdraw his refusal. If such efforts meet with no success, then action must be taken against him in order to obtain consent to make use of the building. If on account of the delay, any disadvantages should be feared for the management, then issue must be taken on the basis of sections 940 and 942 of the Civil Law, to bring about a provisional agreement which obliges the proprietor to permit the setting up of poles, supports, &c. Should the proprietor then seek to withdraw from the obligation agreed upon, to permit the setting up of the poles, supports, &c., by giving notice to relinquish his own station, or by causing the other stations to be relinquished, that may be installed in the building, and thereby makes it necessary for the management to set up the telephone line along

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some different route, then, in such cases, if request is made, at a later period, to have stations again installed, in the same building, the compliance with this request will be made to depend upon the consent of the proprietor to pay for the extra costs arising from having to carry the telephone line along the other route. This proceeding is necessary, because, if the proprietor should act in the above manner, he would commit an unwarrantable breach of the general stipulations, according to which proprietors, so long as they have stations installed in their houses, are bound to allow the roofs of the same to be used. The like procedure is also to be followed, if the proprietor, by giving notice to relinquish his station, already installed in his house, compels the removal of the poles or supports placed on his building, and in consequence of this makes it necessary to carry the telephone line some other way.

(7) In cases where the owner of a house, where telephone stations have not been installed, in giving his written consent to permit the apparatus to be set up on or near his house, should put difficulties in the way of the erection, extension or continuance of roof poles or supports or other appliances, then no steps should be taken to move any existing arrangements, considering the right belonging to him to give notice, subsequently, to relinquish his station, until such notice has actually been given and the full time has expired, after notice has been given. New arrangements are then only to be constructed and carried out, if necessary, by taking suit against him, or by arriving at a provisional agreement, when such arrangements are of real practical advantage, even considering the possibility of notice being given to relinquish the telephone station.

If, after notice has been given to relinquish the station, and the arrangements have consequently been removed, a subsequent request should be made to have stations installed in the same house; the installing of the said stations cannot be made to depend upon the reimbursement of the extra expenses incurred by the telegraph management, for the reason that the proprietor has only exercised his legitimate right, and has not evaded the existing stipulations.

(8) The written declaration of consent to set up poles, supports, &c., applies to overhead and underground lines, including the construction of cable lines. However, according to the wording of this declaration, no particular room or space can be used inside the building. For the using of such, as for instance the cellar, &c., the owner is entitled to ask for some compensation, in the way of rent for same. It is advisable, therefore, to forego the use of the cellar, &c., if at all possible, and to construct a cable arrangement, by fixing a hauling-box (joint-box) for the cable, on the roof supports.

To ARTICLE 5:—

It belongs to the telephone offices, the telegraph offices and the post offices, to attend to the matter of suspending service, when the rates are not punctually paid. Regarding the manner of procedure in matters of detail, see 'General Regulations,' section V., 6 (page 452).

(2) Auxiliary arrangements may be permanently connected with a station and its appurtenances, if the same can be fixed without any outward (external) damage to the apparatus, &c., and without any alteration to, or tampering with, the internal construction of the same. The government postal direction will specify any further regulations on this point.

(3) The head office of the postal department will take action in the matter of removing telephone stations, as specified in Article 5, paragraph 2. In the case of subscribers who become bankrupt, the stations are not to be removed at once, even if the lawyer in charge of the bankruptcy proceedings declares that the station will not be used during the calendar quarterly term following the opening of the bankruptcy proceedings. Steps are only to be taken at the beginning of this quarterly term and then only after the day for payment has elapsed and after payment has not been made up to this date.

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To ARTICLE 7:—

(1) The head office of the postal department is authorized to construct special telegraph arrangements for the independent connection of business establishments belonging to the same person, within the area of delivery of the same post office, and also to construct independent supplementary telegraph arrangements, within the same area, in so far as the said telegraph arrangements are to be operated according to the Morse system, or the telephone system. Special, or supplementary telegraph arrangements to be operated according to the type-printing system, must in all cases obtain the sanction of the government Post Office Department.

(2) Special, or supplementary arrangements will not be constructed for private individuals on payment of the costs of construction of same. The government postal department will decide in cases where requests are made by public authorities to have the above-mentioned arrangements constructed, and will also specify the conditions to be observed, in taking over the up-keep of the same. The existing agreements made regarding the construction of special, or supplementary telegraph arrangements, by paying cost of construction for same, may remain in force for the present.

(3) The subscriber, who has a supplementary telegraph arrangement used for telephone service, will be permitted, on request being made, to use the arrangements for carrying on conversations with persons living in the vicinity of the place to which his lines are connected, the said person being called for this purpose to the bureau. In like manner, conversations may be carried on from the bureau, with the subscriber. For the rates, in such cases, see 'Instructions,' to Article 17 (page 493).

(4) The existence of a public call station in places which have no local telephone system, will only stand in the way of granting supplementary telegraph arrangements for telephone service, if it is intended to connect the lines of the telephone subscriber with the said public call station.

(5) A copy of the 'Regulations for the use of Supplementary Telegraph Arrangements and Special Telegraph Arrangements,' issued by the government postal departments, is to be always given to subscribers for such arrangements as the 'Regulations' apply to. The head office of the government postal department will supply copies of the same.

To ARTICLE 8:—

(1) When a telephone station is handed over for use later than the first day of a quarterly term, but still during the course of the first half of the quarterly term, then the subscriber has the option of paying the unlimited service rates or the measured service rates, from the past first day of the quarter, instead of from the day that the station was handed over for service, with the understanding that the term of subscription begins from this period. Subscribers coming under this category are always to be referred to the above conditions, and efforts should always be made to obtain their consent to this arrangement.

The giving of notice for the relinquishing of stations at the end of the calendar quarterly term, is only to be considered as done at the specified time when notice is given, not later than the third working day of the quarterly term, according to the form of notice specified in sections 565 and 580 of Civil Code.

(2) The term of service for supplementary stations expires at the same time as the term of service for the principal stations with which these are connected, if the term has not already expired for the said supplementary stations. The regulations specified for the premature removal of telephone stations apply also in the case of telephone supplementary stations, when they have been installed and have to be maintained by the government telegraph management. In such cases, therefore, the charges specified under Article 16 will be collected (page 482).

In the case of supplementary stations which have not been installed and do not have to be maintained by the government telegraph management, no special term for

giving notice of relinquishing the same need be observed. The charges have to be paid up to the end of the calendar quarterly term in which the station is removed.

(3) The using of a telephone station, or of a special or a supplementary telegraph arrangement, for some time after a term has expired for which notice was duly given, will be granted on request, if no valid reasons can be found against so doing. The charges must be paid up to the day that the arrangements are removed, inclusively.

(4) For expositions and similar occasions, the head office of the postal department may grant the use of telephone stations for a shorter term of service than one year. This the said department can do independently, with the stipulation that payment must be made to the department for constructing and for taking down again the arrangements (without including the costs of stations and material that can be used over again); and also that a full payment be made for the time that the station is in use, according the full proportion of the annual charges, to be estimated by even quarterly terms, no fractional parts of quarterly terms to be considered.

If the station is to be chiefly used for general traffic, and a constant service to be expected of the same, then the general charge and additional charges for conversations must be paid (*i.e.*, measured service rates), otherwise the lump sum charge (*i.e.*, unlimited service rates) must be paid. If the installing of a telephone automatic arrangement (slot machine) is requested, the corresponding part of the unlimited service rates must be guaranteed (paid as security).

To ARTICLE 9:—

(1) When the metallic circuit system is to be introduced into a telephone system, then written notice of the impending measures about to be taken must be duly given to the subscribers, who, as a consequence of the proposed change, may have to pay higher annual rates, and also in certain cases an extra charge for costs of constructing the additional wire connected with the telephone station. This written notice must give information as to when the obligation to pay the higher rates commences; and, if the station is more than 10 km. ($6\frac{1}{2}$ miles) distant from the exchange station, when the obligation begins to pay the extra charge for additional cost of construction (*i.e.*, 5 marks (\$1.19) for every 100 metres (110 yards) or fraction thereof), and also how the rates are to be estimated, and what regulations form the basis of calculation. If the telephone subscribers refuse to pay the higher rates, &c., then they are to be requested to make this declaration, in writing, at a date to be fixed by the head office of the postal department. This written declaration may be regarded as a notice given to relinquish stations, at the time when the double wire service is to commence.

Subscribers are to be permitted to give notice, in such cases, to relinquish their stations, even before the termination of the first year that the station was handed over for service. Should telephone subscribers refuse to pay the higher rates, &c., and yet at the same time make demand to retain their stations, then notice must be issued to give up stations on the nearest date allowable by the subscription agreement. An official announcement, as provided in paragraphs 3 and 5 of the 'Law relating to Telephone Rates' (page 455), in the case of an alteration in the unlimited service rates or the measured service rates, is not necessary, when the double line service is introduced.

These regulations are also to be applied when individual existing stations with single wire service are furnished with the double wire service.

(2) In the case of principal stations that are situated more than 5 km. ($3\frac{1}{4}$ miles) distant from the exchange station, and which have ordinary metallic return wires, the extra charge for the additional length of line, and, the extra charge, if any, for construction outside the 10 km. ($6\frac{1}{2}$ miles) limit, are always to be reckoned according to the charges made for double lines.

(3) Subscribers who, under Article 9, paragraph 3, of the present 'Regulations,' (page 481), have to pay extra charge of 10 marks (\$2.38) for single lines, for cost of construction, in having their stations connected to some other than the nearest exchange station, must pay, when these stations are furnished with the single

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wire service, an additional charge, once for all, of 5 marks (\$1.19) for each 100 metres (110 yards) or fraction thereof, of additional length of line necessary to be constructed inside the distance limit of 5 km. (3 $\frac{1}{8}$ miles). Such subscribers are to be expressly informed of their obligation to pay this additional charge, when notice is sent to them, as specified in par. 1 of the present 'instructions' to Article 9 (page 481). On the other hand, if no extra charge for costs of construction was made when any of these stations was first installed, then no extra charge for costs of construction is to be collected from such subscribers, if the double wire service is introduced in connection with their stations.

(4) If telephone stations are connected to some other than the nearest exchange station by a single metallic return wire, the extra charge for cost of construction for additional length of line necessary within the 5 km. (3 $\frac{1}{8}$ miles) limit, is to be estimated according to the charge for double lines.

(5) The extra charges for costs of construction may be wholly or partly reduced by the person concerned undertaking to furnish free supplies, or give help, gratis, in the construction of the arrangements, as, for example, by supplying trees for poles or supports (stays), by preparing holes for the poles, by supplying carts for hauling, or by supplying help. In such cases, definite agreement must be arrived at beforehand as to the value of the supplies furnished and the help rendered.

(6) In each case, exchange stations can only be cancelled in the interests of the service, and be combined with another exchange station, when the sanction has been obtained beforehand of the government postal department.

(7) The regulations given in the last paragraph of Article 9 apply also to stations existing at the time when an exchange station is moved to another location (plot of ground).

To ARTICLE 10:—

(1) Specially costly lines are those which exceed, by more than 300 marks (\$71.40) the cost of construction usually estimated for, under ordinary circumstances. This does not apply to special telegraph arrangements and supplementary telegraph arrangements.

(2) When telephone lines (connected with stations) are entirely or partly, carried along in, underground multiple wire system cables, then in estimating the extra charges the cost of construction, laying and switching on (connecting up) the cable, together with the proportion of cost of cement conduits, main boxes (man holes), &c., must be considered. If a cable with mixed conductors (bunched cable) is employed, then instead of the actual cost of furnishing the same the costs are to be reckoned for a telephone station cable, of the ordinary kind, having the same number or an approximate number of conductors (wires). The total costs of the underground cable, including the general costs, are to be divided by the number of double wires (pairs of conductors), which after deducting the number of necessary extra (reserve) double wires, remain over from the total number of double wires. For this reason, for every four double wires an extra double wire is to be allowed for; so that, for example, in a cable with seven pairs of double wires (a $\frac{7}{4}$ cable), two extra (reserve) pairs of double wires are to be allowed for. If the share of costs, estimated in this manner, for a double wire, exceeds by more than 300 marks (\$71.40) the cost of an overhead wire, for the same distance, or stretch of line, then 10 per cent of the extra amount is to be collected as an additional charge; if the above conditions do not exist, then no extra charge is collected.

If all the double wires of the cable (not counting in the wires that are necessary for reserve purposes) are not to be immediately put in use, then, as a stipulation for the application of the above manner of estimating the costs, there must be a reasonable prospect that within the immediate future, calculation can be made for the use of all the double wires that are not required for reserve purposes. If, on the other hand, there is no prospect of the said wires being put in use, which will happen in

cases where cables have to be laid for stations in residences that are situated in isolated localities, and which cables, as compared with the existing types, carry a larger number of wires than are immediately required for use—then, the total costs of the cable are to be divided equally among the individual stations, and the resulting amounts (after deducting the costs that would be required for an overhead line) are to form the basis of estimating the rates.

The reckoning of the additional charges for special telegraph arrangements and supplementary telegraph arrangements, that are carried entirely or partly, underground, is to be made in the same manner, but with the provisional measure, that the extra charges must be paid, even if the difference between the share of the costs estimated for a cable line and those for an overhead line, of the same switch, is less than 300 marks (\$71.40).

The foregoing regulations apply also in cases where there are not double wire cables, but only cables with a number of single wires.

(3) No additional charges are collected from subscribers who have principal stations, for safety arrangements against electric high tension (maximum current) lines; even if, on account of the high tension arrangements, double wires, or metallic return wires have to be used in common; but if, on account of the proximity of these high tension (maximum current) arrangements, underground cables have to be employed, in place of the overhead wires, the regulations given under par. 1 apply.

(4) In the case of supplementary telephone stations, special telegraph arrangements, and supplementary telegraph arrangements, the increased charges, according to the proportion of 5 marks (\$1.19) for each 100 metres (110 yards) of line, are to be collected, when metallic circuits have to be employed, on account of the proximity of electric high tension wires. The regulations given under par. 3 apply to cases where underground cables have to be employed for such occasions.

To ARTICLE 11:—

(1) If an extra bell or several bells, or an extra telephone, are requested the work is done free of charge, if the work is done during the two annual periods appointed for new constructions, &c., or if other work has to be done, at the same time. Should the subscriber wish to have the bell or the telephone fixed at some time other than one of the two occasions above-mentioned, a charge will be made for the workman and the time required for the work. The time required to go and return from the subscriber's station is also to be included, and fractions of hours are to be reckoned as full hours.

(2) The cost price for supplying special bells different from those ordinarily used by the telegraph management, is to be fixed according to the price paid to the manufacturer for the same, during the same year that the station is installed. For installing such bells there will be charged, in addition to the cost of supplying, and the specified general and supplementary costs, a special charge of 4 marks (95 cents). If the installing of the same is requested at some definite time, other than the two annual fixed periods for construction work, and when no other work can be done at the same time, the charges specified above, under par. 1, are to be collected to cover the extra expense, or as a share thereof.

(3) Special bells and extra telephones may be removed, when requested by subscribers whose stations have been installed at the expense of the postal department, without notice having to be given at any specified time beforehand. The rates for same must be paid up to the close of the calendar quarterly term, in which the apparatus is removed, and the minimum time for which the charge is to be made, is one complete year. For removing special telephone cabinets for use in long-distance service, which have been installed at the expense of the postal department, besides the telephone stations that are used for ordinary service, the regulations apply that are specified for the removing of telephone stations. See Articles No. 8 and No. 16 (pages 481 and 482).

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(4) When subscribers, whose stations have been installed by the telegraph management, have bells of some special kind fixed up by other persons, on the same premises where their stations are installed, then an annual charge of 3 marks (72 cents) must be paid to the postal department for each of such bells. The subscriber, himself, must bear the costs of supplying, fixing up, and maintaining the said bells. Bells that have to be connected by a circuit-changing switch must correspond, in the parts that are to be connected with the current, with the specified technical requirements that are appointed for bell arrangements, in connection with supplementary telephone stations. See 'regulations regarding supplementary telephone stations,' Article 3 (page 497), and 'Instructions' thereto (page 499).

(5) The price to be charged for supplying an extra telephone receiver is to be regulated according to the price paid to the manufacturer for receivers during the year, when the same is supplied to subscriber. In addition to the cost price, an extra charge of 1 mark (24 cents) is to be added, to cover the additional costs connected with supplying the receiver, and 3 per cent of the general costs, as also the costs for supplying a suspension-hook, if required. The costs for fixing up the extra receiver are to be reckoned specially. Receivers of different kinds (patterns) are not to be used for the same telephone case.

To ARTICLE 12:—

(1) For reckoning the charges for those connections in local service, and in service with neighbouring places, which are prolonged from the day hours of service into the night hours, the regulations are to be applied that are given under par. 5 of 'instructions for carrying into effect the regulations relating to connections made, during night hours, in service with principal centres, and in departmental (municipal) service,' which are given on page 503.

(2) In cases where, in telephone systems that do not have night service, or in service with neighbouring places, between two local systems, that do not have night service, a subscriber requests continuous connections, not with one, but with several other subscribers, during night hours, the charges are to be reckoned, according to the number of connections requested.

(3) Continuous connections are also granted during the night hours of service, in the exchange stations; see Section V., Part 6 (pages 518, 519). To be continuous connections for unlimited service rates, those regular connections are also reckoned, that are made with the public fire department, in the local systems that are used for fire alarm purposes.

(4) In services with neighbouring places, continuous connections are also granted, during night hours, between subscriber's stations, in local systems that do not have night service, and exchange stations that have night service. If an individual connection of this kind is used for carrying on a conversation, for which charges are to be paid, then the charge for the continuous connection is not to be collected. Unlimited service rates, for continuous connections during night hours, are not refunded in the above cases.

Finally, the 'instructions' under pars. 1, 3 and 4 to the 'regulations relating to connections made, during night hours, in service with principal centres, and in departmental (municipal) service,' are found on pp. 502, 503.

To ARTICLE 13:—

(1) When a public call-station that has been called up, has to send for a person, living in the vicinity, to come to the 'phone, a charge of 25 pf. (6 cents) will be charged in each case. This charge must also be paid when a post office agent, or the person in charge of an auxiliary station, or public call station receives communications or orders arriving for some other person, living in the neighbourhood, and transmits the same to the said person, no matter how the said communications are transmitted. On the other hand, this charge is not collected, if the person to be called up, in the long-dis-

tance place, is already present in the public call-station, and notifies the person desiring the conversation, that such is the case.

(2) In estimating the charges for conversations sent to public call-stations, these call-stations, in so far as they are connected with the exchange station by telephone station wires, are to be considered as subscriber's stations belonging to the local system in question; but, of course, the charge for sending for a person to come to the 'phone, must be paid, when necessary, as a special matter. Conversations sent by subscribers to public call-stations, of the kind described, do not pay any special charge, in local service and in service with neighbouring places, and principal centres, if these subscribers pay the unlimited service rates specified for the service in question. Otherwise, the subscriber has to pay a charge of 5 pf. (1 cent) for local service, and for service with neighbouring places, and with principal centres, the rates for conversations specified under Article 18 (p. 483 of the present 'regulations,' must be paid.

Public call stations switched on to the ordinary lines or to trunk lines (long-distance lines) are to be treated in the same manner as public call stations that are connected by special wires with an exchange station, and are to be handled for service in both directions, when

- (1) Connected by ordinary or long-distance lines with the nearest exchange station; and at the same time,
- (2) Are situated within the municipal area of the place where the exchange station is located, or,
- (3) Are situated outside this territory, but not more than 5 km. ($3\frac{1}{2}$ miles) in a direct line, from the exchange station (or the central exchange station); and are connected with the same by the same ordinary line, or trunk line (long-distance lines); without having any connection with another independent exchange station.

When a public call station, that is situated within the area of 5 km. ($3\frac{1}{2}$ miles) distance limit, is connected by ordinary, or by long-distance lines, with several exchange stations, situated in different directions, then the said call station is to be assigned to the jurisdiction of the nearest exchange station.

These regulations are also to be applied to switch stations.

(3) The regulations and the charges specified for service with neighbouring places, and with principal centres, do not apply to conversations sent to and from independent public call stations. Subscribers belonging to a departmental telephone system (municipal system) where the graduated scale of rates have been introduced, may, without paying any special charges for conversations, carry on conversations from their stations with all the public telephone call stations that are connected with the exchange stations which are situated within the departmental system (municipal system) and which call stations are also situated within the area of the said departmental (municipal) system. The charge for sending for a person to come to the 'phone must also be paid, when necessary, by subscribers in departmental (municipal) systems. In the other departmental systems, the charges specified for long-distance service are always to be collected for conversations with public call stations, that do not belong to the same local system.

To ARTICLE 15:—

(1) When the removal of a station makes it necessary that metallic circuit service has to be used for the 'phone, in place of the single grounded wire service; or if on the other hand, the single wire service has to be used in place of the metallic circuit service, the rates are to be fixed according to manner of service to be used for the new 'phone. In the case of 'phones that have an ordinary metallic circuit, the rates specified for double wires are to be collected.

(2) When several 'phones that have been installed in the same room, and which have one connecting wire in common, have all to be removed to another room in the premises, or to a room outside the premises, then the full specified charge is to be

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collected for removing the first 'phone, but for each of the other 'phones the charge will only be collected that is specified for moving a 'phone within the same room, *i.e.*, 4 marks (95 cents), or 6 marks (\$1.43). No special charge is made for removing and fixing up again an additional microphone (transmitter) and special magneto-bell (ringer), when stations are being moved.

(3) If a supplementary telephone station that is installed on the same premises as the principal station, is moved with the said principal station to other premises, the only charge collected therefor will be that for moving a station within the same premises, *i.e.*, 6 marks (\$1.43), or 10 marks (\$2.38).

(4) The removing of telephone stations, for the purpose of transferring the same to some other person, is only admissible within the same local telephone system. This regulation applies also to departmental (municipal) telephone systems.

(5) For other smaller jobs done in connection with 'phones, such as taking down and fixing up again inside wires, or replacing damaged inside wires, or ground wires, &c., the charge will be reckoned as a round sum for the workman and the time required. The time taken up going and returning from the subscriber's 'phone will also be charged for. Fractions of hours will be charged for as full hours.

To ARTICLE 16:—

(1) By 'the period of contract,' or 'term of service,' there is to be understood the minimum period of time during which the agreement of contract is to continue. For a quarterly term in which a station has to be removed, prematurely, the full amount of charges are always to be collected.

(2) In estimating the share of costs that must be paid for construction and for removing, in the case of poles and lines that have to be taken down, a rough calculation has to be made for the construction and removal of those parts of the apparatus which cannot be again used, including the general costs; and from this there is to be deducted the actual value of the material again available for use, when the apparatus is taken down. The remainder is to be multiplied by a fraction whose numerator is to be the term of subscription not yet completed, fractions of quarterly terms to be counted as full quarters; and the denominator of the said fraction is to be the minimum period of time during which the term of contract was to have continued.

(3) For the charges to be paid in the case of removing a supplementary telephone station, before the close of the term of contract, see the 'Instructions' to Article No. 8 (page 487).

To ARTICLE 17:—

(1) The additional charge of 10 marks (\$2.38) for each 'phone is also to be collected, even if the service between the various stations can only be carried on in a limited manner, between one another, because of the existing switch arrangements.

(2) Telephone arrangements that connect more than two premises with one another, are to be regarded as one arrangement. In such cases, in estimating the rates, the length of line is therefore to be only counted once in even kilometres (about $\frac{1}{8}$ mile).

(3) When the line is carried along partly on wooden and partly on iron poles, or in cables, then for every kilometre or fraction thereof, of the entire length of line, the charge is to be fixed according to the rates specified for lines carried on wooden poles; then, over and above, for every kilometre or fraction thereof of line carried along iron poles, or in cables, the charge is to be fixed, according as the rates for lines carried along iron poles, or in cables, exceeds the rate for lines carried along wooden poles. The lines connected with the telephone arrangements that use the type-printing apparatus, are constructed and maintained by the telegraph management, up to the 'phone terminals' (binding screws). Accordingly, in estimating the charges, calculation must be made of the entire length of line, including the leading-in and the inside wires.

(4) In estimating the charges for wires carried underground, the calculation is to be made by the nearest road that can be used for the laying of cable, without incurring any special costs, even if the actual cable used is carried around by some other (shorter) route.

When the conditions make it imperative to change the overhead lines of existing special telegraph arrangements and supplementary telegraph arrangements into underground lines, the subscribers have the right, if an increase in the rates should be necessary, to give notice to relinquish their instruments, at the nearest period of time this can lawfully be done. From this said period onwards the arrangements in question will be charged for at the increased rates.

(5) For conversations carried on by a subscriber, who has a supplementary telegraph arrangement with persons who have to be sent for to come to the bureau for this purpose, and for conversations in the opposite direction, the regular charges, specified for conversations over trunk lines are to be collected, including the specified charge for sending for a person to come to the 'phone, when the said charge is payable. (See 'Instructions' to Article 13, page 491).

For the reckoning of the charges, see 'General Instructions,' section V., part 6, paragraph 32 (page 448).

To ARTICLE 18:—

(1) The transfer of a subscriber from paying the conversation charge of 10 pf. (2½ cents) in service with neighbouring places, to paying the 5 pf. (1 cent) charge, and *vice versa*, can take place at the beginning of any quarterly term, if the subscriber gives written notice to this effect not later than a month beforehand.

(2) In so far as special unlimited service rates have been specified for service with principal centres, and departmental (municipal) service, this arrangement may remain unchanged for the present. The right is reserved to readjust these rates should the metallic circuit service be introduced. The subscribers have the option of paying either the present specified unlimited service rates, of 200 marks (\$47.60), or 250 marks (\$59.50), or the rates specified in the 'Law relating to Telephone Rates.'

(3) The area of a principal centre telephone system, includes all those places which (on the basis of section c, par. 9, of the 'Law relating to Telephone Rates, p. 459) are united with the chief place, or the principal centres, for service with neighbouring places (interlocal service). The subscribers in service with principal centres, who, instead of the annual unlimited service rates (as specified in paragraph 2 of the 'Law relating to Telephone Rates,' page 454) pay an unlimited service rate of 200 marks (\$47.60), have the right to call up all the rest of the subscribers in the area of the principal centre system, without paying any extra charge, no matter what kind of rates are paid by these subscribers. On the other hand, those subscribers who pay a minimum unlimited service rate of 150 marks (\$35.70), according as the rates are specified in their own system, or in the system of the neighbouring place, are also entitled to call up the subscribers who pay the unlimited service rate of 200 marks (\$47.60), without paying any extra charge. Special regulations are made for departmental (municipal) service. The principal centre service, or the departmental (municipal) service, are not extended to those telephone systems which do not yet belong to the area of a principal centre system, or a departmental system.

(4) In service with principal centres, the specified charge of 60 pf. (14½ cents) for urgent conversations, must be paid, even by those subscribers who pay unlimited service rates for ordinary conversations.

To ARTICLE 21:—

(1) The head office of the postal department is authorized to allow, if requested, the application of these 'Regulations' (of March 26, 1900) to the special telegraph arrangements, and the supplementary telegraph arrangements, that have been constructed, before April 1, 1900, even before the present term of contract expires, GERMANY.

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if the said arrangements have been installed by the head office of the postal department. Other requests are to be presented to the government postal department.

(2) Finally, those contracts for special telegraph arrangements and supplementary telegraph arrangements, that have been installed at the government expense before April 1, 1900, do not require to be relinquished by formal notice being given. These present 'Regulations' (of March 26, 1900) really apply to the said telegraph arrangements, from the period at which he said contracts can be relinquished by giving notice, without any further steps being necessary. Therefore the subscribers who have the said telegraph arrangements, are to be informed as to what rates they have to pay in future, by having a copy of those regulations that are to apply, in future, to the said arrangements sent to them.

ADDENDA.

SCHEDULE No. 4.

Declaration of Consent by House Proprietor.

I herewith consent and agree that the government telegraph management shall be allowed to construct at my house, situated on street (or square) in all the arrangements (such as poles, supports, &c.) that may be necessary for installing telephone stations in the said house, for leading in the wires, as well as for the construction, maintenance and extension of the telegraph and telephone systems, with the stipulation that the telegraph management shall at once make good, at the government expense any damage done to the said house in consequence of these arrangements, and have the said arrangements removed within a year after notice has been given by me to that effect. I understand and agree that the period of one year's grace, after notice has been given, begins on April 1, following the time that notice is given, or if notice is given after April 1, but before the end of September, that the said period of one year's grace begins on October 1. I further pledge myself not to make any use of my right to give notice to remove arrangements so long as a telephone station is installed in the building.

..... date19 .

SCHEDULE No. 5.

Declaration by the Telegraph Management.

As D.....in.....has given his consent, that at his building, situated on.....street (or square), in.....all the arrangements (such as poles, supports, &c.) may be constructed which may be necessary for the installing of telephone stations for the leading in of the wires, and also for the construction, maintenance and extension of the telegraph and telephone systems; the government telegraph management agrees to make good at once, at the government expense, any damage that may be done to the said building, in consequence of these arrangements, and to remove the said arrangements within a year after notice is given to that effect, on The government telegraph management will be specially responsible for any damage resulting to the said building, through leading in the telephone cable underground. The one year's grace begins to be reckoned on April 1 following, after the period when notice is given, or if notice is given after April 1, but before the end of September, the said one year's grace begins on October 1. The right to give notice remains so long as a telephone station is installed in the building. Date.....19 .

SCHEDULE No. 3.

Request for Subscription to a Telephone System.

The undersigned, requests connection with the telephone system in.....
 from his premises, situated on street (or square) No.....
 Besides this*

The insertion in the telephone directory is to be as follows:—

Name, or Firm.	Designation of Profession, or Branch of Business.	Residence, or Business Address.

I desire to pay the unlimited service rates (or, the measured service rates)**
 The consent of the house proprietor is inclosed.

To the Royal Postal Department (Telegraph Management, or City Department)
 in

SCHEDULE No. 3a.

Reply to the Foregoing Request.

Reply to request from..... Date19 .

The request for connection in the telephone system ofhas
 been duly filed.

The telephone station desired will be installed as soon as the requests made by
 you have been duly arranged for. No definite time can be fixed for carrying out the
 arrangements for installing station. You will please have the enclosed forms for re-
 quest of membership, and for declaration by house proprietor, filled up and duly at-
 tested, and return the same. In the form of request, please mention if you wish to
 pay an unlimited service rate ofmarks, ormarks;
 or the measured service rates ofmarks; with additional charges for
 conversations. The date when the installation will begin, will be announced to you
 beforehand.

The rates for the use of station, are based upon the 'Law relating to Telephone
 Rates,' of December 20, 1899, and the 'Regulations' for carrying the same into effect,
 issued by the State Chancellor, on March 26, 1900, which may be seen here. The obli-
 gation to pay rates, &c., begins on the day that the station is handed over to the sub-
 scriber.
 To.....

DECLARATION OF A SUBSCRIBER for telephone connection, during the night, between
 the places.....and.....

The subscription is to begin on..... The connection is desired
 from.....o'clock till.....o'clock, during the night, middle European time.

The following stations are to be connected: No..... Name.....
 Place.....; with No..... Name..... Place.....
 The charges will be paid up to.....in advance. I am acquainted with the
 regulations relating to the use of telephone trunk lines during night hours.

Signature.....

Date....., 19 .

*Here is to be inserted, if wished for, the installing of supplementary stations, the fixing of
 an extra or several bells. In the case of supplementary stations, it should be mentioned from
 which principal station they are to branch off.

**This clause is left out in telephone systems where the unlimited service rate amounts
 to 80 marks (\$19.04).

APPENDIX No. 1

REGULATIONS CONCERNING SUPPLEMENTARY STATIONS.

(Issued on January 31, 1900 and amended to December, 1904.)

I.—The Granting of Supplementary Stations.

ARTICLE 1.—Subscribers in a telephone system may have supplementary stations installed in the living rooms or business rooms that are situated on the premises where their principal station is installed, and have the same connected with their principal station.

Premises which are separated by real estate belonging to other persons, by public roads, squares, &c., or by public streams or rivers, from the premises where the principal station is installed, are to be regarded as separate premises.

ARTICLE 2.—Those subscribers in telephone systems who pay the unlimited service rates, may have supplementary stations, which are not more than 15 km. (9½ miles) distant from the central exchange, installed in the living or business rooms of other persons that are situated on the premises (property) where their principal station is installed, or in the living or business rooms of other premises, with the consent of the persons in question, and have the same connected with their principal station.

ARTICLE 3.—Not more than five supplementary stations may be connected with the same principal station. It is left to the subscribers to have the supplementary stations that are installed on the premises (property) where the principal station is located, installed and maintained by the government telegraph management, or by other persons (or firms). The supplementary stations that have not been installed by the telegraph management, must correspond with all the technical requirements specified by the telegraph management.

Before the supplementary stations are handed over for service, notice has to be given of the same to the post office, the telegraph bureau, or the city telephone bureau, under whose jurisdiction the exchange station has been placed. The said office or bureau is authorized to see, in all cases, as to whether these supplementary stations correspond with the technical requirements.

The installing and maintaining of the supplementary stations that are not situated on the same premises (property) as the principal station, belongs to the telegraph management.

ARTICLE 4.—Subscribers who have supplementary stations are entitled to converse with the principal station, as also with the other supplementary stations that are connected with the principal station. Connections with other persons for purposes of conversation, are granted to the said subscribers, according to the same extent (area) as to the subscribers who have principal stations.

In so far as other regulations have not been specified, the regulations concerning the use of principal stations apply equally to supplementary stations.

The supplementary stations specified under Article 2 will be inserted in the telephone directory, unless the contrary is requested.

ARTICLE 5.—The subscriber who has the principal station is responsible for all the charges connected with the use of the supplementary station. The single charges for conversations from or to supplementary stations, become due, as soon as the connection with the principal stations that are connected with the same has been made by the exchange station.

ARTICLE 6.—The right to use a supplementary station ceases with the right to use the principal station. Besides this, the right to use the same, may be withdrawn, on account of improper use of the station, or when it is discovered that the same does not correspond with the technical requirements, or if special difficulties should supervene to the telephone service, from the use of the supplementary station.

II.—Rates for Supplementary Stations.

The rates for supplementary stations, are fixed on the basis of paragraph 10, of the 'Law relating to Telephone Rates,' of December 20, 1899 (State Code, p. 711). These rates are as follows:—

A. For installing and maintaining supplementary stations by the government telegraph management:—

- (1) For supplementary stations in the living or business rooms of the premises belonging to the subscriber, where the principal station is also installed, each, yearly. 20 m. (\$4.76)
- (2) For other supplementary stations, each, yearly. 30 m. (\$7.14)
- (3) When more than 100 metres (110 yards) of line are required to connect the supplementary station with the principal station, then for each additional 100 metres (110 yards) or fraction thereof, of extra length of line, an additional charge will be collected, as follows:—
For single lines (wires), yearly. 3 m. (72 cents)
For double lines (wires), yearly. 5 m. (\$1.19)
- (4) In the case of supplementary stations that are more than 10 km. (6½ miles) distant from the central exchange station, the same additional charges for extra costs of construction will be collected, as in the case of principal station.

B. For supplementary stations, which have not been installed and have not to be maintained by the government telegraph management, the following charges are collected:—

- (1) For supplementary stations in the living or business rooms of the premises (property) belonging to the subscriber, where the principal station is installed, each, yearly, 10 m. (\$2.38).
- (2) For other supplementary stations, each, yearly, 15 m. (\$3.57).

C. In departmental (municipal) telephone systems, there will be collected (for supplementary stations, connected with those principal stations where the subscribers pay the unlimited service rates, for the use of the trunk lines) in addition to the charges specified above, under II., A (2), and B (2), an extra charge of 100 marks (\$23.80) yearly, for each supplementary station. For supplementary stations where the subscribers have to pay the charges specified under II., A (1), and B (1), this extra charge, specified above, will not be collected.

III. The foregoing 'Regulations' become effective on April 1, 1900.

BERLIN, January 31, 1900.

On behalf of the State Chancellor,
VON PODBIELSKI.

INSTRUCTIONS FOR CARRYING INTO EFFECT THE FOREGOING 'REGULATIONS.'

To ARTICLES 1 AND 2:—

(1) Real estate that forms one connected property, belonging to the same owner and which does not consist of detached areas, separated from each other by other property, public roads, squares, or public streams, is to be considered as one property, even if the same is entered in different registers of survey.

(2) Supplementary stations may also be installed for other persons than the subscriber who has the principal station, in premises (property) distinct from that where the principal station is installed. Regarding the exception made in the case of those supplementary stations that pay the unlimited service rates for service with principal centres of departmental (municipal) service, see below, under par. 5.

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(3) When several principal stations are so connected with several supplementary stations, that these supplementary stations can be connected, whenever desired, with one or other of the said principal stations, then the same rates must be paid for all these principal stations, *i.e.*, the general charge, and additional charges for conversations (the measured service rates), if all the supplementary stations are admitted for the same measured service rates, or else the unlimited service rates, specified for local service, or for service with neighbouring places, and with principal centres.

(4) Lines are also admissible for the purpose of connecting various principal stations belonging to the same local system by direct wire. The charges are to be reckoned according to the regulations specified for supplementary telephone stations.

(5) Supplementary stations may be connected with a principal station situated in the area of another local telephone system, or in the area of another switch station. It is presupposed that the supplementary stations are not farther distant than 15 km. (9 $\frac{3}{8}$ miles) from the exchange station, with which the principal station is connected. No additional charges, for costs of construction, are collected for supplementary stations, for the extra length of line necessary to be constructed within the 5 km. (3 miles) limit of distance from the exchange station, or central exchange station. See Article 9, of the 'Regulations regarding the 'Law relating to telephone rates'' (page 481). In the case of principal stations which pay the unlimited service rates, specified for service with principal centres and departmental (municipal) service (see par. 2, to Article 18 of the 'Regulations regarding the "Law relating to Telephone Rates"', p. 483), only those supplementary stations situated in places that do not belong to the area of principal centre system, or the departmental system, can be connected with the said principal stations, when these supplementary stations also belong to the subscriber who has the principal station.

(6) In which cases the distance limit of 15 km. (9 $\frac{3}{8}$ miles) for existing supplementary stations, may be exceeded, when the location of the exchange station to which the said supplementaries are connected, is changed, see 'Instructions' to the 'Law relating to Telephone Rates,' paragraph 1, section 2 (page 456).

(7) Requests for supplementary stations must be signed by the subscriber who has the principal station.

To ARTICLE 3:—

(1) If other 'phones are switched on to (placed in circuit with) a supplementary station, then the said 'phones are also to be treated as supplementary stations, and are to be included with the supplementary stations that are connected with the principal station. The same regulation applies to those arrangements (*i.e.*, contact boxes (floor-plugs), &c.) by which 'phones can be connected for occasional use, with the lines belonging to principal or supplementary stations. Any such arrangements that may be necessary in the case of principal stations, are not to be considered in the above category.

(2) The head offices of the postal management are authorized to hand over to the owner of the principal station, on payment of the actual value of same (if no valid reasons to the contrary exist), those supplementary stations that have been installed by the telegraph management on the premises where the principal station is located. The said supplementary stations become henceforth the property of the subscriber, who pays the value of the same. The charges specified under II., B, of the 'Regulations concerning Supplementary Telephone Stations,' (page 498), will be collected for these supplementary stations, from the first day of the following quarterly term, onwards. The said supplementary stations are henceforth to be kept in repair at the subscriber's expense.

(3) The following are the 'Technical Requirements' specified:—

The speaking and hearing arrangements of those supplementary stations that have not been installed, or that have not to be maintained by the telegraph management, must not be inferior to or different from the same arrangements that are employed

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by the telegraph management for local service. If systems are to be employed for supplementary stations, which call for some alteration in the switching arrangements of the exchange stations, then the sanction of the government Postal Department must be first of all obtained for the same.

When the lines of several principal stations belonging to the same subscriber are led into the same premises (property), permission is given to all the supplementary stations, that are connected with these principal stations, to converse with one another. If, however, besides the supplementary stations, there are private 'phones for which the rates specified under II., B, of the 'Regulations concerning Supplementary Telephone Stations,' are not paid, then the technical arrangements must be so constructed that no connections can be made between the private 'phones and the exchange station.

For other matters, the technical requirements are to be specified by the head offices of the Post Office Department. The general rule to be followed in this matter is, that the subscribers who have supplementary stations should have as much liberty as possible in the choice of 'phones, line arrangements, &c.

However, in order that the security and reliability of the service in the telephone systems may not be interfered with, the persons concerned are to be instructed that it is for their own interests to use only the best arrangements for speaking and hearing, and especially in the matter of microphone cells (pile), to use only those dry cells which produce a sufficient quantity of electrical energy. It is desirable that the private arrangements should correspond, in all important particulars, with the arrangements of the government telegraph management, in order that no difficulties or matters of friction may occur in the service between the supplementary stations, and the other stations.

For this reason the following points are to be specially observed:—

- (a) The switch arrangements in the telephone case, are to be so arranged that the same correspond in all important details with the switch arrangements employed by the telegraph management. As a guide, the circuit diagrams, P.W. Stf. M. 99, of the telephone case (box), may be given, which can be applied both for single wire and for double wire service.
- (b) With regard to the joining up in circuit of the batteries, instructions must be given when such batteries are to be used in connection with stations that are installed by the telegraph management.
- (c) That for calling, an alternating current, of not less than 30, and not more than 40 volts of tension, must be employed. Only polarized magneto-bells are to be employed, for the reason that when unpolarized magneto-bells are used, danger may arise to the operators in the exchange station, &c., from the generation of the current by inductors. The resistance of the magneto-bell coil must amount to at least 300 ohms.
- (d) The 'phones and lines (wires) of the supplementary stations are to be connected with the principal station, in such a manner that it can easily be found out, at any time, in the case of difficulties in the service, whether the defect is to be sought for in the arrangements belonging to the government telegraph management or in the private arrangements. When a drop-board (annunciator-board) is employed in the principal station, then the costs for the said drop-board (annunciator-board), and the other switch arrangements that may be required, are to be borne by the subscriber who has the supplementary station.

When any alterations in the service are to be carried out in the exchange stations, which make an alteration necessary in the technical arrangements of the private supplementary stations, due notice must be previously given to the persons concerned, that such is to be done. Information may also be supplied as to where the materials may be procured for the said alterations. The supplying of these materials from the
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stores of the telegraph management and the carrying out of these alterations by the employees of the same, is not admissible.

The telephone box (case) of the principal station can also be arranged for joint use, for service with supplementary stations that have not been installed, and are not maintained by the telegraph management, but the switch arrangements must be so constructed that in the case of difficulties in the service it may always be easily determined as to whether the fault is to be sought for in the principal or in the supplementary station.

(4) Supplementary telephone stations not required to be installed and maintained by the government telegraph management, may be installed by private contractors and be rented out to other persons.

To ARTICLE 6:—

(1) The withdrawal of the right to use supplementary stations, belongs to the head offices of the Post Office Department.

To REGULATION II., A (1).—For the charges to be paid, when supplementary stations are removed before the termination of the period of contract, see 'Instructions' to Article 8 of the 'Regulations for carrying into effect the "Law relating to Telephone Rates"' (page 481).

To REGULATION II., A (1-3).—When the 'phones of two supplementary stations that belong to one and the same principal station are, in addition, connected directly with each other by special wires, then, besides the additional charge for the connecting wire, an extra charge for the extension of the technical arrangements must be paid, in the case of both stations, which amounts, altogether, to 20 or 30 marks (\$4.76 or \$7.14) annually.

To REGULATION II., A (3).—The length of line is to be measured according to the nearest road that can be used for carrying the same along, without incurring any special costs, even if the line is actually carried round by some other (shorter) way. In estimating the rates for supplementary stations, the wires of which are carried along underground, the calculation is to be made according to the nearest road that can be used for laying the cable, without incurring any special costs, even if the cable actually used is carried round by some other (shorter) way.

If the overhead lines of any existing supplementary stations are changed into underground lines, in the interests of the telegraph management, then no increase in the rates will be made on this account.

To REGULATION II., A (4).—In estimating the additional charge for cost of construction, the calculation is to be made according to actual length of the line connected with the supplementary station, that is outside the 10 km. (6½ miles) area of the exchange station.

REGULATIONS CONCERNING THE USE OF THE TELEPHONE TRUNK LINES DURING NIGHT HOURS.

(Issued on September 19, 1901, and amended to December, 1904.)

ARTICLE 1.—The telephone trunk lines between places where there is telephone service during night hours, may be used by telephone subscribers during night hours for single conversations, paying charges for each, and also for conversations at subscription rates. The night hours (in so far as different rules have not been specified for individual places) are to be reckoned from 9 p.m. till 7 a.m., during the summer, and from 9 p.m. till 8 a.m., during the winter.

ARTICLE 2.—Single conversations of an ordinary and an urgent nature, are admissible under the same conditions as during the hours of day service. These conversations, however, can only be carried on during the times when the connections are not being used for conversations which pay the subscription rates.

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ARTICLE 3.—Subscribers' conversations are admissible for such connections as can be made during the hours of day service, between the same subscribers at the same times. Each subscription must last, at least, during a period of one month. The term of subscription may commence at any time, but the monthly period is always reckoned from the following 1st or 16th of the month. The fractional amount of the subscription rates for the period up to the beginning of the term of monthly subscription, must be paid with the first monthly subscription rates. The subscription can only be relinquished at the close of the 15th of a month, or at the end of a month. For subscribers' conversations one-half of the day rates are collected.

The rates are to be paid in advance. In reckoning the monthly rates, the month is counted as 30 days. No reimbursement of charges is granted for connections that have not been used. However, if the time allowed for conversation has not been used at all, or only partly used because of derangement of the service, then opportunity will be given to the subscriber, if possible, during the same night, to make this good. If on account of the derangement in the service it has not been possible to carry on the conversation at all, and if it has not been possible to give opportunity to make this good, then, if the subscriber so requests, a thirtieth part of the monthly charges will be refunded for the said conversation.

ARTICLE 4.—The request for subscription conversations must be presented to the exchange station, in the place where the applicant resides, and arrangements must be made with the said exchange station beforehand, regarding the time when the subscriber's conversations are to be carried on.

The minimum duration of a conversation is six minutes; the maximum duration of the same is twelve minutes.

ARTICLE 5.—Subscription conversations may only be carried on regarding matters pertaining to the concerns of the subscriber, or of persons belonging to his household or business establishment.

On behalf of the State Chancellor,

KRAETKE.

BERLIN, September 19, 1901.

INSTRUCTIONS TO THE FOREGOING REGULATIONS.

To ARTICLE 1:—

For night hours, in long distance-service, the hours are always to be reckoned that are specified under Article 1. In local service, in service with neighbouring places, and with principal centres, and in departmental (municipal) service, the hours from 9 p.m. till 7 a.m., are to be reckoned, unless other rules should be prescribed for particular places.

To ARTICLE 3:—

(a) The regulations for subscribers' conversations are also to be applied to those connections in long-distance service which are regularly made during night hours for special subscribers, without service being given, at the same time, to the rest of the subscribers of the local telephone system. The sanction of the government Postal Department must be obtained for the effecting of continuous connections during night hours, between subscribers' stations in places that do not have telephone night service and a long-distance exchange station that has the night service.

(b) Several conversations held at different periods of time during the same night between the same subscribers, are allowed to be carried on, for the maximum period of twelve minutes for each conversation, if the time is not taken up by other subscribers.

(c) Should the subscriber wish to prolong the term of subscription beyond the minimum period of one month, he must pay the subscription rates each month in advance. For this purpose the account for the new month is always handed in, not GERMANY.

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later than eight days before the term of subscription expires. If this account is not paid forthwith, the subscription is considered as cancelled. The station in the long-distance place is to be notified that the subscription has ceased.

To ARTICLE 4:—

(a) The request for subscription must be written on the form specified for this purpose.

(b) When the request for subscription is handed in, the exchange station makes arrangements with the station in the long-distance place, and with the applicant, regarding the time when the connections are to be made, and also collects the charges for the minimum period of subscription, that is specified under Article 3 of the foregoing 'Regulations concerning the use of Telephone Trunk Lines during night hours,' and gives a receipt for the same, in which the time is specified, when the connections are to be made.

To ARTICLES 1 TO 5:—

The special regulations for service with foreign places are supplied separately to each of the exchange stations concerned.

REGULATIONS.

REGARDING CONNECTIONS DURING NIGHT HOURS, IN SERVICE WITH PRINCIPAL CENTRES, AND IN DEPARTMENTAL (MUNICIPAL) SERVICE.

(Issued on January 9, 1902, and amended to December, 1904.)

The following 'Regulations' are issued on the basis of paragraph 10, of the 'Law relating to Telephone Rates,' of December 20, 1899 (Government Code, p. 711):—

The 'Regulations,' given above, 'concerning the use of Telephone Trunk Lines during Night Hours,' (of September 19, 1901), apply also to the connections made during night hours in service with principal centres, and in departmental (municipal) service, from the 15th day of January of this present year, with the stipulation that continuous connections can be arranged for between stations in different local systems that do not have telephone service during night hours, which, so far as the specification of the rates are concerned, are to be regarded as ordinary connections for conversations of three minutes' duration.

Accordingly, the following charges are collected, in service with principal centres, and in departmental (municipal) service:—

- (a) For each ordinary and for each urgent conversation during night hours, the charges are those specified for similar conversations during the hours of daily service, according to paragraphs 7 and 9 of the 'Law relating to Telephone Rates' (pp. 447 and 459), and Articles 13 and 18 of the 'Regulations' to the said 'Law' (pp. 482, 483).
- (b) For connections during night hours, for which a term of subscription is entered upon, and which are made daily between the same subscribers, at the same times, the charges to be collected are one-half of those specified for ordinary conversations of the same duration made during the hours of daily service, according to the above-mentioned 'Law relating to Telephone Rates,' and the 'Regulations' connected therewith.

The said charges are to be collected, whether the subscriber who requests the connections pays the annual unlimited service rates for service in the telephone system concerned, or not.

On behalf of the State Chancellor,

KRAETKE.

BERLIN, January 9, 1902.

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INSTRUCTIONS TO THE FOREGOING 'REGULATIONS.'

To ARTICLE 1:—

Applications made by subscribers for connections during night hours, in service with principal centres, and in departmental (municipal) service, when there is no service during night hours in both places that are to be connected with each other, are only to be granted if the requisite number of trunk lines necessary for this purpose is available, and if no hindrances stand in the way, regarding the interests of the telephone service, or regarding technical difficulties. Special attention must be given to ascertain that the calling up can be properly effected over the lines to be connected, without the necessity of employing, for this purpose, other technical arrangements connected with the subscribers' stations, such as increasing the voltage of the ringing battery, or the changing of telephone boxes with ringers, for boxes with induction coils.

To ARTICLE 2:—

The regulations concerning continuous connections during night hours in service with principal centres, and in departmental (municipal) service, apply also to connections.

- (a) Between subscribers' stations, in local systems, that do not have service during night hours.
- (b) Between local subscribers in systems having no night service and exchanges where continuous service is in operation.

The rates to be collected for a monthly term of subscription are:—

- (1) In service with principal centres, 3 marks (72 cents).
- (2) In departmental (municipal) service, thirty times the amount of the half charge for an ordinary conversation of three minutes' duration, carried on between the local systems in question. See paragraph 7, of the 'Law relating to Telephone Rates' (p. 447).

When a continuous connection of the kind (specified above under *b*) is used for carrying on a conversation, for which a charge is paid, then the charge for the said continuous connection is not collected. Subscribers' charges are not refunded in such cases.

To ARTICLE 3:—

Subscribers in places not having night service for whom single night connections are made by the exchange stations of other places that have night service, are to be allowed to avail themselves of the long-distance service during night hours, to the same extent as the subscribers who live in a place that has service during night hours; or, in case a different area of service should be fixed for the place where the said subscribers reside, they are to avail themselves of the service within the said area.

To ARTICLE 4:—

The sanction to have regular connections made, during night hours, is to be granted in each case, with the right to cancel the same; and the said sanction is to be withdrawn as soon as any disadvantages supervene from the concession.

To ARTICLE 5:—

Conversations that have been commenced during the hours of day service, under the conditions specified for the daily service, may be prolonged beyond the close of the daily service for the period of time specified for single conversations, during night hours; and be reckoned as a conversation during the day hours. Should the said conversations be continued for a longer period of time, then the charges specified for night conversations are to be collected for the additional time taken up.

REGULATIONS

REGARDING NIGHT CONNECTIONS IN TELEPHONE SERVICE WITH NEIGHBOURING PLACES.

(Issued on February 18, 1904.)

- (1) The charge for an ordinary conversation, lasting not longer than 3 minutes, is 20 pf. (5 cents).

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Three times the ordinary amount is collected for urgent conversations. For subscription conversations, half the charges are to be collected that are specified for ordinary conversations, carried on during night hours. The minimum duration of a conversation, for which subscription rates are paid, is 6 minutes; the maximum duration of same is to be 12 minutes.

(2) Continuous connections may be made during the whole night, between stations of different local systems, which do not both have service during night hours. For making each of such connections, a charge of 20 pf. (5 cents) must be paid; one-half of this charge is collected when subscriptions are taken out.

(3) The charge for conversations during night hours, and continuous connections during night hours, must be paid, even if the subscriber who requests such connections pays the annual unlimited service rates for service with neighbouring places.

(4) In so far as the foregoing 'Regulations' contain nothing to the contrary, the 'Regulations' also apply that have been issued on September 19, 1901, regarding the use of telephone trunk lines, during night hours (page 501).

On behalf of the State Chancellor,

KRAETKE.

BERLIN, February 18, 1904.

INSTRUCTIONS TO THE FOREGOING REGULATIONS.

To ARTICLE 1:—

The rates for a monthly subscription term for regular continuous connections, during night hours, is 3 marks (72 cents) in service with neighbouring places. Finally the regulations regarding connections, during night hours, in service with principal centres, and in departmental (municipal) service, issued on January 9, 1902, also apply (page 503).

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Berlin, 1903.

EXTRACTS FROM 'GENERAL INSTRUCTIONS,' (No. V., DIVISION VI.)
FOR POST AND TELEGRAPH DEPARTMENT.

LONG DISTANCE SERVICE.

Classification and Arrangement of the Long-Distance Lines.

9. The long-distance lines are divided into four classes, according to the following order:—

- (a) Lines of class I.: for service with parts outside the German Empire; with the numbers 1 to 99; 5,000 to 5,099; 10,000 to 10,099, &c.
- (b) Lines of class II.: for service within the German Empire; with the numbers 100 to 299; 1,100 to 1,299; 2,100 to 2,299, &c.
- (c) Lines of class III.: for departmental service; with the numbers 300 to 599; 1,300 to 1,599; 2,300 to 2,599, &c.
- (d) Lines of class IV.: for service with neighbouring places and with principal centres; with the numbers 600 to 1,099; 1,600 to 2,099; 2,600 to 3,099. 3,600 to 4,099; 4,600 to 4,999; 5,600 to 6,000, &c.

The lines that serve to connect various exchange stations that belong to the same local telephone system are not regarded as long-distance lines in the sense of the above classification. The numbering of the same is left over to the general post offices. In order to distinguish them from the telegraph line, the long-distance lines are marked with the letter F,* which is placed before the number. Metallic circuits receive the additional marking *a, b*, as, for example, F. 245*a, b*. (*i.e.*, line *a* and *b*.) The new

* The letter 'F' signifies 'Fernsprechverbindungsleitungen', the German word for 'Telephone Long-Distance Lines.'

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circuits that have been formed for the purpose of duplex telephony are to be designated by having the numbers of the circuits that are used marked in a fractional form, thus F. 103/291; and $\frac{1001101}{208}$. The long-distance circuits which are formed from the ordinary telegraph wires are marked with a special long-distance number; but are also to be used for the telegram service of the stations to which they are connected; and are to be so arranged that the stations previously connected by these telegraph wires, may afterwards be immediately reconnected telegraphically in the same way as before. Moreover such long-distance circuits may only be used for transmitting telegrams, when the ordinary telegraph lines are entirely or partly deranged, and when without the use of these long-distance circuits, telegrams would have to be unduly delayed. In the long-distance service over such circuits urgent conversations have the precedence before urgent telegrams; and ordinary conversations before ordinary telegrams.*

The long-distance or trunk lines that are assigned to the various exchange stations for telephone service, may be seen from the 'Register of the Long-Distance Lines within the Telegraph area of the German Empire,' Schedule 8 (page 523). This register is furnished with a 'Supplement,' Schedule 9 (page 525)), which gives, in alphabetical order the names of local telephone systems that are connected with the long-distance lines, with the corresponding public call station, together with the designation of the long-distance lines that have been assigned to each of the said local systems, and public call stations.

This 'Register' is supplied to the general post offices, and also to such telephone stations which on account of the great number of the long-distance lines that run in, or on account of their location in the telephone system, require this register to guide them in making the connections. The register is to be corrected, according to the requirements. The general post offices have to supply the necessary instructions on this point. Besides the above, a register of the testing stations connected with the various long-distance lines is also to be drawn up by the general post offices in the form given for the corresponding register of the telegraph lines (see 'General Instruction, No. V., Part 5, page 525), and copies of the same must be given to the other offices concerned, as also to the exchange stations, as may be required. A copy of the register is to be sent in to the government postal department for the telephone bureau of the said department. Both these registers are kept up to date by the government postal department. For this reason, the general post offices have to send in to the telephone bureau of the government postal department reports of any alterations that may be made. This has to be done monthly, for the 'Register of Long-Distance Lines,' up to the 10th of the next month, and once annually, at the beginning of February, for the 'Register of Testing Stations.' For the purpose of keeping up to date the 'chart of the telephone system of the German Empire,' which is also drawn up by the government Postal Department, the general post offices must likewise send in to the telegraph service bureau of the government Postal Department the sheet of this chart which embraces their own districts, corrected up to date, together with a report of the corrections that have been made. and, at the same time, the information necessary for correcting the chart of the telegraph lines, &c. The above is to be sent in up to the 10th of each month, always, when any alterations in the telephone system have been made during the previous month.

Use of the Long-Distance Lines for Duplex Telephony, &c.

10. The general post offices are authorized to switch together pairs of long-distance lines for duplex telephony, in necessary cases, and according as the existing circumstances allow. Lines having more than one intermediate station, may only be used for this purpose with the sanction of the government Postal Department. The neces-

* Regarding conversations over these trunk lines, that are formed from the ordinary (telegraph) lines, see Note to section 17, following.

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sary auxiliary apparatus are to be ordered in the usual way, from the telegraph workshop of the government Post Office Department. Only those lines are suitable for duplex service, that are well insulated, and are stretched along the same poles in equal groups and led into the same stations for testing purposes. The general post offices have to give special attention to this point. In suitable instances, the government Postal Department may also sanction the use of these lines for simultaneous telephony and telegraphy with the 'Hughes' apparatus. This arrangement is to be made for the long-distance metallic circuits. However, the use of the long-distance lines for telephone service must in no way be infringed upon by this arrangement for double service. For this reason only such long-distance lines may be called into requisition which are not being used for duplex telephony, or that may not be necessary for this purpose, in the immediate future.

Regarding this point, applications have to be made, when necessary, by the general post offices, to the government Postal Department.

The technical arrangements for duplex telephony and likewise for simultaneous telephony and telegraphy, are to be constructed according to the special requirements laid down by the government Postal Department.

Measuring the Resistance of the Long-Distance Lines.

11. The long-distance lines that have a length of 300 km. (186 miles) and over, are to be measured once a year, with regard to their insulating resistance, and line resistance. Arrangements have to be made, on this point, by the general post offices among themselves. When the measuring is being done each wire of the metallic circuit, is to be measured, as a special or separate line, according to the general regulations laid down. The results of the measurements for each calendar year have to be collected by the general post office, in charge of the measuring station, and sent in, without any notification, to the telephone bureau of the government Postal Department, in the month of January of the new year. The government Postal Department will, in each case, make arrangements for measuring the long-distance lines that run beyond the limits of the area of the government postal jurisdiction.

Furnishing Security for Construction of New Telephone Systems.

12. The construction (organization) of new local telephone systems, is to be made contingent upon the persons concerned agreeing to furnish security for a minimum amount of receipts for the metallic circuit that is required for connecting the arrangements with the general telephone system, no matter whether this line has to be constructed at once, or only when the existing ordinary lines are not sufficient for carrying on the service. When switch stations are set up, that are connected with the existing ordinary lines (speaking lines), the request for security to be furnished may be postponed until the fifth subscriber has been received.

The government Postal Department will decide as to what extent a security has to be required for other long-distance lines.

Notifications have to be drawn up regarding the security that may be requisite, in which have to be stated:—

- (a) The telephone arrangements to which the security applies.
- (b) The duration of the obligation to furnish the security.
- (c) The amount of the sum required.
- (d) The proportion in which the sum is to be divided among those concerned.
- (e) What charges for conversations may be reckoned towards balancing the amount of security guaranteed.
- (f) The extent of the area of service; and
- (g) The time when the minimum amount of receipts can be ascertained and collected.

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The cost of official stamps, &c., are to be borne by those who draw up the notifications. The notifications are to be drawn up by the general post offices, with special care and with legal co-operation. The form given, in Schedule 10, will serve as a guide on this point. The notifications are to be kept on file by the general post offices. The general post offices have to fix the amount of security that may be considered necessary for the long-distance lines.* If it should be ascertained, when these investigations regarding telephone arrangements for which security has to be furnished, are being made, that the actual cost of construction considerably exceeds the amount specified in the estimate which has been drawn up (possibly on account of the necessity of having to carry long stretches of the line underground), and that for these reasons special stipulations must be fixed, then the conditions have to be reported to the government Postal Department. The following regulations apply to the furnishing of security for a minimum amount of receipts for the long-distance lines:—

- (1) The amount of security is reckoned according to the length of the line for which the security has to be furnished. If the nearest road that can be used without incurring extra expense, is not chosen for setting up the line, still the length of this road forms the basis of the estimate. The security to be furnished, is the following amounts, yearly, for every kilometre ($\frac{5}{8}$ mile) or fraction thereof, of line: For single lines, 15 marks (\$3.57); for metallic circuits, 20 marks (\$4.76). Should the sum afterwards not exceed 45 marks (\$10.71) annually, then no security is to be required.
- (2) The security continues for a period of five years, to be reckoned from the day that service commences over the line.
- (3) The amount to be reckoned as the equivalent of the sum furnished as security (guaranteed) is the charge for those conversations sent over the line that have not already been connected with some other line for which a guarantee has been given. Only conversations in one direction are to be reckoned.*

The general post office must fix the direction in which the conversations have to be reckoned. In doing so, the wishes of those concerned are to be considered, as far as may be possible. If the line serves for connecting new places to the telephone system, then as a general rule, the charges are to be reckoned for the conversations that are sent from these places.

- (4) If an existing line, for which a guarantee has been given, is used for connecting another place, then the persons concerned who reside in the said place, have to assume a proportionate amount of the guaranteed sum, the amount of the same to be fixed by the general post office. No increase in the guaranteed sum takes place, unless the length of the new line to be constructed exceeds 3 km. ($1\frac{3}{4}$ miles) in the case of single line, or 2 km. ($1\frac{1}{4}$ miles) in the case of double line. Should either of the above cases supervene, then the persons concerned, in the new place that is to be connected in addition to the share borne by them of the guaranteed sum for the existing line, must also furnish a guaranteed sum for the new length of line, to continue for a period of five years.
- (5) The conversion of a single line into a metallic circuit, is to be made contingent upon the amount of security specified above, under par. (1), unless the conversion of the said line has become necessary, in the interests of the management.* The length of the period for which the security is furnished is not prolonged for the above reason.

*Special regulations are specified for the security to be furnished for ordinary lines, and for the stations that are to be connected with these.

* The point of departure, for the direction of a conversation, is the Exchange Station, where the request for the connections has been made.

*If the guaranteed sum for a single line has been estimated according to regulations previously laid down, and happens to be higher than the sum specified in the regulations given above under par. (1), for double metallic circuits, then when the line is converted to a metallic circuit the previous amount agreed upon has to stand as it is.

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- (6) A guaranteed amount is not required, if there is refunded to the postal department 40 per cent of the amount, roughly estimated, for cost of construction. The specified general costs have to be included in the estimate of the cost.

It is not necessary, as a rule, to specify all the places that are to be admitted to the telephone service, when the aforesaid notifications are drawn up, in connection with the amount of guarantee required for a new line. It will be considered as sufficient only to mention in the document the most important places of the area of service to which the subscribers are to be admitted. The minimum amount of receipts that has been guaranteed, has to be required for each year of the period during which the obligation continues, without regard to the amount obtained for the service carried on over the new arrangements, during the previous years. The registers of the charges received during each year are only to be kept up to that period of the year when the equivalent of the amount of receipts that was guaranteed has been taken in. If through the establishment of a new long-distance line, for which a guarantee has been given, the receipts received from older long-distance lines (for which a guarantee has also been given) and which lines together form a connected telephone system, are unfavourably affected, then the persons concerned are to be allowed to unite together in forming a common agreement of guarantee for all the long-distance lines of the system. This common agreement of guarantee may also be extended to ordinary telegraph lines.

If the aforementioned persons wish to avail themselves of the arrangement referred to, they must agree to be responsible at the close of each year of service of the new telephone arrangements, last added to the united system, for a total amount of annual receipts of charges for conversations that can be reckoned towards the sums guaranteed, equal to the sum total of all the annual individual amounts that have been guaranteed for all the lines in question.* The period of guarantee is not prolonged for the lines on account of the persons concerned entering into a common agreement of guarantee. If one of the lines in question passes out of the category because the term of guarantee agreed upon for the same has elapsed, then the total amount of guarantee for the remaining lines is to be correspondingly reduced.

If the common (united) agreement of guarantee begins for an existing telephone system during the course of a fiscal year (year of service), then the share of receipts taken in during the previous part of the year from the service of the system in question is to be credited to the minimum amount of receipts that is guaranteed for the whole year of service.

These rules also apply to the construction of new stretches of line for which a guarantee is necessary, and which are an extension or continuation of existing long-distance lines, for which a guarantee has been given. When the arrangement is being made for a common (united) agreement of guarantee, among various places for all the lines in question, special attention must be given to the provisions laid down in deed of agreement. See the form in Schedule 10 hereto. If, in consequence of a new line being taken into service (for which no guarantee is required), long-distance conversations are sent over this new line, which previously were sent over a line for which a guarantee was given, then the said conversations are to be reckoned to the former guaranteed line. It may be seen, from section 6 of the present volume, to what extent the obligation to furnish a guarantee applies to public call stations that are to be erected in centres of traffic belonging to the area of service of a local system. A yearly amount of receipts must be guaranteed for the line of the said call station, equal to the unlimited service rates that have been specified for a subscriber's station, for the local system in question. This sum has to be guaranteed in addition to the extra amount of receipts that have to be reckoned for, on the basis of the general re-

*Guarantees that have been agreed upon on the basis of previous regulations, may be changed into agreements in accordance with the present regulations, by arrangement with the parties concerned.

gulations, that apply to the said stations. Towards the amount of guarantee there will be reckoned the charges for all the conversations that are carried on from the call station, with the stations that belong to the same local telephone system. In the case of public call stations that are situated in the area of service that pertains to a neighbouring place system, or a principal centre system, the following arrangement may be made regarding guarantee: at the request of the persons concerned, instead of the local unlimited service rates, either the highest amount of unlimited service rates, fixed for one of the neighbouring places, or the unlimited service rates for service with principal centres, may be fixed as the amount of guarantee for the receipts from all the conversations carried on from the public call station, within the area of the system of service with neighbouring places, or the principal centre system concerned.

In the case of public call stations which are more than 10 km. (6½ miles) distant, in a direct line, from the central exchange station, the extra charge for additional cost of construction has also to be paid, that is specified under section 9 of 'Regulations' regarding the 'Law relating to Telephone Rates' (page 481). If a public call station is connected to the general telephone system by a long-distance line, then the regulations specified for guarantee, in connection with long-distance lines, apply also in this case. In cases where such call stations are set up in rural districts, and the persons concerned wish to fulfil the specified requirement to pay to the Postal Department 40 per cent of the additional costs of construction and of the general costs, then the persons concerned may have opportunity given to them to reduce the said costs, by furnishing free supplies and rendering assistance gratis, when the arrangements in question are being constructed; as, for example, by supplying poles and supports, by supplying places where the poles can be trimmed, by supplying assistance, or by lending carts, &c., for purposes of transport, &c. The foregoing regulations regarding public call stations, that are connected with centres of traffic, &c., apply also to the furnishing of guarantees for public call stations that have to be set up at the request of municipalities or districts. When the setting up of public call stations for private individuals, that is to say, automatic stations, is made contingent upon furnishing a guarantee for an annual amount of receipts, then the amount of guarantee is to be estimated according to the extra sum for conversations that may be reckoned for on the basis of the general regulations, in the following manner:—

- (a) In places that have no service with neighbouring places, or with principal centres, the calculation is to be made according to the unlimited service rates specified for the local system in question.
- (b) In places (systems) that have service with neighbouring places, the calculation is to be made according to the highest amount of unlimited service rates, that has been specified for any of the neighbouring places.
- (c) In places (systems) that have service with neighbouring places and principal centres, or that only have service with principal centres, the calculation is to be made according to the unlimited service rates specified for service with principal centres, *i.e.*, 200 marks (\$47.60).

The guarantee for a public call station that is connected by junction (branch) lines to an exchange station, has to extend to the whole duration of the term of agreement for the said station, and not only to the minimum period of agreement, *viz.*, one year.

The amounts necessary to equalize the sum guaranteed for the minimum quantity of receipts, in the case of public call stations, have to be fixed and paid in at the close of the fiscal year.

Special rules are fixed for other arrangements for which a guaranteed sum may be required, as, for example, when night service is to be introduced into local telephone systems.

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FIXING THE AREAS OF SERVICE.

13. In fixing the areas of telephone service within the government telegraph sphere of jurisdiction, the general requirements have first to be considered. In considering the admissibility of the conditions required for the service, the following regulations are to be observed:—

- (1) The granting of the service depends upon the number of the long-distance lines, and the ordinary lines that have to be used for making the connections, and, in certain cases, on the number of exchange stations located within the area of service.*
- (2) Service between places situated on the same trunk line is to be granted without regard to the number of intermediate stations.
- (3) If 2 lines have to be connected together in order to carry on the service, then the service must not extend beyond 6 intermediate stations.
- (4) When 3 lines have to be connected with each other, then the service must not extend beyond 3 intermediate stations.
- (5) As a general rule, not more than 3 lines are to be switched together for making connections for a conversation. However, in exceptional cases 4 lines may be connected with one another; as, for example, if the service required is between places located within the same postal district, or neighbouring postal districts; if a special necessity demands that the connections should be made; if the 2 subscribers are able to understand each other sufficiently; or if there is no heavy traffic carried on over any of the lines required, so that there is no possibility of an undue strain being put on the service over the lines for the time being. The number of intermediate stations is not to be limited in the case of exceptional privileges being granted, after the manner above described; still, in order to avoid difficulties in the service, the number must be limited as far as possible.
- (6) When connections are made for conversations over ordinary lines (speaking lines), intermediate stations are considered to be the transfer stations,† and division stations that are situated between the place where the conversation is sent, and the station that is called up. The other stations that are switched on the ordinary lines (speaking lines) are not considered when the number of intermediate stations are counted. When through the extension of ordinary lines, long-distance metallic circuits are acquired, then the stations that are situated between the receiving stations of the said line are to be considered intermediate stations, in the sense specified above under pars. 1 to 4.
- (7) Systems belonging to the one telephone area, in service with neighbouring places and principal centres, are admitted to an equal extent of service with other places. When the area of service is being fixed, the exchange stations in such places are to be reckoned together as one station, and the long-distance (trunk) lines that connect them are not to be taken into consideration.

It pertains to the Postal Department to fix the conditions of service, according to the regulations laid down above, under pars. 1 to 7, if no increase in the existing arrangements are required, in so doing; and if, for the carrying on of the service, it is not necessary to use lines of 4 mm. or stronger bronze wire, or lines of 5 mm. strong

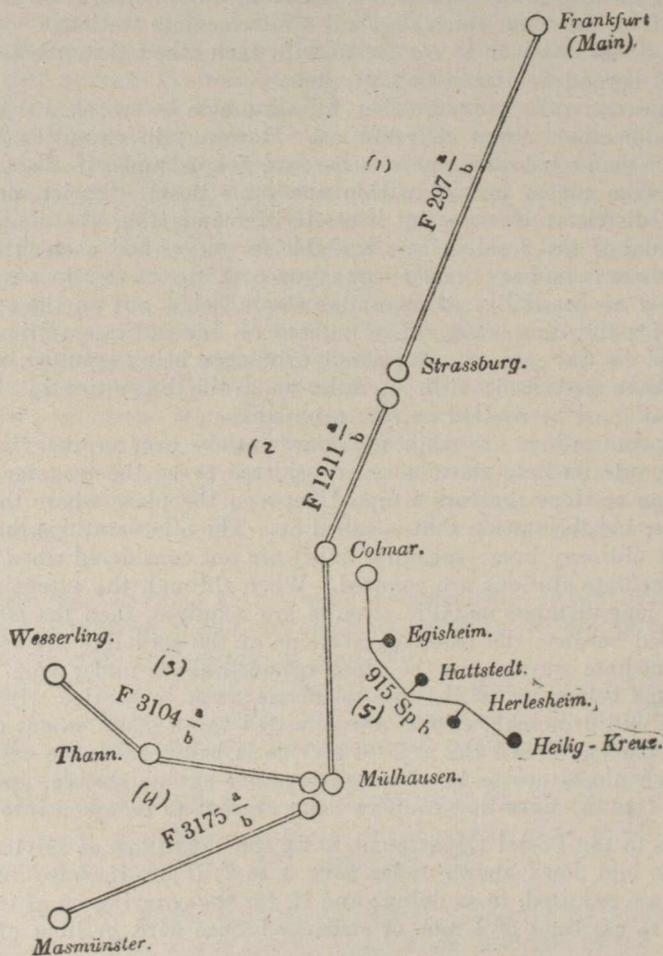
* Other conditions, originating at earlier periods, are to be gradually brought into harmony with the present 'Regulations,' either by cancelling less important matters connected with the service, or by finding new ways of equalizing the service. Conditions of service that have been inaugurated by the orders of the Government Postal Department, can only be cancelled by permission from the said department. The new long-distance lines required for carrying out these rules, are to be specified in the yearly register of the other new constructions that have to be proposed, and which is to be sent in on August 1. The urgency or the importance of the said long-distance lines is to be stated in the register of proposals.

† Transfer stations mean here, the switching stations connected with the ordinary lines.

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double metal wire, or wires that are furnished with the 'Pupin' coils. It is also necessary that all the general post offices that are connected with the immediate area of service belonging to these lines, should be at agreement with regard to the arrangements that may be made concerning the conditions of the service.

In all other cases the granting of the area of service, &c., is subject to the approval and sanction of the government Postal Department. The requests presented on this matter to the government Postal Department and which are to be drawn up, as far as possible, in the form of a register, are to be elucidated by a simple sketch, drawn by hand in the said register, or on the margin of the report (see the sketch given below), so that it may be easily seen which lines are to be connected together for carrying on the service, and how many exchange stations have to be called into requisition.



NOTES:—

- (1) Long-distance double (metallic circuit) line, No. 297a/b.
- (2) " " " " " " No. 1211a/b.
- (3) " " " " " " No. 3104a/b.
- (4) " " " " " " No. 3175a/b.
- (5) Ordinary telegraph line (single) (metallic circuit) line, No. 915b.

Single long-distance lines are numbered as described in section 9. Only those long-distance lines which are double (metallic circuit) receive the additional designations a/b, or a/b after the number.

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The sketches need not include lines which are outside the government area. The daily telegraph service between the places which have been proposed for service and the strain (traffic) on the lines which have to be called into requisition, are to be given in the form of proposal which is drawn up. Finally, these registers, or concise reports must state whether the other general post offices which are connected with the service of the lines in question are in favour of the proposed arrangement.

In fixing the area of service, new places which are to be connected with the general telephone system, are not to be admitted to a more extensive area of long-distance service than those places which help to supply the service in question, or than the other larger places in the surrounding district.

According as the various systems of lines are extended and enlarged, the general post offices have to arrange that the exceptional cases where special conditions of service have been granted, according to par. 5, above, are gradually brought into harmony with the general rules and regulations. New wires and trunk lines which might be necessary for this purpose are only to be proposed when their construction seems to be called for, on account of other reasons connected with the service. If a public call station already exists in the place for which a local system is being arranged, and if the area of service for the said station exceeds the limits which have been specified in the foregoing rules, then this same area of service must also be granted to the subscribers in the new local system. In this case, however, it must be borne in mind that the existing conditions are to be brought into harmony as soon as possible with the general regulations, as the telephone system is altered or extended. When it is not advisable to grant unlimited service, in certain directions, owing to heavy traffic over the lines, then arrangements may be made in the following manner: Arrangements may be made to have service carried on within the limits of the area which has been specified, exclusively, during the hours when there is the least amount of service over the lines in question, that is to say, during the slack hours of service. The 'slack hours' on the working days of the week, are always considered to be the following:—

From 7 or 8 a.m. until 9 a.m.

From 12 o'clock noon until 3 p.m., and

From 7 p.m. until 9 p.m.

On Sundays and holidays, all hours of service.

It depends upon the hours of service in the exchange stations in question, as to what extent connections can be made during these hours. A tabular list must be kept in each exchange station, or public call station, of the amount of limited service granted, and of the hours during which connections can actually be made, according as the hours of service in the various exchange stations will admit of this being done. It pertains to the general post office to grant limited service during certain specified hours, on the basis of the regulations specified under pars. 1 to 7 above; if no extension of the existing arrangements is required for this purpose. If other general post offices are concerned in the immediate service of the lines in question, then their consent is necessary to carry out the arrangements. A list of the areas of service of all the local systems whose telephone directories are united into one working list, is to be published in special pamphlet form, without cover, according to the specified form (see Schedule 11 hereto).

One copy of the same is to be sent to each subscriber, with the telephone directory. On the second column of this form, there has to be entered the names of those local telephone systems to which an additional name has been given by the Government Postal Department, in the same manner as specified for the unification of the telephone directories. See section 8. Public call stations are not given on the list. The charges for service with the public call stations have to be ascertained by the subscriber when necessary by inquiry at the exchange stations. The places which only have limited service during certain hours are to be distinguished on the list, by having a cross (+) inserted after the statement of charges.

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The meaning of this sign is to be explained on each page of the list, by a foot-note, worded according to the form given below.

TESTING AND CLEANING THE INSTRUMENTS, ETC., WHEN BEGINNING SERVICE.

16. Each day, immediately after the service begins, and in stations which do not have continuous day service, at the commencement of the afternoon term of service, the operators in the exchange station have to test and clean away any dust, dirt, &c., from the apparatus that has been assigned to them. This has to be specially done with the drops of the sections (cabinets). These have also to be tested, as to their working order. All irregularities that are noted, must be at once reported to the supervisor. Besides this, in the exchange stations and public call stations, the receivers and transmitters are to be cleaned by using a soft piece of leather for rubbing purposes, and a 3 per cent or thereabouts carbolic acid solution. The long-distance lines are to be tested as to the working order of the calling signal (ringer), and the accuracy of the transmission of conversations. Only when irregularities are noted, it is necessary to have further test made of the lines, with regard to their insulation, resistance and capacity. The cord circuits are to be examined each day at the beginning of the service, at the direction and under the guidance of the supervisor, by experienced instrument men, with regard to their efficiency. Defective cords are to be at once set aside from further use. After every thunderstorm that takes place in the vicinity of the system, all the parts of the equipment in the exchange station have to be carefully examined; and any damage that may have been done by the lightning must be at once repaired.

SERVICE OVER THE LONG-DISTANCE LINES.

17. The service over the long-distance lines must be carried on in the following order:—

- (1) Urgent conversations relating to the service.
- (2) Urgent private conversations by the general public.
- (3) Ordinary conversations (not urgent) by the general public.
- * (4) Ordinary conversations (not urgent) relating to the service.

Urgent international conversations have the precedence before urgent domestic conversations, and ordinary international conversations have the precedence before ordinary domestic conversations.

The connections for conversations of the same class, sent to the same place, are to be made according to the order of announcement.

The order in which through connections are to be made is to be determined by the time when the request was made at the through station.

When it seems advisable to do so, on account of the extent of the service, and because of local conditions, then these through connections have to be noted down on special through-service forms. Providing of suitable forms is left to the general post offices. When requests for long-distance connections with each other are made about the same time by two subscribers, then each of these requests is to be granted, according to the time made, in the order of other conversations of the same class which have been called for. These two requests for connections can only be granted immediately after each other, when they are made at the same time, or when other requests for connections, which may claim precedence, both in the matter of time and importance have not been made in the interval between the two calls referred to. Several simultaneous requests by a subscriber for connections with other subscribers' stations at the desired long-distance point are not allowed.

NOTE.—Over ordinary (telegraph) lines, telegrams have precedence over conversations—even urgent conversations. Regarding telegram service over long-distance double (metallic) lines, which have been acquired through extending ordinary (telegraph) lines, see Section 9.

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When requests for long-distance connections have been made at both terminal exchange stations, then the same are to be granted in successive order, from both ends. When several long-distance lines are at liberty between two places, then one of these lines can be used for conversations in one direction, and the other for those in the opposite direction. If the lines are of different degrees of electrical resistance for conversations which have to be sent over long circuits, the particular line is always to be used, which on account of its lower resistance will make the conversation more easily understood. Requests for connections which cannot be effected at once are to be sent, if convenient, in groups of not more than three each to the exchange station, at the desired long-distance point, in order that the subscribers who are wanted there may know that the connections are to be made. Those conversations, which are only granted during the 'slack hours' of service, exclusively (see section 13), may be announced, by the subscribers, any time during the hours of day service. Conversations called for during the 'slack hours' (day service, page 513), are to take their place, according to the order of announcement, with the other connections which have been requested, even if the connections do not have to be made during the slack hours when these connections were asked for, on account of other conversations which were previously announced. Connections which have been requested outside of this time, and which can only be granted to a limited extent, are again to be announced, if necessary by telegraph, in as brief a form as possible, in order that time may be given to prepare the connections, as soon as it may be convenient to do so, with regard to the service, and the strain (traffic load) on the wires. The usual duration of a conversation is 3 minutes, but it is admissible to prolong a conversation up to 6 minutes. It is not necessary for the subscriber to make a special declaration to this effect. The connections, however, are to be broken off, after the lapse of 3 minutes, unless the longer period has been expressly requested by the person calling up, before the connections were made. A conversation may only be prolonged beyond 6 minutes, if the line is not required for other connections. When it is ascertained that a desired conversation has been rendered unnecessary on account of the subscriber wanted having already spoken, from the long-distance point asked for, then arrangements are to be made with the calling subscriber, not to carry out the connection with the said long-distance point. If the request has been already made at the exchange station in the long-distance point, then the said station is to be informed that the conversation has been rendered unnecessary.

In the case of long-distance lines, which are connected with intermediate stations, the rule is, that under equal conditions, the stations which are at the greatest distance from each other are to have the precedence in the carrying on of conversations. The calls coming from, or going to these stations are therefore to be sent on. When necessary, the line is to be cleared, as soon as any conversation which may be in progress has terminated. Moreover, the intermediate stations which are connected with a long-distance line, have equal rights to the use of the said line. A conversation which has been commenced, must at no time be interfered with, by another intermediate station.

When two stations are in connection with each other, then, as a general rule, they must carry out all the connections which have been requested. A third station may only break in on the line, if the requests for conversations have been received at the said station half an hour earlier than the requests which have been made in the two stations then using the line. If a subscriber is already engaged in carrying on a conversation, when a connection has been made for him from a long-distance point, or if he cannot begin the conversation at once, then the exchange stations must immediately make connections for such other conversation as may have been called for. If other requests have not been made, then the question is, as to whether the conversation waiting, is to be sent over one long-distance line, or whether two or more long-distance lines have to be connected. In the first of these cases, the line is to be cleared at once for the service of the other station. But if two long-distance lines

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have had to be switched together, the connections must be broken off within two minutes. When more than two long-distance lines have to be connected, the connections must be broken off within three minutes, at the latest. When any reasonable objections can be urged as to the hearing capacity of the lines, &c., then the operators in the exchange stations have to assist the subscribers, as far as possible, in carrying on the conversation. The attempts to endeavour to understand or to make the other person understand, have to be stopped, as soon as it has become evident that such attempts are useless, or that an understanding would only be possible under great difficulties, and that in so doing an unnecessary amount of time would have to be employed. These attempts to understand have especially to be stopped, if other conversations have been announced, and if the long-distance lines which are to be used are in working order.

When, in the case of long-distance lines having a heavy strain of traffic, and which have also several intermediate stations, it seems desirable to fix, in advance, definite times for service between the said station recurring at different hours, then the general post offices concerned are authorized to draw up plans (schemes) for the use of the said long-distance lines. It is not admissible to infringe upon the said scheme, in favour of urgent conversations, or for the purpose of completing conversations which are being carried on.

If there are no conversations waiting to be carried on in the said stations during the time of service specified for them, then the receiving stations or the other larger stations connected with the long-distance line have to decide regarding the use of the line, for the time in question.

In all cases, great care must be taken in making such arrangements, and also to watch whether the introduction of the said scheme of service causes inconvenience to the general public. If such should prove to be the case, to any considerable extent the said scheme of service must be cancelled.

WORKING CONNECTIONS AROUND TO POINTS BY OTHER THAN THE REGULAR ROUTES.

* 18. When the long-distance line which serves to connect two places is not in working order, or is temporarily inaccessible, on account of heavy traffic, the connections may be obtained by using other long-distance lines. Telegraph lines may also be used for this purpose, in a supplementary way, in necessary cases.

In working round the connections, the order of precedence is to be followed that is specified in section 17. The working round of the connections in question must not infringe, to any extent upon the ordinary service of the lines which have to be called into requisition.

SERVICE WITH NEIGHBOURING PLACES AND PRINCIPAL CENTRES.

20. In service with neighbouring places and principal centres, if the conversations are not subject to individual charges, the person calling up (A) gives to his local exchange station (X), the name of the exchange station (Y), at the required long-distance point where the desired subscriber's station (B) is. The local exchange station (X) responds, 'All right, I shall call,' and then calls up the distant exchange station Y. This station Y then answers A, 'here station Y,' whereupon A gives the number of B. Exchange station Y repeats the number, and says, 'I shall call,' and carries this out by making simultaneous connections between A and B.*

For the rest, the regulations provided for local service apply.

In the case of service between neighbouring places and principal centres, for which individual charges are not paid, the exchange station concerned must break off

*With the sanction of the general post offices, the simpler way of calling up, that is specified for local service (see section 19), may also be employed in service with neighbouring places and principal centres, if no difficulties result for the calling service in so doing.

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the connections if conversations are so unduly prolonged as to interfere with connections required by persons paying individual charges for the service. The subscribers interrupted must be informed of the reasons why the connections were broken off.

For the rest, the manner of procedure to be followed in carrying on the service for conversations, for which individual charges are collected in service with neighbouring places and principal centres, is to be specified by the general post offices, according to the local conditions. Regarding connections to be made for conversations carried on by the Emperor and Empress, attention must be given to the special regulations that have been issued.

LONG DISTANCE SERVICE.

21. When a conversation is requested, in long-distance service, the subscriber who calls up has, in addition to any request that may be made regarding the nature and the duration of the conversation, to mention the name of the desired long-distance point, and the number of the subscriber's station desired. The operator in the exchange station repeats the actual points stated and adds, 'Please hang up, you shall be called.' Then the operator calls up the long-distance point and gives the number of the station requested.* Both exchange stations then call up their subscribers, and arrange the connections required. If several long-distance lines are idle, the conversation, as a general rule, is to be carried on over the line over which the announcement was made. The length of a conversation is to be reckoned from the point of time at which the connection was made between the station of the person calling up and the station which has been asked for; or, in the case of conversations sent from or to a supplementary station, as soon as the connection has been made from the exchange station, with the principal station, to which the said supplementary station is connected. The duration of the conversation is to be noted by the exchange station which has received the request for the connection from the subscriber, &c.

Conversations from long distance points desired during the session of parliament with the authorities present in the parliament buildings, on parliamentary duty, or with members of the federal parliament, or with persons employed in the parliament buildings, are to be announced by the word 'Parliament,' and then the name of the person desired is to be carefully stated. These connections are to be made without delay. As soon as it is perceived by the calling exchange station that the connections can soon be made with Berlin (in about 10 minutes) then the said exchange station has to announce to the long-distance station in Berlin that the connection is to be made, in order that the fact can be stated to the postal bureau in the parliament buildings. The postal bureau will then send for the person desired. The connection is to be made as soon as this can be done, according to the order of the requests made, and the person in the parliamentary buildings desired comes to the 'phone. Otherwise, the connection has to be postponed until the postal bureau in the parliament buildings announces that the person desired has come to the 'phone. In the meantime, the long-distance lines are to be used in the usual way for making connections for other conversations. The length of conversations sent to the parliament buildings is reckoned from the point of time when the conversation begins. In the case of conversations sent from the parliament buildings, the long-distance station in Berlin has also to inform the exchange stations concerned that the conversations have been requested, several minutes before arrangements can be made to make the connections; and in the meantime has to send for the person to come to the 'phone who has requested connection. In this case also the length of the conversation is to be reckoned from the time when the same commences; and at the same time, it must be seen to that the long-distance lines are used for other conversations, until the person calling

*The government Postal Department issues special regulations concerning how far it may be necessary to give more detailed instructions to the exchange stations, when connections are required with countries outside Germany.

up in the parliament buildings comes to the 'phone. No charge is to be made for sending for the desired person to come to the 'phone, when such conversations are sent to the parliament buildings. The foregoing regulations also apply to those conversations sent through the agency of the postal bureau, from the Prussian House of Lords, or from the Prussian Chamber of Deputies.

In long-distance lines which have more than two exchange stations, the calling is done by means of code-signals. These signals are to be independent of those specified for the Morse service, and are to be limited as far as possible in their length and number. It is not necessary that these signals should be abbreviations of the local names; nor is it necessary, in cases where several long-distance lines are at the disposal of the exchange stations, to have different signals for each of the said lines. The signals are to be specified through arrangement with the general post offices. When a long-distance connection is made at the time when one of the two subscribers concerned is engaged in carrying on a local conversation with another subscriber, then the operator in the exchange station switches on his instrument to the local connection and briefly informs both the subscribers who are conversing of the cause of the interruption, and makes arrangements at once for the long-distance connection. The general post offices are also authorized to instruct that connections in service with neighbouring places and with principal centres, and in departmental service, are always to be broken off in favour of long-distance connections, where only one long-distance line is being used; and when the conditions of the service demand that the connection should be broken off. When conversations for which single charges are collected, are interrupted in this manner, then no charges are collected. In every exchange station a chart of the long-distance lines which are led in, has to be hung up, from which the operators may always be able to see the location of the exchange, &c., stations connected, the number and construction of the long-distance lines and the testing stations, &c. The chart must also show any telegraph lines that are led in.

CONTINUOUS CONNECTIONS.

22. In order to facilitate the service between two subscribers who are in the habit of frequently conversing with each other, the lines of both subscribers' stations, by request, may be continuously connected with each other, during the hours of day service, if no long-distance lines have to be used for this purpose. It is presupposed, of course, that the local unlimited service rates are paid for both the stations in question. When one of the said two subscribers desires to converse with a third subscriber, then he has to give a pre-arranged signal, either by turning the crank (handle) around several times, or by pressing the key a certain number of times, whereupon the continuous connections broken off. The connection is also to be broken off when one of the two subscribers is called up by another person. In this case, the usual manner of calling up has to be employed. When the conversation has terminated, the continuous connection is again made as soon as the final clearing out signal is given. The calling up of subscribers who have continuous connection with each other is usually done by turning the crank around once, or by pressing the key once. In order to prevent mistakes, the continuous connections are to be obviously distinguished by loops being made in the plug cords. Subscribers' stations which belong to the same local telephone system may also be connected with each other during the slack hours of day service. These continuous connections are not charged when the same is requested by a subscriber, who pays the unlimited service rates; but a subscriber who pays the measured service rates must pay a charge of 5 pf. (1 cent) for each continuous connection requested.

Requests to have continuous connections made between two stations, are only to be granted, with the reservation that the privilege may be cancelled at any time. Moreover, such requests are only to be granted where no reason exists against so doing, from the standpoint of the interests of the service. Local systems may also be used, at the request of the subscribers, for sending in fire alarms during the hours when

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there is no service in the exchange stations. The regulations specifying the manner of procedure to be followed in such cases, are to be issued in each case, by the general post office concerned.

NIGHT SERVICE.

23. As a general rule, telephone night service is only considered in the case of the larger local telephone systems. In each individual case the general post offices receive special instructions on the matter from the government Postal Department. The service granted during the day between long-distance exchange stations having night service, is also to be continued during night hours, in so far as this may be possible, according to the hours of service in the various exchange stations concerned; if long-distance lines required for this service pass through stations which are closed during the night hours the lines required for such through service are to be left in through connection at such stations during the hours when the service is suspended. Any changes made in the hours of service in the various exchange stations are to be reported by the general post offices concerned, to one another. When subscribers' stations, in local systems which have no night service, within the area of service with neighbouring places, principal centres and departmental service, are connected continuously during the night, with the exchange station of another local system having night service, the noting down of the charges made for the said subscribers' night connections is to be done by the exchange station giving such night service, and which receives the requests for the said connections. At the end of the month, these notes of charges are to be sent to the exchange stations of the places concerned, which do not have night service, to be further dealt with. A list of all connections which have to be regularly made during the night hours must be hung up in every exchange, with the names, &c., of the subscribers who have requested such connections.

The 'night hours' are reckoned from 9 p.m. until 7 a.m., in local service, and in service with neighbouring places and principal centres, and in departmental service, unless different hours are specified for individual places. In long-distance service the 'night hours' are reckoned from 9 p.m. until 7 a.m. or 8 a.m.

a. Local Night Service and Night Service with Neighbouring Places.

For the carrying out of connections during night hours in local service and in service with neighbouring places, the 'Regulations' apply that have been issued by the State Chancellor. See 'Regulations for carrying into effect the "Law relating to Telephone Rates,"', Article 12, with the accompanying 'Instructions,' given in 'General Instructions,' No. II., part 2 (page 1715.) Continuous night connections are not to be arranged until after the close of the day service. In local service, during the hours of night service, subscribers' wires may also be used for receiving telegrams that are to be sent off, and at the request of the subscribers, for transmitting telegrams coming in for the said subscribers. It is presupposed that neither an extension in the existing arrangements of the service nor an increase in the number of the operators is required for this purpose. Besides the charges specified for receiving telegrams from and transmitting the same to subscribers, the charge specified for night connections is to be collected for each connection made during the night, for the purpose of receiving telegrams from, or for transmitting the same to subscribers.

b. Long-Distance Night Service.

For the use of long-distance service lines during night hours, see the 'Regulations,' issued on September 19, 1901, given in 'General Instructions,' No. II. (page 501.) In fixing the times for night subscribers' conversations, the exchange stations have to leave ten minutes free for other conversations, between the times appointed

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for every two conversations for night subscribers. For carrying on night subscribers' conversations, the exchange stations have to make the long-distance lines ready at the times that have been arranged for beforehand. If an ordinary conversation is being carried on at the time, then the making and breaking off again of the connection for the night subscriber has to be correspondingly postponed. A list or scheme of the connections that are required for night subscribers' conversations is to be hung up in the long-distance station, or exchange station.

c. Night Service with Principal Centres and Departments.

For arranging connections during night hours, in service with principal centres and in departmental service, see 'Regulations' issued by the State Chancellor, on January 9, 1902, given in 'General Instructions,' No. II., part 2 (page 503.) The permission to have regular connections during night hours is to be given, in each case, under the reservation of cancelling the same. The permission is to be withdrawn as soon as it is found that any difficulties may result from the concession.

USE OF LONG-DISTANCE, ETC., LINES IN SERVICE WITH STOCK EXCHANGES.

25. Arrangements have to be made with the management of the stock exchanges as to the persons who are to be permitted to make use of the 'phones installed in the various stock exchange buildings. The charges for using these 'phones are fixed by the government postal department. In local service, either the annual unlimited rates or measured rate charges for conversations may be collected. Frequenters of the stock exchanges who have paid the annual unlimited rates may have unlimited use of the stock exchange 'phones in local service during stock exchange hours. Each frequenter (or member) of the stock exchange who wishes to use the 'phone, must satisfy the operator in charge that he is entitled to do so. In long-distance service the specified toll charge is collected for each connection from a stock exchange 'phone, when owing to the fault of one of the persons concerned the conversation is not carried out. However, not more than the charge specified for an ordinary conversation of 3 minutes duration can be collected in this case. The charges must be collected in any event in the following cases:—

- (1) If the person desired at the long-distance point, when the lines are in good working order, does not respond to the call; or at the time that was specified for the conversation, in the stock exchange, if the said person cannot be found; or if the said person refuses to carry on the conversation.
- (2) If the subscriber, or frequenter of the stock exchange, who has requested the conversation, does not come to the 'phone in time, or foregoes the conversation, or fails to respond, after the long-distance line is placed at his disposal; or after the call has been made to the exchange station at the desired long-distance point.

The fixing of the charges is done in the same way as has been specified in the case of public call stations, in section 24 of this volume.

DERANGEMENTS, INTERRUPTIONS, ETC., OF THE LONG-DISTANCE LINES.

29. When derangements take place at the exchanges or at the subscribers' stations, then proceedings are to be taken according to the directions given in 'General Instructions,' No. VII., part 2. A thorough examination of the equipment of the subscribers' stations has to be undertaken from time to time in order to increase the reliability of the telephone service. The general post office will determine, according to GERMANY.

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the local conditions at what intervals and by whom this work is to be done. The localizing and removing of derangements or interruptions in the long-distance lines, and in the wires of subscribers' stations, is done, as a general rule, according to the directions given in 'General Instructions,' No. V., part 5, and No. VII., part 1 (not received.) The inspection (survey) of a faulty section of line must be done, if possible, from both ends simultaneously. For this purpose, the exchange station which detects a derangement in the vicinity, has to send a line inspector to the section of line where the trouble seems to be, and desire the exchange station that is situated nearest the other end of the stretch of line in question, to send a line-inspector in the opposite direction. A brief statement of what has been done has to be included in the report of the interruption of the service, which has to be sent in to the general post office. Both inspectors must carefully inspect the lines, and at once remove any defects that may be found out. They must switch on the line telephone, from time to time, as instructions may be given to do so, by both the exchange stations concerned, in order to receive further orders, &c. After the derangement has been removed, the inspectors are to be called in, as soon as they can be communicated with. If necessary, they have to inspect the line until they meet each other. At the point where they meet, each inspector has to mark down briefly in the note-book of the other inspector the place and time of meeting. The second inspector need not be sent out if the deranged section of line is not of very great length, and if it is not important trunk lines that are out of order; and further if one only of the wires of a double line is out of order, and the service can be carried on without difficulty, over the single line. In such cases, the exchange stations concerned have to make the necessary arrangements with each other. The results of the observations of the road inspectors (*i.e.*, those who watch the lines) are only to be waited for, before sending out the line-inspectors, if no considerable delay in removing the interruptions is likely to result therefrom. If the defect lies between two exchange stations which are not concerned in localizing the same, then one of the said stations is to be informed of the existence of the defect. This information is to be given by that station concerned in localizing the defect, that has the best facilities for doing so according to the location and telegraphic connections of the said station. When there is any question raised on this point, then the information is to be given by the station whose local name stands first in the alphabetical list. After giving the information, then the station that does so is obliged to remove the defect, *i.e.*, to send out an inspector, and notify the other station as to progress and results. When it is impossible for the line-inspector connected with the station in the vicinity of which the derangement or interruption takes place, to attend to the matter at once on account of other important work being carried on at the time; or if the said inspector and the line-men at his disposal are unable to remove the defect in a short space of time, owing to the extensive nature of the damage done to the line, then the matter is to be telegraphed to the general post office in charge of this district, in order that, if necessary another line-inspector or line-repairer may be sent to the place. In cases where it is not possible to localize defects in the usual way, on account of the stations being shut that have testing-stations (apparatus) or because of other reasons, then the best thing to be done, is to endeavour to localize the defect approximately, by measuring (testing). This is specially advisable when the deranged lines are very long, or when the lines are in contact with each other.

A special day-book is to be kept in the exchange stations for noting down all the derangements or interruptions that occur, according to the form specified for the telegraph lines, in 'General Instructions,' No. V., part 5 (not received.)

For exchange stations having an extensive area of service, the general post offices are at liberty to arrange a simpler form of day-book, more adapted for the purpose in hand, and better suited to the existing local conditions, for noting down the derangements or interruptions in the wires connected with subscribers' stations.

4-5 EDWARD VII., A. 1905

CALCULATING THE 5 PF. (1 CENT) MEASURED RATE CHARGES IN LOCAL SERVICE, AND IN SERVICE WITH NEIGHBOURING PLACES.

31. The register of local charges shows the manner of procedure to be followed in collecting the 5 pf. (1 cent) single charges for conversations in local service, and in service with neighbouring places. See paragraph 5 of 'Law relating to Telephone Rates (page 455), and Article 18, of 'Regulations' to same, by the State Chancellor, in 'Instructions,' No. II., part 2 (page 483.)

The local conversations, &c., for which single charges are paid, are noted down by the operators, on tickets. For each conversation a space in the form is to be filled up in pencil, with the number of the subscriber who has to pay the charge. The obligation to pay the charge begins as soon as the connection has been made between the calling station and the station called; or, if it is a case of conversation to or from a subscriber's supplementary station, as soon as the connection has been made with the subscriber's principal station, with which the former is connected. Up to this time the calling subscriber may withdraw his request for conversation without being liable to pay charges.

If necessary, in order to fix the date of the conversations, the daily stamp of the office in question, may be placed on the back of the spaces where the numbers are entered. The general post offices are at liberty, in cases where this may be advisable, to introduce a simpler method of ascertaining the number of conversations for which single charges are paid. At the close of the quarter, the amount of charges due by each subscriber for the local conversations carried on by him, is to be carefully ascertained and entered in the register of local charges. The manner in which the amounts are to be ascertained during the course of the quarter, is to be fixed by the manager, according to the nature of the local conditions. A second operator has to verify the accuracy of the entries in the register of local charges and check them off.

In order to prevent the loss of the forms on which the single conversation charges are recorded, or of the small conversation tickets which are detached from these forms, a record has to be kept of the running numbers of the sheets handed in from the various local sections of the switch-board; on the basis of which the full number of these sheets are checked; and the amounts to be entered into the register of local charges at the end of the quarter can be fixed. The duty of keeping these sheets and tickets is to be assigned to a special official, who is to be held responsible for any losses. The agreement of the amounts in the register of local charges, with the records of the running numbers of the sheets, is to be verified by the operator (clerk) whose duty it is to check the entries in the said register. The conversation tickets are not to be handed over to the subscribers when the charges are collected, but are to be kept six months on file, in case the general post office may require them. At the close of the fiscal year, or when stations are removed, the amount of charges due for conversations as well as the balance required to make up the minimum amount of receipts agreed upon is collected.

ASCERTAINING THE LOAD (TRAFFIC) ON THE LONG-DISTANCE LINES.

37. The load on the long-distance lines is ascertained on February 5, May 5, August 5, and November 5. If one of these days falls on a Sunday or a holiday, then the reports have to be drawn up on the working-day following. If the service of the lines is affected by derangements, or other unusual circumstances, on the day appointed for the computation, then another working-day has to be arranged for the purpose, by the exchange stations concerned. A register has to be drawn up, according to the form given in Appendix 24, by the exchange, &c., stations, for each line that is led in for service, and for each line used for duplex telephony. Exceptions are made in the case of lines between the exchange stations of the same local telephone system and lines that are used in service with neighbouring places and principal centres, and in departmental service, and also those long-distance lines which, according GERMANY.

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to the unanimous agreement of the stations connected with the service of the said lines, do not have on an average more than twenty conversations daily over any circuit of the total length. As a rule, the load of such lines is not ascertained.

If for the above reasons, computations have not been made in the case of a long-distance line (owing to limited traffic), then the fact has to be reported to the general post office in charge of the district, by the western receiver station (closing office); or if the long-distance line leads to Bavaria, Wurtemberg, or countries outside Germany, by the receiver station (closing office) situated within the government telegraph area.

A common register is to be drawn up for lines which serve to connect the same places. This does not apply to long-distance lines that are used for duplex telephony. The registers for these are always to be kept separately. The registers are to be sent in to the general post office in charge, up to the middle of the month. Tables are to be drawn up, according to the forms given in Schedules 25 and 26, on the basis of the aforementioned registers (see Schedule 24). The compiling of the tables of the results of the computations has to be done for the individual lines, by the general post office in charge of the western receiver station, or, if the line leads to Bavaria, Wurtemberg or countries outside Germany, by the general post office in charge of the receiver station situated within the government telegraph area. The registers are to be drawn up in the form given in Schedule 26, and are to be sent in to the telephone bureau of the government Postal Department not later than September 1.

Regarding the traffic load on those long-distance lines which connect the districts of various general post offices together, these various offices have to keep themselves informed by mutual agreement, through making extracts from the registers of the lines in question.

STATISTICAL AND OTHER REPORTS.

38. The general post offices have to send in a report once a year up to February 1, to the telephone bureau of the government Postal Department, concerning accidents to girl telephone operators through electric discharges while attending to the service.

SCHEDULES.

SCHEDULE 2 TO SECTION 21.

USE OF PUBLIC CALL STATIONS FOR LONG DISTANCE SERVICE.

The accompanying form contains the names of the long-distance places, with which the conversations are carried on. The charge entered in the same entitles the person in question to carry on a conversation of 3 minutes duration, according to the order of announcement. Three times the ordinary amount is to be charged for urgent conversation. In the places marked with an asterisk (*), there are public call stations. Persons living in the neighbourhood are sent for to come to these public call stations, for a special charge of 25 pf. (6 cents). The charge for the conversation, and the special charge for sending for a person to come to the 'phone, are to be paid in advance.

The charges for conversations are refunded:—

- (1) When the conversation cannot be carried on on account of derangements in the lines; or because the person desired to come to the 'phone cannot be found.
- (2) In long-distance service, when no response is obtained from the subscriber's station that has been called up.

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SCHEDULE 8. TO SECTION 9.

FORM OF REGISTER OF THE LONG-DISTANCE LINES WITHIN THE TELEGRAPH AREA OF THE GERMAN EMPIRE.

Number of the Line; and nature and size of the wires:—	Name of the District that has to keep the Lines in repair:—	Length of the Lines:— km.	The Line is led in for Service, and for Testing in:—	Number of the Line; and nature and size of the wires:—	Name of the District that has to keep the Lines in repair:—	Length of the Lines:— km.	The Line is led in for Service, and for Testing in:—
1	2	3	4	1	2	3	4
L.D. 219 ^a / _b	Dortmund.	39	Dortmund. Hamm(Wtf)	L.D. 224 ^a / _b	Hamburg.		Hamburg, (V.A.I.)
Bronze.		26	Soest.	Bronze.			
2 mm.	Mind.	{ 23 24	Lippstadt.	2 m.a.		12	Harburg, E.
		18	Paderborn.			22	Buxtehude.
						23	Stade.
etc.	etc.	etc.	etc.	etc.	etc.	etc.	etc.

NOTES:—L. D. Long Distance. ^a/_b Double Line.

SCHEDULE 9. TO SECTION 9.

FORM of Alphabetical Register of the Local Telephone Systems and the Public Call Stations, connected with the Long-Distance Lines, together with a description of the Long-Distance Lines assigned to these places:—

Exchange Station:—	Long Distance Lines led in for Service:—	Exchange Station:—	Long Distance Lines led in for Service:—	Exchange Station:—	Long Distance Lines led in for Service:—
1.	2.	1.	2.	1.	2.
A.		Adorf.....●	2,185. 6,192..	Algringen.....●	3,142.
Aix-la-Chapelle● (German, Aachen)	15. 16. 55.. 158. 254.. 848. 1,100.. 1,132. 1,236.. 1,795. 2,169.. 2,252. 2,260.. 2,822. 3,176.. 3,177. 4,124.. 4,129. 6,148..	Aerzen.....●	4,286.	Allenburg.....●	9,105.
		Ahaus.....●	5,123.	Allendorf.....●	2,272. <u>5,295.</u>
		Ahlbeck.....● (Watering place)	1,289. 7,198..	Allenstein.....●	{ 2,110. 5,100. 7,113. 7,117. 7,122.
		Ahlen.....●	218.	Allstedt.....●	3,107. <u>5,229.</u>
Abelischken.....●	7,112.	Ahrensböck.....●	7,107.	Alsdorf.....●	1,133.
Achern.....●	1,159.	Ahrensburg.....●	4,276.	Alsfeld.....●	6,242.

Notes to above:—

- . Local system with 5 and more principal stations of subscribers.
- ⊙. Local system with less than 5 " " therefore a switch station.
- ⊕. A Public Call Station.

— The numbers underlined are single grounded wires. The rest are metallic circuits.

SCHEDULE 10 TO SECTION 12.

FORM OF GUARANTEE.

The undersigned bind themselves, by their signatures, in the accompanying list, to pay to the government post office and telegraph management for the period of 5 (five) years, the amount that may be required to make up the annual sum guaranteed for telephone service, in and which sum amounts to marks (write in words).

In fixing the guaranteed annual sum, only those conversations are to be reckoned that are sent from over the line, and which have not already passed over another line, for which a similar agreement of guarantee has been entered upon. The ascertaining and collecting of the amount that may be required to make up the annual guaranteed sum is to take place on..... The subscribers in the local telephone system in..... are admitted to telephone service with In estimating the particular amount that may have to be paid by the individual members towards the balance that is required to make up the guaranteed sum, the amounts for conversations that are liable to single charges, that have been paid by the said individual subscriber, are to be deducted from the amount which he has signed for. The government post office and telegraph management does not guarantee that there will always be a satisfactory service (in the matter of subscribers being able to understand one another) between all the places that have been admitted to service. Any difficulties that may supervene in the service will have no effect upon the agreement of guarantee that has been entered upon. The official stamps required for the purpose of authenticating this document, &c., are to be paid for by the undersigned parties.

Name, or Firm :—	Place and Dates :—	Annual Amount Guaranteed :—	Signature :—

SCHEDULE 11 TO SECTION 13.

FORM OF LIST OF PLACES ADMITTED TO TELEPHONE SERVICE WITHIN AN AREA WITH STATEMENT OF RATES CHARGED :—

These Rates are charged for ordinary conversations, of not more than 3 minutes duration.

TAX SQUARE.	1061		1117		1061		1117		1061		1061		1117		1116		1117		1062		1172		1007		1062			
	M.	Pf.	M.	Pf.	M.	Pf.	M.	Pf.	M.	Pf.	M.	Pf.	M.	Pf.	M.	Pf.	M.	Pf.	M.	Pf.	M.	Pf.	M.	Pf.	M.	Pf.		
From :—	To :—																											
	Berlin.		Adlershof.		Charlottenburg.		Copeniek.		Triedenau.		Friedrichsberg near Berlin.		Friedrichshagen.		Gross-Lichterfelde.		Grünau.		Hoppegarten.		Ludwigfelde.		Mühlenbeck near Berlin.		Neuenhagen.			
Aix-la Chapelle.....	1	50	1	50	1	50	1	50	1	50	1	50	1	50	1	50	1	50	1	50	1	50	1	50	1	50	1	50
Aalborg.....	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50
Aarhus.....	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50	2	50
Adlershof.....	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	25	25	25	25	20	20	
Ahlbeck.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Ahlen.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Ahrensfelde.....	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	
Aken.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	50	50	50	50	1	1	
Alfeld.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Allenstein.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Allstedt.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Alsleben.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

SCHEDULE 24 TO SECTION 37.

FORM OF REGISTER OF THE TRAFFIC LOAD ON THE DOUBLE LONG-DISTANCE LINE, NO. 44^a/_b.

Preliminary Remarks.

(1) All the exchange stations that take part in the service of the line are to be placed, according to the order of their connection, at the head of columns 2 to 9. The western receiver station is placed in the first column to the left, and also the receiver station situated within the government telegraph area, in the case of lines running to Bavaria, Wurtemberg or points outside Germany.

(2) The first line of the register serves for entering the conversations which are sent from the local system and from places lying back, which send conversations through the exchange station over the line. In the following lines of the columns, there has to be inserted the service from the places in Bavaria, Wurtemberg, or points outside Germany, that are connected with the line, as also the service from other points over these places, to the government telegraph area.

(3) Conversations lasting twice or three times the usual length are to be counted as double or threefold. Urgent conversations are to be counted as ordinary.

Places where the Conversations entered the Line.	NUMBER OF CONVERSATIONS WITH OR OVER								REMARKS.
	A.	B.	C.	D.	E. Foreign	F. Foreign			
	2	3	4	5	6	7	8	9	
1	2	3	4	5	6	7	8	9	10
B.	1	1	2	8	10			
E. (Foreign Points)	7			
F. (Foreign Points)	9			

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SCHEDULE 25 TO SECTION 37.

FORM OF REGISTER OF THE TRAFFIC LOAD ON DOUBLE LONG-DISTANCE LINE, NO. 44^a/_b.

General Summary by the General Post Office.

Places where the conversations entered the line.	Number of conversations with or over.								The following stretches have been used for these conversations.							
	A.	B.	C.	D.	E.	F.			A.B.	B.C.	C.D.	D.E.	E.F.			
					Foreign.	Foreign.										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
A		1	2	1	3	6			13	12	10	9	6			
B	1		1	2	8	10			1	21	20	18	10			
C	1	1		1	1	3			1	2	5	4	3			
D	1	1	2		2	2			1	2	4	4	2			
E (foreign).....	2	7	1	1					2	9	10	11				
F (foreign).....	5	9	4	3					5	14	18	21	21			
Total.....									23	60	67	67	42			

SCHEDULE 26 TO SECTION 37.

FORM OF REGISTER OF THE TRAFFIC LOAD ON THE LONG-DISTANCE LINES.

Number of the line.	Description of the line and of its various stretches.	Conversations.						Remarks. (If several lines are reckoned together, then the number of these.)
		On the days when computation was made.				Total.	Daily average.	
		In November	In February.	In May.	In August.			
77	A-F							
	A-B	22	20	23	23	88	22	
	B-C	58	54	59	60	231	58	
	C-D	63	61	64	67	255	64	
	D-E	61	57	63	67	248	62	
	E-F	37	34	40	42	153	38	
2212	O-G							Less than 20 conversations.
2213 & 6290	N-M	160	183	200	210	753	188	2 lines.
2213 & 6290	N-M	45	50	55	58	208	52	Duplex telephony line.
2214	P-O		21	18	24	63	21	Formerly less than 20 conversations.
Etc.	Etc.	Etc.	Etc.	Etc.	Etc.	Etc.	Etc.	

REMARKS—All lines exclusively used for conversations which pay single charges are to be included in this register of lines. In describing the lines the most important terminal points (receiver stations) are to set down first; and in the case of lines that run to Bavaria, Wurtemberg and points outside of Germany the terminal point (receiver station) situated within the government telegraph area. The lines are to be arranged alphabetically, according to the terminal points that are set down first.

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No. 290e.

GERMANY—*Continued.*

(Translation.)

POST OFFICE DEPARTMENT, BERLIN, May 1, 1905.

REGULATIONS FOR THE USE OF TELEPHONE STATIONS.

(A hand book for subscribers.)

1.—PRELIMINARY REMARKS.

The stations of a local telephone system are to be used as follows:—

- (a) For the subscribers to communicate with one another.
- (b) For sending in communications to the central bureau, to be forwarded by post, by express messengers, or by telegraph.
- (c) For transmitting telegrams coming to subscribers, at their request.

When the central bureau is closed at night, stations can be connected with the public fire department, in so far as the local system can be used for sending in alarms of fire.

2.—HOURS OF SERVICE.

The hours of service at the central stations are fixed by the telegraph department.

The usual hours of service, and the hours when employees may be called up at night to attend to the service, are specified at the beginning of the telephone directories of each local system.

3.—SUBSCRIBER'S PRINCIPAL STATIONS.

Subscriber's stations connected with the central exchange (by direct wire) are termed principal stations.

The telegraph department decides as to which central exchange, the principal subscriber's stations are to be connected. As a rule they are connected to the nearest central exchange. Premises situated more than 15 km. (9½ miles) from the central exchange, are not connected.

By way of exception, premises may be connected, by request, to some other central exchange than the nearest one, within the distance limit of 15 km. (9½ miles) if the person concerned can prove a legitimate interest, and if no valid reasons to the contrary, can be found by the telegraph management. This regulation, however, does not apply to the connecting of stations in localities where there are several central exchanges. Stations subject to the special regulations for service with principal centres (No. 18), or with municipal systems (No. 28) are only connected by way of exception, to some other than the nearest central exchange, and then only when in both local systems the unlimited service charge is allowed for conversations in service with principal centres and municipalities.

In local systems, where long-distance service is sufficiently differentiated from local service, in the exchanges, the wires may be directly led into the long-distance room, in order to facilitate and accelerate the long-distance service. These connections, for which the unlimited service charge for local service, specified under No. 12a, must be paid, serve exclusively for the announcement and the carrying on of long-distance conversations.

4.—SUPPLEMENTARY STATIONS.

Subscribers are permitted to set up supplementary stations, and have these connected with the principal station, in the living or business rooms of the premises where the principal station is installed.

Places separated from the premises where the principal station is installed, by other grounds and property, public roads, streets, squares, esplanades, public streams, &c., are considered as separate premises.

Subscribers who pay the unlimited service charge are permitted to set up supplementary stations in the living or business rooms of other persons, situated on the GERMANY.

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premises where the principal station is installed; or in living or business rooms situated within other premises, by consent of the persons concerned; and have these supplementary stations connected with the principal station, if the said supplementary stations are not more than 15 km. (9½ miles) distant from the central exchange.

This is also admissible, when the principal and the supplementary stations are situated within the area of different local telephone systems. On the other hand, in the case of principal stations that pay the unlimited service charge for service with principal centres, and with municipal systems, supplementary stations will only be set up in places which do not belong to the area of the systems connected with the service of principal centres or municipal systems—when the said supplementary stations belong to the person who has the principal station.

Lines used for connecting together various principal stations, are also counted as supplementary stations.

Not more than five supplementary stations are allowed to be connected with the same principal station. Subscribers are allowed to have the supplementary stations, situated on the same premises as the principal station, set up and maintained by the telegraph management, or any other person. Supplementary stations, which are not set up by the telegraph management, must comply with the technical requirements specified by the telegraph management.

Before the service has begun, the supplementary stations must be reported to the post office, the telegraph office, or the long-distance office, under which the exchange is placed. The said office is authorized to see, in all cases, that the said supplementary stations comply with the specified technical requirements. The installing and maintaining of the supplementary stations not situated on the premises where the principal station is set up, must be done by the telegraph management. The subscribers, who have the supplementary stations, are allowed to converse with the principal station, and also with the other supplementary stations which may be connected with the principal station. They are also allowed to converse within the same area of service, as is granted to the subscriber who has the principal station.

When the wires of several stations belonging to the same subscriber run into the same premises, conversation is allowed with all the supplementary stations which may be connected with these principal stations. But should there be, besides the supplementary stations, any private 'phones for which no rates are paid to the post office, then the said private 'phone or 'phones must be so installed that no connections can be effected between the private 'phone and the exchange station.

5.—CONSENT OF THE HOUSE OWNER.

Any one desiring to have a principal or a supplementary station installed, or to remove his station, must, before the station can be installed, or any removal of an existing station take place, produce the written consent of the house proprietor, unless notified otherwise by the telegraph management. This consent must approve the bringing in of the wires into the building in question, and the setting up or moving the station, as the case may require. This consent must include all the arrangements necessary for the construction, maintenance and extension of the telegraph and the telephone systems, such as poles, supports, stays, &c. The production of this consent is the *sine qua non* for the installing or shifting of the telephone station.

6.—SETTING UP NEW SUBSCRIBERS' STATIONS.

New stations except in a few of the larger cities, are set up each year at two fixed periods, may be found specified on the covers of the telephone directories. Stations applied for after these periods have expired, and stations requiring construction different from the usual plan will be set up independently of these two appointed periods by paying a fixed additional charge of 15 marks (\$3.57) to cover the additional costs. Should the extra costs, however, amount to an unusual sum, then instead of the said sum of 15 marks (\$3.57) the actual amount of extra costs will have to be paid.

7.—THE MOVING AND TRANSFERRING OF STATIONS.

The moving of a station within the area of the same local system can be requested if the regulations given under No. 5 have been complied with. It is not admissible to move a station to the area of another local system. It is not admissible to transfer a station to another person, such as a successor in business, &c., without the consent of the telegraph management.

8.—RESPONSIBILITY OF SUBSCRIBERS.

The subscriber is responsible for all damage done by himself or by others, as well as for all damage done by fire, to the telephones and their appurtenances. He is also responsible for all loss arising from theft within the building where the telephone station and its appurtenances are located.

9.—SUSPENSION OF SERVICE AND REMOVAL OF STATIONS.

The telegraph management has the right to order the suspension of the telephone service for a time entirely, or to suspend its use for certain classes of service. The telegraph management has the right to remove a station without giving any previous warning for the following causes: Unpunctuality in the payment of charges, misuse of the 'phone, altering or interfering with the technical arrangements of the 'phone, or by doing wilful damage to the same, either by the subscriber, by his employees, or by members of his family, or by inmates of his house, switching on 'phones constructed by the subscriber, without the consent of the management, connecting supplementary stations without the knowledge of the management, and unseemly behaviour of persons using the 'phone towards the employees at the exchange. The removal of the station does not free the subscriber from the responsibility specified under No. 8, nor from the liability to pay the charges, up to the end of the period specified under No. 10. The right to make use of a supplementary station ceases with the right to use a principal station. Moreover, the supplementary station may be withdrawn by the telegraph management, if the station is used in an improper manner, or if it should be found that it does not comply with the technical requirements, or if special difficulties should arise for the telephone service through the use of the supplementary station. Auxiliary arrangements may be permanently connected with the station and its appurtenances, if this can be done without any external damage to the apparatus, &c., and without altering the internal construction and its mounting, or connections. The telegraph management will give more detailed instructions on this point if necessary. The telegraph management is not responsible for any loss or inconvenience arising from suspension of the service, derangement of the wires or incorrect or false communications sent over the 'phone.

10.—DURATION OF SUBSCRIPTION.

The term of subscription continues for the term of a year from the day that the station is handed over. If the end of this period does not coincide with the termination of one of the calendar quarterly terms, then the period of subscription is to be prolonged until the end of the said term. If a written notice is not sent in three months in advance, then the period of use is continued indefinitely, with the right to give three months notice, but only for the termination of a calendar quarterly term. Notice must be given not later than the third working day of the quarterly term, with which the period of subscription is to end.

The use of a station for which written notice has been given within the specified time for a period beyond the termination of the date for which such notice has been given, will be granted by request. In such cases the full amount of charges must be paid, up to and including the day when the station is removed. The telegraph management, when requested, reserves the right to grant to subscribers or those who are immediately concerned, the privilege of cancelling the subscription agreement before

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the close of the first year, for such causes as the death of the subscriber, the removal of residence or business to some other place, retiring from business, or other special and reasonable causes. The charge specified for giving up a station before the time agreed upon is given under No. 12i (page 536.) The full amount of charges must be paid for the quarter in which the station is given up prematurely.

The foregoing regulations apply also to supplementary stations, in so far as such have been installed, and are maintained by the telegraph management, and also to any special apparatus used in long-distance service for registering the charges at subscribers stations, as also the apparatus used for ordinary service. No special period within which notice must be given is appointed in the case of supplementary stations which are not installed and maintained by the telegraph management. The charges must be fully paid up to the end of the quarterly term within which the station is removed after notice of withdrawal is given. Moreover, the time of service for a supplementary station, if it has not terminated earlier, expires at the same time as the service for the principal station with which it is connected.

Special magneto bells, and additional telephones, will be removed at the request of the subscriber, without previous notice being given from stations installed by the Post Office Department. The charges for the same must be paid up to the end of the quarterly term within which these items are removed and the minimum term of use for which entire charges are to be paid, is one year. Stations may be installed for a shorter period than one year, for exhibitions, &c. The stipulations and rates for such stations will be fixed by the telegraph management.

11.—VARIOUS KINDS OF RATES.

For connection with a telephone system, a yearly unlimited service charge is collected by which payment the subscriber obtains the right to call for connections between his own station and the other subscribers' stations belonging to the same local system, during the daily hours of service, without paying any further charges. Instead of the unlimited service rates, the subscriber has the option of paying a measured service charge for installing and maintaining the 'phone and for setting up and maintaining the connections, and in addition thereto charges for each conversation, to the minimum number of 400 conversations yearly. The subscriber has to make a declaration that he will pay the measured service charge with the extra charges for conversations, either when the station is installed or before the end of February of a new calendar year, to take effect on April 1.

If he does not make this declaration, then he will be required to pay the unlimited service charge. In systems where the unlimited service charge is 80 marks (\$19.04) yearly, the measured service rates are not granted.

The standard for reckoning the unlimited service rates and the measured service rates, is the existing number of subscribers' principal stations, at the commencement of the calendar year. The unlimited service and measured service rates thus fixed come into effect on the 1st day of the following April. Any changes in these two rates made at the commencement of the year are officially announced in the districts to which they apply.

If the new arrangements entail an increase in the rates, subscribers are entitled to give notice to have their stations removed up to the end of February, to come into effect on April 1. Subscribers may also, during the time their period of subscription lasts, be transferred from measured service rates to unlimited service rates, and *vice versa*, or be transferred from one class of measured service rates to another class of measured service rates, if they make request for the same within the time specified for giving notice. Moreover, it is only admissible before the close of the first year, from the day that the station was installed (see No. 10), to be transferred from measured service rates to unlimited service rates, as also from a lower to a higher class of unlimited service rates, if the subscriber is prepared to pay the unlimited service rates, or

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the higher class of unlimited service rates, from the time in the fiscal year when the station was installed. The amounts of measured service rates already paid in for the fiscal year will be counted to the unlimited service rates. On the other hand, the amounts already paid for conversations will not be allowed for, nor will charges for conversations be cancelled which are recorded at the exchange up to the day when the transfer is effected. Where several principal stations are so connected with several supplementary stations that the latter can be connected at pleasure with any of the principal stations, the same rates must be paid for all these principal stations, *i.e.*, either the measured service rates (if the supplementary stations are all rated at the measured service charge) or the unlimited service rates, for service in the local system, or for service with neighbouring places, or for service with principal centres.

12.—RATES.

(a) The unlimited service rates are as follows:—

In systems with not more than 50 subscribers.....	80 m. (\$19.04)
“ “ more than 50 up to 100, inclusive.....	100 m. (\$23.80)
“ “ 100 “ 200 “	120 m. (\$28.56)
“ “ 200 “ 500 “	140 m. (\$33.32)
“ “ 500 “ 1,000 “	150 m. (\$35.70)
“ “ 1,000 “ 5,000 “	160 m. (\$38.08)
“ “ 5,000 “ 20,000 “	170 m. (\$40.46)
“ “ 20,000 subscribers.....	180 m. (\$42.84)

The above rates are paid yearly for each station not further, in a straight line, than 5 km. (3 miles) from the exchange. In systems having several exchanges, this distance is reckoned from the central exchange.

(b) The measured service rates are as follows:—

In systems with not more than 1,000 subscribers.....	60 m. (\$14.28)
“ “ more than 1,000 up to 5,000, inclusive.....	75 m. (\$17.85)
“ “ 5,000 “ 20,000 “	90 m. (\$21.42)
“ “ 20,000 subscribers.....	100 m. (\$23.80)

The above rates are paid yearly for each station which is not farther, in a straight line, than 5 km. (3 miles) from the exchange. In systems having several exchanges this distance is reckoned from the central exchange. The rate for each conversation, in local service, is 5 pf. (1 cent) during the daily hours of service

(c) An annual extra charge is required for stations which are more than 5 km. (3 miles) distant, in a straight line, from the central exchange, *viz.*: 3 m. (71 cents) for single lines, and 5 m. (\$1.19) for metallic circuits, for each 100 metres (110 yds.), or fraction thereof of extra length of line. This distance is to be measured according to the shortest road by which the line can be led, without necessitating any unusual expenses—even if the line is actually carried by a circuitous route.

Stations further than 10 km. (6½ miles), in a straight line, from the central exchange have to pay, in addition to the extra annual charges for the increased length of their line the extra cost of construction, which amounts to 10 marks (\$2.38) for single lines, and 15 marks (\$3.57) for metallic circuit for every 100 metres (110 yards), or fraction thereof, to be measured according to the actual length of line.

When request is made to have stations connected to some other than the nearest exchange, then in addition to the extra annual charge for any additional length of line, exceeding 5 km. (3 miles), an extra charge for additional expense of construction will also have to be paid, according to the same proportion as is specified above.

The additional expense of construction may be reduced wholly, or in part, by the persons concerned furnishing free supplies or help, as, for example, by supplying trees for poles and braces, by digging holes for poles, by supplying teams, &c., or by rendering assistance in various ways. In such cases, special agreements will be made beforehand, as to the value of the said supplies and assistance rendered.

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Stations with common metallic return-wires are reckoned as stations with metallic circuit.

(d) For the use of exceptionally expensive lines, there must be paid, in addition to the specified charges, an annual extra charge of 10 per cent of the additional cost, in even sums of complete marks.

(e) For installing and maintaining supplementary stations, by the telegraph management, the following charges are collected:—

For supplementary stations installed in the living or business rooms of the premises that belong to the subscriber who has the principal station—

For each supplementary station, yearly 20 marks (\$4.76)

For each other supplementary station, yearly 30 marks (\$7.14)

If more than 100 metres (110 yards) of line are required to connect the said supplementary station with the principal station, then, in addition to the above, there will be charged for every additional 100 metres (110 yards), or fraction thereof:—

For single lines, yearly 3 marks (71 cents)

For metallic circuits, yearly 5 marks (1.19)

This distance will be measured according to the shortest road that can be used for setting up the line, without entailing any special cost, even if the line is actually carried around some other way. For supplementary stations which are more than 10 km. (6½ miles) distant from the central exchange, the same extra charges for additional cost of construction, for extra length of line, measured from the principal station, will be made, as have been specified above for principal stations, under the same conditions. The extra charges for additional cost of construction will be estimated according to the actual length of line that exists outside the 10 km. (6½ miles) circle which forms the specified area of the exchange.

If two stations are connected with each other by special lines, thereby increasing the equipment in each of the said stations, then, in addition to the extra charge for the line, a special maximum charge of 20 marks (\$4.76) will be made, if the equipment is located in the living or business rooms of the same person, within the same premises, but if located otherwise the maximum charge will be 30 marks (\$7.14).

(f) For supplementary stations which are not installed, or maintained by the telegraph management, the following charges are collected:—For a station located in the living or business rooms of the premises which belong to the subscriber who has the principal station, and on the same premises where the principal station is, an annual charge of 10 marks (\$2.38) must be paid; and for each additional supplementary station installed herein, an annual charge of 15 marks (\$3.57).

(g) The additional annual charge for installing and maintaining an extra bell or bells, or for a special indicator-drop in the same premises where the station is installed is, for each bell or indicator-drop, 3 marks (71 cents).

2. For supplying and maintaining an extra telephone, the annual charge is 5 marks (\$1.19).
3. The installation of an extra bell or bells, an extra telephone, or an indicator-drop, is done free of charge, if required within the two special periods fixed for such work (see No. 6), or if it should happen that some other work is to be done at the same time. If the subscriber wishes to have these installations made at some other time than those hereinbefore specified, a charge will be made to cover the additional expense, which charge will be reckoned according to the time occupied in doing the work.
4. For special bells differing from those commonly used by the telegraph management, besides the annual charge of 3 marks (71 cents), the actual cost of procuring, installing and maintaining the same will be made. Should the subscriber require a bell arrangement attached to a special indicator-drop, in connection with his station, he must pay the cost of supplying, fixing and maintaining the bell, battery and inside wires for same.

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5. For installing bells differing from those usually employed by the telegraph management, and for bells attached to a special indicator-drop, there must be paid a special charge of 4 marks (95 cents), besides the cost of supplying and constructing the same. See also subsection 3, hereto. For an additional receiver supplied at the subscriber's request, the actual cost of same must be paid. Any equipment supplied at the subscriber's expense becomes his own property.
6. When subscribers have a special kind of bell, installed by some firm other than the telegraph management, an annual charge of 3 marks (71 cents) must be paid for each bell to Post Office Department, and the subscriber must bear the cost of supplying, fixing and maintaining such bells.

(h) The following charges are made for moving subscribers' stations within the same room:—

For metallic circuits	6 m. (\$1.43)
For single lines	4 m. (95 cents)
Within the same premises:—	
For double metallic circuits	10 m. (\$2.38)
For single lines	6 m. (\$1.43)
To other premises:—	
For metallic circuits	25 m. (\$5.95)
For single lines	15 m. (\$3.57)

If the new station is more than 10 km. ($6\frac{1}{2}$ miles) distant from the central exchange, the additional cost of construction must be paid (according to No. 12 c) for the new line that has to be erected outside the distance limit of 10 km. ($6\frac{1}{2}$ miles), even if the former station was also situated outside this distance limit.

If the moving of the station necessitates the substitution of a metallic circuit for a single wire, or if a metallic circuit is replaced by a single wire, the rates will be fixed accordingly.

When several stations installed in the same room, having one connecting wire in common, are to be removed to another room within the same premises, or to some room outside the premises, the full specified charge must be paid for removing the first station, and for the additional stations, the charge will only be that made for the moving of a station within the same room, *i.e.*, 4 marks (95 cents), or 6 marks (\$1.43) for single or metallic circuits respectively. No special charge is made for the removal and refixing of an additional telephone or special bell when stations are being removed.

If a supplementary station, installed on the same premises as the principal station has to be moved with the principal station, to some other premises, then the charge for moving the supplementary station will only be that prescribed for moving a supplementary station within the same premises, *i.e.*, 6 marks (\$1.43), or 10 marks (\$2.38), according as there are single or metallic circuits. For other smaller items of work performed in connection with telephone stations, such as taking down and refixing inside wires, replacing the same, or broken ground wires, a fixed sum will be charged for the time occupied in doing the work.

(i) The charge required for taking out a station before the end of the first year (see No. 10) is 15 marks (\$3.57) for each station, and when poles and lines have to be taken down, the difference in the cost of such construction (if any) for which the subscriber may be liable, must be paid for the period of subscription yet to run, as well as the cost of taking down the lines.

(j.) An annual charge of 10 marks (\$2.38) is made when the standard time is communicated daily at the subscriber's request.

13.—USE OF STATIONS BY OTHER PERSONS.

Subscribers who pay the unlimited service charge are entitled to allow other persons to use their stations for conversations with other subscribers, free of charge; GERMANY.

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and also to allow persons to converse with the public call stations, which belong to the telephone area of the same local system. Subscribers who pay for measured service, *i.e.*, who pay a single charge for each conversation may collect these charges for conversations, from other persons whom they permit to make use of their telephone.

14.—SERVICE WITH NEIGHBOURING PLACES.

Subscribers of such neighbouring places as pay a common tax for mail delivery, according to the appointment of the Chancellor of State, are allowed, if they pay rates for unlimited service, to converse with the systems of other neighbouring places, without paying additional charges. If they wish to avail themselves of this privilege, and if the charge for unlimited service is higher in one of these places than in their own system, they must pay this higher charge, instead of the lower charge in their own system. Subscribers paying unlimited service rates are entitled to allow other persons to converse, free of charge, with subscribers of those other neighbouring places, with which they themselves are allowed to converse.

Subscribers who pay the measured service rates are allowed to converse with neighbouring places, by paying 5 pf. (1c.) for each connection made. If, however, the measured service rates are higher in one of these neighbouring places than in their own system, persons desiring to avail themselves of this privilege must pay the higher charge instead of the lower one fixed for their own system. A minimum number of 400 conversations at 5 pf. (1 cent) each must be paid for yearly, by subscribers using service with neighbouring places.

Subscribers in local systems where the measured service rates are not in operation, must pay a charge of 5 pf. (1 cent) for each connection made, with neighbouring places, in the case of systems where the measured service rates are 60 marks (\$14.28) yearly. If more than 60 marks (\$14.28) yearly are charged for measured service, in one of these neighbouring places, the subscribers of those systems which do not pay for measured service must also pay a charge of 5 pf. (1 cent) for each connection made with neighbouring places. If they wish to avail themselves of this privilege, they must pay, as an additional charge to the telephone unlimited service rates, a yearly amount corresponding to the difference between 60 marks, and the highest rate paid for measured service in the local systems, belonging to such neighbouring places.

If use is not made of this arrangement, a charge of 10 pf. (2 cents) will be required for each connection made in service with neighbouring places. The subscriber can be transferred from the 10 pf. (2 cents) rate for each conversation for service with neighbouring places, to 5 pf. (1 cent) rate for each conversation, and *vice versa*, at the beginning of each quarterly term, provided that the subscriber makes request for the same, in writing, not later than one month beforehand.

15.—SERVICE WITH PRINCIPAL CENTRES.

The rates for a connection, lasting not longer than 3 minutes, is 20 pf. (5 cents) between stations admitted to service with principal centres. The use of trunk lines, in service with principal centres, is permitted, without extra charge, to those subscribers who pay instead of the yearly unlimited service rates, specified in No. 12a. an unlimited service rate of 200 marks (\$47.60). They have the right to call up all the subscribers, within the area of service with principal centres, without extra charge, no matter what class of rates are paid by these subscribers. Subscribers who, according to the rules specified, pay an unlimited service rate of at least 150 marks (\$35.70) in their own system, or in the systems of neighbouring places, have also, on their part, the right to call up, without extra charge, those subscribers who pay the unlimited service rate of 200 marks (\$47.60).

Subscribers who pay the unlimited service rates, in service with principal centres, are entitled to allow other persons to use their telephones free of charge for conversations with subscribers in other places of the same area of service with principal centres, with whom they themselves are allowed to converse for the unlimited service

rates. No extension is granted of the service with principal centres, to local systems, which do not yet belong to the area of a principal centre system.

16.—SERVICE OVER LONG-DISTANCE LINES (TRUNK LINES).

In long-distance service, charges are collected for each conversation over the trunk lines. In service within the government telegraph area, and in service with Bavaria and Wurtemberg, the amount of those charges, for a connection lasting not longer than 3 minutes, is as follows:—

For a distance up to	25 km., inclusive	(15½ miles)	... .	20 pf. (5 cents)
“	“	50 “	(31 miles)	... . 25 pf. (6 cents)
“	“	100 “	(62 miles)	... . 50 pf. (12 cents)
“	“	500 “	(310 miles)	... . 1 m. (24 cents)
“	“	1,000 “	(621 miles)	... . 1 m. 50 pf. (35c.)
For a distance of more than 1,000 km.	(621 miles)	... .	2 m. (48 cents)	

For estimating the distance, the regulations apply which are given in the law regarding post office charges of October 28, 1871, section 2, paragraph 2. (See Government Code, p. 358.) The charges for service with foreign parts are specially fixed.

17.—ANNOUNCEMENT OF CONVERSATIONS BEFOREHAND.

In service with principal centres, and in long-distance service, when request is made, the name of the person desiring to converse will be sent on to the station to be called up before the connections are made for carrying on the conversation. A charge of 25 pf. (6 cents) is required for this privilege. This charge must be also paid in cases when the conversation is carried on from the station that has been called up by some other person than the particular person desired. In service with stock exchanges this particular charge is not required. For abatement of charges, see No. 25.

18.—CONNECTIONS DURING NIGHT HOURS.

The night hours fixed for local service, service with principal centres, with neighbouring places, and for departmental (municipal) service, except where there are special rules for particular places, are from 9 p.m. until 7 a.m., and in long-distance service, from 9 p.m. until 8 a.m.

During the daily hours of service, conversations begun according to the regulations for daily traffic, are allowed to be prolonged beyond the close of the daily service, for a period equal to that allowed for a conversation during night hours, and will still be reckoned as a conversation during day hours. If conversations are continued longer, night charges will be collected for the additional time, beyond that allowed for the day charges. In exchange stations, with night service, conversations will only be granted, in local service, and in service with neighbouring places, during the hours of night service, on payment of charges for each conversation. The charge for each of such connections is 20 pf. (5 cents). In local systems without night service, as well as in service with neighbouring places between two local systems which do not both have night service, connections may be made for the whole night. For arranging each such connection a charge of 20 pf. (5 cents) is required. For connections of this kind, agreed to beforehand, the unlimited service charge between the same stations is:—

For each month, paid monthly	... .	1 mark (24 cents)
For each quarter, paid quarterly	... .	2 marks 50 pf. (60 cents)

For the continuous connections supplied for the above unlimited service charge those regular connections which are made use of for sending in alarms of fire to the fire department (where such service is given) are also counted.

In service with neighbouring places, continuous night connections are also allowed between subscribers' stations in local systems not having night service and **GERMANY.**

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change stations having night service. If a single continuous connection is used for a conversation for which a separate charge is made, the charge for the continuous connection is not collected; but unlimited service charges for continuous connections during night hours are not refunded. The regular arranging of night connections in service with neighbouring places is only undertaken in each case with the reservation that the privilege may be cancelled at any time. The charges for night conversations and continuous connections during night hours, have also to be paid, when the subscribers who request the connections pay a yearly unlimited charge for such service. In long-distance service, the trunk lines between local systems in which telephone night service is carried on, may be used by the subscribers during night hours, both for single conversations, for which charges are collected, as well as for conversations under the usual subscription rates per year. For single conversations during night hours the same charges have to be paid, as for conversations during the hours of daily service, of the same length of time. The subscription rates apply to those conversations which are carried on during the daily hours of service. Each subscription for night connections embraces, at least, a period of one month. The subscription may commence at any time, but the beginning of the month is always reckoned from the following 1st or 16th of the month. The fractional part of the monthly subscription for the time up to the beginning of the monthly term of subscription, has to be paid along with the subscription charge for the first month. The subscription may only be given up by the 15th of a month, or at the end of a month.

For long-distance conversations made by subscribers, half the amount is required that is specified for ordinary conversations of the same duration, made during the daily hours of service. The charge is due in advance. In fixing the monthly amount, the month is reckoned as thirty days.

The duration of a conversation is 6 minutes, and the maximum duration allowed is 12 minutes.

Conversations covered by the above-mentioned subscription may only be carried on regarding matters pertaining to the subscriber, or affairs belonging to persons connected with his household or place of business. No reimbursement of charges is allowed for connections that have not been used. On the other hand, if the time allowed for conversation could not be used at all, or could only be used in part, owing to some derangement or interruption in the service, then opportunity will be given to the subscriber, if at all possible, in the same night, to make this good. If, on account of derangement or interruption in the service, the conversation was not possible at all, and if opportunity to make up for this was also not possible, then, at the request of the subscriber, a thirtieth part of the month's charges that have to be paid will be refunded to him.

The request for subscription has to be presented at the exchange station in the district where the applicant resides, and arrangements will also be made with the said exchange station beforehand regarding the time when the conversations are to be carried on.

The subscriber may prolong the minimum period of subscription from month to month. The rates are to be paid monthly, in advance. For this purpose the account for the new month will be presented not later than 8 days before the term of subscription expires. If it is not paid, then the subscription is considered as cancelled.

In service with principal centres, and in departmental (municipal) service, single conversations, and conversations under subscription rates, are granted, between local systems, in which telephone night service is carried on, under the same stipulations as in long-distance service; and if there is no night service in either of the two places to be connected with each other, then continuous night connections will be made, as in service with neighbouring places (interlocal service).

The following charges are collected monthly for continuous night connections, which have been previously arranged:—In service with principal centres, an unlimited service charge of 3 marks (71 cents); in departmental (municipal) service, thirty

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times the amount of the half charge for an ordinary conversation of 3 minutes duration (No. 16), between the two local systems required.

19.—PUBLIC CALL STATIONS.

The amount of charges for conversations, of not more than 3 minutes duration, sent from public call stations, is:—

- In local service, and service with neighbouring places. . . 10 pf. (2½c.)
- In service with principal centres. 20 pf. (5c.)

In long-distance service, the charges specified under No. 16 are collected. If a receipt is requested for charges paid, then an extra charge of 10 pf. (2½ cents) must be paid for the said receipt. No special charge is made for conversations sent from subscriber's stations to public call stations in local service, and in service with neighbouring places and principal centres, when subscribers pay the unlimited service charge specified for the service in question. In other cases, subscribers have to pay, in local service, a charge of 5 pf. (1 cent) for each conversation; and in service with neighbouring places and principal centres, the rates specified for conversations under Nos. 14 and 15.

In all public call stations located in public establishments, &c. (with the exception of automatic slot machine telephones) persons living in the vicinity may on request be sent for to come to the 'phone. In such cases a charge of 25 pf. (6 cents) is made for each person. This charge for calling a person to the 'phone has also to be paid in cases where a post office agent, or the person in charge of an auxiliary station, receives an incoming message or order for another person residing in the vicinity, and forwards the same to the said person, no matter how the forwarding is effected. The post office agent, or the person in charge of an auxiliary station, to whom the request is made to forward such communication to other persons, is authorized to refuse to be responsible for the right delivery of the said communication. This charge for calling a person to the 'phone is not collected if the person to be called up, on the long-distance connection, is already present in the public call station, and notifies the person calling up, when the request is made for conversation, that he is already there.

20.—AUTOMATIC SLOT MACHINE TELEPHONES.

The regulations given under No. 19 apply also to the use of public call stations with slot machine telephones. Urgent conversations, conversations arranged for beforehand, and conversations for which the person called up must be sent for to come to the 'phone, are not allowed in public automatic slot machine stations; neither are these stations allowed to be used in departmental, or in long-distance service. At the request of subscribers, their stations may also be furnished with automatic slot machine telephones, instead of the ordinary telephone sets, if the subscribers guarantee an annual minimum amount of charges for the continuation of the contract of agreement; which sum is to be fixed by the telegraph management. As security for the continuation of the contract, the fourth part of the guaranteed annual amount of charges must be deposited. No special time is specified for sending in of requests to have the ordinary stations changed for automatic slot machine telephones; nor is it necessary to send in a formal announcement to cancel the former station. Subscribers' stations with the automatic slot machine telephone are allowed to hold conversation with local service, and service with neighbouring places, and principal centres; also in departmental (municipal) service, and in long-distance service. The charges for conversations, from subscriber's automatic stations, are 10 pf. (2½ cents) in local service, and service with neighbouring places. For conversations in service with principal centres, departmental (municipal) service, and long-distance service, the general charges, specified in Nos. 15 and 16, are collected. Supplementary stations are not supplied with automatic slot machine telephones.

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21.—ACCIDENT OR EMERGENCY CALLS.

Instructions will be found in the telephone directories as to the arrangements for making accident calls, during the hours when there is no service in the exchange stations.

For an accident call made during night hours (see No. 18) the following charges are collected :—

In local service and service with neighbouring places . . . 20 pf. (5c.)

In service with principal centres, for each connection

lasting not longer than 3 minutes 20 pf. (5c.)

In other kinds of service, the same charges are paid, as are specified under No. 16. For estimating the charges for accident calls during the intervals when there is no service in the day hours, the regulations apply that are given for stations calling up, during daily service. A charge of 25 pf. (6 cents) is made for calling a person to a public call station.

22.—URGENT CALLS.

Urgent calls are allowed in long-distance and departmental (municipal) service, in service with principal centres, and also from public call stations, in local service, and service with neighbouring places. The charge for an urgent conversation lasting not longer than three minutes is 30 pf. (7 cents) in local service, and with neighbouring places, and 60 pf. (14 cents) in service with principal centres. Three times the ordinary amount of rates is collected in departmental and in long-distance service. In departmental (municipal) service and in service with principal centres, charges must be paid for each urgent call, even by those subscribers who pay the unlimited service rates for ordinary service.

23.—ORDER AND DURATION OF CONVERSATIONS.

Connections are made according to the order in which they are asked for. Urgent conversations have precedence over ordinary conversations.

Conversations may be prolonged beyond six minutes, if no other persons have made request for connections. Special notice before breaking the connection will only be given from the exchange station to the person using the 'phone, that the time allowed for conversation has elapsed, if a prior request to that effect has been made. By way of experiment, it has been arranged that on ordinary week days, before 9 a.m. and after 7 p.m., and further, on Sundays and holidays, ordinary and urgent conversations in service with principal centres and in departmental service, and in long-distance service, may be prolonged beyond the ordinary period of six minutes, up to thirty minutes, by paying charges for each conversation, if request for connections for other urgent conversations have not been already made, or if (during the night) subscribers' conversations have not to be carried on.

On ordinary week days, between 9 a.m. and 7 p.m. conversations are not allowed to be prolonged beyond six minutes, when requests for other connections have been made. The only exception being for urgent conversations.

The simultaneous request by a subscriber for several consecutive long-distance conversations with the same subscriber at a long-distance point is not admissible. Each station is allowed only one conversation at a time, with the same subscriber at a long-distance point. One conversation must be terminated before a request for a second connection with the same subscriber can be carried out.

24.—TRANSMISSION OF TELEGRAMS, ETC., BY TELEPHONE.

The rates for receiving communications by telephone which have to be forwarded by other means is 1 pf. ($\frac{1}{4}$ cent) per word, with a minimum charge of 20 pf. (5 cents).

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Charges in excess of this rate are to be calculated in multiples of 10 pf. (2½ cents). For forwarding these communications by mail, express messengers or telegraph, the ordinary tariff charges for transmission are collected in addition to the foregoing charges for receiving. No credit accounts are allowed. The charge for transmitting a telegram to a subscriber, through the 'phone, is 10 pf. (2½ cents), without regard to the number of words. Communications for transmission by mail, express messengers, or telegraph, may only be sent by subscribers through exchange station of their own local system, unless exceptions are made for neighbouring places, and principal centres of some of the larger places. Non-subscribers may use the 'phone for transmitting telegrams, &c. The subscriber whose station is used is responsible for the resulting charges.

When telegrams with answer prepaid are delivered over the 'phone, the amounts will be entered in the monthly account, after the answer forms have been collected which are delivered to the subscribers. The transmission of telegrams by 'phone to subscribers, who, on account of there being no exchange station in the neighbourhood of the telegraph office of their district, are connected to the exchange station of some neighbouring place, is only admissible when the telegrams are actually addressed to the place where the said exchange station is located. The receivers of such telegrams must therefore see that telegrams sent in to them over the 'phone, are correctly addressed after the manner described above.

Telephone stations in country places which have no telegraph office, may also be used for the transmission of telegrams for other persons residing in the district, if the said persons make a written request to the telegraph office concerned, to have their telegrams sent to them over the 'phone, and, at the same time, produce the consent of the subscriber whose 'phone is to be used for this purpose. The telegraph management is not responsible for mistakes, &c., made by subscribers in receiving and transmitting such telegrams.

In Berlin, telegrams are only transmitted to subscribers over the 'phone when the subscribers have an abbreviated address, which has been fixed and agreed upon, or when the station is designated before the subscriber's name in the telephone directory, according to number and bureau of connection. The designation of the telephone station may be given by a single compound number, the first figure of which is the number of the exchange station, and the following figures the number of the subscriber's station; for example, No. 61642, that is, central station No. 6, and subscribers' station No. 1642. In this case, it is not necessary to give the name of the street and the number of the house. In Berlin also, telegrams are only transmitted over the 'phone by request.

When telegrams to places other than Berlin are to be transmitted over the telephone to subscribers who have previously requested this to be done, the number of such subscriber's station may be given instead of the street address. Copies of telegrams received by the telegraph office and transmitted to subscribers over the telephone, will be subsequently mailed to such subscribers in a sealed envelope.

The charge for sending in the telegram by 'phone is collected when the telegrams are handed in. This charge is not collected, if the sender has paid the charges for delivery, by express messenger, in advance. No reimbursement is granted of any extra amount that may have been paid for express messenger charges.

If telegrams are transmitted by the 'phone, during the night service hours, the usual charges for night connections, for each connection made, in transmitting the said telegrams must also be paid, in addition to the charges specified for this service.

25.—PAYMENT OF CHARGES.

The subscriber who has a principal telephone station, is responsible for all the charges due for the use of the said station, and any supplementary stations connected therewith. He must pay the charges specified in the account presented by the telegraph
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management, but has the right to demand reimbursement of any charges which he may prove to be incorrect.

All charges so far as they can be specified beforehand, are due quarterly, in advance, on January 2, April 1, July 1, and October 1.

A telephone station installed after a quarterly term begins is liable for charges from and including the date of installation up to the end of the same quarter.

If a station is installed at any time within the first half of a quarterly term, the subscriber may pay the unlimited service rate, or the measured service rate, from the first day of the said quarterly term, instead of from the date of installation, on the understanding that the yearly subscription dates from the first day of the quarter.

The charges for special construction, for special bells and for additional telephone receivers, as also the charges for moving stations, &c., have to be paid in advance before the work is proceeded with.

Finally, the charges which cannot be specified quarterly, in advance, are due as soon as the accounts therefor have been rendered.

The obligation to pay for conversations begins as soon as the required connections have been made. Up to this time, the person calling up, may cancel his request without incurring any charges. The single charges for conversations from or to supplementary stations become due as soon as the necessary connections have been made, between the exchange and the subscriber's principal station.

In long-distance service (with the exception of service with neighbouring places, and with principal centres) the charges are not collected, if no response is received from the subscriber's station called up. If the calling subscriber's station does not respond, when the connections required have been made, and if the connections are in good working order, the charges for an ordinary conversation are collected. If a conversation with a person, whose name has been reported in advance to the exchange at the long-distance point, cannot be carried on, because of some derangement in the line, the charges will not be collected, either for the conversation or for the advance report of the name. Should the conversation fail to be carried on for other reasons, the charge for an ordinary conversation, of 3 minutes duration, must be paid; but, in this case, no charge will be made for the reporting of the name in advance.

No charges will be made for long-distance service with public call stations, if the person desired has to be sent for and cannot be found; or if conversation is impossible, because of some derangement in the lines.

The charge for sending for a person to come to the 'phone becomes due as soon as the request is delivered to the said person at the long-distance point.

26.—REDUCTION AND REIMBURSEMENT OF CHARGES.

In the case of stations which have not been used, for at least eight consecutive weeks, after previous notification has been given, the 50th part of the annual unlimited service rate must be paid for each week commenced during which the said station has been in use; and for the remainder of the year, the 50th part of the annual measured service rates for each week. The same rule applies to stations in systems with not more than 50 subscribers' stations; and also to stations where the subscribers pay the unlimited service rates, for service with neighbouring places, and principal centres. Charges owing for supplementary stations, or for lines subject to extra charges, or for special bells, annunciators, &c., and for additional microphones, must also be paid for the full time that stations are not used.

In the case of stations whose subscribers pay the unlimited service rates for departmental (municipal) service, no reduction in the charges will be made for occasional periods when the stations are not used.

If any interruption not the fault of the subscriber takes place in the service of a telephone station, due notice of which has been given to the telegraph management, should continue longer than four weeks, no charge will be collected for this period.

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No charge is collected for any period during which service is suspended from a telephone station, under regulations given in No. 9, paragraph 1.

27.—TELEPHONE DIRECTORIES.

A telephone directory is supplied, free of charge, to every principal station. Further copies will be supplied at cost price from the place mentioned in the telephone directory.

Principal stations and all supplementary stations, whether installed for other persons on the same premises as the principal station or on other premises, are inserted in the telephone directory with the number and name, and when necessary, occupation and residence of such persons. At the subscriber's request, the hours for speaking over the phone, or his business hours, may also be stated in the telephone directory.

The insertions in the telephone directory are to be as short as possible. No more than three printed lines can be allowed for the insertion of a telephone station. For each additional line an annual charge of 5 marks (\$1.19) is collected. This charge also applies to all additional insertions of the same station in other parts of the telephone directory; also to cross references, or to the insertion of stations connected to some other telephone exchange or to supplementary stations not installed by the telegraph management.

28.—DEPARTMENTAL (MUNICIPAL) TELEPHONE SYSTEMS.

There are special regulations for stations which are connected with the existing departmental (municipal) telephone systems. No extension is made of the departmental (municipal) service, to those places that do not yet belong to the area of a departmental (municipal) system.

BAVARIA.

(The following papers selected from among those sent by the Bavarian Postal Department have been translated for the information of the Committee. The originals are on file in the Committee room and may be referred to at any time.)

No. 291.

(Translation.)

HEAD OFFICE OF THE ROYAL BAVARIAN POST OFFICE AND TELEGRAPH DEPARTMENT,

MUNICH, July 13, 1905.

To Sir WILLIAM MULOCK,
Postmaster General and
Chairman of the Select Committee on Telephone Systems,

Enclosures.—Letter, with answers to questions, and 24 written and printed pamphlets and documents relating to such questions.

DEAR SIR,—I have the honour to transmit to you by the enclosed documents and answers to questions the information you desire.

Regarding the question asked, at the close of your letter, I may state that the Bavarian telegraph management endeavours, as much as possible, to extend the telephone service to the people living in rural districts, first of all, by setting up telegraph offices with telephone service, in the smaller places which have post offices, which, as public call stations, can be used by private individuals for telephone service, by paying single charges for conversations. Besides this, so-called municipal public call stations are set up in country districts, where the municipality furnishes a guarantee for a minimum yearly amount, equal to the annual unlimited service charge for a private subscriber's telephone station and connections of the same length. Moreover, private subscriber's stations may be used as 'municipal public call stations' for country districts, and, in this manner be placed at the disposal of the general public for telephone service, on payment of a charge for each conversation. Also in smaller places, independent local telephone systems are organized, according to the existing requirements, and the means at the disposal of the telegraph management. In this manner the request of the rural population to have connection with the government telephone system is complied with, in the fullest possible way, and without undue expenditure of government funds.

With the assurance of my highest esteem, I am, yours, faithfully,

VON RINGER,
Royal General Manager.

No. 291a.

BAVARIA—*Continued.*

(Translation.)

ANSWERS TO QUESTIONS.

The right to set up telephone systems and operate the same belongs, in Bavaria, exclusively to the government, as decreed by law. The Bavarian government owns and operates the long-distance telephone lines and local exchange systems.

The length of the long-distance lines, according to the status of December 31, 1903, was 19,224 km. (11,938 miles) of loops—loops (metallic circuits) being counted as one line. The length of subscribers' lines, according to the same status was: 5,676 km. (3,525 miles), single lines; 50,450 km. (31,331 miles), double lines—metallic circuits counted as one line.

The length of pole routes carrying long-distance lines on December 31, 1903, was 4,402 km. (2,734 miles). The length of pole routes carrying subscribers' lines on December 31, 1903, was 6,265 km. (3,891 miles).

The length of lines (each wire counted singly) on December 31, 1903, was: Long-distance lines, 38,448 km. (23,876 miles); subscribers' lines, 106,576 km. (66,187 miles).

In long-distance service the rates charged for single conversations lasting not longer than five minutes, are as follows: For distances up to 25 km. (15½ miles), inclusive, 20 pf. (5 cents); for distances up to 50 km. (31 miles), inclusive, 25 pf. (6 cents), for distances up to 100 km. (62 miles), inclusive, 100 pf. (12 cents). for distances up to 100 km. (62 miles) and over, 1 mark (24 cents).

Subscribers' wires are made of copper. For bare lines double bronze wires of 1.5 (No. 17 S.W.G.) and 2 mm. (No. 14 S.W.G.) are employed. For cable lines, conductors of 0.8 mm. (No. 21 S.W.G.) of copper are employed. Subscribers' lines are, for the most part loop lines (metallic circuits). The single wire lines, still in use, are soon to be changed into metallic circuits.

The diameter of the long-distance lines, according to the length and amount of traffic: 2 mm., 3 mm., 4 mm. and 4.5 mm. (Nos. 14, 10, 8 and 7 S.W.G.).

The total cost of long-distance lines up to the close of the year 1903, amounted to 5,300,000 marks (\$1,261,400, an average of \$105.66 per mile of metallic circuit).

In long-distance service, the rates specified are usually collected. However, the whole area of service is divided into eight departmental telephone systems. Subscribers who pay the annual unlimited service charge obtain the right, by paying an additional sum of 50 marks (\$11.90) per year, to have free telephone service within the particular departmental telephone system. See 'Charges for local service' (p. 548).

Subscribers who desire to avail themselves of the advantages of the departmental service are required to pay for local service in addition to the departmental service charge of 50 marks (\$11.90), an 'unlimited service' rate equal to that prevailing in the exchange system within the departmental service area where the highest rate is charged.

The number of conversations allowed in departmental service is limited to 1,000 conversations during the calendar year. For every additional 100 conversations the charge is increased 10 marks (\$2.38). In addition to this, service is permitted between individual places situated adjacent to each other. In such service with neighbouring places, subscribers are allowed to converse, free of charge, who pay the highest unlimited service charge fixed for the local systems, situated within the area of service with neighbouring places. Subscribers who pay the highest annual measured service charge fixed for the local systems, situated within the area of service with neighbouring places, are allowed to converse with neighbouring places by paying 5 pf. (1 cent) for each conversation. In all other cases, a charge of 10 pf. (2 cents) is collected for each conversation in service with neighbouring places.

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Of the long-distance lines the only ones used for simultaneous telephony and telegraphy are the lines between Nürnberg and Leipzig, and between Nürnberg and Ludwigshafen.

STATEMENT showing Population and Number of Subscribers' Principal and Supplementary Stations in the Local Systems of the Larger Cities of the Kingdom of Bavaria.

Names of Cities.	Population according to the Census of 1900.	STATUS ON DECEMBER 31, 1904.		
		*1 Total Number of Subscribers' Principal Stations.		*1 Total Number of Subscribers' Principal and Supplementary Stations.
		*2 Stations Paying the Unlimited Service Annual Rate.	*2 Stations Paying the Measured Service Annual Rate.	
Munich.....	499,932	7,837	1,836	14,629
Nürnberg	261,081	3,324	1,690	7,259
Augsburg	89,170	613	547	1,809
Würzburg	75,499	628	549	1,661
Ludwigshafen.....	61,914	390	245	987
Fürste (Bavaria).....	54,144	653	390	1,664
Kaiserslautern.....	48,310	263	338	797
Regensburg.....	45,429	397	249	972
Bamberg	41,823	288	225	785
Hof on the Saale.....	32,781	190	176	525
Permaseus.....	30,195	267	179	619
Bayreuth.....	29,387	149	117	409
Erlangen.....	22,953	106	46	215
Ingolstadt.....	22,207	94	15	142
Amberg.....	22,039	67	27	121
Landshut.....	21,737	109	68	265
Speyer.....	20,921	156	142	391
Kempten in Algäu.....	18,864	139	126	360
Aschaffenburg.....	18,093	216	97	439
Passau.....	18,003	179	107	401
Neustadt on the Haardt.....	17,795	252	335	778
Ausbach.....	17,563	93	12	170
Strübing.....	17,541	123	44	247
Frankenthal (S.G.).....	16,899	102	113	285
Landau (S.G.).....	15,824	227	282	662
Schweinfurt.....	15,302	112	108	298
Rosenheim.....	14,246	124	21	191
St. Fugbert.....	14,050	75	13	109
Zweibrücken.....	13,716	123	70	272
Memmingen.....	10,889	73	25	145
(334 local systems).				
Total number in Bavaria.....	6,176,057	24,718	8,724	47,872
		33,442		

REMARKS.

*1. The stations of private individuals and officials are both reckoned in the above columns, which are marked *1.

*2. The number of subscribers' principal stations is the standard for fixing either one or the other above mentioned kinds of subscription. In systems with more than 50 subscribers, the choice is open to subscribers for either of these rates. In systems with less than 50 subscribers' principal stations, subscribers have to pay the appointed annual unlimited service charge.

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Charges for Local Service.

For each principal station in a government system, the subscribers have the choice of paying (1) a fixed annual charge for unlimited service, (2) or an annual general charge for measured or limited service, with additional charges for outgoing local conversations, amounting to at least 400 conversations in each calendar year.

In local systems, where the unlimited service charge is fixed at 80 marks (\$19.04) subscribers are not granted the measured service rate above stated.

The unlimited service charge amounts to:—

In local systems with not more than 50 subscribers' stations, 80 marks (\$19.04).

In local systems with more than 50 up to 100, inclusive, 100 marks (\$23.80).

In local systems with more than 100 up to 500, inclusive, 120 marks (\$28.56).

In local systems with more than 500 up to 1,000, inclusive, 130 marks (\$30.94).

In local system with more than 1,000 up to 5,000, inclusive, 140 marks (\$33.32).

In local systems with more than 5,000 up to 10,000, inclusive, 150 marks (\$35.70).

The above rates are paid yearly for each station, which is not more than 5 km. (3 miles) distant, in a straight line, from the exchange station.

The measured service charge amounts to:—

In local systems with not more than 1,000 subscribers' stations, 60 marks (\$14.28).

In local systems with more than 1,000 up to 5,000 subscribers' stations, 75 marks (\$17.85).

In local systems with more than 5,000 subscribers' stations, 90 marks (\$21.42).

The above rates are paid yearly for each station, which is not more than 5 km. (3 miles) distant, in a straight line, from the exchange station.

For stations paying the unlimited service charge and the measured service charge, which are more than 5 km. (3 miles) distant, in a straight line, from the exchange station, a yearly charge of 3 marks (72 cents) is collected for every extra 100 metres (110 yards) or fraction thereof.

The rates for supplementary stations amount to:—

(1) For each supplementary station set up in the living rooms or business rooms of the premises where the principal station is installed, and which are the property of the subscriber who has the principal station, an annual charge of 20 marks (\$4.76) is required.

(2) For each additional supplementary station, yearly, 30 marks (\$7.14).

(3) When the distance between the principal and supplementary stations is more than 100 metres (110 yards), in a straight line, a charge of 3 marks (72 cents) is made for every additional 100 metres (110 yards) or fraction thereof. When the setting up of lines is attended with special difficulty or unusual expenses, then the telegraph management is entitled to increase the above-mentioned rates, or require payment for part of the expenses of setting up the line.

For installing and maintaining a second, and also every additional call-bell, an additional annual charge of 3 marks (72 cents) is made. For installing and maintaining a desk telephone instead of a wall telephone, an annual extra charge of 5 marks (\$1.19) is made. In all other cases where any special arrangements different from the ordinary arrangements are made, the subscriber must pay all extra expenses arising from the setting up and maintaining of the said special arrangements.

Subscribers who pay the unlimited service charge, do not pay any extra charges for conversations in local service. Subscribers who pay the annual measured service charge have to pay an additional charge of 5 pf. (1 cent) for each outgoing local conversation. The foregoing rates apply equally to the larger cities, and to the country districts (departments). No limit of distance has yet been fixed for subscribers' stations, still, as a rule, stations are not installed where the distance is more than 15 km. (9½ miles), in a straight line, from the exchange station.

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The following is a summary of subscribers' principal and supplementary stations in the local systems of the smaller towns and municipalities of the Kingdom of Bavaria:—

Names of Towns and Municipalities.	Population according to the Census of 1900.	STATUS ON DECEMBER 31, 1904.		
		*1 Total Number of Subscribers' Principal Stations.		*1 Total Number of Subscribers' Principal and Supplementary Stations.
		*2 The Un-limited Service Charge.	*2 The Measured Service Charge.	
Eichstätt.....	7,701	41	.....	56
Forschheim (B.).....	7,591	45	.....	62
Praunstein.....	6,845	72	1	89
Weissenburg (B.).....	6,550	38	.....	55
Bad Dürkheim.....	6,207	63	71	178
Germersheim.....	5,868	26	.....	37
Edenkoben.....	5,232	59	82	161
Güntzburg.....	4,624	18	.....	25
Douanswäth.....	4,367	32	.....	43
Plattling.....	3,888	12	.....	14
Wiesbach.....	3,429	39	.....	50
Zchenhausen.....	2,666	19	.....	21
Regen.....	2,366	14	.....	17
Holzkirchen (S.G.).....	1,958	25	.....	31
Obernburg.....	1,735	20	.....	22
Cadolzburg.....	1,494	13	.....	16
Etringen.....	953	5	.....	5
Mintraching.....	928	23	.....	27
Kirchheim (Sch.).....	841	5	.....	5
Nordheim v. R.....	807	5	.....	6
Berg (Oberfranken).....	736	3	.....	5
Muggendorf.....	447	7	.....	7
Oberau.....	363	7	.....	11

REMARKS.

*1. The stations of private individuals and officials are both included in the above numbers.

*2. In systems with less than 50 subscribers' principal stations, only the appointed unlimited service charge is allowed.

In the rural districts (viz., all places which are not cities, but only villages or market towns) there are 187 local telephone systems, with a total number of 4,061 subscribers' principal stations (private and official). Accordingly there is an average number of 22 subscribers' stations to each system.

By paying the additional sum required for departmental service (\$11.90) subscribers obtain the right to hold up to 1,000 conversations within the area of the departmental system. For every additional 100 conversations begun, the charge is increased 10 marks (\$2.38). For the rest, we may state that, especially for local service, no graduated scale of charges has been introduced in Bavaria, according to the area of service in which a station is used.

No maximum limit of distance has been fixed up to which subscribers can converse. The longest distance over which conversations can be carried on, under the present telephone arrangements, amounts to, within Bavaria, about 490 km. (304 miles), rates, 1 mark (24 cents), and, in service with places outside of Bavaria, about 850 km. (528 miles), rates, 1 m. 50 pf. (36 cents).

For subscribers' stations single and central batteries are employed. As soon as possible experiments will be undertaken with accumulators (storage batteries), which will be set up where the station is installed, and which will be charged from the switch station. There are no independent switch stations. The exact type of telephones furnished to subscribers may be seen from the accompanying diagrams (filed but not printed).

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The proportion between overhead and underground subscribers lines on December 31, 1903, was 49,149 km. (30,521½ miles), and 57,427 km. (35,662½ miles).

The total amount expended up to the end of 1903 was:—

(a) Applied capital	31,186,843 m.	(\$7,422,469)
(b) Operation and maintenance	19,667,347 m.	(\$4,680,829)
	50,854,190 m.	(\$12,103,298)

The total revenue from the entire telephone system in 1903 was 4,748,808 m. (\$1,130,216).

The expenditure for 1903, including interest and sinking fund, was 3,172,480 m. (\$755,050).

The amount of profit for 1903, without deducting interest and sinking fund, was 1,577,328 m. (\$375,404).

The wages paid to managers, foremen, instrument men, labourers, wiremen and telephone girls, in 1903, was 2,138,252 m. (\$509,904).

The cost of two switch stations at Munich, I. and II., are given in the accompanying document 18. In the switch station, No. II., the principal distribution board used in the former small switch station had to be replaced by a new larger one, and, at the same time had to be removed to another room. The cost of this is shown in document 18, under the heading 'Expense of moving the main distributor.' The connecting cable, the cost of which is given in document 18, serves to connect the two switch stations at Munich, Nos. I. and II.

COST OF CONSTRUCTING THE SWITCH STATION AT MUNICH (BAVARIA), NO. I, FOR 6,000 SUBSCRIBERS. (From Document 18.)

Construction I.: 10 subscriber's section boards with 240 drops, 2 junction boxes, 2 long-distance booths (calls-boxes), and 1 supervisor's table	143,457 m.	(\$34,143)
Construction II.: 5 subscriber's section boards with 240 drops, and 1 junction box.	96,010 m.	(\$22,850)
Construction III.: 5 subscriber's section boards with 240 drops, and 2 supervisor's tables	95,856 m.	(\$22,814)
Construction IV.: Alterations for connecting with station No. II., and long-distance equipment.	24,336 m.	(\$23,028)
Construction V.: Complete construction, 3 sections, with 405 drops	96,755 m.	(\$23,028)
	456,414 m.	(\$108,627)
Switch board (as above), say	460,000 m.	(\$109,480)
350 cables, at 50 marks=17,500 marks at 1.60 m.	28,000 m.	(\$6,664)
Power apparatus in cellar.	10,000 m.	(\$2,380)
Power switch board on third floor	1,000 m.	(\$238)
Moving power apparatus to the third floor.	8,200 m.	(1,952)
Increasing capacity of storage battery	500 m.	(\$119)
	507,700 m.	(\$120,833)
Leading in	120,000 m.	(\$28,560)
Construction of switch room and leading-in tower	99,700 m.	(\$23,729)
Connecting lines between switch stations Nos. I. and II.	60,000 m.	(\$14,280)
Total cost	787,400 m.	(\$187,402)

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Cost of constructing Switch Station at Munich (Bavaria), No. II., capacity 10,800 subscribers:—

I. Cost of the switch board itself—

Previous cost of constructing 25 sections and
and provisional fixing of same, for 6,000
subscribers. 338,845 m. (\$ 80,645)

II. Entire cost of construction—

7 subscriber's sections at 9,300 marks 65,100 m. (\$ 15,494)
Additional joint boxes. 700 m. (\$ 166)
Relay-frames, equipped with 'calling' and
'cut-out' relays for 10,800 lines 118,400 m. (28,180)
Cables and soldering 77,280 m. (18,392)

261,480 m. (\$ 62,232)
Previous cost as shown above under I. 338,845 m. (\$ 80,645)

600,325 m. (\$142,877)

Per subscriber, 55 m., 60 pf. (\$13.23) 600,000 m. (\$142,800)

Here must be added:

42 cables for distributing board—

300 x 90 = 27,000 m.
240 x 30 = 7,200 m.

34,200 metres at 1.50 m. 51,300 m. (\$12,209)

*Cost of moving main distributing board about 100,000 m. (\$23,800)

Power plant, including construction of engine
and storage battery rooms, cabling, &c. 35,000 m. (\$ 8,330)

186,300 m. (\$44,339)

Cost of connecting cables—

$\frac{2,270 \times 3}{2} = 810$ pairs.

$\frac{90.3}{2} = 135$ "

18 "

963 "

1,000 " 1, 5 km. = 1,500 km.

Pairs or wires, per km., with end-pieces (sleeves), &c. . 75 m. (\$17.85)

Cable guards (covering, armature) per km. per pair. . . 25 m. (\$ 5.95)

1,500 km. at 100 m. (\$23.80), 150,000 m. (\$35,700). 100 m. (\$23.80)

The new main distribution boards with safety-fuse arrangements are only set up in parts, according to the immediate requirements, and are supplied at the following prices:—

M. Pf.

Iron uprights (supports), including screws, &c., each. 32.75 = (\$7.80)

Holdfasts (couplings) for 28 double lines, each. . . 23.90 = (\$7.80)

Safety-fuse arrangements for the above, each. . . . 0.28 = (7 cents)

Holdfasts (couplings) for 20 double lines, each. . . 7.60 = (\$1.81)

* Here is included the furnishing of a new main distributing board, together with safety fuse arrangements for 15,904 outside wires, and 14,000 switchboard wires, at approximately, 11,000 m. = (\$2,618).

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There has been no competition in telephone service at any time in Bavaria.

The system of working the switch stations in Neustadt on the Haardt, and at Munich, No. II., is 'central energy' or 'common battery.' The switch station at Munich No. I., as well as the present switch station now being rebuilt for the 'common battery' system at Nuremberg, have, at the present time older systems.

The regulations for the service of subscriber's stations, switch stations, and long-distance lines, are contained in Document 24, as printed in No. 291b.

No payments are made for wayleave privileges; the telegraph management is authorized by law to use the public roads, free of charge, for telegraph lines and for telephone lines.

BAVARIA—Continued.

No. 291b.

(Translation.)

INSTRUCTIONS FOR THE BAVARIAN POST OFFICE AND TELEGRAPH SERVICE. (SECTION VI., DIVISION 2.)

MUNICH, May, 1904.

THE TELEPHONE SERVICE.

3.—SYSTEM OF WORKING LONG-DISTANCE STATIONS.

Noting Down Subscribers' Requests for Conversations.

43. As soon as a subscriber in a local telephone system makes known his intention to the switch station, to converse with a station in another local telephone system which, together with the local system to which the subscriber belongs, is neither admitted to service with principal centres, nor to service with neighbouring places, then the operator in the switch station makes the connection with the long-distance station. (See section 32, in addenda hereto, page 563.)

The long-distance station responds to the call by calling back, 'Here long-distance station.'

The long-distance station must respond to the calling up as promptly as possible.

First of all, the person calling up gives the long-distance station his number and name, or the name of his firm. Then he gives the number and name of the station to be called up, together with the name of the local telephone system, with which the said station is connected. If the conversation is to have the precedence of the ordinary connections made for conversations, then the subscriber adds the term 'urgent' to his call. If the subscriber wishes to be informed when the time allowed for conversation has elapsed, then he must make special request to this effect, when he desires the connection to be made. The operator in the switch station carefully notes down these requests in the form to be used for this purpose (see Appendix 7 and 8), inserting each item in its own place. The entries regarding the urgency of the conversation, the desired notification when the time allowed for conversation has elapsed, or the character of the conversation, as dealing only with matters relating to state service, &c., are to be entered on the column that is headed 'remarks.' The form to be used for Munich is 'service form' F, 35a. The operator in the switch station repeats

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over distinctly these points noted down, whereupon the subscriber confirms the correctness of the same, or corrects any mistake made.

The operator in the switch station concludes with the words, 'You will be called,' and then switches off. The switch station breaks off the connection, and the subscriber hangs up his receiver.

Then the correctness of the entries made by the operator in question is again verified, and the exact time when the connection was desired, together with the date and the signature of the operator, is to be added, at the top of the form, in the left-hand corner.

In the case of official conversations, which are requested from stations that belong to public officials, &c., the call must begin with the words 'official conversation.'

When a conversation of a private nature is requested from such stations, then the call must begin with the words, 'Private conversation,' expressly stated. Besides this, the person who desires the connection has always to give his or her name. The said name is to be entered on the service form, above the designation of the official station, from which the connection is requested.

In those cases in which official conversations are desired from the stations of private subscribers, request must be made that the person who desires the long-distance conversation must inform the long-distance station what public authority he represents, and also give his name and branch of service.

These points are to be carefully noted down, and if this is neglected, then the operator in the switch station must endeavour to find out these points. In the service form under the column headed 'Remarks,' official conversations are to be distinguished by the letter 'S,' and private conversations by the letter 'P.'

The request for long-distance conversations from public call-stations must be made by the operator in charge of the said public call station. (See section 66, No. 5, in addenda hereto.) It is not admissible to receive the request from the person who desires the connection. Any attempts to do so are refused, with the remark that the connection can only be effected when the same is requested by the operator.

The service forms (viz., F. 35, or in the case of Munich, F. 35a, see Appendices 7 and 8, not translated), on which the requests for conversations are noted down, that are desired from subscribers' stations, and public call stations, are supplied in pads of 100 each, or 50 each, and are numbered consecutively.

The larger long-distance stations have to use, according to the service, several of these pads, at the same time, and have to mark the same specially, so as to distinguish the one from the other, by adding to the consecutively-numbered forms that are torn off from the pads, the Roman numerals I, II, &c., by which the various pads are distinguished, the one from the other. In each station where requests for conversations are allowed to be received, a sufficient number of these conversation forms must always be on hand to last at least for one day's service. The name of the place is to be written or stamped on the said forms. Pencil is to be used for writing purposes. As the full number of these conversation forms is verified, there must be no break in the consecutive numbers. Forms that have been spoiled must also be handed in with the necessary explanations written on them.

N.B.—The appendices and forms referred to, have not been printed.

ARRANGING THE CONNECTIONS.

44. The technical arrangement of the long-distance stations resembles that of the switch stations, so far as the switch arrangements are concerned.

The connections are also made here by means of the connecting cords. In the case of switch stations that have united local and long-distance service, the switch arrangements that are used for local service are also arranged for making long-distance connections.

If the line necessary for making the long-distance connection is free, then a cord with a black plug, is inserted in the long-distance jack in question, and the long-distance station in the other place is called up.

With regard to the use of long-distance lines, special attention must be given that where several long-distance lines, having wires of various gauges, or weight, are available for use in one direction, wires of 3 and 4 mm. (Nos. 10½ and 8 s.w.g.) are to be used for making connections for distances of extra length; and for shorter distances, lines with wires of 2 mm. are to be employed.

The size of the wires comprising the various long-distance lines is to be denoted on the jacks of the long-distance switch boards. The call is made over long-distance lines where there are no intermediate stations, by pressing the calling key once, shortly. By turning the switch lever, the calling apparatus (the receiver and transmitter) are switched on to the line. In lines with more than two switch stations, or long-distance stations, the calling up is done by code signals. The code signals are taken from the Morse alphabet, and must be different for each of the stations that are switched on to a long-distance line. It is not necessary that the code signals should be abbreviations of the local names. The specification of these signals is laid down by the Royal Bavarian post and telegraph management.

As soon as the long-distance station that has been called up responds, then the number of the station desired is given to the same. The long-distance station called up repeats the number and then switches the second connecting cord, having a red plug, into the jack of a trunk line leading to the switch station. The switch station which receives the long-distance signal and the general call signal, receives the calling number from the long-distance station, repeats the same, and then calls up the station of the subscriber desired, and connects it with the long-distance line by means of a direct connecting cord. The long-distance station again informs the station called up, with the words, 'You are called up by'(here is to be mentioned the local telephone system to which the station calling up belongs). At the same time, the station that has sent the call, is informed by the other long-distance station, by means of the switch station, that the connections are ready, with the words, 'You are connected with'(here is to be mentioned the local telephone system to which the station that has been called up belongs).

The conversation between the two subscribers may now begin. In the case of public call stations, the call of the switch station is to be answered by the operator, and the said operator has to request the person waiting for the conversation to begin the conversation, when the announcement is made that the connections are ready.

If no response can be received from the person called up, or if his line is out of order, then the person calling up is informed of this, by the announcement, '——— gives no answer,' or 'the wire of —— in —— is out of order.' In the service between larger long-distance stations over long-distance lines that have no switch stations, the sending in of requests for conversations is admissible in groups of three conversations. In cases when from two stations, who wish to converse with each other, the requests for conversation are announced almost at the same time, the response already given is not again repeated to the first station calling. The charge will only be collected at the long-distance station from which the request for conversation is again repeated. In the case of several requests made for conversations, under the same circumstances (conditions), no division in the charges will be made.

SUPERVISION OF CONNECTIONS.

45. The operator in the switch station has to watch the connection which has been made for the conversation, until he, or she, is assured that the same has been correctly effected. The point of time at which the person called up responds, and the person calling up is informed by the switch station or the long-distance station, that the desired connection has been made, is to be entered on the service form as the point of BAVARIA.

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time at which the conversation has begun. With regard to the point of time at which a conversation sent from a supplementary station begins (see section 15, on page 564). After the conversation has been commenced, the operator's calling apparatus is to be switched off.

Intermediate switching on to the connection in order to hear what is being said is not admissible unless by official instructions.

The control (regulation) of the duration of the conversation is only to be done at longer intervals of time, and is to be limited to the absolutely necessary time required for this purpose.

An occasion for switching on is given, if the signal to disconnect is not made shortly before the period specified for conversation has elapsed. If, in this case, the operator perceives that the conversation is still being continued, and if no other request has been made for the line, then he must at once switch off the calling apparatus and must not interfere with the continuation of the conversation. If other requests for conversation have been made, then both stations are to be notified to finish the conversation, with the words 'please finish,' and the connection is to be broken off, as soon as the period allowed for conversation has terminated. In this case, it is left to the option of the person calling up, either to make request at once, for a later continuation of the conversation, or to finish the conversation for the time being. No interruption must take place in the conversation from the stations in the Royal Court, or the royal establishments of the Crown Prince or Princess, or in the conversations of public officials, on account of any requests for conversations that may be waiting. In the case of connections requested by public officials in long-distance service, for which no charge is made, or for which a reduced charge is made; or in the case of conversations which claim exemption from paying an individual charge, on the basis of the regulations relating to the rates in departmental (municipal) service, if any well-founded doubt exists in the first case, as to the official nature of the conversation, or, in the second case, as to whether the requirements really exist, that are presupposed for a conversation that is exempted from paying an individual charge, then supervision must be exercised by listening to the said conversations. A sufficient ground for exercising such supervision over conversations, is only to be considered necessary, when special reasons exist, such as, when several offences have already been noted on the part of the subscriber in question, against the regulations in the telephone service that have been specified for the payment of charges and exemptions from paying the same.

In the case of conversations, where the conditions make it impossible to fully understand what is being said, the observations made by the operator, are to be briefly noted down on the back of the service form (see section 43). The same is to be handed to the chief operator or to the management, for further consideration. The chief operator, on the basis of these observations made by the operator, and in conference with the subscriber, has to decide as to whether, under the existing circumstances, a reduction will be allowed in the charge.

When any derangement takes place in the service, the persons who have been noted down for conversations, are to be informed whether this notification holds good, and in all cases how long it will be maintained.

The service forms, with the requests for conversations that have been withdrawn are to be scored through, obliquely, on the front side, from left to right, and the necessary remarks are to be entered on the back of same.

When any one makes a request for connections during the time that the service is deranged (interrupted), then, of course, he must be at once informed of the present derangement in the lines.

BREAKING THE CONNECTIONS.

46. When the signal is received that the conversation has terminated, then the connection is at once broken off, and the point of time at which the conversation closed, is ascertained and entered on the service form.

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If the operator in charge of the connection observes that the conversation is not being continued, and receives no response to the inquiry, 'Do you still speak?' she is to consider the conversation ended, and break the connection.

In this case, the time when the connection is broken is to be also regarded as the time when the conversation has terminated, and the same is to be entered on the service form. By breaking the connection at the long-distance station, the long-distance signal and the general call signal become visible at the switch station. This informs the operator in the switch station that the connection is to be broken. The operator in the long distance station has to note down on the service form the duration of the conversation, in minutes, and the charge to be estimated for the same. Finally, the operator who is responsible for the connection has to sign the form in the lower right hand corner; the service form thus filled in is then to be handed over for further calculation.

EXCHANGE OF CONVERSATIONS OVER LONG-DISTANCE LINES.

47. The switch stations, or the long-distance stations, that are connected with a trunk line, have equal rights to use the said line.

A conversation that has been commenced must not, under any circumstances, be interrupted.

The following regulations apply, in the internal service of Bavaria, to the order of succession, according to which the telephone conversations are to be carried on:—

- (1) Conversations which are carried on by His Majesty the King, His Royal Highness the Prince Regent, and the other ruling princes of the States of the German Empire, as also their Royal Consorts and widows (dowagers), or by the officials, retainers, suite, or royal establishments, which may be connected with their Majesties or royal personages.
- (2) Conversations by the ministers of state on matters of state service, by the management of the Royal Bavarian State Railway, and the subordinate officials of the same, on matters of service pertaining to the state, conversations by both chambers of parliament, concerning parliamentary affairs, and urgent conversations by the other state officials, as well as by the municipal authorities on matters pertaining to the state.
- (3) Private conversations of an urgent nature.
- (4) Ordinary private conversations, ordinary conversations on state affairs, other than those specified under No. 2 (with the exception of the post office and telegraph authorities), and ordinary conversations by the municipal authorities, on matters pertaining to the state.
- (5) Ordinary conversations by the post office and telegraph authorities.

The connections, for conversations of the same rank, to the same place, are to be made according to the order of announcement.

When requests for conversations have been received in both the long-distance stations, then the connections are to be made by turn in opposite directions. An urgent conversation, the duration of which exceeds the specified time, must only be interrupted if another urgent conversation is waiting to be carried on.

The prolongation of an urgent conversation beyond the usual specified time, is regarded as a request for a further urgent conversation, which, as such, claims the precedence of all the previous or simultaneous ordinary conversations, that have been requested. The said conversation must therefore not be set aside for the purpose of carrying on an ordinary conversation, no matter in what direction the latter is to be carried on.

For the order of through connections, the point of time at which the announcement was made is generally to be taken as the standard. The precedence, however, in carrying on the conversations, is to be given to the places which are furthest dis-

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tant from each other. The calling up of such switch stations, or long-distance stations is to be granted at once, if at all possible.

If the line required is occupied, then the same must be given up, as soon as the conversation, being carried on, is finished.

Requests for conversations between local telephone systems of the Palatinate and Rhenish Bavaria, and *vice versa*, are to have the precedence of all ordinary conversations between local telephone systems within Rhenish Bavaria, or within the Palatinate; and are therefore, in precedence to these, to be transmitted by the long-distance receiving and intermediate stations.

When two long-distance stations enter into communication with each other, then these must carry out to a complete finish the requests for conversations that may be on hand. A third station may only enter into the connection if an urgent call has been requested in the same.

Every through connection, if the same cannot be made at once, is to be entered on a sheet by itself, in the through station, with the name of the place calling up, and the name of the place desired, and the time when the request was made, and to be placed, in order, among the other requests that have been received. The time when the connection was made is also to be noted down. These sheets are to be kept for reference for three months in the switch station, or long-distance station, in case any protests may be made.

USE OF CIRCUITS FOR CONNECTIONS.

48. The making of connections for long-distance conversations must, as a general rule, take place over the ordinary lines or circuits that are specified for this purpose.

In cases when the lines are deranged or when the traffic exceeds the capacity of the designated circuits, then it is admissible to obtain the connection by means of other available circuits.

In the case of lines belonging to another management, only those circuits may be used for obtaining connections which are designated in the usual way. When, in obtaining connections, Bavarian local telephone systems are called into requisition, these must willingly hand over for use the circuits that are required, still there must be no essential interference with the ordinary service over the said lines.

USE OF LONG-DISTANCE LINES DURING NIGHT HOURS.

49. The long-distance lines, between local telephone systems, which have full night service, or at least service during a part of the night, may be used by subscribers during night hours for single conversations, paying ordinary rates, and also for conversations for night subscription rates. Ordinary and urgent conversations are admissible under the same conditions as during the hours of daily service, but the same may only be carried on at the times when the wires are not being used for conversations at subscription rates. Subscription conversations may only be carried on regarding matters pertaining to the affairs of the subscriber, or members of his family, or business employees.

Night hours are reckoned during the summer months, April to September, from 9 p.m. till 7 a.m., and during the winter months, October to March, from 9 p.m. till 8 a.m. Each subscription must last at least one month. The subscription may begin at any time, but the duration of the month is also to be reckoned from the following 1st or 16th of a month. The switch station or long-distance station concerned is to be informed when a subscription has been taken out for conversations during night hours. (See 'Instructions,' section IV., division 5, part II., paragraph 7: explanations to division 1, II., not received.) The station concerned has to make arrangements, at once, with the long-distance station, with which the night connections are to be made, regarding the time when the said connections are to be made.

If several long-distance stations are required for carrying out the connections, arrangements must be made with all the said stations. Any unnecessary delay in the time requested by the subscriber for carrying on the conversations is to be avoided as much as possible. The result of the arrangement between the long-distance stations is to be given at once, to the station where the request for subscription was presented, in order that final arrangements may be made with the subscriber regarding the time when the connections are to be made.

The time agreed upon for making the connections, and the time when the period of subscription begins, is to be 'phoned to the long-distance stations concerned. The subscriber is to receive written information as to the time when the subscription commences and the period of time for which the desired connections will be made, as also the amount of rates to be paid, from the station where the request for subscription was made.

The communications which have to be made between the various long-distance stations on matters of service, are to be carried on by the chief operators in stations that have such officials, and in stations that do not have chief operators, by the manager of the bureau under which the long distance station in question is placed, or by an operator connected with the long-distance service.

No conversations must be carried on until the subscription rates have been paid. The long-distance stations have to keep a general list of all the subscription conversations that are carried on during night hours. This list must always be kept correctly. These stations must co-operate in the keeping of the said list, as sender, intermediate and receiving stations. The list must contain:—

- (a) The calling number and the name or firm of the two subscribers.
- (b) The time during which the conversation is carried on.
- (c) The numbers and designation of the lines to be connected.
- (d) The time when the night subscription begins and ends.

DEPARTMENTAL SERVICE.

50. For the definition of 'Departmental Service,' see section 3 (not translated). Regarding the kind of rates that are collected in departmental service, see section 10, No. 3 (not translated). For the carrying on of conversations in departmental service, the same rules which have been specified for long-distance conversations also apply.

The regulations regarding subscription in departmental service, by paying an annual additional charge, over and above the unlimited service rates, and the extent of the rights that belong to subscribers in departmental service, through paying the said rates, are contained in 'Instructions,' section IV., division 5, part II., paragraphs 9 and 10 (not received).

A subscriber paying the additional rate for service within the area of a departmental system, is not permitted to converse, free of charge, within such area, from a public call station or from the station of any other subscriber, whether these pay the extra rate for departmental service or not.

In individual cases, when the station of a subscriber belonging to the departmental system is out of order, or for any temporary cause, cannot be used, if the said subscriber wishes to use the station of another subscriber, with his consent, for the purpose of carrying on a conversation, within the area of the departmental system, without charge, no objection can be made, no matter whether this other subscriber also belongs to the departmental system or not. In such cases, however, the subscriber who wishes to carry on the conversation has to give his name and number to the switch station or long-distance station concerned, when he requests the connection, and has also to state the reasons why he uses the other subscriber's station.

In this case, of course, the conversation is not to be charged against the subscriber whose station is being used, but against the subscriber who carries on the conversation.

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sation. If there is any ground for doubting the reasons that are given for using the station of the other subscriber, the switch station, or long-distance station concerned, has to verify the truth of the reasons given, by afterwards calling up the station reported to be out of order, or by means of some other suitable investigation. Any mis-statements that are found out are to be reported to the management or the chief operators.

It is not admissible to use a public call station for conversations free of charge, within a departmental system, under any circumstances whatever.

Payment is to be made only for the actual connections that have been carried out. 'Actual connections' are only those in which response has been obtained from the station called up, and conversation made between the same and the station that sends the call.

A connection is not to be reckoned in the following cases:—

- (1) When no response is obtained from the station called up.
- (2) When the request for the connection is withdrawn.
- (3) When it is not possible to carry on conversation between the station that sends the call and the station that has been called up, and when the person that sends the call informs the switch station, or the long-distance station concerned, of this fact, immediately after the connections have been broken off.

Those conversations are also not to be reckoned that are carried on by a subscriber in a departmental system, in a place that has been admitted to service with principal centres, with the said chief centre and with another principal centre, as also those conversations that are carried on by the said subscriber, in a chief centre, with a principal centre. The same applies also to service with neighbouring places. On the other hand, besides the 'actual connections,' those connections are also to be reckoned when:—

- (1) The subscriber who is called up responds to the call, but declines to carry on the conversation.
- (2) The subscriber in the departmental system who has made the request for the connection, declines to carry on the conversation, or does not respond after the connections have been made for him.

The operator has to be satisfied that the connections are all right, by listening for a moment to the conversation.

The conversations carried on in departmental service are to be noted down as a call by the switch station or long-distance station from which they are sent. The conversation is not to be noted down as a call until after the connection has been broken off.

Each conversation carried on in departmental service is counted singly, no matter how long it is continued. Urgent conversations in departmental service, are also counted as one, in each case, without regard to the length of time taken up, without infringing upon section 11, part 2, of the 'Telephone Rates.' The call entries by the operators are to be made with the greatest possible accuracy and faithful conscientiousness, for the sake of the financial interests of the telegraph management and of the subscribers. A free conversation in departmental service may only be continued longer than three minutes, if, at the termination of this period no other person wishes to use the line that is occupied; or, in case several lines are being used, if one of the same lines are not in request. If such a request has been made, then the connection must be broken off at the close of the three minutes, no matter what protests may be made. The managers or supervisors must watch carefully that this regulation is strictly enforced by the long-distance stations. When the connections are being made for subscribers in departmental service, the long-distance operator must indicate to the other long-distance station, by using the words 'departmental service,' that the connection requested must be broken off after the lapse of three minutes.

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The conversations held the previous day by subscribers entitled to free departmental service must be telephoned by the various stations with which such conversations are made, not later than noon each day, to the exchange where payment of the additional charge for such free departmental service is made.

When the lines are deranged, during lengthened periods of time, then this communication is to be made by letter. Requests for conversations that have not been carried on do not have to be sent in. These reports must be sent in by the manager, or, in the case of local telephone systems having a supervisor, by that official.

The said managers or supervisors are responsible for the accuracy and punctuality of these reports. The daily reports sent in this manner over the 'phone, must be handed over at once, to the operator who has charge of the register in which these are entered. (Service form F. 48. See 'Instructions,' section VI., division 5, part II., remarks to paragraph 9, not printed.)

SERVICE WITH THE GERMAN GOVERNMENT TELEGRAPH AREA, WITH WURTEMBERG, AUSTRIA, LICHTENSTEIN, AND SWITZERLAND.

51. The service with the German government telegraph area, with Wurtemberg, Austria, Lichtenstein and Switzerland, is carried on, so far as noting down and carrying out the connections are concerned, according to the regulations which have been specified for the service within the area of Bavaria.

Regarding the carrying on of conversations, in service with the German government telegraph area, even urgent conversations must be stopped after the lapse of six minutes, if requests for ordinary conversations are waiting to be carried out in the opposite direction. The stopping of an urgent conversation to make way for another call does not entitle an ordinary one to precedence if at the time when it is stopped another urgent call is waiting, no matter from which end of the line. In this case, the urgent conversation that has been stopped must be immediately followed by the urgent call that is waiting.

Conversations sent to Bavaria from the German government telegraph area, from Wurtemberg, or from Austria, which are not to be counted, are to be noted down on service form F. 36 (Appendix 9). These notes must contain the name of the local system which sent the call, and the local system called, the number of the station asked for, the length of time taken up by the conversation, and the amount of charges for the same.

For through service which has to be reckoned for, from Wurtemberg, over the German government telegraph area to Bavaria, on the left side of the Rhine, and from the German government telegraph area over Wurtemberg, and from Switzerland over Austria to Bavaria, on the right side of the Rhine, and, finally, in direct service from Austria to Bavaria, the conversations over the above-mentioned connections are to be noted down with the name of the system sending the call, and that of the system called, the number and name, or firm of the person calling, and the name of the person called, also the duration of the conversation, and the charges to be paid for the same. The service forms which contain the entries regarding the service, in both directions, between Bavaria and the German government telegraph area by way of Wurtemberg, are to be distinctly marked on the upper margin 'over Wurtemberg.' The signature of the operator who makes the connection and supervises the same, must be inserted on the right lower corner of the service form.

WORKING SYSTEM OF THE MESSAGE STATION—SERVICE WITH THE MESSAGE STATION.

52. The wires leading from message stations are led into the exchanges in the same manner as the wires from subscribers. Connections between message stations and subscribers' stations are made in the same way as between two subscribers' stations. The subscriber who wishes to send a telegram or some other message, calls BAVARIA.

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the exchange, and after he has been answered, uses the word 'telegram' or 'message.' Thereupon the operator in the exchange calls up the message station and gives the number of the subscriber who has made the call.

RECEIVING THE MESSAGES.

53. The message station calls up the subscriber, with the words, 'Message station, who is there?' whereupon the subscriber answers, 'Here (number and name), telegraph to.....,' or 'A post card to.' or 'A letter to....., or 'A message to.....' The operator notes down carefully the number and the name of the subscriber, and then calls, 'Please give.' The subscriber now begins to dictate. In order that the operator may be able to follow, in writing down what is being said, the dictation must be done slowly, distinctly and in sentences of three or four words at a time. Then a pause has to be made until the operator calls 'continue.' Surnames and other words, especially those in a foreign language, regarding the spelling of which there may be some difficulty, are to be spelled, if requested, by using, if necessary, the spelling alphabet which is printed out in part II. of the Telephone Directory. When figures have to be written with letters, then this must be specially mentioned by saying 'spell with letters.' Any necessary signs of punctuation are dictated in the usual terms, *i.e.*, period, comma, &c. These insertions are not counted when the charges are reckoned. As soon as the whole message is dictated, the subscriber has to call the word 'finished.' Then the operator reads the whole message over again. If any mistake is noted in the taking down, then the subscriber interrupts, with the words, 'Wrong, it reads in stead of.....' The operator corrects the error and repeats the place in question over again, and then reads further. If no mistake is observed when the message is read over again, the subscriber calls, 'Correct, finish,' and hangs up the receiver. Then the subscriber and the operator ring off.

FORWARDING IN-COMING TELEGRAMS TO THE SUBSCRIBER.

54. As soon as a telegram to be transmitted, by 'phone, to a subscriber arrives at the message station, the operator calls up the exchange and gives the number of the subscriber's station for which the telegram has arrived. The exchange makes the connection. The subscriber who responds is informed of the telegram by the words, 'Message station, a telegram from.....' In transmitting telegrams received to the subscribers, the same manner of procedure is followed, as in receiving telegrams, &c., from the same; only, in this case, the operator in the switch station is the one who dictates, and the subscriber the one who writes down. If a subscriber receives a telegram with answer prepaid (R₁) through the 'phone, and sends the reply back by 'phone, then he has to describe the latter to the message station as 'telegram, answer prepaid.' On the other hand, if the subscriber receives such a telegram by the express messenger and if he wishes to send the answer by 'phone, by using the answer-form, then he must also describe this telegram to the exchange, as 'telegram, answer prepaid'; and at the same time write down the telegram on the answer-form, and use this at the end of the month, when payment is made, as a receipt to show that the answer was prepaid. For handing over the written copies of the telegrams that have been sent by 'phone (see 'Instructions,' section IV., division 5, part II., paragraph 18, not printed).

MESSAGES WITH ANSWER PREPAID.

55. Every subscriber can make request that the answer to a message, given from his station, may be sent to him, by 'phone, from the message station, if he agrees to pay the charges for the said answer. In this case, the subscriber has, when dictating the message, to add, immediately after the address, the words 'answer prepaid.' The

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agreement to pay the answer, only for a specified number of words, is not admissible. When a message is forwarded, with answer prepaid, the receiver is handed an answer-form (Appendix 10, not printed), on the back of which he has to write down the answer at once. The answer is then at once brought back to the message station, and forwarded from the same to the subscriber. The transmitting of this answer by the operator in the exchange is introduced by the words 'answer to message sent to.....' If for any reason the answer cannot be at once obtained from the person receiving the message, then the sender is informed of the fact, by the exchange. This announcement, which takes the place of an answer, is, in all cases, considered as an answer consisting of 5 words, and is charged for as such. Regarding the charges for messages (see 'Instructions,' section IV., division 5, part II., paragraph 16, not printed).

THE HANDLING OF TELEGRAMS AND OTHER MESSAGES—COUNTING THE WORDS—RECKONING THE CHARGES.

56. The telegrams that are given in to be sent by 'phone are written down on a telegram receiving-form (service-form D52, not printed). The writing is done with pencil. The messages that are to be forwarded by mail, take the form of letters or post cards, according to the wish of the subscriber. The former are written on service-form F30 (Appendix 11, not printed), and the latter on franked post cards. The request to write down the message cannot be handed in by the telephone messengers, but the request to send the written message may be handed in by them.

The writing down of messages, to be sent to non-subscribers, who live in the vicinity, is also to be done on service-form F30. An additional copy is written out, during the intervals in the service, of those messages that are to be forwarded through the post, as letters, and also those that are to be delivered in the neighbourhood of the switch station. The first copy is to be handed in for reference. The second copy is delivered to the receiver of the message. The wrapper to be used is service-form F31 (Appendix 12, not printed). When the first copies of the forms are handed over, then the charges to be paid by the sender are at once reckoned, and entered into the 'Register of Telegrams and Messages sent to the Message Stations.' (Service-form F11, Appendix 13, not printed.)

For counting the words and estimating the charges for telegrams, the regulations apply that are specified in the 'Rates for Telegraph Service'; 'Instructions,' section IV., division 4 (not printed). No charge is made for receiving and sending telegrams by 'phone: but the receiving of those messages are charged for, which are to be forwarded by the post, or by messengers. (See 'Instructions,' section IV., division 5, part II., paragraphs 16ff, not printed). In calculating the charges for receiving such messages, the same rules are to be followed, with regard to the counting of the words, that are specified for calculating the charges for telegrams.

TRANSMITTING TELEGRAMS RECEIVED BY 'PHONE—FORWARDING TELEPHONE MESSAGES BY POST—DELIVERING MESSAGES TO NON-SUBSCRIBERS, LIVING IN THE NEIGHBOURHOOD OF THE SWITCH STATION.

57. After the specified entries, &c., have been made, the telegrams are to be sent, as promptly as possible, to be transmitted by the telegraph bureaux. The despatch of the letters and post cards must also take place at the earliest opportunity. Messages to be delivered to non-subscribers, living in the neighbourhood, are sent by messengers, in the same way as telegrams which come in from other places. All telegrams and

APPENDIX No. 1

messages, coming in by 'phone, must receive the stamp of the message station, before they are forwarded.

TRANSMITTING OF TELEGRAMS TO SUBSCRIBERS BY 'PHONE.

58. The transmitting of telegrams to subscribers by 'phone will only be done when written request is made for the same. The written copies of the telegrams that are sent by 'phone, are furnished with an entry regarding the time when the telegram was spoken over the 'phone, and inclosed in an envelope, with the name and address of the receiver, and forwarded to him by the next delivery of mail. The time and the manner of sending the same, and also the number of subscriber's station, has to be entered on that part of the form which is retained.

If the subscriber does not reside within the area of mail delivery, where the switch station is situated, then the copy of the telegram is to be forwarded by the next post to the mail delivery office concerned, in order that it may be handed to the subscriber. The envelope is to be marked 'postal matter.'

If the station of a subscriber cannot be called up within a quarter of an hour after a telegram has been received for transmission by 'phone, then the telegram is furnished with the necessary remarks and sent by messenger. The same manner of procedure must be followed, without delay, when there is any derangement in the service.

Telegrams arriving after business hours are also forwarded by messengers, unless some other written instructions have been received.

A correct list must be kept in every message station of those subscribers who have telegrams transmitted by 'phone to their stations. This list must contain details regarding the times when the business establishments of subscribers are closed, and now telegrams are to be handled that come in during such times.

Regarding the list of those subscribers who receive the 'weather bulletins' over the 'phone, see 'Instructions,' section IV., division 5, part II., paragraph 18. A corrected copy of the telephone directory, containing the subscribers of the local system must be kept on hand in every message station.

ADDENDA.

SERVICE WITH THE LONG-DISTANCE STATION.

32. The subscriber who wishes a connection with another subscriber, belonging to some other telephone system, calls for the long-distance station.

The operator in the local exchange thereupon removes the plug that was inserted in the jack of the subscriber's wire for calling purposes, and then inserts into the jack the plug of a direct connecting cord, at the same time inserting the other plug of this cord into the jack of a long-distance wire, thereby the long-distance signal (call) is given both in the local exchange, and also in the long-distance station, and the latter is called upon to enter into the connection. When the conversation has terminated, the long-distance station breaks the connection. This again gives the long-distance signal to the local exchange, and therefore the operator in the switch station has the signal to disconnect. The operator then removes the direct cord from the jacks of the subscriber's line, and the long-distance line.

When a subscriber is called from a distance, the long-distance station calls up the local exchange required, in like manner, by means of the long-distance signal. The operator in the local exchange required, switches his calling apparatus on to the long-distance line in question, and receives from the long-distance station the number of the subscriber who is to be called up.

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The calling apparatus is again switched off, and the plug that was used for calling up is removed from the jack of the long-distance line, and the connection is then made between the subscriber and the long-distance station, over the same long-distance line, by means of the direct cord, after the same manner described above.

CALLING UP THE LOCAL EXCHANGE, OR LONG-DISTANCE STATION, FROM PUBLIC CALL STATIONS.

66. When a conversation is to be carried on in local service, or in service with principal centres, or with neighbouring places, the calling up of the local exchange may be left to the person who is using the public call station. If the person is not acquainted with the use of the telephone apparatus, then the operator in charge of the public call station must make the necessary arrangements.

In the case of a conversation in long-distance service, the long-distance station must be called exclusively by the operator who has charge of the public call station. The calling up of the long-distance station is to be introduced by the words 'here. . . . (name and class of service of the operator) 'paid connection (or free connection) with X in Y.' The long-distance station must not make any connections in long-distance service unless the call is made in this manner. The operator in the public call station must not hand over the 'phone to the person who wishes to carry on the conversation until he is sure that some one is present at the station called up.

DURATION OF CONVERSATIONS.

15. The amount of charges to be paid for conversations in local service, and in service with principal centres, and with neighbouring places, and also in long-distance service, is estimated according to the actual length of the same. The duration of a conversation in local service, in service with principal centres, and with neighbouring places, is reckoned from the point of time when the call is responded to from the station called up. The duration of a conversation, in departmental service, and in long-distance service is reckoned from the time when the connection has been made between the station of the person calling and the station called, and when the person calling is informed, by the local exchange, or the long-distance station concerned, that the connections are ready. The duration of a conversation which is carried on from supplementary stations, in departmental service, and in long-distance service, is reckoned from the time when the subscriber who has the principal station, with which the supplementary station is connected, is informed that the connection is ready, by the local exchange, or the long-distance station concerned. A conversation, carried on from a subscriber's station, is considered as ended, when the signal to ring off is given to the local exchange, or the long-distance station concerned; or, if the signal is omitted to be given, when the operator, in the local exchange perceives that the conversation is not being continued, and when no response is given to the inquiry as to whether the conversation has terminated. The duration of a conversation, in long-distance service, sent from a public call station, is reckoned from the time when the operator, in the public call station hands over the 'phone to the person who wishes to hold the conversation. A conversation, in long-distance service, is considered as ended, when the person using the public call station has either rung off, or, if he has omitted to do so as soon as he leaves the 'phone. In the latter case the operator must ring off.

The supervision of the length of time, taken up by the conversation, and the fixing of this time, in the case of conversations carried on from subscriber's stations, is to be attended to by the local exchange, or the long-distance station, to which the request for the connection was made, by the person calling up; and, in the case of conversations, sent from public call stations, by the operator in charge of the said public call station.

APPENDIX No. 1

BAVARIA—Continued.

No. 291c.

(Translation.)

COST OF TELEPHONE MATERIAL AND CONSTRUCTION.

A.—OVERHEAD LINES.

1. *Wooden Poles.*

Supplying and setting up in average ground creosoted poles, per pole:—

a.	Length of pole, 7.5 m. (24½ ft.)	(a)	Marks 6.60 (\$1.57)
	"	" (b)	" 5.30 (\$1.26)
b.	" 9.0 m. (29½ ft.)	(a)	" 7.60 (\$1.81)
	"	" (b)	" 6.30 (\$1.50)
c.	" 10.0 m. (32¾ ft.)	(a)	" 9.20 (\$2.19)
	"	" (b)	" 7.20 (\$1.72)
d.	" 11.0 m. (36 ft.)	(a)	" 11.30 (\$2.69)
	"	" (b)	" 9.20 (\$2.19)
e.	" 12.0 m. (39¼ ft.)	(a)	" 14.00 (\$3.33)
	"	" (b)	" 12.00 (\$2.86)
f.	" 13.0 m. (42½ ft.)	(a)	" 16.10 (\$3.83)
	"	" (b)	" 15.00 (\$3.57)
g.	" 14.0 m. (46 ft.)	(a)	" 20.00 (\$4.76)
	"	" (b)	" 19.00 (\$4.52)
h.	" 15.0 m. (49¼ ft.)	(a)	" 24.00 (\$5.71)
	"	" (b)	" 23.50 (\$5.59)
i.	" 16.0 m. (52½ ft.)	(a)	" 28.00 (\$6.66)
	"	" (b)	" 27.50 (\$6.43)
j.	" 17.0 m. (55¾ ft.)	(a)	" 32.00 (\$7.62)
	"	" (b)	" 32.00 (\$7.62)

(a) Munich. (b) Nurenburg.

Supplying and setting up a telephone mast (not creosoted):—

a.	Length of mast, 18 m. (59 ft.)	. . . . .	Marks 90.00 (\$21.42)
b.	" 19 m. (62¼ ft.)	. . . . .	" 110.00 (\$26.18)
c.	" 20 m. (65½ ft.)	. . . . .	" 130.00 (\$30.94)
d.	" 21 m. (68¾ ft.)	. . . . .	" 150.00 (\$35.70)
e.	" 22 m. (72 ft.)	. . . . .	" 170.00 (\$40.46)
f.	" 23 m. (75½ ft.)	. . . . .	" 200.00 (\$47.60)
g.	" 24 m. (78¾ ft.)	. . . . .	" 240.00 (\$57.12)
h.	" 25 m. (82 ft.)	. . . . .	" 280.00 (\$66.64)

Supplying and setting up in average soil, 23 creosoted poles to each km. (about $\frac{5}{8}$ of a mile), per km.: a. Length of pole, 7.5 m. (24½ ft.), Munich (a), marks 152 (\$36.18); Nurenburg (b), marks 125 (\$29.75). b. Length of pole, 9.0 (29½ ft.), Munich (a), marks 175 (\$41.65); Nurenburg (b), marks 150 (\$35.70).

Supplying and setting up in average soil, 20 creosoted poles to each km. (about $\frac{5}{8}$ of a mile), per km.: a. Length of pole, 7.5 m. (24½ ft.), Munich (a), marks 132 (\$31.42); Nurenburg (b), marks 110 (\$26.18). b. Length of pole 9.0 m. (29½ ft.), Munich (a), marks 152 (\$36.18); Nurenburg (b), marks 130 (\$30.94).

Supplying a brace or strut: a. Length from 7.5 m. (24½ ft.) to 9 m. (29½ ft.) Munich (a), marks 6.60 (\$1.57); Nurenburg (b), marks 7.70 (\$1.83). b. Made from fallen poles, marks 3.30 (79 cents).

Supplying a truss wire, or stem lightning rod, made of iron wire, per truss or rod, marks 2.00 (48 cents).

Supplying shores, each, marks 2.50 (60 cents).

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REMARKS CONCERNING THE FOREGOING PRICE-LIST.

The cost of transportation of poles from the warehouse to the place required is not specified. The cost in each case has to be reckoned separately and specially shown in the estimates.

For new construction and extensions made in the existing arrangements, the railway freight charges are to be reckoned according to the 'Tariff for supplies required for new Telegraph Construction,' issued on August 1, 1891. For the construction of private arrangements, the rates are to be reckoned according to the 'Tariff for the Transport of Goods, &c.' When several cartage stations are required for the transporting of materials, then the said stations are to be specified and their maximum total distance is to form the basis of calculation. Freight charges are not reckoned for work done in maintaining the existing arrangements.

For transport over public (country) roads, the average distance from the railway station in question is to be specified, and the number of days required for wagon transport is to be reckoned.

In stony ground, which can be cut with a boring iron (or cutting tool), the charge for medium-sized poles is to be increased by 1 mark (24 cents). In rocky ground which requires the use of blasting materials, the charge is to be increased by 2 or 3 marks (48 or 72 cents). The amount of the charge for specially long poles, is to be correspondingly increased.

For marking out the course of the lines and overseeing the work of construction by experienced employees, special amounts have to be specified in the estimate of the cost of construction.

2. Erection of wires, per km. (about $\frac{5}{8}$ of a mile):—
- | | |
|---|-----------------------------|
| a. Erecting wires of 4.5 mm. (No. 7, S.W.G.), bronze wire, with insulators | Marks 260 (\$61.88) |
| b. Of 4 mm. (No. 8, S.W.G.), bronze wire | " 215 (\$51.17) |
| c. Of 3 mm. (No. 10 $\frac{1}{2}$, S.W.G.), bronze wire | " 125 (\$29.75) |
| d. Of 2 mm. (No. 14, S.W.G.), bronze wire on poles, or on iron roof supports | " 70 (\$16.66) |
| e. Of 1.5 mm. (No. 17, S.W.G.), bronze wire with insulators and pins (bolts), No. 3, on iron roof supports | " 45 (\$10.71) |
| f. Of 1.5 mm. (No. 17, S.W.G.), bronze wire, with insulators and pins (bolts), No. 3, fastened on iron wall supports (attachments), including stays | " 90 (\$21.42) |
| g. Braided okonite conductors, for crossings with high tension lines, 2 mm. (No. 14, S.W.G.), bronze wire, insulated to 4 mm. (No. 8, S.W.G.), per metre ($39\frac{37}{100}$ inches) | " 0.16 (3 $\frac{3}{4}$ c.) |

Remarks.—When more conducting wires are to be placed on an existing pole with the changing of the cross-arm at the same time, then the extra cost of the new cross-arm, together with the cost of removing the former cross-arm, and the placing of the new cross-arm is to be specified in the estimate of costs drawn up for such work. In like manner, the cost of altering and strengthening these poles is to be specified in the said estimate. The cost for transport of wire, suspension pins (bolts), and insulators, the weight of which is about 50 kg. for each km. of line, is to be specified in the estimate of cost.

B. Underground lines, per metre ($39\frac{37}{100}$ inches):—

1. Cable ducts, made of double profile irons:—

18. Asphalted cable protective irons, No. 4 (weight 4.6 kg.), with binding hoops (straps), including moving and laying of the cable, but not including excavating:—

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- a. No. 4 (weight 4.6 kg.), for 14 to 28 double stranded cable Marks 1.05 (\$0.25)
- b. No. 5.2 (weight 5.4 kg.), for 42, 56 and 84 double stranded cable. " 1.15 (\$0.27½)
- c. No. 6.5 (weight 6.2 kg.), for 112 and 140 double stranded cable " 1.35 (\$0.32½)
- d. No. 10 (weight 10.8 kg.), for 168 and 224 double stranded cable " 2.15 (\$0.51½)
19. Binding hoops (straps) with wedges (keys) per 100 " 4.40 (\$1.05)
20. Metal clips, consisting of two unequal parts, 80 and 32 mm. broad, with screws for profile (side face), per 100:—
- a. No. 4. Marks 17 (\$4.05)
- b. No. 5.2. " 19 (\$4.52)
- c. No. 6.5 " 23 (\$5.47)
- d. No. 10. " 26 (\$6.19)
21. Cast iron curved back piece, asphalted inside and outside, with 1 socket (sleeve), for profile (side face), per pair:—
- a. No. 4. Marks 2.80 (\$0.67)
- b. No. 5.2. " 3.40 (\$0.81)
- c. No. 6.5 " 3.80 (\$0.90)
- d. No. 10. " 6.00 (\$1.43)
- Cast iron curved back piece, asphalted inside and outside, with 2 sockets (sleeves) for profile (side face), per pair:—
- a. No. 4. Marks 3.20 (\$0.76)
- b. No. 5.2. " 3.80 (\$0.90)
- c. No. 6.5. " 4.00 (\$0.95)
- d. No. 10 " 6.70 (\$1.59)
22. Joint sockets for profile (side face):—
- a. No. 4, 5.2 and 6.5, each Marks 3.80 (90c.)
- b. No. 10 " 6.80 (\$1.62)

Trenching, Cement Ducts, Cable Shafts.

23. Trenching, filling in again, carting away surplus earth, including removal of obstacles, per metre ($39\frac{37}{100}$ inches):—
- a. For cable casing 0.5 m. (20 inches) deep, 0.4 m. (16 inches) broad. Marks 0.70 (17c.)
- b. For 1 cable duct with 3 openings " 1.20 (28½c.)
- c. For 1 cable duct with 4 openings " 1.30 (31c.)
- d. For 2 cable ducts with 3 openings " 1.30 (31c.)
- e. For 2 cable ducts with 4 openings " 1.50 (36c.)
- f. For 3 cable ducts with 3 openings " 1.40 (33½c.)
- g. For 3 cable ducts with 4 openings " 1.60 (38c.)
- h. For 4 cable ducts with 3 openings " 1.70 (40½c.)
- i. For 4 cable ducts with 4 openings " 1.80 (43c.)
24. Supplying cable ducts of cement form pieces split longitudinally, including cartage to construction work at Munich, Nuremburg and Neustadt, but not railway freight charges to other points.
- a. A 4-cable bottom piece Marks 3.70 (88c.)
- b. A 4-cable covering piece. " 4.30 (\$1.02½)
- c. A 3-cable bottom piece. " 2.90 (69c.)
- d. A 3-cable covering piece " 3.30 (79c.)
25. Supplying clips, made of rod iron, 10 mm. thick, 160 mm. long, for binding the ducts, per 100. " 2.00 (48c.)

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26. Imbedding cable, without counting trenching:—
- a. Form piece or duct for 4 cables in 1 bed . . . Marks 1.10 (26c.)
 - b. Form piece or duct for 4 cables in 2 and more beds “ 1.00 (24c.)
 - c. Form piece or duct for 3 cables in 1 bed “ 0.90 (21½c.)
 - d. Form piece or duct for 3 cables in 2 and more beds. “ 0.80 (19c.)
27. Excavating for shafts (manholes), including carting of material, per cub. m. (1½ cubic yards) “ 2.70 (64½c.)
28. Concrete for basement and walls of shaft (manhole), per cub. m. “ 20.00 (\$4.76)
29. Masonry for shaft (manhole):—
- a. Of building stone laid in cement, per cub. m. “ 35.00 (\$8.33)
 - b. Of ordinary burnt brick, per cub. m. “ 26.00 (\$6.19)
30. Shaft (manhole) covers, each:—
- a. For pavements Marks 70.00 (\$16.66)
 - b. For street railways “ 100.00 (\$23.80)
 - c. For ventilating shafts “ 112.00 (\$26.66)
 - d. Double covers “ 150.00 (\$35.70)
31. A complete equipment with profile iron (shaped iron):—
- a. For a normal shaft (manhole), per shaft. Marks 74.00 (\$17.61)
 - b. For a simple shaft (manhole), per shaft “ 79.00 (\$18.80)
32. Cast iron pipe for draining shaft, each “ 5.00 (\$1.19)
33. Constructing a shaft (manhole) in the pavement for more than six cables of ordinary building stone (canal stone), including shaft cover, and hauling arrangements, per shaft:—
- a. 140 cm. x 130 cm. x 200 cm. (4 ft. 7 in. x 4 ft. 3 in. x 6 ft. 7 in.) Marks 335.00 (\$79.73)
 - b. 190 cm. x 130 cm. x 210 cm. (6 ft. 3 in. x 4 ft. 3 in. x 6 ft. 11 in.) “ 355.00 (\$84.49)
 - c. A ventilating shaft “ 370.00 (\$88.06)
- 34 and 35. General construction of a shaft (manhole) in the pavement, No. 2, for from 3 to 6 cables, according to the Monier system, per shaft:—
- a. Size: 140 cm. x 120 cm. x 100 cm. (4 ft. 7 in. x 3 ft. 11 in. x 3 ft. 3 in.) Marks 180 (\$42.84)
 - b. Size: 190 cm. x 130 cm. x 100 cm. (6 ft. 3 in. x 4 ft. 3 in. x 3 ft. 3 in.) “ 220 (\$52.36)
 - c. Built of brick masonry, including cover and equipment—Size: 100 cm. x 80 cm. x 80 cm. (3 ft. 3 in. x 2 ft. 8 in. x 2 ft. 8 in.) “ 130 (\$30.94)
 - d. Size: 120 cm. x 100 cm. x 100 cm. (3 ft. 11 in. x 3 ft. 3 in. x 3 ft. 3 in.) “ 220 (\$52.36)
36. Shaft (manhole), No. 3, for from 3 to 4 cables, finished with concrete, with corrugated iron cover:—
- Size: 120 cm. x 100 cm. x 60 cm. (3 ft. 11 in. x 3 ft. 3 in. x 2 ft.) Marks 60 (\$14.28)
37. Restoring car tracks, and pavements, per sq. m.:—
- Channel pavement—sidewalk with gutter Marks 0.30 (7¼c.)
 - Ordinary causeway. “ 0.80 (19c.)
 - Beaten pavement “ 1.20 (28½c.)
 - Clinker (tile) pavement, including replacing broken materials. “ 1.30 (31c.)
 - Macadam pavement “ 2.00 (48c.)
 - Flag pavement, with mastic cement “ 2.50 (59½c.)

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37. Restoring car tracks, and pavements, per sq. m.—*Continued.*

Flag pavement, without mastic cement	"	2.00 (48c.)
Basalt pavement	"	3.00 (71½c.)
Limestone sidewalk	"	3.20 (76c.)
Slab sidewalk	"	4.00 (95c.)
Cement slab sidewalk	"	4.00 (95c.)
Asphalt sidewalk	"	5.00 (\$1.19)
Wooden pavement	"	14.00 (\$3.33)
Rolled asphalt	"	18.00 (\$4.28)

REMARKS CONCERNING THE FOREGOING ITEMS.

To No. 18.—The weight is specified for double profile.

Iron cables and ducts can be used for 2 cables. For more cables, see Nos. 24, 35 and 36.

In estimating the iron cable ducts, the basis for 14 to 112 double strand cable, is the diameter of the bare cable; and for 140 to 224, the diameter of the compounded cable.

To Nos. 18 and 22.—In the prices specified under Nos. 18 and 22, the cost of transport from factory to place of construction is not included.

To No. 23.—The contractor who undertakes the excavating work has to attend to the diameter of the bare cable; and for 140 to 224, the diameter of the compounded with. No compensation is allowed to the contractor, for leakage of water into the excavations, for removing walls, or masonry, or for any damage arising from ordinary accidents. When the soil is specially difficult to work extra amounts are allowed.

To No. 24.—The cost of transport from the place where material is manufactured to the place of construction; and also in the vicinity of the factory, the cartage from the factory to the place of construction, is included in the prices given. Freight charges, by railway, are to be reckoned separately.

To Nos. 30-32.—The cost of transportation is not included in the prices given.

To No. 33.—Only in urgent cases are shafts (manholes) allowed to be constructed in the road way (cart way). In such cases the cost is increased 30 marks (\$7.14) per shaft (manhole). By employing brick the cost may be reduced by 30 marks (\$7.14).

To No. 34.—The Monier system of shafts (manholes) can also be employed in the estimate given under No. 35; in which case the price may be reduced by about 40 marks (\$9.52).

Cost of Exchange Equipment.

	Marks.	
Long-distance switch table for 20 telephone loops, without multiple spring jackseach	1,000	(\$238.00)
Strips of 20 multiple spring-jacks—		
(a) For long-distance switch table..per strip	27	(\$6.43)
(b) For central switch board. " "	21	(\$5.00)
Central switch boards—		
(a) For 100 double lines, with 15 groups of keys, without multipleseach	1,200	(\$285.60)
(b) For 50 double lines, with seven groups of keys.each	790	(\$188.02)
(c) For 25 double lines, with five groups of keyseach	480	(\$114.24)
(d) For 15 double lines, with three groups of keyseach	310	(\$73.78)
Desk telephone set with two receivers.each	72	(\$17.14)
Wall telephone set with two receivers.each	68	(\$16.18)

No. 292.

BELGIUM.

(Translation.)

The following papers selected from those sent from the Department of Telegraph Management of Belgium have been translated for the information of the committee; the originals are on file in the committee room and may be referred to at any time.

MINISTRY OF RAILWAYS, POSTS AND TELEGRAPHS,
TELEGRAPH MANAGEMENT, TECHNICAL DEPARTMENT,
BRUSSELS, September 23, 1905.

To the Postmaster General and Chairman
of the Select Committee on Telephone Systems,
Ottawa, Canada.

SIR,—In answer to your letter of May 1, 1905, I have the honour to send you the information which you have kindly requested from me, regarding the organization and operation of the telephone service in Belgium. I have described, in answer to question 21, the measures which have been adopted by the Belgium government for the furthering of the telephone service in the rural districts of the country.

I have also the requests for information which you have addressed to the managers of the telephone systems at Antwerp and Liege. These requests appear to constitute a repetition, for the most part, of the interrogatories you have sent to the Central Telegraph Management; in order, therefore, to avoid repetition, I have only replied to those questions which do not appear on the list which you have sent to me directly.

With assurance of my highest esteem,

I am,

F. DELARGE (*General Director.*)

No. 292a.

(Translation.)

ANSWERS TO QUESTIONS.

The right to operate telephone systems, organized, for the most part, in the larger Belgian cities, was originally conceded to companies, or to private individuals. Since 1886 the government itself has constructed and operates the telephone systems in the smaller cities. In 1893 the government began to repurchase successively the rights which had been conceded. The public telephone service is therefore now operated exclusively by the government. From the very beginning the Telegraph Management has retained the right of operating the long distance lines, both within the country and also in service with foreign countries.

The length of the telephone wires used for internal interurban telephony and for international telephony, is 6,077 miles. The length of the telegraph wires used for telephone service, and which serve for internal interurban telephony, and also for international telephony, is 3,922 miles.

The length of the telephone wires which are used exclusively for international telephony, is 2,477 miles.

BELGIUM.

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The cost of constructing long-distance lines varies with the diameter of the conductor (wire). We give here the approximate cost for the first construction of a mile of each size of bronze wire:—

Size of wire.		Cost per mile.	
mm.	S.W.G.	francs.	\$
2	14	212.87	41.08
2.4	13	255.57	49.32
2.5	12½	267.56	51.64
3	10½	334.51	64.56
3.25	10	372.52	71.90
4	8	504.90	97.45
5	5½	723.82	139.70
5.5	4½	852.45	164.52

There are on an average 13 or 14 poles to each kilometre, or 21 or 22 poles per mile.

We send with this a copy of the 'Special Regulations relating to the Telephone Service,' and also the pamphlet containing the additions to these 'Regulations.' The information regarding the various telephone rates will be found on pages 80 to 94, of Document 2. (See pages 581-588.)

For the telephone rates between Belgium and France, Belgium and England, and Belgium and Germany, see Documents 3, 4 and 5. See pages 588-590.)

Our telephone lines are partly underground and partly overhead. In the case of overhead lines, subscribers' wires terminate at the central telephone station, on an (iron) distributing standard or tower. Between the central station and the residences of the subscribers they are carried on iron or wooden poles, according to circumstances. In the case of the mixed lines, that are constructed in the principal cities, the wires are divided into zones, having a radius of about 200 m. (656 feet), or 250 m. (820 ft.). Each of these is served by an underground conduit, the cables in which terminate on a distributing pole or tower the size of which depends on the number of subscribers' circuits. From that point the wires are carried overhead to the residences of the subscribers. The distributing points are formed of iron poles, fixed in the streets or public squares of 4-sided towers placed by way of preference on public buildings, for the sake of permanence.

The underground ducts are formed of pipes made of glazed earthenware laid in cement, and surrounded by concrete to thickness of 10 centimetres.

In each pipe is placed a lead-sheathed, paper insulated cable, having a maximum capacity of 350 pairs of wire conductors. Subscribers who reside beyond the urban divisional zones, are, as a rule, connected with the terminal distributing pole or tower within the city limits, by overhead wires. When a sufficient number of these wires have to be carried along the same route, they form what we term 'suburban routes.' They are carried on supports, or on poles, as in the case of overhead lines. Sometimes these lines are carried in lead-sheathed paper insulated cables with an armature of metal, placed in a wooden duct and filled with pitch. The overhead wires connecting the subscribers are, as a general rule, made of phosphor bronze, with a diameter of 1.4 mm. (No. 17, S.W.G.), and having a conductivity equal to 30 per cent of pure copper. The wires of the insulated paper cables are of tinned copper, having a diameter of 0.8 mm. (No. 21, S.W.G.), and a conductivity of 98 per cent. The management has been trying a bi-metallic wire of 50 and 55 per cent copper. Subscribers circuits are exclusively metallic. Although there are three telephone systems which still have single grounded wire circuits, they are being gradually converted into metallic circuits.

According to the distance, bronze wire of 2 mm. (No. 14, S.W.G.) and 2.4 mm. (No. 13, S.W.G.) with a conductivity of pure copper of 80 per cent, and of 2.5 mm. (No. 12½, S.W.G.), and 3 mm. (No. 10½, S.W.G.), of 90 per cent, are used for internal interurban lines, and for international lines, wires 2 mm., 3 mm., 3.25 mm. (No.

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10, S.W.G.), 4 mm. (No. 8, S.W.G.), 5 mm. (No. 5½, S.W.G.), and 5·5 mm. (No. 4½, S.W.G.), of 90 or 95 per cent.

Initial cost of establishing the long-distance lines to December 31, 1903:—

Lines	2,752,957 f. 89 cent. (\$531,320.87)
Apparatus	334,928 f. 64 cent. (64,641.23)

Total 3,087,886 f. 53 cent. (\$595,962.10)

Cost of maintaining the lines during 1903:—

Lines	113,796 f. 38 cent. (\$21,962.70)
Apparatus	12,004 f. 06. cent. (2,316.78)
Share of indemnities paid for way-leave privileges on long- distance lines.	1,510 f. (\$291.43)

Total 127,310 f. 44 cent. (\$24,570.91)

The interest paid by the Belgium government amounts to 3 per cent on the capital employed.

The cost of the lines is paid off in 15 years, and the cost of the apparatus in 10 years.

The annual expenditures, which have not already been referred to, amounted, during 1903, to 283,942 fr. 23 centimes (\$54,800.85).

Charges for conversations from public call stations, are paid at the time in cash. Subscribers who use the internal interurban telephone service and the international telephone service, or who use the telephone for transmitting telegrams to the telegraph office, and subscribers who have telephone messages delivered, have to deposit in advance, an amount equal to a sum slightly in excess of the estimated total charges that would be due in respect of such services during a period of one month. The central stations accountable enter in a register all the internal interurban and international communications, also all the telephonic messages sent from subscribers connected with the said central stations, and, when necessary, in addition thereto, the communications sent to auxiliary stations which are not responsible for noting down the same.

The charges due for each message, or conversation, is inserted in the said register, and is entered daily in the current account of each of the subscribers. A similar course is followed regarding the interchange of telegrams over the 'phone lines.

The charges entered in the current accounts, are collected monthly. (See also Articles 45 to 52 of the 'Special Regulations relating to the Telephone Service,' document 1. Not printed.)

The Van Rysselberghe system of simultaneous telephony and telegraphy is used. However, the majority of the circuits are composed of double wires (metallic circuits) as specially used in telephony.

The total population of Belgium, on December 31, 1904, was 7,074,910.

On December 31, 1904, the number of subscriber's stations in use was:—

Principal stations.	20,875
Supplementary stations.	3,229

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The following are the number of subscribers in and populations of the chief cities and towns:—

	Principal Stations.	Supplementary Stations.	Population.
Brussels.....	6,304	1,301	655,000
Antwerp.....	3,521	632	412,000
Liege.....	2,226	321	317,000
Ghent.....	1,296	121	222,000
Verviers.....	1,075	114	89,000
Charleroi.....	730	170	165,000
Mons.....	545	55	61,000
Namur.....	485	32	53,000
Ostend.....	370	12	48,000
Tournai.....	303	53	51,000
Bruges.....	241	32	62,000

In Belgium, the telephone systems do not have any radius, that is to say, the number of 'communes' that are comprised in a local telephone system, have not been determined. As a rule subscribers are connected to the nearest central exchange. But the Belgian management has received a certain number of requests to have stations connected to a central exchange which is not the nearest one. The subscription rates are fixed according to the tariff specified for the system with which the subscriber is connected. When the subscriber's station is situated at a distance of more than 10 kilometres ($6\frac{1}{2}$ miles) in a straight line, from the central exchange, the management requires from the subscribers an agreement of a duration of more than one year, and extending up to five years.

It happens, sometimes, that the reverse condition occurs; that is to say, it is in the interest of the management itself to connect the subscriber to a central exchange at a greater distance. (See page 582, par. 3.) In this case, the subscriber is charged the rates specified for the distance to the nearest telephone system. In order to further the extension of the telephone service in localities of secondary rank, the management organizes auxiliary telephone systems, which are connected with the principal system, and form together in a single group, one working system. In the large cities, the central exchanges are placed in special locations. The central exchanges of the auxiliary systems are attached to the telegraph offices which are located either in the railway depôts, or in the post offices. Instead of fixing the rates for subscribers in an auxiliary system, according to the distance, in a straight line, between the subscriber's station and the principal central exchange, they are calculated according to the distance from the auxiliary central exchange, in order to reduce, as much as possible, the rates to be paid by the subscribers.

Each auxiliary system, as a general rule, is connected directly with the principal central exchange of the group by one or more bronze metallic circuits, of 2 mm. (No. 14 S.W.G.) having a conductivity of 50 or 80 per cent of pure copper. We call these interlocal or auxiliary circuits.

All the subscribers in one telephone group, whether connected to the principal central exchange, or to one of the auxiliary central exchanges, are allowed, without any extra charge, to converse with one another in the same locality or between different localities, either from the telephone stations rented to the subscribers, or by means of the public call stations belonging to the group.

The government, at its own expense, connects together the various central exchanges which belong to the same group.

The establishment of connections between subscribers' stations of the same exchange and also between the subscribers' stations of other exchanges but belonging to the same local group, is effected in the manner described in pages 8-10 of the 'Belgian Telephone Directory,' document No. 6. (See page 605.)

New systems are as a general rule connected to the nearest existing telephone group. However, the management sometimes departs from this rule to assist interests of a commercial or industrial nature. Hitherto, the government has refused, as a general rule, to establish central telephone exchanges in localities of minor importance that are less than 7 kilometres ($4\frac{3}{8}$ miles) distant from some telephone centre. For the list of the various Belgian telephone groups, and their organization, see page 2 of document 6. (Page 580.)

The following are the numbers of subscribers in the smaller towns and villages:—

<i>Smaller towns.</i>		<i>Villages.</i>	
1. Huy..	135	1. Selzaete..	22
2. Dinant..	79	2. Sivry..	21
3. St. Ghislain..	72	3. Bertrix..	20
4. Ypres..	59	4. Ouffet..	19
5. Tirlumont..	52	5. Tintigny..	17
6. Gosselies..	44	6. Moll..	15
7. Vilvorde..	43	7. Fexhe..	15
8. St. Trond..	40		
9. Hasselt..	33		

The subscribers in many of the communes being connected with the afore-mentioned central exchanges, and the small communes having only a very small number of persons sufficiently interested to take telephones, it is not reasonable to make a comparison between the population of such places, and the number of telephones installed there.

The 127 auxiliary central exchanges which were in operation, on December 31, 1904, had a total number of 3, 242 subscriber's principal stations, and 337 subscriber's supplementary stations.

In urban telephone service (that is to say among subscribers that belong to the same group) the subscription rates are paid according to the 'flat rate' system; but the management is now considering the adoption of a 'message-rate' system.

All subscribers can converse with one another within the country. The greatest distance is about 400 kilometres ($248\frac{3}{8}$ miles).

The apparatus supplied to the subscribers in the Brussels, Ghent and Liege systems, equipped with 'common battery' are the Western Electric Company's with 'Solid Back' transmitters. In the other systems, the ordinary wall telephone supplied by the Bell Telephone Company of Antwerp (a branch of the Western Electric Company), or those of the Antwerp Telephone Company, are used. These telephones have granulated transmitters of the 'Delville' 'Grunenwald' 'Lorenz,' etc., types. A dry battery, or a 'Warnon' cell of the Leclanche type supplies the speaking current. In the case of stations, which converse over long distances, 2 cell-batteries are employed.

With one exception, those who first obtained the concessions, constructed the systems with single grounded circuits. The requirements of the long-distance service induced the holders of the said concessions to supply metallic circuits to those subscribers who made request for the same in consideration of extra payment.

The telephone systems constructed by the government are metallic circuit and have been so from the beginning. The telegraph management transforms successively the equipment in the systems that have been bought over, and uses the opportunity to metallic circuit the lines. There are now only a few systems in which the subscribers are connected by single grounded wires.

The interurban lines without exception are metallic circuits (bifilaires).

The overhead lines of the local systems on December 31, 1904, had a total length of 37,770 miles; and the underground lines a total length of 18,220 miles.

Until the last few years, the telephone system had only a very small number of underground lines. This condition of affairs has been gradually modified, by reason of the transformation of the systems. We are not able, at the present time, to give any information as to the cost of the underground lines.

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The total revenue, as per budget of 1903, was 4,635,188.55 Fr. (\$894,591.39).

The total expenditure, as per budget of 1903, was 3,837,662.03 Fr. (\$740,668.77).

The amount of profit, as per budget of 1903, was 797,526.52 Fr. (\$153,922.62).

As a general rule, the Belgian telephone systems are managed directly by officials who have the rank of engineer, or of chief engineer, chief of section, or chief of principal section, under the supervision of the higher authorities.

The salaries of these officials are as follows:—

Chief engineers—5,500 Fr. (\$1,061.50), 6,000 Fr. (\$1,158), 6,500 Fr. (\$1,254.50), and 7,000 Fr. (\$1,351).

Engineers—3,100 Fr. (\$598.30), 3,500 Fr. (\$675.50), 4,000 Fr. (\$772), 4,500 Fr. (\$868.50), 5,000 Fr. (\$965), and 5,500 Fr. (\$1,061.50).

Chiefs of principal sections—4,000 Fr. (\$772), 4,500 Fr. (\$868.50), 5,000 Fr. (\$965), 5,500 Fr. (\$1,061.50), and 6,000 Fr. (\$1,158).

Chiefs of sections—2,000 Fr. (\$386), 2,300 Fr. (\$443.90), 2,700 Fr. (\$521.10), 3,100 Fr. (\$598.30), 3,500 Fr. (\$675.50), and 4,000 Fr. (\$772).

Officials having the rank of chief of office (chef de bureau), with a salary of 5,500 Fr. (\$1,061.50), 5,000 Fr. (\$965), and 4,500 Fr. (\$868.50); and those having the rank of chief clerk (commis en chef) with a salary of 4,000 Fr. (\$772) and 2,500 Fr. (\$675.50), co-operate in the supervision of the subordinate employees; or they are employed as accountants in the telephone systems.

The telephone operators are mostly females. The female operators are taken on, first as 'provisional' learners, and do not attend to the service except in case of necessity, or to take the place of operators who are sick, on leave, &c. The fee allowed to these occasional operators, is 1 Franc 70 centimes (33 cents), or 85 centimes (17 cents) according as the day's sitting has been for 8 hours, or for 4 hours.

According as the daily terms of duty are regularly performed, 'provisional learners' are definitely appointed as 'learners' with a fixed annual salary of 600 Fr. (\$115.80), or 700 Fr. (\$135.10), according to the length of service rendered as 'provisional learners.' After a year's term of service at 700 Fr. (\$135.10), these learners are promoted to the rank of 'assistants.'

The female employees consist of operators (commis d'ordre), and supervisors (surveillants). The 'learners' and assistants are placed amongst the operators. The 'supervisors' are selected from among the 'operators.' The salaries are gradually increased by 200 Fr. (\$38.60) at a time—for 'supervisors' from 1,000 Fr. (\$193) to 2,600 Fr. (\$501.80); and for 'operators,' from 1,000 Fr. (\$193) to 2,200 Fr. (\$424.60). For 'assistants' by sums of 100 Fr. (\$19.30), from 800 Fr. (\$154.40) to 1,800 Fr. (\$347.40).

Female employees, with a good record of 30 year's service, and who have for six years been in receipt of the maximum salary of their class, may, on attaining the age of 50 years have their salaries increased to 2,800 Fr. (\$540.40), 2,400 Fr. (\$463.20), or 2,000 Fr. (\$386).

In addition to their fixed salary, the female operators receive, under the form of a bonus, half-yearly, an amount for regular attention to their duties, varying according to the carefulness and accuracy which each operator has manifested in the duties assigned to her. These bonuses may be reckoned approximately, at 75 Fr. (\$14.47) for the 'supervisors'; 50 Fr. (\$9.65) for the 'operators' and 'assistants,' and from 20 Fr. (\$3.86) to 25 Fr. (\$4.82) for the 'learners.'

A few males are also employed in office work, night service, and occasionally on the regular telephone service.

The salaries of such male employees are the same as those specified above, for female employees of the same class, except that the male employees may be promoted to the first class of their grade, with salaries of 2,400, 2,600, 2,800, and 3,000 francs (\$463.20, \$501.80, \$540.40, and \$579). The last mentioned salary is allowed to those clerks with a good record of 30 years' service, who have attained the age of 50 years, and who for six years have been receiving the maximum salary of 2,800 francs. The

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following salaries are paid to the male clerks. (Female clerks are ineligible to this class):—

Class I.—2,300, 2,700, and 3,100 francs (\$443.90, \$521.10, and \$598.30).

Class II.—1,700 and 2,000 francs (\$328.10 and \$386).

Class III.—1,200 and 1,400 francs (\$231.60 and \$270.20).

The work of installing, maintaining and repairing the lines and the instruments, is assigned to employees who are termed foremen of works, overseers, foremen of a gang, fitters (wiremen, or instrument men) and assistant fitters. These workmen are paid according to the actual amount of work done during each day. Only a small number of these workmen are regularly employed on Sundays and public holidays.

The scale of wages is fixed as follows:—

1. Foremen of works, 7 fr 6 cent. to 10 fr. 80 cent. (\$1.47 to \$2.08 daily).
2. Overseers, 5 fr. 70 cent. to 9 fr. 20 cent. (\$1.10 to \$1.77 daily).
3. Gang foremen, 4 fr. 20 cent. to 6 fr. 40 cent. (\$0.81 to \$1.23 daily).
4. Fitters, 3 fr. 60 cent. to 5 fr. 10 cent. (69 to 98 cents daily).
5. Assistant fitters, 2 fr. 60 cent. to 3 fr. 30 cent. (50 to 64 cents daily).

The Central Office plant and equipment in Brussels has cost 695,865 francs (\$134,301.94). This central exchange plant comprises the following:—

1. One intermediate switch table with three operating positions, of which two only are equipped.
2. Fourteen local switch board sections with three operating positions, each equipped for 6,300 subscribers and having a total capacity for 14,400 subscribers.
3. One local switch board section equipped as above for operating the 'auxiliary circuits,' and the circuits connected with the telegraph stations.
4. Six double interurban switch tables, and one recording switch table, equipped for two operating positions. Each of these can operate eight circuits.
5. Two supervisor's tables, placed in different positions for supervision: one for the local switch boards, and the other for the interurban switch boards.
6. One test desk (wire chief's) arranged for testing the lines for the purpose of ascertaining and locating defects, &c.
7. One main distribution board, constructed for 15,200 lines; equipped for 8,200 lines on the vertical side, and for 6,400 on the horizontal side.
8. One intermediate distribution board, with a capacity for 15,600 lines, and equipped for 6,480 lines.
9. One relay frame equipped with calling and cut-out relays for 7,200 lines, comprising 6,480 calling (lamp) relays, and 6,480 cut-out relays.
10. One repeating coil frame, with a capacity for 2,160 repeating coils, and equipped with 932.
11. Two generators, of 30 volts, 360 ampères, with rhéostat.
12. Two motors, of 16 horse power—110 volts.
13. Two dynamos—110 volts, for calling.
14. One storage battery, with 11 accumulator cells.

There is only one central office at Brussels, consequently we have no sub-exchange switch boards.

The cost of a subscriber's wall telephone is 53 francs, 30 centimes (\$10.29).

The cost of a subscriber's desk telephone is 55 fr. (\$10.61).

The distributing towers cost on an average about 7,500 fr. (\$1,447.50) each. The substructure work, approximately 50 cubic metres in extent, is paid for at the rate of 29 fr., 20 centimes (\$5.63) per cubic metre. The weight of the tower is estimated at 16,000 kilograms (35,280 lbs.), of which 12,500 kg. (27,653 lbs.) is of steel, at Fr. 0:36 per kg., and 3,500 kg. (7,718 lbs.) of cast-iron, at Fr. 0:365 per kg.

The barked pine poles not creosoted, are supplied at the following prices:—

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LENGTH.		Cost.	
Meters.	Feet.	Francs.	\$
7½	24½	6.74	1.30
9	29½	8.09	1.56
10½	34½	9.45	1.72
12	39½	10.80	2.08
14	46½	12.60	2.43
17	55½	15.30	2.95
20	65½	18.00	3.47

After the poles are received, they are creosoted.

The supports (chevalets) and iron cross arms are paid for at the rate of Fr. 0.25 (5 cents) per kilogram (2½ lbs.).

We give below the price of insulators, steel bells and bolts:—

Large leading-in insulators.	Fr. 0.314 (6 cents each)
Small leading-in insulators.	Fr. 0.21 (4 cents each)
Ordinary insulators.	Fr. 0.11 (2 cents each)

The bells of galvanized steel are used for protecting the ordinary insulators, cost fr. 0.275 each.

Iron bolts of from 0.20 m. to 0.65 m., cost from 0.113 frs. to 0.725 frs. (2½ cents to 14 cents).

The earthenware pipes employed in the construction of underground ducts, into which telephone cables are drawn, are 1½ feet in length. They cost 7 cents per foot. The same pipes divided longitudinally into two equal parts, used for protecting steel armoured telephone cables, measure 1½ feet each in length, and cost 10 cents per foot.

There has not been any competitive telephone service in Belgium since the service has been regulated by the State laws in 1883.

There are, in Belgium, 151 telephone systems, divided into seventeen local telephone systems. Each local system or group comprises a principal central exchange and several auxiliary central exchanges. Two of these local systems have a central exchange only, viz., Louvain and Malines.

The 'interlocal,' or 'auxiliary' circuits permit the establishment of communications between the different systems of the same group. The 'interlocal' circuits are connected at the principal central exchange of the group, with one or more operator's switch tables, which enables connections to be made with subscribers of the principal system when they are called up by one of the auxiliary systems, or connects the 'auxiliary' circuits, when communications are required between the auxiliary systems. Connections with the auxiliary systems requested by the subscribers of the large principal stations, are made by operators who attend exclusively to the 'auxiliary' circuits. The same procedure is followed in the smaller central exchanges, such as Charleroi, Ostend, Namur, &c., that is to say, in the central exchanges where the switch board equipment includes various operator's switch tables. In the smaller systems, the operator attends to 'subscribers' and the 'interlocal' circuits.

Special rates are charged for interurban connections, viz., those connections passing beyond the limits of a local telephone system. These connections are made by the principal central exchanges, in which interurban switch boards for connecting long-distance lines, with the local and the auxiliary switch boards are installed. From the operator's switch table a number of interurban circuits can be served, viz., eight at Brussels, eight at Ghent, &c. The number of long-distance circuits given to one operator varies according to the amount of traffic. The international connections, viz., those that are made between different countries, are handled in the same manner as interurban connections.

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The law of June 11, 1883, gives the government the right to carry wires of telephone systems over buildings and land without attachment or contact. The law of May, 20, 1898, gives the government the right to construct telephone lines on or under the public property of the state, the provinces, or the communes (municipalities.) When telephone lines have to be carried over the property of private individuals, the government must ask the permission of the proprietor or occupant. This permission is generally accorded on payment of an indemnity for each wire—in most cases the sum of 1 franc (19½ cents), by giving a telephone free of rental, by keeping the roofs of houses that are used in repair, or by maintaining any private electric arrangements which may be used by the individuals concerned, &c. For the use of property belonging to the public services of the state, the provinces, or the communes (municipalities), the telegraph management grants a reduction of 35 per cent on the telephone rates of subscribers connected with the said services.

SUPPLEMENTARY ANSWERS REGARDING THE LOCAL TELEPHONE SYSTEMS AT ANTWERP AND LIEGE.

As a general rule, the management strives to combine in one single room, the various switchboards of the central telephone exchanges, both for the local and long-distance service.

The number of direct lines having only one telephone (*i.e.*, non-party lines), corresponds with the number of the subscribers, exception being made in the case of the lines that are for the use of the management.

Our statistics do not distinguish between the supplementary telephone stations that are installed on the same premises as the subscriber's principal station, and those which are installed outside of the said premises. At Antwerp, there are 632 supplementary stations, and at Liege 321.

The lines and apparatus are set up by the management, and remain the property of the management. The subscribers do not pay anything towards the cost of installation. Nor is there any entrance fee.

In Belgium all the subscribers to the local service pay a flat rate for an unlimited service.

BELGIUM—*Continued.*

No. 292b.

(Translation.)

SPECIAL REGULATIONS FOR THE TELEPHONE SERVICE.

GENERAL PROVISIONS.

(Doc. I., p. 3.)

1. Telephone construction belongs exclusively to the telegraph management.

The establishment of a telephone central exchange in a locality depends upon the reception of a minimum number of requests for subscription, fixed by the management. Moreover, account has to be taken of the distance between this locality and the nearest central exchange.

The management designates the localities that may eventually become the seat of a telephone central exchange. No employee or agent of the service may, without being authorized by the management, agitate a movement in favour of the creation of a telephone system. As soon as it is known that a certain number of requests for subscription can be collected, so as to justify the establishment of a telephone exchange in a BELGIUM.

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certain locality, then notification of the same has to be given to the technical direction, in an official way. This notification has to specify:—

- (a) The name of the locality to be considered as the centre of the proposed telephone system.
- (b) The Christian names, surnames, professions and addresses of the persons who are to become subscribers in the said system.

This information has to be collected without and intervention, direct or indirect, of persons not connected with the telegraph management. These proposals are examined by the management; and the instructions requisite for the existing conditions, are given to the employees and agents concerned.

2. A telephone system comprises a central exchange, into which the wires are led that run from the subscriber's stations, and the public call stations. The central exchange has to make the connections between the various subscribers' stations.

Several telephone systems, established in different localities or centres, may be united to form local telephone groups. The central exchanges of these telephone systems, are connected by special lines.

3. The telephone service comprises two divisions, subject to different rules.

- (a) Local telephony, which comprises the service between the various subscribers' stations connected to the same local telephone system or group.
- (b) Long-distance telephony, which comprises another kind of service, both within the area of the country, and with foreign parts.

Long-distance telephony has, therefore, two separate divisions, viz., Interrurban telephony, which comprises the service between the various local telephone systems or groups of the country; and international telephony.

SPECIAL REGULATIONS REGARDING CENTRAL EXCHANGES.

(Doc. I., p. 28.)

40. The central stations are divided into two classes:—

- (a) Principal central exchanges.
- (b) Auxiliary central exchanges.

These last are sub-divided into responsible auxiliary central exchanges and non-responsible auxiliary central exchanges.

2. Central exchanges which serve isolated telephone systems are classed in the first of these categories. In the telephone groups, the central exchanges into which the interurban (long-distance) lines are led in, are considered as principal central exchanges.

3. The other central exchanges of the group are considered as responsible or as non-responsible auxiliary central exchanges.

41. The central telephone exchanges are connected to the telegraph system by special lines, which are used:—

- (a) For the exchange of telegrams, within the limits of the conditions specified in the special instructions issued on this point.
- (b) For the transmission and receipt of telephone messages. See Articles 69 to 77.
- (c) For the service of the general public with the railway stations. See Supplement 21.

42. No subscriber can obtain a connection, for which a special charge has to be paid, such as long-distance connections, transmission of telegrams, telephone messages, &c., unless the said subscriber has made a deposit, in advance, in order to guarantee the payment of the charge. This deposit, however, is not required from the various government departments, nor from the authorities of the provinces and communes.

(2) As an exception to the above rule, a subscriber who has not paid the deposit may receive connection with a telegraph bureau, in order to ask or to give certain

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information from or to the same. In this case, the operator has to mention to the telegraph bureau that this deposit has not been paid, at the time when the connection is made.

(3) Connections requested by a telegraph bureau may always be made with the subscribers.

(4) The charges for connections that have been made, in cases where the afore-said deposit has not been paid, or when the amount of the same is not sufficient, have to be paid by the agent or official who is at fault, if the person concerned refuses to pay the amount.

(5) This responsibility to pay the amount due may be transferred to the operator concerned, when a connection is made that is not covered by a deposit.

(6) Any request made for connections, which deviates from the ordinary rules, must be refused by the chief operator. (For example, it is not admissible that No. X. should ask to be called only at stated hours, or that his station shall only be connected with certain specified subscribers, or that he shall not be connected with any other subscriber unless some prearranged word is mentioned when the call is made, &c.) This rule does not apply to the transmission of telegrams to the subscribers by 'phone.

BELGIUM—Continued.

No. 292c.

(Translation.)

TELEPHONE GROUPS.

(Doc. VI., p. 2.)

The following are the telephone groups into which the Belgian telephone service is divided:—

Antwerp.—Boom, Cappellen, Lierre, Moll, Turnhout.

Arlon.—Bastogne, Bertrix, Etalle, Florenville, Lavaux, Libramont, Messancy, Neufchateau, St. Hubert, Tentigny, Virton.

Brussels.—Braine-L'Alleud, Braine-Le-Comte, Cortenberg, Court, St. Etienne, Enghien, Gembloux, Genappe, Groenendael, Hal, Nivelles, Overysse, Vilvorde, Virginal, Wavre.

Charleroi.—Acoz, Beaumont, Binche, Chatilneau, Fleurus, Florennes, Fontain-L'Évêque, Gosselies, Labuissière, La Louvière, Nalinnes, Philippeville, Sivry, Tamines, Thuillies, Thuin, Walcourt.

Chimay.—Couvin, Mariembourg, Momegnies, Seloignes.

Courtrai.—Iseghem, Menin, Mouscron, Poperinghe, Roulers, Ypres.

Ghent.—Audenarde, Berchem, Deynzi, Eecloo, Renaix, Selzæte, Thielt.

Landen.—Diest, Hannut, Hasselt, Jodoigne, Looz, Orp, St. Trond, Tirelemont, Wareme.

Liege.—Amy, Andenne, Engis, Esneux, Fexhe, Huy, Marché, Modave, Ouffet, Soheit, Seraing, Tinlot, Spri, Mont, Trooz, Vise.

Coast Group.—Bruges, Ostende, Blankenberg, Dixmude, Furnes, Ghistelles, Heyst, Middekerke, Nieupoort, Thourout.

Louvain.—

Malines.—

Mons.—Dour, Escaussinnes, Feluy, Givry, La Bouverie, Quevy, Quievrain, Roisin, St. Ghislain, Soignies.

Namur.—Beauraing, Ciney, Dinant, Gedinne, Havelange, Mesnil, St. Blaise, Profondeville, Rochefort, Yoor.

Termonde.—Alost, Lokeren, St. Nicolas.

Tournai.—Antoing, Ath, Brugelette, Celles, Leuze, Pecq, Peruwelz, Quevaucamps, Taintegnies, Templeuve.

Verviers.—Spa, Stavelot, Vielsalm.

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APPENDIX No. 1

HOURS OF SERVICE.

Antwerp, Brussels, Charleroi, Ghent, Liege, Mons, Namur, Toumia and Verviers:—Continuous day and night.

Arlon, Chimay, Courtrai, Landen, and Termonde:—7 a.m. to 9 p.m.

Louvain:—7 a.m. to 11 p.m.

In some towns in the coast telephone group: 6 a.m. to 11 p.m.; in the smaller systems adjacent to Brussels, Antwerp, Liege, Ghent, Verviers, etc., where the service is continuous: 7 a.m. to 7, 8 and 9 p.m.

On Sundays and feast days, 9 a.m. to 12 noon; 9 a.m. to 1 p.m.; 2 p.m. to 4 p.m.; 2 p.m. to 5 p.m., and 6 p.m. to 8 p.m. These hours vary in the different exchanges, while in some cases on Sundays and feast days there are different hours of service from those specified above. In some cases the service on these days is from 8 a.m. to 7 and 8 p.m.

PUBLIC CALL STATIONS.

In the larger cities the service is permanent in some stations, while in others the hours are mostly from 7 a.m. until 7, 8, or 9 p.m.

On Sundays and feast days the service is mostly from 9 a.m. until 12 noon, or 1 p.m., while in a few instances, the service is from 7 a.m. to 7 p.m., or from 8 a.m. to 8 p.m.

In some of the public call stations the hours of service vary, according to the season of the year; as, for instance, from 7 a.m. until 7 p.m. during the summer months; and from 8 a.m. until 7 p.m. during the winter months.

The following are the legal feast days, which are kept in Belgium, and the neighbouring countries with which international telephone service is carried on. These feast days are classified along with Sundays, so far as service in the central stations are concerned:—

Belgium.—Ascension, the Feast of the Assumption, All Saints and Christmas. On the Mondays after Easter and Pentecost, the hours of service are reduced, in the central stations.

Germany.—New Year's Day, the 27th of January, Good Friday, Easter Monday, Ascension, the Monday after Pentecost, Corpus Christi, Fast Day, All Saints, Christmas Eve, Christmas Day.

France.—New Year's Day, Shrove Tuesday (Mardi-Gras), Easter Monday, Ascension, the Monday after Pentecost, the 14th of July, the Feast of the Assumption, All Saints, Christmas Day.

The Grand Duchy of Luxemburg.—The Mondays after Easter and Pentecost, Ascension, the Feast of the Assumption, All Saints, Christmas Eve, Christmas Day.

Holland.—Good Friday, Easter Monday, Ascension, the Monday after Pentecost, Christmas Eve, Christmas Day.

BELGIUM.—Continued.

No. 292d.

(Translation.)

TELEPHONE RATES.

I. LOCAL SERVICE.

(Doc. II., p. 80.)

1. An ordinary subscriber's station comprises the apparatus necessary for transmitting and receiving; an ordinary subscriber's station connected directly with the central exchange is a 'principal' subscriber's station; other ordinary subscribers' stations, which can be connected with the central exchange through the principal

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subscriber's station, are termed supplementary stations. All materials required for the purpose of completing the ordinary equipment are considered as accessories.

2. All materials, without exception, required for making connection with the telephone system, have to be supplied, installed and maintained by the management, which rents out the same. Consequently in cases where there are private telephone arrangements already existing between two establishments, or different branches of the same establishment, which the applicant for a principal subscriber's station wishes to have connected with the telephone exchange system, the management may consent to purchase such private line or lines, as well as the apparatus and accessories. The management completes the installation, if this is necessary, and then fixes the rates, as if the line and the apparatus had been installed by the management itself.

3. The distance which forms the basis of calculation for fixing the rates to be paid by each principal subscriber's station, is measured, in a straight line between the said station and the exchange, or the centre of the district, according to the circumstances of the case. For this purpose maps drawn up by the Military Chartographic Institute, are used. If the interests of the service, or financial reasons so require, the management may connect within the same telephone group a subscriber to an exchange, other than the one nearest to him. In this case, the rates are fixed according to the distance of the subscriber from the nearest central exchange. On the other hand, when the rates for several stations belonging to the same subscriber, connected to different central exchanges of the same telephone group, give a smaller aggregate return than would result from the application of the rates applying to supplementary stations, these may be applied, by fixing the rates according to the amount specified for multiple subscriptions; when such procedure is in the interests of the management. This exception is only made, however, in telephone groups which are specially designated by the central management.

The foregoing regulations are for the purpose of preventing any obstruction of the auxiliary circuits that connect the various systems of one group; and also to guard against any interfering with the subscriber's circuits, when new systems are being constructed in the neighbourhood of residences, etc., which are already connected to an existing system. The managers of the systems consider that in such circumstances it will be in the interests of the management to apply the exceptional regulations specified above. For this reason the managers submit proposals to the Technical Bureau, and do not make any agreements with subscribers without having received due authority.

4. A local subscriber who relinquishes his principal or supplementary desk telephone in the residence occupied by him, and who requests the management to move the same to other premises, may have his request granted, although, as a rule, a station cannot be moved beyond the limits of the same premises, and the distance from one switch to another must not exceed the limits covered by the special rates fixed for supplementary stations.

Each of these switches require special jacks. On account of restricting the use of flexible cords, the jacks must be adapted, as far as possible to the article of furniture (desks, tables, &c.) where the station is to be placed, in the same manner as the multiple jacks of the operator's apparatus in connection with multiple switchboards.

The special installations are subject to the following annual rates:—

- | | |
|--|-----------------|
| (1) For a second switch | 25 fr. (\$4.83) |
| (2) For each additional switch | 5 fr. (97c.) |

In the case of a subscription for one-half year, the above charges are reduced 30 per cent.

5. If the supplementary installations requested are not specified in the ordinary fixed scale of charges, or if the said arrangements have to be carried out under exceptional circumstances, then the manager of the telephone system in question must refer the matter to the Technical Bureau before taking any steps towards carrying out the required arrangements.

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An extra telephone receiver:—

- a. Malines, not stated.
- b. Other places, 5 fr. (97c.).

N.B.—The subscription rates for a single connection in the principal telephone systems of Antwerp, Brussels, Ghent, Liege, Mons, and Verviers, apply also to their auxiliary systems, with the limitation, that in the said auxiliary systems there has to be paid for the use of a second wire necessary for a metallic circuit, an extra charge of 20 fr. (\$3.86), within the radius of the first inclusive kilometre ($\frac{5}{8}$ mile), and 10 fr. (\$1.93) for every inclusive $\frac{1}{2}$ km. ($\frac{1}{8}$ mile) over and above the first km.

RATES APPLYING EXCLUSIVELY TO THE TELEPHONE GROUP OF CHARLEROI.

An ordinary subscriber's principal stations with metallic circuit, within the radius of 3 km. ($1\frac{7}{8}$ miles) in a straight line, from the centre of the district where the central exchange is situated.	Fr. 200.00 (\$38.60)
For each additional km. ($\frac{5}{8}$ mile) beyond the fixed radius of 3 km. ($1\frac{7}{8}$ miles)	Fr. 50.00 (\$ 9.65)
An ordinary supplementary station.	Fr. 50.00 (\$ 9.65)
An additional bell.	Fr. 7.50 (\$ 1.45)
An additional telephone receiver.	Fr. 5.00 (97c.)
A switch with one or more points, or for an intermediate station	Free.
A switch with indicator.	Fr. 5.00 (97c.)
A switch with two indicators.	Fr. 10.00 (\$ 1.93)

In the group of Liege and Charleroi no reduction is made in the rates for second and subsequent stations of the same subscriber.

Each annual subscription, for second and subsequent stations of the same person or business establishments, is subject to the following reductions:—

- (1) In the telephone groups of Antwerp, Brussels, Ghent and Verviers, a reduction of 50 francs (\$9.65).
- (2) In the telephone systems of Louvain and Malines, a reduction of 12.50 francs (\$2.41).

The reduction is only granted for the period of time to which the various subscriptions apply, and not for limited periods.

Agreements are granted to subscribers for half-yearly periods, to terminate at the end of three half-yearly periods, or at the end of three consecutive years. If subscriptions are paid within each half year, a reduction of 30 per cent is allowed.

In the telephone systems of Antwerp, Brussels, Ghent, Liege, Louvain, Malines, Mons and Verviers, the addition of a second wire (metallic circuit) to a single (grounded) wire connection, calls for an extra charge, equal to 50 per cent of the rates specified for a principal station connected by a single (grounded) wire. This extra charge, however, must not exceed 100 fr. (\$19.30) for the first 3 kilometres ($1\frac{7}{8}$ miles).

The rates specified for stations and accessories, and for ordinary supplementary stations include the free use of 50 metres (55 yards) of line (wire), measured in a straight line from the principal station, and extending in the direction of all the stations that are installed on the supplementary circuit.

7. In the telephone groups of Arlon, Chimay, Courtrai, Landen, the Coast Group, Namur, Termond and Tournai, the specified rates are given in the following table:—

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	Tariff A on a Three Years, Contract per Annum.		Tariff B on a Yearly Contract per Annum.		Tariff C Half Yearly for Three Consecutive Years. Per $\frac{1}{2}$ year.	
	Francs.	\$ cts.	Francs.	\$ cts.	Francs.	\$ cts.
I. A principal subscribers station, connected by metallic circuit with the Central Exchange—						
a. Within a radius of 1 km. ($\frac{5}{8}$ mile) from centre of district where the Central Exchange is located.....	150	28 95	170	32 81	119	22 97
b. More than 1 km. ($\frac{5}{8}$ mile) and up to $1\frac{1}{2}$ km. ($\frac{3}{4}$ mile).....	162	31 27	187 50	36 19	131 25	25 33
c. More than $1\frac{1}{2}$ km. ($\frac{3}{4}$ miles) and up to 2 km. ($1\frac{1}{4}$ miles).....	174	33 58	205	39 57	143 50	27 70
d. More than 2 km. ($1\frac{1}{4}$ miles) and up to $2\frac{1}{2}$ km. ($1\frac{5}{8}$ miles).....	189	36 48	222 50	42 94	155 75	30 06
e. More than $2\frac{1}{2}$ km. ($1\frac{5}{8}$ miles) and up to 3 km. ($1\frac{3}{4}$ miles).....	204	39 37	240	46 32	168	32 42
f. More than 3 km. ($1\frac{3}{4}$ miles) and up to $3\frac{1}{2}$ km. ($2\frac{3}{8}$ miles).....	221 50	42 75	257 50	49 70	180 25	34 79
g. More than $3\frac{1}{2}$ km. ($2\frac{3}{8}$ miles) and up to 4 km. ($2\frac{1}{2}$ miles).....	239	46 13	275	53 08	192 50	37 15
For each additional $\frac{1}{2}$ km. ($\frac{5}{8}$ mile) inclusive, over and above the specified 4 km. ($2\frac{1}{2}$ miles).....	17 50	3 37	17 50	3 37	12 25	2 36
II. Accessory and supplementary installations.						
For an ordinary telephone station, connected with the principal station.....	30	5 79	35	6 76	24 50	4 73
For a magneto-bell.....	5	0 97	5	0 97	3 50	0 68
For an ordinary bell.....	4	0 77	4	0 77	2 80	0 54
For a switch with one or several points, or for intermediate station.....	5	0 97	5	0 97	3 50	0 68
For an overhead metallic circuit according to actual length, between stations—						
50 metres (55 yards), or less.....	free.	.....	free.	.....	free.	.....
More than 50 metres (55 yards) up to 250 metres ($\frac{5}{8}$ mile).....	45	8 69	65	12 55	45 50	8 78
More than 250 metres ($\frac{5}{8}$ mile) up to 1 km. ($\frac{3}{4}$ mile).....	95	18 34	110	21 23	77	14 86
More than 1 km. ($\frac{3}{4}$ mile) and for each extra $\frac{1}{2}$ km. ($\frac{5}{8}$ mile) over and above the first km. ($\frac{3}{4}$ mile).....	45	8 69	60	11 58	42	8 11

As an exception to what is specified in Section 1 of the preceding table, the rate for each subscriber's connection in the telephone system of Nieuport (in the coast telephone group) is governed according to circumstances by the shortest distance, in a straight line, between the subscriber's station and the centre of the town of Nieuport on the one hand, or the station of Nieuport-Bains on the other hand.

Subscribers for second and subsequent stations of the same person or business in the local telephone service of the Arlon group, do not receive any reduction of rates.

In each of the telephone groups of Chimay, Courtrai and Namur, a reduction of 15 francs (\$2.90) is granted on the amount of annual rates to each yearly or three-yearly subscription for a second or subsequent station taken by the same person or business establishment.

In the telephone groups of Landen, the coast group, Termonde and Tournai, a reduction of 10 per cent is allowed on each yearly, three-yearly and half-yearly subscriptions for stations taken in addition to the first, calculated on the average rates for the various classes of service, considered as single subscriptions for subscribers' ordinary principal stations. As a general rule, in the telephone groups mentioned in the present section multiple subscriptions must be payable on the same date. When this is not already provided for, new agreements arranged to begin on the same date and to continue for at least the same period of time as the existing agreements must be sub-

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stituted for the latter. These reductions are only granted for the full periods of time, during which each of the agreements for the various classes of service has to run, according to the specified regulations.

When the length of line connecting a supplementary station with a principal station exceeds one km. ($\frac{5}{8}$ mile), the rates to be fixed for this extra length of line, added to the rates specified for and ordinary supplementary station, and for such accessories as are necessary for making connection with the subscriber's principal station, must be at least equal to the rates paid for an ordinary station. This rule applies to multiple subscriptions for several stations taken by the same person or business establishment.

The length of the supplementary outside lines are measured without taking into consideration the inside (leading-in) wires.

8. The rates for local telephone connections made from a public call station are fixed at 25 centimes (5 cents) for an indivisible unit of time, lasting for 5 minutes.

Persons who are furnished with regular tickets entitling the holder to have free local connections from the public call stations, are not required to pay this charge.

9. The rate for subscribers who have regular telephone connections with the service established in railway stations, is 100 frs. (\$19.30) yearly; or 60 frs. (\$11.58) half-yearly.

Subscribers of this class are subject to special regulations. These regulations are given in 'Supplement 21,' which is annexed to the 'Special Regulations relating to the Telephone System.'

LIST OF CHARGES FOR MOVING A TELEPHONE, ETC.

	Francs.	
Within the same premises:—		
(a) An ordinary principal or supplementary station	7.50	(\$1.45)
(b) An ordinary principal or supplementary station, with fixtures, viz., insulated wire, cable, iron work, (fixtures), &c.	10.00	(\$1.93)
(c) A supplementary Bell.	2.50	(48c.)
(d) A supplementary Bell, with outside fixtures	5.00	(97c.)
(e) A switch with indicators per indicator	1.00	(19c.)
(f) A switch, with one or more points.	2.00	(38c.)
(g) A switch moved at the same time as on ordinary station.		Free
Removal to other premises:—		
(h) An ordinary principal or supplementary station.	12.50	(\$2.41)
(i) A supplementary Bell.	5.00	(97c.)
(j) A switch with indicators, per indicator.	1.50	(29c.)
(k) A switch, with one or more points.	2.50	(48c.)
(l) A switch removed at the same time as an ordinary station.		Free

N.B.—These charges apply to work done within a radius of 3 km. ($1\frac{7}{8}$ miles), in a straight line from the central point fixed in the agreement. Beyond this radius the charges are increased 0.50 fr. (10 cents) for each extra km. ($\frac{5}{8}$ mile) or fraction thereof.

RATES—Continued.

II.—INTERURBAN SERVICE.

(Doc. II., p. 90.)

10. The rates for ordinary conversations. in interurban service, are as follows:—
 1 franc (19 $\frac{1}{2}$ cents) for an indivisible unit of time, allowed for conversation.
 1 franc, 50 centimes (29 cents) for a conversation lasting two units of the specified time.

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11. Subscriber's monthly rates, in interurban service, are fixed as follows:—			
2	units of conversation, or less, daily.. . . .	35.00	frs. (\$ 6.76)
3	“ “ “	52.50	frs. (\$10.14)
4	“ “ “	70.00	frs. (\$13.51)
5	“ “ “	85.00	frs. (\$16.41)
	Each additional unit.	15.00	frs. (\$ 2.90)

The subscribers, in interurban service, are subject to special regulations, which are given in 'Supplement 22,' which is annexed to the 'Special Regulations relating to the Telephone Service.'

12. The unit of time for which rates are collected, and during which interurban conversations can be carried on, is five minutes.

On days when the Brussels and Antwerp stock exchanges are open the time for conversations from public or private telephone stations in these stock exchanges is reduced to three minutes, between the hours of 11.21 a.m. and 3.21 p.m. On Wednesdays this rule applies up to 5 p.m. to conversations exchanged with public or private telephone stations installed in the Commercial Stock Exchange of Brussels.

The public and private telephone stations installed in the buildings of the Stock Exchanges at Brussels and Antwerp include:—

- (1) Special telephone booths placed at the disposal of the bankers and stock exchange agents; which may also be used by other persons who frequent the stock exchanges.
- (2) The public telephone bureau in each of the stock exchanges.
- (3) Subscriber's stations installed in the stock exchange buildings.

The expression 'stock exchange' applies to all telephone stations installed in the building so named. For this reason, no distinction is made between conversations exchanged over the lines that directly connect the Stock Exchanges of Brussels and Antwerp, and conversations with the said stock exchanges, through one of the central exchange stations in both cities at the same time.

On the days that the stock exchanges are not open for traffic, the time allowed for interurban conversations is in all cases five minutes.

The foregoing regulations, in sections I. and II., apply equally to ordinary conversations which are charged singly, and to conversations carried on by subscribers paying a monthly subscription.

13. In the case of interurban conversations commencing when the unit of time allowed is five minutes, and concluding during the hours specified for stock exchange service, when the time allowed is three minutes, and *vice versa*, the following regulation has to be followed:—

Each conversation which passes from the five minute period to the three minute period, or *vice versa*, is charged for according to the period of time allowance when such conversation commences.

The procedure to be followed in each of the three cases which may supervene, in this matter, is as follows:—

- (1) A conversation of 1 unit is to be charged at the rates fixed for the period of time allowance in force when such conversation is commenced.
- (2) A conversation of 2 units where the second unit of time falls within the two different periods of time allowance (*i.e.*, 5 minutes and 3 minutes, or *vice versa*, is charged for at the rate in force when the conversation was commenced.
- (3) A conversation of 2 units, where the first unit (of 5 or 3 minutes, as the case may be) falls within the two different periods of service, is to be charged for as follows:—The first unit at the rates specified for the period of time allowance in force when the conversation was commenced; and the second unit at the rate specified for the other period of time allowance, with a reduction of 50 per cent.

Consequently, in this last case, the duration of the conversation is 8 minutes; and the rate charged is 1 franc, 50 centimes (29 cents).

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In interurban service, (Doc. I., p. 39) :—

- (1) When conversations, comprising two units of the specified time allowed, and the first unit of time is covered by the subscription agreement, the second unit is charged for at the rate of 1 franc (19½ cents).
- (2.) When a conversation comprises three units of the specified time, and the first unit of time is covered by the subscription agreement, the last two units are charged for at the rate of 1 franc, 50 centimes (29 cents). (Doc. I., p. 39.)

RATES—Continued.

III. CHARGES FOR TELEGRAMS, LONG-DISTANCE CONVERSATIONS AND TELEPHONE MESSAGES.

Subscribers who wish to transmit telephone messenger calls; to converse with another telephone system or group; to use the interurban or international long-distance service from their own stations; or to send telegrams by 'phone to the telegraph bureaux, must deposit an amount equal to the estimated charges due for one month. This deposit must be at least 5 francs for each subscriber's station.

At the end of each month the subscriber is notified of the amount of charges owing, and is requested to pay the same within 3 days. After this period, the said charges are collected by mail at the subscriber's expense. If payment is not made, no further long-distance connections are allowed within or without Belgium unless the charges are paid in advance; and the central station may refuse connections with the telegraph bureau, for the transmission of telegrams by 'phone.

Subscribers who have made a deposit are responsible for the payment of the following charges :—

- (1) The charges for all the long-distance conversations in Belgium and with other countries, requested from their own stations.
- (2) The charges for telephone messenger calls, and for all telegrams transmitted from their own stations, by any person.

RATES—Continued.

IV. INTERNATIONAL SERVICE.

a. Between Belgium and France.

14. The charges for ordinary conversations, and the subscription rates, in the service, between Belgium and France, are fixed according to zones, as follows :—

Series.	Single toll conversations, of an indivisible unit of 3 minutes duration each.		MONTHLY SUBSCRIPTION RATES, DAY AND NIGHT.		
			For a daily conversation of :—		
	Day Rates.	Night Rates.	6 Minutes Duration.	9 Minutes Duration.	12 Minutes Duration.
	Francs.	Francs.	Francs.	Francs.	Francs.
1.....	1.50 (29c.)	0.90 (17c.)	45 (\$8.69)	67.50 (\$12.95)	90 (\$17.37)
2.....	2. (39c.)	1.20 (23c.)	60 (\$11.58)	90 (\$17.37)	120 (\$23.15)
3.....	2.50 (48c.)	1.50 (29c.)	75 (\$14.48)	112.50 (\$21.52)	150 (\$28.95)
4.....	3 (58c.)	1.80 (35c.)	90 (\$17.37)	135 (\$26.00)	180 (\$34.74)
5.....	4.75 (92c.)	2.85 (55c.)	142.50 (\$27.50)	213.75 (\$40.25)	285 (\$55.00)
6.....	5.25 (\$1.01)	3.15 (60c.)	157.50 (\$30.40)	236.25 (\$45.60)	315 (\$60.80)

N.B. The Night Rates apply from 8.51 p.m. until 6.51 a.m. during the summer months; and until 7.51 a.m. during the winter months. The winter months comprise November, December, January and February.

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APPENDIX No. 1

In the list of international connections given in the directory of the telegraph and telephone bureaux of Belgium, the number which follows each telephone group, or telephone system in France, designates the particular zone, according to which the rates are fixed, as specified in the foregoing table.

In the international connections between Belgium and France, the unit of time allowed for ordinary conversations is fixed at 5 minutes. But the time is reduced from 5 minutes to a maximum of 3 minutes in service between Brussels and Antwerp on the one hand and Paris on the other, during week days, from 10 a.m. until 4 p.m. (Greenwich time). On Sundays, the unit of time allowed for conversation is 5 minutes in all cases.

b. Belgium and Germany.

15. Between Belgium and Germany, the rates are fixed according to the extension of the service. These rules are specified in the lists of connections between Belgium and Germany, which are given in the various long-distance telephone directories kept in the central stations.

Urgent conversations may be carried on by paying a charge equal to 3 times the amount of the ordinary specified rates.

The unit of time allowed for ordinary conversations is 3 minutes.

Subscription agreements are not accorded in service between Belgium and Germany.

The following are the revised rates of service between Belgium and the German Empire (from January 1, 1902):—

IN BELGIUM.

(Doc. V., No. 473.)

Communications sent from or to the telephone groups of Liege and Verviers, zone 1, Fr. 0.625 (12c.).

Communications sent from or to the other Belgian telephone groups, zone 2, Fr. 1.25 (24c.).

IN GERMANY.

Communications sent from or to the telephone systems within the territory of general postal management of Aix-la-Chapelle, zone 1, Fr. 0.625 (12c.).

Communications sent from or to the telephone systems within the territory of Cologne (on the Rhine) and Dusseldorf, zone 2, Fr. 1.25 (24c.).

Communications sent from or to the telephone systems not included in zones 1 and 2, Fr. 2.25 (43c.).

The total rates apply to communications sent from Belgium and which are exchanged between:—

- (1) The telephone systems within the 1st Belgian zone and the systems within the 2nd German zone.
- (2) The telephone systems within the 2nd Belgian zone and the systems within the 1st German zone.
- (3) The telephone systems within the 1st Belgian zone and those of the 3rd German zone. These rates are, 2 francs (38c.) for the first two divisions, classified above, and 3 francs (58c.) for the third division.

C. BELGIUM AND THE GRAND DUCHY OF LUXEMBURG.

16. In service with the Grand Duchy of Luxemburg, the rates are fixed according to zones, as follows:—

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Designation of the Zones.	Charge for an indivisible unit of time of 3 minutes.	AMOUNT OF SUBSCRIPTION RATES FOR.	
		A daily indivisible unit of time of 6 minutes.	A daily indivisible unit of time of 9 minutes.
	Francs.	Francs.	Francs.
Within the 1st zone.....	1·25 (24c.)	37·50 (\$7.24)	56·25 (\$10.86)
Within the 2nd zone.....	2·00 (39c.)	60·00 (\$11.58)	90 (\$17.37)
Within the 3rd zone.....	2·50 (48c.)	75·00 (\$14.48)	112·50 (\$21.71)

In the list of international connections with the Grand Duchy of Luxemburg, given in the directory of the telegraph and telephone bureaux of Belgium, the number which follows each telephone group, or telephone system, in Belgium, designates the particular zone, according to which the rates are fixed, as specified in the foregoing table.

d. BELGIUM AND HOLLAND.

17. In service with Holland, the rates are fixed according to zones, as follows:—

Designation of the Zone.	Charge for an indivisible unit of time. of 3 minutes.	AMOUNT OF SUBSCRIPTION RATES FOR.	
		A daily indivisible unit of time of 6 minutes.	A daily indivisible unit of time of 9 minutes.
	Francs.	Francs.	Francs.
Within the 1st zone*.....	1·25 (24c.)	37·50 (\$7.24)	56·25 (\$10.86)
Within the 2nd zone.....	3 (58c.)	90 (\$17.37)	135 (\$26.06)

* Telephone groups of Liège and Verviers and Heerlen, Maastricht and Valkenburg; between Antwerp and Bergen-op-Zoom and Rozendaal; between Verviers and Kerkrade; and between coast telephone groups and Flushing.

In the list of international connections given in the directory of the telegraph and telephone bureaux of Belgium, the number which follows each telephone group, or telephone system, in Holland, designates the particular zone, according to which the rates are fixed, as specified in the foregoing table.

e. BETWEEN BELGIUM AND GREAT BRITAIN.

In service with Great Britain, the rate is 10 fr. (\$1.93) per unit of three minutes conversation. Subscription agreements may be arranged for during night hours at a charge of one-half of the foregoing rate. (See agreement, Doc. IV., Article 7 and 8, pp. 599, 600.)

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BELGIUM—Continued.

No. 292e.

(Translation.)

NEW REGULATIONS RELATING TO THE TELEPHONE SERVICE BETWEEN BELGIUM AND FRANCE.

I. GENERAL AGREEMENT.

(Doc. III., No. 439.)

His Majesty, the King of the Belgians, and the President of the French Republic, desiring to arrange the telephone service between Belgium and France, and exercising the authority accorded to them, by Article 17 of the International Telegraph Agreement, signed at St. Petersburg, on July 22, 1875, have resolved to conclude a general agreement on this subject, and have appointed the following as their plenipotentiaries:—

For His Majesty the King of the Belgians—

Baron D'Anethan, his Minister Plenipotentiary and Envoy Extraordinary, to the President of the French Republic.

For the President of the French Republic—

Mons. Delcassé, member of the Chamber of Deputies, and Minister of Foreign Affairs: who, having communicated their full powers, which have been found in good and due form, have agreed upon the following regulations:—

1. The telephone service between Belgium and France is insured by means of conducting wires, the diameter, conductivity, and insulation of which agree with the conditions under which the said telephone service ought to be carried on. These wires are arranged, as far as possible, to avoid all inductive influences. Each of the two telephone managements has to carry out, at its own expense, within its own territory, the work of constructing and maintaining the telephone lines. Telephone communications may be sent to or from public call offices, or subscriber's stations.

2. Unless a contrary decision shall be mutually agreed upon by both governments, the circuits specially constructed for the telephone service, are to be exclusively used for that purpose. The two governments may also mutually agree to use the telegraph lines for the exchange of telephonic communications.

3. The unit of time to be allowed for conversation, and for which the specified rates are to be charged, is three minutes.

4. Government communications are to have the same precedence which has been accorded to government telegrams by Article 5 of the International Agreement, signed at St. Petersburg on July 10 and 22, 1875. The government communications are not to be limited as to the length of time occupied in conversation.

5. Rates are to be paid by the person who requests the connections. The rates are the total amount of the elementary charges, specified below, for a conversation of three minutes duration:—

a. In Belgium.

Seventy-five centimes (14½ cents) for communications originating from, or sent to, the telephone group of Courtrai, and the telephone systems forming part of the groups whose principal centres are situated in the provinces of Hainault, Namur and Luxemburg—zone 1.

One franc, 25 centimes (24 cents) for communications sent from, or to, the other Belgian telephone systems—zone 2.

b. In France.

Seventy-five centimes (14½ cents) for communications from or to the telephone centres of the following departments:—Nord, Pas-de-Calais, Aisme, Ardonnes, Meuse and Meurthe-et-Moselle—zone 1.

One franc, 75 centimes (33½ cents) for communications sent from, or to, the telephone systems of the departments whose chief city is situated within a circle, drawn

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from Paris as the centre, having a radius of 300 km. and excluding the departments that form the first zone—zone 2.

Four francs (77½ cents) for communications sent from, or to, the telephone centres of the departments that are not included in the two first zones—zone 3.

The two governments may, by mutual agreement, modify the elementary charges and reduce the same during the hours of night service.

6. The managements concerned will mutually agree regarding the kind of circuits by which the international service is to be carried on; and also regarding the various cities that are to be admitted to the service; and also the hours during which the service is to be granted.

7. After a mutual agreement has been arrived at, by both governments, a system of subscriptions may be arranged for, at fixed hours, for service between Belgium and France.

8. The two telephone managements will mutually designate the circuits that are to be used for subscriber's conversations, as also the hours during which the subscribers may carry on conversations.

9. The portion of the rates belonging to the lines within each territory, is to be paid to each management, according to the scale given in Article 5. The receipts resulting from the telephone service, are to be handled by each management, as a special account, to be kept separate from the receipts received from the telegraph service.

10. After a mutual agreement has been arrived at, telephone service may be opened up with neighbouring countries, by means of the various telephone systems of the different managements, *i.e.*, Belgium and France.

11. On the basis of Article 8 of the international agreement signed at St. Petersburg, each of the contracting government reserves to itself the right to suspend the telephone service altogether or in part, without being held liable for any compensation in so doing.

12. The telephone managements of the two countries are not responsible in any way for private communications sent over the telephone lines.

13. The terms of the present agreement are to be completed by regulations of service, mutually agreed upon by the two telephone managements concerned.

14. The present agreement abrogates the agreement that was concluded at Paris on August 31, 1891. This agreement shall come into force on a date to be fixed upon by the two managements concerned. It shall continue in force during one year, from the time that it has been rescinded by one or the other two managements concerned.

In testimony of which the respective plenipotentiaries have signed the present agreement, to which they have also affixed their seals.

Signed in duplicate, at Paris, on October 29, 1898.

BARON D'ANETHAN.

DELCASSE.

II.—REGULATIONS RELATING TO THE TELEPHONE SERVICE BETWEEN BELGIUM AND FRANCE.

1. During night hours.

2. Under subscription agreements.

The Director General of the Telegraph Department of Belgium, of the one part, and the Under Secretary of State for the Post Office and Telegraph Department of France, of the other, after duly considering the general agreement of October 29, 1898, containing:—

1. Article 5 (last paragraph), that 'the two governments may modify the elementary charges, and reduce the same, during the hours of night service.'

2. Article 7, that 'after a mutual agreement has been arrived at by both governments, a system of subscription may be arranged for, at fixed hours, for service between Belgium and France.'

3. Article 8, that 'the two telephone managements will mutually designate the circuits that are to be used for subscribers' connections, as also the hours during which the subscribers may carry on conversations,'

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have agreed upon the following rules:—

1. The elementary rates specified for telephonic communications between Belgium and France, exchanged between 9 p.m. (Paris time) and 7 a.m. (Paris time), during the summer months, and 8 a.m. during the winter months, are fixed for an indivisible unit of time, consisting of three minutes, at three-fifths ($\frac{3}{5}$) of the ordinary elementary rates specified in Article 5 of the general agreement.

The winter months are November, December, January and February.

2. Subscription agreements may be arranged for telephonic communications exchanged during night hours—from 9 p.m. until 7 a.m., during the summer months, and until 8 a.m. during the winter months (Paris time).

Subscription agreements may also be arranged for conversations to be exchanged during the day, if the two managements are convinced that no inconvenience will result therefrom for the regular telephone service. But subscribers' conversations will not be allowed during the hours when the stock exchanges, which have regular telephone service, are open.

3. Subscribers' conversations must be exclusively on matters relating to the personal affairs or business concerns of the subscribers.

The duration of the term of subscription is to be for an indivisible period of one month, and is prolonged from month to month by a tacit agreement, unless notice of withdrawal is given on either side.

The subscription may be cancelled on both sides by notice being given to this effect, eight days before the termination of a monthly period of subscription. The amount of rates for a subscription must be paid in advance. One subscription cannot be held by several persons conjointly.

4. The minimum duration of conversations between two subscribers is to be double the unit of time allowed for one conversation

An exchange of conversations between two subscribers lasting for three or four units of the ordinary time allowed, may be mutually arranged for between the managements.

5. The monthly rates for subscribers' conversations, estimated for a minimum period of 30 days, is calculated at half the ordinary rates, specified in Article 5 of the general agreement for a conversation lasting 3 minutes.

6. The connections between the two subscribers' stations designated in the contract of agreement are made by the central exchanges at the exact time agreed upon by both subscribers; unless another conversation is already being carried on between two other persons.

The minutes (time allowance) not utilized for conversation must not be carried over to another conversation; but if the said time allowance is not utilized on account of some interruption in the service, the exact number of minutes lost is allowed, if at all possible, to the subscriber, during the same day.

7. On making request for the same a subscriber will be reimbursed for each period of 24 consecutive hours of total interruption in the service by receiving one-thirtieth ($\frac{1}{30}$) part of the amount of the monthly subscription rates.

8. The terms of the present arrangement are to be completed by rules of service mutually agreed upon by the two telephone managements.

9. The present arrangement is to come into force on the same date that the general agreement passes into effect, and is to continue in operation for the same length of time as the said general agreement.

Signed in duplicate,

At Paris, on February 2, 1900.

LEON MOUGEOT,

Under Secretary of State,

Post Office and Telegraph Departments of France.

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At Brussels, on February 8, 1900.

F. DELARGE,

Director-General of the Telegraphs, &c.

Approved by

JUL. LIEBÆRT,

Minister of the Railway, Post Office and Telegraph Departments.

III. REGULATIONS FOR THE TELEPHONE SERVICE.

(See p. 592, par. 13, and p. 593, par. 8.)

1. Each morning when the daily service commences, the central telephone stations having direct connection with one another, are to test the conditions of the connections, the one with the other.

The tests are to be made of the call signals, in both directions; and for the audibility of speech. The results of these tests are to be entered into registers, by each of the central exchange stations in question.

Electric tests are to be made every month regarding the conductivity and insulation of the circuits. The tests have also to be made when there is persistent derangement of the lines.

2. The hours are to be regulated according to the Paris and Brussels time. The official time in France is that of the meridian of Paris; and in Belgium that of the meridian of Greenwich, which is 9 minutes behind that of Paris.

The Central exchange stations in direct connection with each other, are to exchange the time as often as may be necessary. This is to be done at least at the commencement and the close of the daily hours of service. The clocks are to be regulated as soon as they show a difference of more than one minute from the official time.

3. The service is permanent in the Central exchange of Brussels and Paris. The days and hours of service in the other central exchanges and in the public call stations are fixed by the managements, according to the existing circumstances.

4. Connections are made :—

1. Between the stations of two subscribers.
2. Between two public call stations.
3. Between a subscriber's station and a public call station.

As a general rule, connections are not allowed which require the intervention of more than five intermediate central exchanges, including the transmitting and receiving exchanges. The managements mutually designate the central telephone exchanges of the two countries which are to have service with each other, and specify the various telephone lines to be used.

5. The managements take all necessary steps to insure the secrecy of all telephonic communications.

6. Ordinary communications, sent during the summer months from 7 a.m., and during the winter months from 8 a.m. up to 9 p.m. (Paris time), pay the full rates specified in Article 5 of the 'General Agreement.' Communications sent from 9 p.m. up till 7 or 8 a.m., according to the season of the year, pay the reduced rates that are specified in Article 1 of the 'Arrangement' agreed upon on February 2, and 8, 1900.

The winter months are November, December, January and February. The liability to pay the specified charges, connections requested by one subscriber with another, begins at the moment when connections have been made between the station calling up and the station asked for. For connections from a public call station to a subscriber's station, the liability to pay the specified charges begins as soon as connections have been made with the subscriber's station asked for. In both cases the charges have to be paid without regard to the person who replies from the subscribers' station called. Finally, when connections are asked for with a public call station, the liability to pay the charges begins as soon as the person calling up is placed in connection with the subscriber's station asked for, or with the person calling up from BELGIUM.

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the public call station as the case may be. The charges are collected either from the subscriber from whose station the call is sent, or from the person at the public call station who requests the connections. The time during which the call is being made, either from the subscriber's stations or from the public call stations is not charged for. As a general rule, this time is limited to 2 minutes during the hours of day service, and to 5 minutes during the hours of night service.

The charges are not collected, when, through any fault in the telephone service, the request for conversation is not followed by connections being effected with the station that has been asked for. If the charge has been already paid, it is reimbursed, according to the special rules of service applying to each telephone bureau. No reduction in the charges can be granted, if, through any fault in the telephone service it is not possible to carry on conversations between the stations that have been connected, even if the central stations or the public call stations may have been requested to verify the impossibility of being able to converse. Any reduction in the charges must be mutually agreed upon between the two telephone managements.

The actual duration of an ordinary conversation between two persons must not exceed twice the unit of time allowed for a single conversation. At the end of this time the connection is broken off by the central station. In the event of the persons conversing not having finished their conversation at the expiration of the first period, they are not allowed a further period immediately following the first, unless there are no requests waiting from other persons for connections. If such requests have been made these connections must be completed according to the order in which they have been asked for.

In cases where the connections have been placed at the disposal of two persons conversing during a longer period of time than double the unit of time allowed for a single conversation, the person who requests the connections has to pay for the length of time that the line is used according to the number of indivisible units of time, *i.e.*, 5 or 3 minutes, as the case may be.

In the matter of government communications, there is no limit as to the length of time during which the lines are in use.

7. Applications for subscription have to be made eight days in advance to the French telephone management at Paris; or to the telegraph management at Brussels. These applications must state specifically the subscriber's stations that have to be connected.

In Paris, besides the private stations of subscribers, conversations at the specified subscription rates are only allowed from the public call stations in the Paris Bourse (stock exchange). Subscription agreements are drawn up in the form of contracts or engagements made in duplicate, by the management which collects the rates. The other office (central exchange) has to receive a copy of this document. The subscription agreement may be arranged to begin on any date, but the monthly period begins only on the 1st or the 16th day of each month.

The proportionate charges for the period from the date when the subscription begins to the commencement of the monthly term (if the subscription is taken out before this date), is added to the subscription for the first month. However, at the subscriber's request, the monthly period may commence on some other date than the 1st or the 16th of the month, if this request is made in due form when the agreement is signed, and the subscriber declares his intention of relinquishing the subscription at the termination of the first monthly period.

As a general rule, an interval of two minutes is reserved between two subscribers' conversations.

8. Each management undertakes to supply its subscribers in the manner that may be considered most convenient, with full information regarding the telephone systems, and the public call stations of the neighbouring country with which the service has been established. The central exchanges of importance and the principal public call stations must possess directories of the subscribers connected with the service, and carefully keep these up to date.

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For this purpose, the various central exchanges concerned exchange gratis a sufficient number of telephone directories of the systems connected with a central exchange, or a public call station. The managements will make the necessary arrangement to have these directories placed on sale for the general public.

9. The telephone connections are made by means of the central exchange. As soon as it is known that the subscriber's station or the public call station calling can be connected with the station called, the central exchange receiving the call from the subscriber communicates with the central exchange at the intermediate or long-distance point, as the case may be, and asks for the called subscriber's station (by number if possible). As soon as the connections have been made, the subscriber or the public call station is informed that this is the case, and asked to begin the conversation.

The 'calling' and 'called' central exchanges note down the time when the connection is made, and, before leaving the circuit, make sure that conversation is satisfactory from both ends. As soon as the conversations are finished, the two subscribers immediately notify (ring up) their respective central exchanges. The time when the conversation terminates is noted down in the register of connections made. When the duration of ordinary conversations is double the unit of time allowed, then the 'calling' or 'called' central exchange follows the regulations given above, in section VI., paragraphs 11 and 12, informing, if possible, the persons conversing, that the connections must be broken.

In the case of subscribers' conversations, the connections are broken off by the central stations, as soon the specified time arranged for in each case has elapsed.

When a central exchange has received a number of requests for connections, then the same are to be made with the various central exchanges concerned, consecutively in the order of time in which such requests were received.

The central exchanges must respond without delay to the calls sent to them. When a central exchange does not respond to the calls, the exchange calling up must send in another call after the lapse of a minute or so, by another circuit. If this cannot be done, or if this does not have the desired effect, then the subscriber calling up must have recourse to the telegraph bureau, in order to inform the central exchange called of the situation.

10. Special services for communications to be forwarded by messengers are not arranged for, nor organized conversations with a public call station cannot be carried on unless an arrangement has been made beforehand between the parties concerned, for the person called to be present in the public call station. The central stations and the public call stations must be careful to give instructions on this point to the persons who wish to converse. When the person wanted, who has been announced as being present in the public call station, does not respond, the connection cannot be continued, unless the specified charge is paid for the time taken up. The same rule applies to communications between the stock exchanges in the French and Belgian cities, where the bureaux in question have an organized service of messengers, to inform the person present of the times when connections are requested. The officials in charge of the public call stations must inform the person requesting connections of the necessary measures to be adopted in using the 'phones, in order to obtain the most satisfactory results. The official in charge of the 'calling' public call station, must note down the exact time when the desired connections have been made, and when the conversations are finished.

As soon as the first unit of time allowed for conversation has elapsed the official must inform the person conversing of the fact, upon which he must at once conclude the conversation, unless he consents to pay the additional charge. The official has the right to require the payment of this charge in advance.

11. A central station, or a public call station, must not suspend or close the service at the specified hours, until all the connections requested before the hour fixed for the suspension or the closing of the service have been completed.

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12. Conversations exclusively relating to the telephone service between France and Belgium may be exchanged free of charge between the officials of the two managements, who have special authority to hold such conversations.

When claiming this privilege, the said officials are bound to state their names and office. If they neglect to do so the central exchange or the public call station who has to make the connections must request this information before the connections are made, unless the identity of the official in question is known. These free conversations are announced from one central exchange to another by the word 'service.' The two managements must take all necessary steps to restrict, as much as possible, each in its own matters of service, the number of such communications. As a general rule, it is preferable to use the telegraph lines for this purpose.

13. Conversations having the right of priority (precedence) are:—

1. Those sent by officials authorized to transmit the government telegraph despatches. Such communications are subject to the ordinary rates.
2. Those by the officials of the two managements, authorized to converse on matters relating to the telephone service, when they claim this privilege, on matters of urgency.

The order in transmitting telephonic communications is fixed as follows:—

1. Government communications.
2. Communications on urgent matters relating to the service.
3. Private communications.
4. Communications relating to the service that are not urgent.

For conversations of the same rank, the connections are made according to the order of request. Subscribers' conversations are interpolated into the order of requests received by the central exchanges, so as to be carried on at the time specified in the agreement. Conversations of the same rank from both ends of the lines, are exchanged in alternate order. Conversations of a higher rank are not included in the alternate order of exchange.

14. As soon as any difficulty in conversing, or any derangement in the service is ascertained, the two managements will take immediate steps to remedy the matter; each in that part of the service pertaining to itself. The central exchanges will advise one another, by telegram, if necessary, of any defects or circumstances which hinder or impede the telephone service.

15. Each management has to keep a register of service, which has to contain, in addition to the points relating to the service, all the necessary details for collecting the rates, and for balancing the international accounts. The accounts are drawn up monthly, and are exchanged between the two managements, according to the form adopted for the telegraph accounts.

In cases of dispute as to the length of conversations, the managements have to refer to the records of the central exchanges which made the connections.

Signed in duplicate.

At Paris, on Feb. 2, 1900.

LEON MOUGEOT,
Under Secretary of State,
for the Post Office and Telegraph
Departments of France.

At Brussels, on Feb. 8, 1900.

F. DELARGE,
Director General,
of the Telegraph Department
of Belgium.

IV.—ROYAL DECREE DETERMINING THE FRANCO-BELGIAN RATES.

Leopold II., King of the Belgians,

To all to whom these presents shall come, *Greeting.*

Whereas, the law of June 11, 1883, extends to the telephone service the provisions specified in the law of March 1, 1851; and

Whereas, the law of December 30, 1899, continues the law of March 1, 1851; and

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Whereas, an agreement, relating to the organizing of the telephone service between Belgium and France, was entered into on October 29, 1898;

Therefore, on the proposal of Our Minister of Railways, Post Offices and Telegraphs,

We have decreed, and do decree:

1. The elementary rates applicable to telephone communications between Belgium and France, exchanged between the hours of 8.51 p.m. (Eastern European time) and, during the summer months, 6.51 a.m., or during the winter months, 7.51 a.m., are fixed, for a unit of time, consisting of three minutes, at three-fifths ($\frac{3}{5}$) of the ordinary rates, specified in Article V. of the foregoing 'Agreement.' The winter months are November, December, January and February.

2. The monthly rates for subscriber's conversations, between Belgium and France, calculated for a minimum period of 30 days, are fixed, for a unit of time, consisting of three minutes, at the half of the ordinary rates, specified in Article V. of the said 'Agreement.'

The minimum duration of a communication exchanged between two subscribers is double the unit of time allowed for one conversation.

Communications lasting for three or four units of the time allowed, may be granted after arrangements have been made between the two managements. Our Minister for Railways, Post Offices and Telegraphs, is authorized to execute the present Decree; and will fix the date when the same shall come into force.

Given at Laeken, on March 30, 1900.

For the King,

JUL. LIEBAERT,

Minister of Railways, Post Offices and Telegraphs.

V. MINISTERIAL DECREE, ISSUED IN CONFORMITY WITH THE ABOVE ROYAL DECREE.

The Minister of Railways, Post Offices and Telegraphs,

Having duly considered the 'Agreement' of October 29, 1898, relating to the telephone service between Belgium and France;

Having duly considered the Royal Decree, of March 30, 1900, determining the basis according to which the rates applicable to the telephone service between Belgium and France, for ordinary conversations, during night hours, and for conversations exchanged between subscribers, are to be calculated.

Decrees:

Special Article.—May 1, 1900, is fixed as the date for carrying into effect:

1. The Franco-Belgian telephone agreement of October 29, 1898.
2. The measures enacted by the Royal Decree of March 30, 1900, given above.

The general telegraph management is charged with the execution of the present Decree, which is to be delivered to the audit office for verification.

JUL. LIEBAERT.

Brussels, March 31, 1900.

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(Translation.)

TELEPHONE SERVICE BETWEEN BELGIUM AND GREAT BRITAIN.

I.—AGREEMENT.

(Doc. IV., No. 495.)

His Majesty the King of the Belgians, and His Majesty the King of the United Kingdom of Great Britain and Ireland, and of the British Possessions beyond the Seas, Emperor of India, desiring to arrange the telephone service between Belgium

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and Great Britain, and exercising the authority accorded to them by Article 17, of the international telegraph agreement, signed at St. Petersburg, on July 22, 1875, have resolved to conclude a general agreement on this subject, and have appointed the following as their plenipotentiaries:—

For His Majesty the King of the Belgians: Baron De Favereau, Knight of the Order of Leopold, Senator, his Minister of Foreign Affairs.

For His Britannic Majesty: Sir Constantine Phipps, Knight Commander of the most distinguished Order of St. Michael and St. George, Companion of the Most Honourable Order of the Bath, His Envoy Extraordinary and Minister Plenipotentiary to His Majesty the King of the Belgians, who, having communicated their full powers, which have been found in good and due form, have agreed upon the following regulations:—

1. A telephone service shall be established and operated between Belgium and the United Kingdom by the telegraph managements of the two countries.

2. For this service a submarine cable shall be employed, containing four conductors (wires), which has to be laid, at the mutual expense of both managements, between the Belgian coast and the English coast, and also shore lines, which are to be constructed by each management at its own expense, within its own territory.

The diameter, the conductivity, and the insulation of the wires, must be suited to the requirements of the service. The wires must be arranged so as to preclude as much as possible the effects of induction, and are to be maintained in the best condition of service.

Each management will undertake, at its own expense, the work of maintaining the shore lines, within its own territory.

The English management will maintain the submarine cable, and the costs for this maintaining are to be equally borne by the two managements.

3. The circuits which have been specially constructed for the telephone service are to be exclusively employed for this purpose, unless it shall be otherwise decided by the two managements.

4. The telephone circuits are to be led into the central exchanges designated by the two managements, which are to make connections with the public call stations, or with the subscribers' stations connected with the service, as the case may be.

5. The unit of time specified for the duration of conversations, and for which charges are collected, is an indivisible period of three minutes. Not more than two consecutive conversations, consisting of three minutes each, are to be allowed between the same subscribers, when other requests for connections have been made, either before or during the said conversations.

6. Government communications are to receive the precedence accorded to government telegrams by the international agreement, signed at St. Petersburg on July 22, 1875. The duration of government communications is not limited as to the time taken up.

7. The unit of charge for each conversation of three minutes shall consist of the total sum of the following elementary charges:—

For the benefit of Belgium: Four francs 50 centimes (87 cents) for each conversation sent from or to a Belgian telephone centre.

For the benefit of the United Kingdom: Five francs 50 centimes (\$1.06) for each conversation sent from or to any telephone centre in England or the country of Wales, which can be connected with a Belgian telephone centre. The rates are to be paid by the person who requests the connections.

8. The two managements will mutually designate the telephone stations that are to be connected, the international circuits that are to be employed, and the hours during which the lines shall be open for service.

9. The receipts accruing from the telephone service are to be kept in a special account by each management, separate from those of the telegraph receipts.

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10. After mutual agreement, each of the managements shall be free to organize telephone service with another country, by means of the telephone lines of the other management.

11. Conversations may be exchanged during night hours at subscription rates. Each communication, at subscription rates, is to have a minimum duration equal to double the time allowed for a single conversation. The rates to be paid for the same are to be one-half of the charges that are specified in Article 7. The two managements will mutually fix the hours during which subscribers' conversations are to be carried on.

12. On the basis of *article 8* of the international agreement of St. Petersburg, each of the contracting parties reserves the right of suspending totally or partially, the telephone service, without being liable for any compensation.

13. The two managements are not in any way responsible for private communications sent over the telephone lines.

14. The terms of the present agreement are to be completed by rules of service, drawn up by mutual agreement, by the two managements.

15. The present agreement shall come into force on a date which is to be agreed upon by the two managements. After continuing in force for the space of one year, it may be revised at any time, at the request of one or other of the contracting parties.

In testimony of which the respective plenipotentiaries have signed the present agreement, to which they have also affixed their seals.

Signed in duplicate at Brussels, on November 21, 1902.

P. De FAVEREAU.

CONSTANTINE PHIPPS.

II.—RULES OF SERVICE DRAWN UP IN PURSUANCE OF ARTICLE 14, OF THE ABOVE AGREEMENT.

Articles No. 1, 4, 5, 8, 10, 11, 12, 13 and 14, and portions of Articles No. 6, 7, 8 and 15 have been omitted from this agreement, as they are identical with the 'regulations' governing the service between Belgium and France. (See page 594).

2. Official time, adopted for the telephone service between the two countries is that of the meridian of Greenwich.

3. The service is permanent in the central exchanges at Brussels and London. (2). The hours of service in the other central exchanges and in the public call stations are fixed by the two managements, each within its own territory, and each management supplies the other with information regarding these fixed hours.

6. The rates are collected by each management according to the rules specified for its telephone service, but only the charges for conversations actually held are included in the international accounts. (8). Any reduction in the charges has to be agreed upon by the two managements, each management relinquishing its own share of the charges. (10). Unless by the permission of the 'calling' exchange at the terminal of the line, no person using a subscriber's station, or a public call station, is allowed to have a second conversation until the charges for the first conversation have been paid.

7. Subscription agreements may be arranged for conversations during night hours, from 9 p.m. until 7 a.m. during the summer months, and from 9 p.m. until 8 a.m. during the winter months. The period of winter comprises the months of November, December, January and February. (11). The connections are made by the central exchange between the two stations requested, at the exact time mutually agreed upon, provided that the circuits are not already occupied. (12). The time allowed for conversation or any portion of the said time, which has not been used during the course of one night, cannot be carried over to another night. (13). If the time could not be used on account of some interruption in the service, if at all possible an opportunity is given to the subscriber to make this good, during the course of the same night.

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(14). If it has not been possible to give this opportunity to the subscriber, the said subscriber may, upon request, be reimbursed for the time which could not be utilized. Each unit of 3 minutes of conversations commenced is not taken into calculation, when the reimbursement is made. (15). The reimbursement is paid by the two managements, in proportion to their several shares in the receipts in such cases. (16). When a unit of conversation has terminated, a subscriber may continue to converse provided that no other request for the use of the circuit has been made, and said subscriber consents to pay the ordinary additional charge of 10 francs (\$1.93) for an indivisible unit of 3 minutes. (17). Requests for subscription agreements must be made, at least 8 days in advance, to the telegraph management at Brussels, or to the Postmaster General at London. These requests must specify the stations to be connected.

9. 'International' communications between Belgium and Great Britain, or *vice versa*, which are exchanged by means of the internal lines of these two countries, have the right of precedence over the said lines before 'national' communications which are exclusively within Belgian or English territory. However, in no case must a conversation be broken in upon that is being carried on. (3) The central exchange which receives a request for connections must see that such request is valid, and, especially, that the subscriber's station, or the public call station asked for, can be actually connected with the station calling. (4) If the request is valid, it is transmitted by 'phone as quickly as possible, from point to point, from the 'calling' to the 'called' exchanges on the Anglo-Belgian circuit, by means of all the central exchanges concerned. (5) Each central exchange transmits the requests to the exchange at the terminal of the international circuit, exclusively in the order in which they are received, no matter from where they are sent. (6). In cases where requests are withdrawn or cancelled, the notice is transmitted, according to the same conditions. (7). The requests for connections are made by giving the number, whenever this is possible. The responsibility for the exact number rests with the subscriber who sends in the call, or the person calling from a public call station, as the case may be, unless the number in question is not correctly given in the official directory of subscribers. (8). The Anglo-Belgian circuits are operated in alternate order, that is to say, each of the central exchanges at the terminals of the line, alternately call up each other. (9). The alternate order is followed, after each conversation. (10). The alternate order, however, applies only to conversations of the same rank. (11). Each connection is prepared while the preceding conversation is being carried on. The 'calling' exchanges connected with the international circuits have to make the necessary preparations for arranging for the connections. (12). The connections are made according to the order in which the requests are noted down in the said exchanges. (14). The connections are controlled by the 'calling' exchanges and 'called' exchanges of international circuits. The 'calling' exchanges have specially to control the duration of the conversations. The 'called' exchanges connected with the international circuits have to see that the conversations can be exchanged under satisfactory conditions.

15. In order to insure the most complete agreement in drawing up the accounts connected with the Anglo-Belgian telephone service, the central exchanges that control the service have to record each day the totals of the conversations sent and received, and enter the same at the end of the daily register of service. If these do not coincide then the differences have to be noted down, adding such observations as may be necessary for the guidance of the respective managements. (5). In the case of any disputes as to the duration of conversations, the managements have to refer to the entries kept at the 'calling exchanges.' (6). All the documents connected with the international telephone service have to be kept at least six months from the first day of the month following the date at which the said documents have reference.

16. The regulations of the international telegraph agreement, signed at St. Petersburg, on July 22, 1875, and the rules of service for carrying into effect the said

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agreement, apply in so far as they have any bearing on the matter, to the Anglo-Belgian telephone service, in so far as the same are not modified, in any way, by the Anglo-Belgian agreement, or by these rules of service.

Signed in duplicate:

At Brussels, on May 8, 1903.

At London, on May 23, 1903.

F. DELARGE,

AUSTIN CHAMBERLAIN,

Director General of the Telegraph Department of Belgium.

Postmaster General of the United Kingdom of Great Britain and Ireland.

The Minister of Railways, Post Offices and Telegraphs, having duly considered the agreement of November 21, 1902, relating to the organizing of the telephone service between Belgium and Great Britain, determines as follows:

The Anglo-Belgian telephone agreement of November 21, 1902, is to come into force on June 8, 1903. The general telegraph management is charged with the execution of the present decree, which is to be delivered at the audit office for verification.

JUL. LIEBAERT.

BRUSSELS, May 25, 1903.

BELGIUM—*Continued.*

No. 292g.

(Translation.)

AGREEMENT CONCERNING TELEPHONE SERVICE BETWEEN BELGIUM AND GERMANY.

(Doc. V., No. 285.)

The government of His Majesty the King of the Belgians, and the Imperial Government of Germany, desiring to establish a telephone service between Belgium and Germany, and using the authority accorded to them by Article 17, of the International telegraph agreement, signed at St. Petersburg, on July 22, 1875, have resolved to conclude an agreement on this subject, and have adopted the following regulations:—

1. A telephone service shall be organized and operated by the telegraph managements of Germany and Belgium, between the telephone systems or telephone groups of Aix-la-Chapelle and Cologne (on the Rhine), on the one part, and Verviers, Liege, Brussels and Antwerp, on the other part. The two managements shall be at liberty to extend, by mutual agreement, the telephone service between Germany and Belgium, to telephone systems, or telephone groups, other than those mentioned above.

2. The wire conductors to be employed in the said telephone service are to be installed and operated in accordance with the best conditions which in the experience of the service is possible.

These wires are to be so arranged as to avoid, as much as possible, the effects of induction and other perturbing influences.

Each of the two managements is to carry out, at its own expense, and within its own territory, the work of installing and maintaining the telephone lines.

3. The circuits specially constructed for the telephone service are to be employed exclusively for this purpose, unless it shall be otherwise decided by the two managements. The managements may, by mutual agreement, employ the lines that are at present used for telegraph service for the exchange of telephonic communications.

4. The telephone circuits are to be led in the central exchanges, which will make the necessary connections between the subscriber's stations, and the public call stations connected therewith.

5. The unit of time specified for the collection of rates, and for the duration of communications is 3 minutes.

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6. Not more than two consecutive conversations can be allowed between the same persons, unless no requests for connections have been made by other persons, either before or during the two conversations.

The use of the telephone, the order in which conversations are to be carried on, and the various regulations for the service, are to be mutually agreed upon by the two managements.

Government communications are not to be limited as to time.

7. The rates are collected for a conversation comprising a unit of 3 minutes' duration. This rule applies to all the subscribers' stations and public call stations belonging to the telephone system or telephone group, directly connected with the international line.

These rates are fixed, provisionally, as follows: For connections with Aix-la-Chapelle and Verviers; and with Aix-la-Chapelle and Liege, 1 franc 25 centimes, or 1 mark (24 cents). For connections with Cologne (on the Rhine) and Verviers, and with Cologne and Liege, Aix-la-Chapelle and Brussels, and Aix-la-Chapelle and Antwerp, 2 francs, or 1 mark 50 pf. (36 cents) for connections with Cologne (on the Rhine), and Brussels; and Cologne and Antwerp, 2 francs 50 centimes, or 2 marks (48 cents).

The two managements may, by common agreement, modify this tariff, and fix the rates to be charged for any new connections that may be subsequently opened up in the international service.

(The foregoing rates have been superseded by a decree dated December 3, 1901. See page 604).

8. The receipts for the service, between Germany and Belgium are to be equally divided, for connections between Aix-la-Chapelle and Verviers, Aix-la-Chapelle and Liege, Cologne (on the Rhine) and Brussels, Cologne and Antwerp. The German management will receive 59 pfennigs, or 62½ centimes for each conversation for the service between Aix-la-Chapelle and Brussels, and Aix-la-Chapelle and Antwerp, and 1 mark, or 1 franc 25 centimes for the service between Cologne (on the Rhine) and Verviers, and Cologne and Liege.

9. The rates have to be paid by the person who asks for the connections. Each management will take steps to collect the rates, according to the manner that it may consider most convenient. The receipts accruing from the international telephone service are to be kept in a special account by each management, and separate from the receipts collected for the telegraph service.

10. Each of the two contracting parties reserves the right to suspend totally or in part, for reasons of public order (peace), without being held liable for any compensation.

11. The two managements are not responsible in any sense, for any private communications that may be sent over the lines.

12. The terms of the present agreement are to be completed by rules of service, which may be changed at any time by common agreement between the telegraph managements of the two countries.

The present agreement is to be put in force, on a date to be fixed by the telegraph managements of the two countries. The said agreement shall remain in operation for three months after it has been rescinded, which may be done at any time, by one or other of the contracting parties.

In testimony of which, the undersigned, who have received due authority to this effect, have signed the present agreement, to which they have also affixed their seals.

Signed in duplicate at Berlin, on August 28, 1895.

S. REINDL.

BARON VON MARSCHALL.

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RULES OF SERVICE ADOPTED, IN PURSUANCE OF ARTICLES 6 AND 12, OF THE FOREGOING AGREEMENT.

(Nos. 1, 2, 3, 4, 6, 7, 8, 10, 11 and 12 have been omitted from this agreement, as they are the same as those given for service between Belgium and France. (See page 594).

5. The rates are collected by each management, in conformity with the rules that apply to its telephone service. Consequently the Belgian management makes no charge for any request for conversation which is not followed by connections being made with the stations asked for. The German management charges for a single conversation, as soon as the request for connections has been transmitted to the central station concerned. The amounts collected in such cases belong exclusively to the German management. On the other hand, the German management waives its claim to that share of the rates resulting from requests for connections which are not charged for by the Belgian management.

9. No station may suspend or close the service, at the specified hours, as long as any conversations are being carried on. Within the limits fixed, in the next paragraph conversations are allowed to be completed which have been requested before the hour of closing the service, and which have not been held up to that time.

Unless a special order shall be issued by common agreement of both managements, no telephone bureau shall be kept open longer than 30 minutes to enable conversations requested before the hour of the closing of the service to be completed.

13. The telephone exchanges have to note down the communications effected with the foreign exchanges, the charges collected for these communications, and also all the details necessary for drawing up the international accounts. The daily results of these entries form the basis for these accounts, which are made up monthly, and are exchanged between the post office management at Cologne (on the Rhine), and the telegraph management of Brussels, according to the same manner that the telegraph accounts are handled. The general abstracts of the numbers of conversations are admitted, when the difference in the totals, drawn up by the aforesaid managements, does not exceed one per cent of the amounts rendered by the telephone management who sends in the accounts. When the difference amounts to more than one per cent, then the accounts have to be revised. After verifying the general abstracts, or statements, the quarterly clearance between the two telephone managements is made by the foreign bureau, No. 11, of the government Post Office Department, Berlin.

Approved at Berlin, October 8, 1895. At Brussels, October 11, 1895.

SCHEFFLER,

*Post Office Department, Division II., of
the Imperial German Empire.*

F. DELARGE,

*Director General of the
Telegraph Dept. of Belgium.*

THE GERMANO-BELGIAN TELEPHONE SERVICE RATES.

Leopold II., King of the Belgians.

To all to whom these presents shall come, *Greeting:*

Whereas Article 2 of the Law of June 11, 1883, extends to the telephone service, the provisions specified in the Law of March 1, 1851, and

Whereas the Law of December 30, 1899, continues the Law of March 1, 1851; and

Whereas a telephone agreement was concluded on August 28, 1895, between Belgium and Germany, and particularly *Article 7* thereof, and

Whereas the various royal decrees concerning the rates to be applied to certain connections in the telephone service between Belgium and Germany have been revised,

Therefore, on the proposal of our Minister of Railways, Post Offices and Telegraphs, we have *decreed* and do *decree* as follows:—

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1. From the first of January, 1902, the telephone rates between Belgium and Germany shall be fixed as specified hereafter.

The amounts of rates for an ordinary communication to comprise the sum total of the elementary rates, fixed as follows, for a conversation of 3 minutes:—

In Belgium.

At sixty-two and a half centimes (Fr. 0.625), for communications sent from or to the telephone groups of Liege and Verviers.—Zone 1.

At one franc, twenty-five centimes (Fr. 1.25), for communications sent from or to the other Belgian telephone groups.—Zone 2.

In Germany.

At sixty-two and a half centimes (Fr. 0.625), for communications sent from or to the telephone systems comprised within the territory of the general postal management of Aix-la-Chapelle.—Zone 1.

At one franc, twenty-five centimes (Fr. 1.25), for communications sent from or to the telephone systems comprised within the territory of the general postal management of Cologne (on the Rhine) and Dusseldorf.—Zone 2.

At two francs, twenty-five centimes (Fr. 2.25), for communications sent from or to the telephone systems not included within the two first zones.—Zone 3.

The total rates apply to communications sent from Belgium, and which are exchanged between:—

- (1) The telephone systems within the 2nd Belgian zone, and the systems within the 2nd German zone.
- (2) The telephone systems within the 2nd Belgian zone and the systems within the 1st German zone.
- (3) The telephone systems within the 1st Belgian zone, and those of the 3rd German zone. These rates are, 2 francs (two fr.) for the first two divisions, classified above; and 3 francs (three fr.) for the third division.

Each management shall pay over to the other management that portion of the rates belonging to the zone of the latter.

2. Urgent communications sent over the Germano-Belgian international telephone lines, have to pay three times the amount of the ordinary specified rates.

Our Minister of Railways, Post Offices and Telegraphs is charged with the execution of the present decree.

Given at Brussels, on December 9, 1901.

LEOPOLD.

For the King,

JUL. LIEBAERT,

Minister of Railways, Post Offices and Telegraphs.

No. 292h.

(Translation.)

BELGIUM.—Continued.

REGULATIONS COMMON TO ALL THE SYSTEMS OF THE COUNTRY.

(Doc. VI., page 8.)

9. If the person to be called up is connected to another exchange of the same group as that to which the 'calling' subscriber is connected, the name of the exchange with which the 'called' subscriber is connected must be given to the central exchange, instead of the subscriber's number. The 'calling subscriber must keep the 'phone to

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his ear until a response is received from the exchange asked for, when he will give the number of the called subscriber's station and wait for his reply.

11. For long-distance conversations, within Belgium, follow the instructions given in section 9.

12. In international service, the connection is requested by giving the number of the subscriber wanted, as in service within Belgium.

13. When two persons have finished conversing they must hang the receiver on the hook, with the ear piece downwards, and turn the crank several times as a signal to the central exchange to break the connection. In the various systems of Brussels and Ghent, the signal to break the connection is given by merely placing the receiver on the hook. Any delay in ringing off, renders the subscriber liable to pay for an additional unit of time, if the conversation is one charged for a period not exceeding one unit. If the receiver is not placed on the hook it is impossible to call the exchange, or to be called. Moreover the battery becomes exhausted, and puts the instrument out of order. Omitting to replace the receiver in its suspension hook, with the earpiece downwards, may derange the telephone arrangements. Any damage arising from neglect to follow these instructions has to be made good by the subscriber.

BELGIUM—*Continued.*

No. 2921.

(Translation.)

LONG-DISTANCE SERVICE.

(Doc. I., p. 22.)

35. The only interurban and international connections in the telephone service available for the general public, are those which having been found practicable, are regularly open for traffic.

- (2) This limitation does not apply to communications relating to the service. Every communication of this class has to be sent, when requested by a duly authorized official, no matter what connections may be required.
- (3) However, when connections relating to the service are requested from subscribers' stations in the neighbouring (foreign) country, the Belgian central exchanges are only authorized to comply with such requests within the limits of the service that is regularly open to the general public.
- (4) In all other cases, unless special instructions are given by the central management, or the technical directors, the central exchanges merely inform the person calling up in the neighbouring (foreign) country, that the regulations do not allow the connections to be made.
- (5) In cases of insistence, the central exchanges offer to connect the applicant with the manager of the technical department for the district concerned.
- (6) The central exchanges in question, note down, in their service registers, any requests of this kind that are made, and the replies that have been given to the same.

36. The duration of conversations between subscribers' stations connected to the same central exchange is not limited.

- (2) In the case of free conversations from a public call station, or conversations between subscribers' stations connected to different central exchanges but belonging to the same group, conversations must not exceed five minutes if the line is required for other connections. The period begins at the moment the lines are placed at the disposal of the applicant. The subscriber may be reconnected after the requests awaiting connections have been completed.

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(3) In the case of connections for which charges are made, the period of time begins simultaneously with the liability to pay the charges. Such connections cannot be continued after double the time allowed for one unit of conversation has elapsed, unless no other requests for conversation are awaiting completion. If such other requests have been received the re-connection is made in its proper order with these requests. In any case the ordinary specified rates must be paid just as if a different subscriber had been asked for. In order to facilitate the service with Germany, the persons asking for connections must be requested to state whether they wish a connection for a period of one or two units of conversation. However, the omission of this declaration does not prevent the person conversing from obtaining a second period of three minutes, if the first is not sufficient.

(4) Government communications are not limited as to time.

37. In the case of connections made with a subscriber's station, for which charges are collected, the liability to pay begins as soon as the connections have been made between the two stations. The charge is due from that moment for the intervening time up to the 'ring-off' signal being given.

(2) In the case of conversations held with a person present in a public call station, the charges apply as soon as this station is connected with the 'calling' subscriber; or if the case occur after the lapse of three minutes, which is allowed for the call, in the case of connection made with a public call station.

(3) In view of the foregoing, only the following connections are exempted from payment:—

(a) Connections which could not be carried out on account of some defect in the line, or instruments. Conversations are charged for, however, when they have been effected with the assistance of the operators in the central exchanges or in the public call stations, notwithstanding the existing defects. Any demand for exemption of charges must be made at once, or it will not be considered. If the persons conversing are unable to understand each other, then the terminal central exchange intervenes, and tests the connection with the 'calling' subscriber's station. Afterwards, the 'calling' central exchange makes the same test with the 'called' subscriber's station. If the connection is all right from both ends, the complaint cannot be considered. The operators note down the complaint, in the service registers, with the results of their tests. The same procedure is followed in cases where difficulty arises by reason of persons not understanding how to use the apparatus. Intermediate central exchanges must intervene when required in cases of difficulty in the same way as the 'calling' and terminal central exchanges.

(b) Conversations which could not be carried out by reason of the 'called' subscriber not responding. When a response is received from the 'called' station and the arrangements are in good order, the connection must be charged for. The operators do not ascertain whether the person responding to the call is able to furnish the information desired by the 'calling' subscriber. When the person wanted is absent, the person calling may instruct the person responding to transmit his communication to the person wanted. If he does not give these instructions, he is nevertheless held liable to pay the charges; for the management in making the connections is considered to have furnished means necessary to obtain the service required.

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- (4) The charges are also payable when the connection is not carried out, by reason of the inability of the persons concerned to use the telephone. In such cases the operators ought to offer their assistance, and if possible, inform the person calling that the charges are due.
- (5) Some persons in order to exempt themselves from payment of the charges think that they can ask the terminal central exchange to ascertain if the person wanted is at the 'phone, before asking to be connected with the subscriber's station. The central exchanges are not authorized to supply this information. Their sole duty is to make the connections between the subscriber's stations and see that the service regulations are enforced. It is only in exceptional cases that they have to intervene in a more direct manner. Example: A person has paid the charge for a connection which has not had the desired result, on account of the absence of the person exclusively desired. The terminal central station can offer to inform the person calling when the subscriber asked for is on hand; in order to give the said person an opportunity to request a new connection, for which, of course, he must pay the charges.
- (6) As a general rule, the charges, are due by the person calling. However if a subscriber requests to be put in connection with a non-subscriber present at a public call station of the same telephone system or local group, the charge is to be collected from the non-subscriber, unless the 'calling' subscriber has paid a deposit and instructs the operator at the public call station to charge the connection to him. In this last case, the connection is treated as if it had been made from the calling subscriber's station, and is entered, with an explanatory remark in Register G. 58 of the responsible central exchange of the telephone system or group from which the call is sent.

(For long-distance rates see pp. 586-590.)

No. 292j.

(Translation.)

BELGIUM.—*Continued.*

GENERAL CONDITIONS OF SUBSCRIPTION.

a. IN INTERURBAN SERVICE.

(Doc. II., Sup. 22.)

1. The reduced subscription rates established by the Royal decree of June 23, 1890, apply to the long-distance telephone service, within Belgium, between two specified telephone systems or groups, carried on by the use of the wires and apparatus of these systems or groups. A separate subscription agreement must be signed by each person who uses the telephone service at the said rates. The time allowed for each conversation is 5 minutes; but the telegraph management reserves the right to reduce this period, either for the whole service or during a certain part of the day or night, or only in the case of certain connections without making any reduction in the subscription rates.

2. The rates are to be paid in advance to the central exchange responsible for keeping the accounts, in the local telephone systems where the subscribers reside, unless the subscriber has requested that the rates be collected at his own expense by mail from his residence. The rates will also be collected at the subscriber's expense by mail, if the same has not been paid within three days from the date when notice to make payment was given.

3. Long-distance connections are made according to the order of request at the time required by the subscriber, without any previous agreement with the management being necessary.

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4. Each request for a long-distance connection must be given from the residence or other establishment of the subscriber, or from a public telephone call station belonging to the local telephone system, or group of systems. The subscriber may use the full time allowed daily in one conversation with the same person, in single units or in multiples of consecutive units of conversation with the same person, or with different persons of the terminal telephone system or group. However, the connections will not be continued after the expiration of two consecutive units if another person has made request for connections.

5. The first conversations of each day are considered as being exchanged under the subscription terms.

6. The daily time specified for conversation at the subscription rates is, at least, double the unit of time allowed for ordinary conversations, viz., 10 minutes. The subscription agreement is for one month, and is prolonged from month to month by tacit understanding. The agreement may be cancelled, on either side, by proper notification being given, fifteen days in advance, by registered letter. The monthly period of subscription begins on the 1st or the 16th of each month, or is brought back to one of these dates. However, the privilege of the reduction of rates may be allowed to begin on any date.

7. The units of time allowed daily for subscribers' conversations cannot be carried over from one day to another. In case of any derangement in the service, no reduction in the rates is allowed for an interruption lasting for twenty-four hours or less. Should the time exceed twenty-four hours, the subscriber, upon request, will be reimbursed for each additional period of twenty-four consecutive hours, during the continuance of the interruption, by receiving one-thirtieth of the amount of subscription rates. The duration of the 24 hours is reckoned from minute to minute.

8. The amount of subscription rates is indivisible. The combination of a number of persons to pay the same is strictly forbidden. The conversations must have exclusive reference to the personal or business concerns of the subscriber. Any contravention of the regulations given in the present article, will involve the cancelling of the subscription, without refunding the rates, and without prejudice to any legal proceedings on the part of the management, should this be expedient.

(Article 3, of the law, of June 11, 1883:—'Any person who, without being supplied with a regular concession, operates a telegraph or telephone line for the purpose of collecting rates, is punished with a fine of from 100 to 500 francs.')

9. In case of non-payment, the management may, three days after making a legal demand for payment, sent by registered letter to the subscriber, without result, suspend, without further notice, the daily periods of time allowed for conversation, until full payment has been made.

The management is also at liberty either to cancel the subscription by sending a notification by registered letter, or to take legal steps to recover the amount due.

10. The management reserves the right, at all times, without the subscriber having any claim for indemnity or compensation:—

- (a) Of refusing or forbidding conversations at subscription rates during certain hours of the day or night.
- (b) Of suspending altogether the telephone service, for reasons of public order.

11. The government is not subject to any responsibility for private communications sent over the telephone line.

12. The cost of stamps used in connection with subscription documents is to be borne by the subscribers. The same rule applies to any expenses accruing from having such documents registered.

13. Each subscription agreement is drawn up in duplicate, one copy of which is kept by the subscriber.

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CONDITIONS OF SUBSCRIPTION—*Continued.**b.* IN INTERNATIONAL SERVICE.

(Regulations which are the same as those in interurban service are omitted here.)

(Doc. II., Sup. 23.)

1. The rates for subscribers' conversations in international service are fixed for daily periods of time, the duration of which is specified by mutual agreement between the two managements concerned.

2. Subscribers' connections are made at fixed hours. These hours are mutually agreed upon between the subscriber and the management.

3. Each request for connections must be made either from the residence or other establishment of the subscriber, or from a public call station of the telephone system or group, by which the residence of the subscriber is served. The management may, however, at the express request of the subscriber, and after agreement with the other management concerned, authorize the subscribers' correspondent to call up the said subscriber under the subscription terms.

4. In the service between Belgium and Luxemburg the monthly periods of subscription may begin on any date.

8. Connections are made for subscribers, at the exact time that has been mutually agreed upon, unless another conversation is being already carried on between two other persons. Any minutes allowed for one conversation and not used cannot be carried over to another conversation. If, however, the non-utilization of the time is due to some interruption in the service, an opportunity to make this good is given, if possible, to the subscriber, during the course of the day's service—minute for minute.

CONDITIONS OF SUBSCRIPTION—*Continued.**c.* IN LONG-DISTANCE SERVICE WITHIN AND BEYOND BELGIUM.

(8) Subscription agreements in long-distance service within and without Belgium are contracted for one month at least, and the agreement is continued from month to month, by tacit understanding.

(9) The agreement can be cancelled by either of the contracting parties, provided that 15 days' notice in advance is given, by registered letter. In the service between Belgium and France and Belgium and England, eight days' notice must be given.

(13) At Paris, subscribers' conversations are only exchanged with subscribers' stations, and the public call stations in the stock exchange.

(14) In the telephone service between Brussels and Paris, and between Belgium and Holland, no subscribers' conversations are allowed during the hours when the stock exchange is open, *i.e.*, from 8.51 a.m., until 4.51 p.m. (Greenwich time) between Belgium and Paris, and from 11.21 a.m. until 3.21 p.m. (Greenwich time) between Belgium and Holland.

(15) In the service between Belgium and places in France, outside Paris and between Belgium and England, subscribers' conversations are only allowed during night hours, and then only to such an extent as will not impede the ordinary service.

(21) Any non-subscriber in a telephone system or group, may take out a subscription agreement for the purpose of exchanging conversations from all the public call stations of a specified telephone system or group, with all the subscribers and public call stations of some other telephone systems or group.

(22) Each subscription agreement is only valid for the exchange of conversations between two specified telephone systems or groups, and a separate special subscription agreement is required for service between every two systems or groups.

(23) The subscription agreement is only granted for at least two daily units of conversation.

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(25) Non-subscribers in a local telephone system or group who contract subscription agreements for long-distance connections are only allowed to exchange conversations from the public call stations of the telephone system or group specified in the agreement. The agreement gives no right to converse from any other station. Accordingly, a person residing in Antwerp, for example, may contract a subscription agreement giving him the right to converse from all the public call stations of the Brussels telephone group, with the subscribers and public call stations of the Liege telephone group, but the agreement does not give him the right to converse from the subscribers' stations of the Brussels telephone group, or from the public call stations of the telephone groups of Liege or Antwerp.

(27) The ordinary rates must be paid for all conversations carried on after the daily period of time allowed in the subscription agreements has been utilized.

(30) Subscription contracts are not allowed in the service between Belgium and Germany.

Special Regulations.

(Doc. VI., p. 16).

(1) The charges for interurban and international long-distance service are the same whether the conversations are exchanged with subscribers' stations in the local telephone systems, or public call stations. No extra charge is required from non-subscribers.

(2) Connections are made according to the order in which calls are received; precedence is, however, given to officials and authorities despatching state telegrams, and to urgent private conversations in the service between Belgium and Germany.

(3) The time occupied in making subscribers' connections is one minute during day service (two minutes in international service), and five minutes during night hours (in long-distance service within and without Belgium).

(4) The charge is calculated from the moment that connections are made between the two stations, until the signal is given to break the connection. See Article 13, page 587. Consequently no charges are paid for:—

(a) Connections which cannot be carried out on account of derangement of the line or in the station. When, however, such derangements occur, the person conversing may ask the operators in the telephone bureaux to repeat the conversation. If this is successful the charge must be paid.

(b) Conversations which cannot be carried on because the station called up does not respond.

(7) The person who has called for the connection must pay the charges.

CONDITIONS OF SUBSCRIPTIONS.—*Continued.**d.* IN LOCAL SERVICE.

(Doc. II., Sup. 19).

1. The subscriber receives a copy of the subscription agreement, which he has to sign, along with a copy of the general conditions of subscription.

2. The management concedes to the subscriber, on condition of payment, the use of the telephone apparatus specified on the other side (i.e., on the back of the subscription agreement, where these specifications are stated), and the use of a line connecting the said apparatus to the telephone system for the purpose of exchanging conversations within the limits of the local telephone system or group. The line and the apparatus are installed by the telegraph management, and remain the property of the government. The subscription is limited to one person. It is indivisible.

3. The subscriptions are half yearly, yearly, or, in certain cases, they are contracted for a longer period of time. The half yearly subscriptions are granted on condition of an agreement for at least three half yearly periods, during three consecutive years (i.e., six months in each year for three years).

4. The subscriber has to obtain the consent of the proprietor of his residence, for the placing of supports for the fixing and leading in of the wires, and also for the installing of the apparatus. The subscriber is also responsible for any repairs, etc., which may be involved by the installing or removing of the telephone arrangements.

5. The wire and instruments are installed at the subscriber's residence and remain at his own risk and hazard. The government (state) will not assume any responsibility for any direct or indirect damage that may be occasioned by these installations.

6. The subscriber is responsible for all parts of the telephone station placed at his disposal. In cases of deterioration, loss, partial or entire, demolition, putting out of working order, etc., either through carelessness on the part of the subscriber, or through some accident, the subscriber will have to make the same good to the management without having the right to claim possession of the materials that have been destroyed, damaged, put out of working order, or lost.

7. The cost of the work required in locating defects in the installations connected with a subscriber's station are charged to the subscriber when the said defects are caused by any negligence or mistake at the subscriber's station.

8. The subscriber must give permission to the employees of the management connected with the telephone service, and who present their credentials, to have access at reasonable hours, to the places where the wires and the materials connected with the station are installed.

9. The management reserves the right to change the subscriber's calling number when the necessities of the service so require. The management has always the exclusive right to change, shift, or remove the installations used by the subscriber, according to the necessities and circumstances of the service.

10. The subscriber has to bear the cost of moving the arrangements, and of all other changes carried out at his request, within the same premises or within some other premises.

11. Change of residence need not involve the cancelling of the subscription unless this is done by the consent of the management. The costs of connecting the new residence to the same telephone system or group is borne by the management.

12. Should the telephone service become unnecessary to the subscriber he may be permitted by the management to have the subscription taken over by another person or firm, on condition that the station or stations have not to be transferred to some other premises. In this case the first subscriber becomes responsible for all sums due up to the time of the transfer, as well as all amounts due for the period that the subscription has to run, from the time that the transfer was made.

13. A subscription contracted for one year cannot be cancelled under any circumstances. However, an annual agreement, renewed without interruption, may, by the consent of the management, be cancelled at any time during the course of the first half year of the subscription, provided that the subscriber pays an amount equal to that required for three months' subscription, in addition to the rates for the current quarter, which have always to be paid to the government. In this case the station is removed not later than the end of the said quarter. When a subscription, that is renewed annually, is cancelled during the course of the second half year, no reduction will be made in the subscription rates.

14. The management will not permit the premature cancelling of a half-yearly subscription except at the termination of the first half year, and then only on payment of an indemnity equal to the difference between the amount of an annual subscription and half-yearly one.

15. A subscription contracted for several years may, by consent of the management, be cancelled at the end of the first yearly period, on condition that the sub-

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scriber pays to the management, besides the amount due, an indemnity equal to the difference between an annual subscription and the annual amount of rates entered in his agreement. This applies both for the yearly term of subscription running, and also for any previous years of subscription. The regulations given in Article 13 relating to annual subscriptions renewed with interruption, apply also in this case. According to the preceding conditions, a subscription for several years, renewed without interruption may, by the consent of the management, be cancelled from the beginning of the first year of the renewed period.

16. If, in consequence of the changes of residences, referred to in Articles 10 and 11, the rates are increased, the additional sum is due from the day that the said change or transfer takes place. Should the change involve a decrease in the rates, the said decrease will not come into effect until the commencement of the following year.

17. In the event of the decease of the subscriber, the subscription agreement remains in force, and the amount of rates must be paid in full, by his heirs or assigns, who are jointly responsible for carrying out the said agreement.

18. The subscriber is expressly forbidden:—

- (1) To connect to the apparatus placed at his disposal, any other wires, apparatus, instrument, or any kind of attachment, to open, remove, or take apart the instrument, accessories and wire conductors; to change the equipment, in any way whatever; or to employ the arrangements for any other purpose than that which is specified in the present agreement.
- (2) To collect, directly or indirectly, any charge or toll from any other person using the subscriber's telephone.*

19. The subscriber must conform strictly to the laws, decrees, instructions and regulations, issued by the government, relating to the operation of the telephone system, and the regular carrying on of the telephone service.

20. The subscription agreement begins on the day when the subscriber's telephone arrangements are completed for service with the telephone system.

21. The amount of rates are due for the whole period of time specified in the agreement, whatever circumstances may supervene to involve the premature cancelling of the same, those conditions excepted which are specified in the foregoing Articles 13, 14 and 15. The rates are to be paid in advance at the beginning of each yearly or half-yearly term, according to whether the subscription may be for six months, one year, or longer. The management may, at its own option, collect the annual rates in two equal sums, at the commencement of each half-year, without this privilege being considered as a departure from the right of the management to require payment in advance for the full annual period.

The rates are paid to the central exchange of the local telephone system responsible for keeping the accounts, unless the subscriber has requested that the amount is to be collected at his residence by mail at his expense. The amount due may be collected, by right, through the mail, at the subscriber's expense, if the same is not paid within three days after notification has been sent that payment must be made. The same rule applies to the expenses connected with amounts due by the subscriber, in pursuance of Articles 6, 7, 10, 13, 14, 15, 16 and 30.

22. All payments regularly made by the subscribers are the property of the state (government), subject to (or under the limitations of) the application of Articles 13, 15, 25 (last paragraph), and Article 30 (last paragraph).

23. In cases of non-payment, the management is entitled to suspend the use of the telephone without further notice, until full payment has been made. This step can be taken forty-eight hours after legal notice has been sent by registered letter to the subscriber, without payment having been made. All sums due must be paid in full. The

* (Article 3 of the Law of June 11, 1883 :—' Any person who, without being supplied with a regular concession (warrant), operates, for the purpose of collecting rates, a telegraph or a telephone line, shall be punished with a fine of from one hundred to five hundred francs.')

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management has also the right, as it may see fit, either to cancel the agreement by a simple notification to that effect, or to proceed to legal measures. When the management decides to cancel the agreement, it reserves the right, under all conditions, to demand payment of all sums due (even sums due in advance) without any deduction for damages.

24. The management undertakes at its own expense the maintaining of the subscriber's circuit, stations and connections, in so far as this may become necessary through the regular use, and ordinary wear and tear, of the same. Copies of the telephone directory are sent free by mail to the subscribers, each subscriber receiving one copy.

25. No compensation is due by the management for any period of delay that may be occasioned in the service from the subscribers' station, either when the arrangements are first being installed or when any addition is being made to the arrangements, or when the subscriber changes his residence. The same rule applies in cases of interruption in the service in consequence of broken wires, contacts (crosses), the breaking down of poles or supports, displacement of the lines, derangement of the phone or any other material cause, if the said interruption does not continue longer than one month from the time that notice has been given by the subscriber by registered letter. If this period is exceeded, and if the subscriber is not otherwise himself at fault, the management will reimburse the subscriber with a sum equal to the amount of subscription rates for the period of delay, from the end of this term of one month until connections are again established.

26. The suspension of the telephone service either wholly or partly, by the government, for reasons of public order, does not absolve the subscriber from the payment of his subscription rates, nor give him any right to demand compensation from the government.

27. The subscribers' conversations with other subscribers by means of a public call station of the local telephone system or group, and within the limits of the said system or group, are exempted from any charges. These conversations are carried on, during the ordinary course of the service on presentation of a card furnished by the management, and by complying with the special conditions provided for this service. The subscription agreement confers the right to receive a free card, bearing the subscriber's name, and an additional free card bearing the name of some person connected with his establishment (i.e., family or business). At the request and written attestation of the subscribers, the management will furnish to their partners, agents or employees, subscription cards at the *annual* rate of 20 francs (\$3.86) for the first card, and 10 francs (\$1.93) for each of the following cards. These cards are to be used under the conditions specified above. In the case of subscription cards, valid for six months, the rates are 14 francs (\$2.70) for the first card and 7 francs (\$1.35) for each of the following cards. All cards are strictly personal. They are not to be given away, or lent, on penalty of being withdrawn. Under all circumstances the price of these cards remains the property of the government, apart from any damages that the government may lay claim to. The validity of these cards expires simultaneously with the period for which the rental for the subscriber's telephone has been paid. Cards lost or destroyed will not be replaced before the termination of their term of validity unless the subscriber makes a payment of two francs (39 cents).

28. When the subscriber's telephone is used in conformity with the decrees and regulations for conversations, for which extra charges have to be paid, the subscriber is responsible to the management for the amounts due for all such conversations sent from his station, unless he has declined this responsibility by making a declaration that he has no intention of using the privilege accorded to him. This declaration must be sent to the manager of the local telephone system, who will acknowledge receipt of same.

29. The government is not responsible in any way for any communications of a private nature that may be sent over the lines.

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30. The subscription agreement is renewed by tacit understanding for a period of the same duration, unless notice of withdrawal has been given to the management by registered letter addressed to the manager of the local system, at least four weeks before the agreement expires, or unless the management has given notification within the same period of time that it is opposed to the renewal of the agreement. If this notification has not been duly given, the subscriber may, up to the time that the present agreement expires, receive permission to cancel the renewal of his agreement, on condition that he pays by way of compensation, a sum equal to one quarter's rates.

31. In order to carry out the terms of his agreement, the subscriber must declare his intention to reside in the locality where the central exchange to which his residence is connected is located.

32. The cost of the stamps used in connection with the agreement and its supplements has to be borne by the subscriber. The same rule applies to any costs accruing from the registration of these documents.

(Doc. I., p. 95.)

104. In the case of half-yearly subscriptions, viz., agreements which are contracted for three periods of six months each, the first period begins when the connections are made with the telephone system. The second and third periods commence on the same date in each following year. However, the initial dates of the second and third periods may be changed at the request of the subscriber, but the date of the termination of the agreement must not extend beyond the total period of three full years, from the date when the connections were first made.

- (2) At the request of the subscribers, the telephone equipment used during the half-yearly periods, may remain where they have been installed, during the intervals between each half-yearly period of subscription. In this event the subscriber must declare himself responsible for the station and its accessories, during each of the said intervals, just as if the station and its accessories were in regular service with the central exchange. The half-yearly subscription agreements should be completed, when necessary, by having the following clause inserted in the blank space following the service form, series G, 118:—

‘During the intervals between the half-yearly periods that the station is in use, and at the subscriber’s request, the management will allow the station and accessories, that are signed for in the present agreement, to remain where they have been installed.’ ‘According to the extension of Article 6, of the “General Conditions of Subscription,” the subscriber remains responsible for the station and accessories, during each of these intervals, just as if the station, &c., were in use.’

A corresponding declaration, drawn up on unstamped paper, is required, in such cases, from the subscriber, who signs the half-yearly agreement. The manager of the telephone system must see that the connection with the central exchange is broken at the close of each half-yearly service.

- (3) The manager of the telephone system has to remove, after each period of service, the telephone equipment of the half-yearly subscribers, who have not signed the declaration specified in the preceding paragraph. A special order must be issued on each occasion when the telephone equipment is removed or re-installed. When the subscriber’s equipment is removed temporarily, the workmen must be instructed to see that the wires are carefully grounded, either by closing the circuit, or by a binding wire. Connections must be made outside the premises whenever possible.

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- (4.) Whenever a half-yearly period of subscription is renewed, the manager of the telephone system must see that the rates are collected as early as possible.
- (5) Half-yearly periods of subscription in connection with one or several telephone systems, may be granted to the same subscriber, for the purpose of giving continuous service to different premises. As an exception to the rule by which half-yearly agreements can neither be prolonged nor shortened, two subscription periods, which have to be completed in successive order, may be adjusted, so that the period for each of the premises may be shortened or prolonged. However, the date at which these double contracts terminate, must not run beyond three full years, counting from the date when connections were first made, and the total number of changes made must not entail more than three installations of equipment in each of the said premises, including the first. The subscriber must be informed that each request for reinstallation of the station is to be made within a specified time. Any prolongation or shortening of the periods of service, does not affect the amount of rates due by the subscriber. These rates are collected regularly at the commencement of each half year. The managers of the telephone system concerned must arrange that the total period of service for the two subscription agreements does not exceed the limit of three full years, specified in the present paragraph.

105. Subscription agreements (supplementary stations and accessories included), requested for the service of the state, provinces and communes, are subject to a reduction of 35 per cent on the ordinary rates, on condition that in consideration of this, means present or future compensation, the telegraph management obtains the right of occupation for the poles, supports, &c., set up on the property or buildings, required for the service in question.

- (2) The aforesaid reduction of 35 per cent is applicable, under the same conditions, to the subscription agreements contracted by the following administrations:—
- (a) The national company of municipal railways.
 - (b) The official (government) benevolent societies.
 - (c) The benevolent societies operated (subsidized by the state, the provinces, and the communes.
 - (d) The independent government administration of the Congo.
 - (e) The general bank of savings and annuities (pensions).
- (3) The granting of the reduction of 35 per cent is contingent upon an agreement between the central telegraph management and the administration requesting the subscription. The manager of the telephone system forwards to the technical management, without further preliminaries, the requests for subscription presented by these administrations.
- (4) When the agreement has been concluded, the central management notifies the manager of the telephone system concerned. The manager, from that time, attends to all the requests for subscription, made by the administration in question, without further intervention on the part of the technical management.
- (7) Agreements contracted for the communes must be signed by the Burgomaster, and countersigned by the secretary, according to Article 101 of the law relating to communes. Subscription agreements for the governments of the provinces must be signed by the Department of the Interior, and of Public Instruction when the rates are paid from the state treasury, as is the case when the telephones are installed in the offices or residences of the governors, recorders (registrars) of the provinces, and district com-

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missioners. These agreements are contracted by the provincial government, represented by the governor, when the rates are paid from the treasury of the province, as in the case of the Courts of Commerce, the Record Office of the Courts of Commerce, the residences of the presidents and recorders of the said courts, the schools and institutes of the provinces, the residences of the provincial officials, viz., inspectors, road trustees, engineers of roads, &c.

- (8) The manager of the telephone system must get into direct communication with the administration making the request, in order to conclude the agreement. When so doing, the manager of the telephone system must see how many blank service forms are required by the administration in question, for completing the copies of the agreement, which are necessary for its own use. These blank service forms are delivered, free of charge, at the same time that the copy of the subscriber's agreement (contract) is sent.
- (9) The subscription rates do not have to be paid in advance, when the subscription agreement is contracted for the service of the state, the provinces, the communes, or by any of the administrations or institutions connected with these services.
- (10) According to Article 23 of the 'General Conditions of Subscription,' contracted by the administrations belonging to the Department of Railways, Post Office and Telegraphs' (see supplement 20), the renewal of accessory apparatus, or of supplementary stations, requires the reimbursement of that portion of the rates which has not been paid to the telegraph management (exception to Article 90, paragraph 1),
- (11) The contracts mentioned in Article 91, paragraph 1, and the charges specified in Article 101, paragraph 3, are not required, in advance, in the case of installations for the service of the administrations of the state, the provinces, the communes, and those institutions (establishments) whose budgets and annual accounts have to be submitted to the authorities of the provinces and communes.

122. Requests for subscription agreements, in international service, and in connection with the service in railway stations, are received by all the central telephone exchanges, the public call stations, and the telegraph bureaux. These requests are forwarded at once to the technical management which gives the same the necessary attention. These requests must be sent, if possible, to the central management, eight days before the date fixed for the commencement of the desired service. The managers of the telephone systems concerned must be notified, by the central management, regarding any subscription agreements belonging to one of the aforementioned categories.

Additions and Changes.

113a. As a general rule the management does not grant permission to subscribers to continue the subscription agreements that have been regularly cancelled for an additional period of time, unless the prolongation is carried out on the basis of the regulations given in Article 13 of the 'General Conditions of Subscription.' Any requests that call for some deviation from the regulations of the aforesaid Article 13 must be submitted to the technical management, after the manager of the telephone system is satisfied that the reasons given by the subscriber are legitimate.

(2) In the case of half-yearly periods of subscription (exception being made in the case of cancelled agreements, as indicated in the foregoing paragraph) the manager of the telephone system is authorized to grant a temporary prolongation of the service, on condition that the subscriber pay an amount, for the extended period of service, estimated in proportion to the amount of rates specified in the subscription agreement,

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CONDITIONS OF SUBSCRIPTIONS—*Concluded.*

4. FOR TELEPHONE COMMUNICATIONS OF THE PUBLIC WITH THE SERVICE ORGANIZED IN THE RAILWAY STATIONS.

(On the basis of the Royal Decree of July 30, 1891.)

(Doc. II., Sup. 21.)

1. The subscribers of a local telephone system or group, are allowed to use their telephones, or public call stations for service with the railway station or stations of a specified locality within the area of the local telephone system or group.

These telephone communications are exchanged through the telegraph or telephone bureaux connected with the telephone system, and located in the said railway stations, during the hours of service in the said bureaux. A special subscription has to be taken out in order to obtain this privilege.

These subscribers are also at liberty to converse, under the same conditions, with any persons who happen to be present in the railway stations. The telephone bureau gives permission to any person to converse directly with a subscriber's station for which the special rates are paid, or with the subscriber when he is present in a public call station; provided that the 'phone is not installed in the railway station in a location where the general public are not admitted, according to the regulations, or when the admission of a stranger to use the 'phone does not involve the risk of infringing upon the private character of other telegraphic or telephonic communications.

2. Connections are made according to the order of request. The duration of each connection is limited to 5 minutes; but two consecutive connections of the same duration are given, if no other request has been made.

3. The rates which must be paid in advance are 100 francs (\$19.30) annually, or 60 francs (\$11.58) for the half year. These rates are paid for the whole period of subscription, except in the case specified in Article 6 hereafter. The duration of the subscription is prolonged by tacit agreement for an equal length of time. At the end of the year, or half-year, the contract can be cancelled on either side, by notification being given, 15 days in advance, by registered letter.

4. The subscription is personal, and the rates are indivisible. Any combination of persons to pay the same is strictly forbidden. The conversations must have exclusive reference to the personal or business affairs of the subscriber. Any contraventions of the regulations given in the present Article, will involve the cancelling of the subscription agreement by a notice sent by registered letter, without any reimbursement of rates, and without prejudice to legal proceedings, should this be necessary on the part of the management. (See Article 3 of the Law of June 11, 1883, p. 625).

5. The government reserves the right to suspend, totally or partly, the telephone service with the railway stations, for reasons of public order, without being held liable for any compensation.

6. When for any reason of service (the subscriber himself not being at fault) the management may consider it necessary to suspend or to cancel the telephone service with the railway stations, the subscriber will be reimbursed a corresponding part of the rates, provided that the rebate amounts to at least 2 francs (39 cents).

7. The telephone service with the railway stations is always subordinate to the requirements of the general telephone service. The subscriber is bound to follow the service regulations, and the special rules that are laid down for the control of the connections with the railway stations.

8. The government is not responsible, in any way, for the service with the railway stations.

9. The costs of stamps for registration, in connection with the subscription contract, have to be borne by the subscriber.

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No. 292k.

BELGIUM.—*Continued.*

(Translation.)

TELEPHONE MESSENGER CALLS.

(Doc. I., p. 60).

69. A telephone messenger call is solely for the purpose of requesting a person to converse, by 'phone, with the sender of the said message, or with some other person whose name, &c., is stated. So far as the management is concerned, no connection is considered to exist between the call and the conversation which follows from it.

(2). Conversations may be requested between places other than from which or to which the call is sent; but the said conversations will only be granted within the limits of those connections that are regularly open to the general public.

70. Messenger calls are allowed in service within Belgium, within the following limits and conditions:—

(1) To all subscribers' stations, no matter where the same is situated. However, if the station requested is connected by a single grounded wire to the central exchange, and if the connection requires the use of a double wire (metallic circuit), the person receiving the message must be asked to speak from a public call station, or from a subscriber's station that is connected by double wires (metallic circuit).

(2). To non-subscribers who reside in localities served by distributing telephone bureaux located in a town or commune where a telephone station is established.

(2). When the telephone bureau is installed in the telegraph bureau, as a general rule the call is sent only during the hours that the two bureaux are simultaneously open for service.

FIXING THE RATES.

71. A charge of Fr. 0.25 (5 cents) is made for a call by messenger, when the subscriber's stations or central exchanges that have to be used, belong the same telephone system or group. In interurban service, the charge is fixed at Fr. 0.35 (7 cents).

(2). When the call is sent from a subscriber's station, the amount is charged to the account of the said subscriber. If the call is sent from a public call station, the charge has to be paid, in advance, no matter whether the person sending the same be a subscriber or not.

(3). If the call is sent to a person residing beyond the radius (area) of free delivery from the distributing bureau, then the sender has to pay for the delivery of the call, according to the rates charged for delivery telegrams. These rates are as follows:—

50 centimes (10c.) for a distance of 3 kilometres ($1\frac{1}{4}$ miles or less).

75 centimes (14c.) for a distance of 3 to 4 kilometres ($1\frac{1}{4}$ to $2\frac{1}{2}$ miles).

1 franc (19c.) for a distance of 4 to 5 kilometres ($2\frac{1}{2}$ to $3\frac{1}{2}$ miles).

When the distance is more than 5 km. ($3\frac{1}{8}$ miles) 20 centimes (4c.) is collected for each extra km. ($\frac{1}{8}$ mile) or fraction thereof. These charges may be increased by a maximum of 50 per cent for calls delivered during night hours, or under specially difficult circumstances, that is to say, when the roads have become almost impassible on account of snow, ice, thaw, heavy rain, etc. The sender has to be informed of the reason why the charge for delivery has to be increased. The increased charge during night hours applies to deliveries that have actually been made after sundown.

Example:—A call is sent 10 km. ($6\frac{1}{4}$ miles) distant. The messenger leaves at 6 p.m. and returns at 10 p.m. The sun sets at 8 p.m., therefore the charge has to be calculated as follows:—

Two hours of the journey are made by day, and 2 hours by night, or:—

5 kilometres ($3\frac{1}{8}$ miles) at 20 centimes (4c.) = 1 franc (19c.).

5 kilometres ($3\frac{1}{8}$ miles) at 30 centimes (6c.) = 1 fr. 50 (29c.); total

2 fr. 50 centimes (48c.).

The collection of this charge is mentioned above the address by the words 'delivery paid.....fr.....cmes.' This entry has also to be made on the stub (counterpart) of the service form used.

72. The operators who have to transmit calls have to be sure first of all whether the connection asked for in the call can really be made, and if sufficient interval is allowed for between the time that the call is sent and the time for which the conversation is arranged for.

(2). When the call is sent to a non-subscriber in whose place of residence there does not happen to be a public call station, the operator has to inform the sender that the person for whom the call is intended has either to use a subscriber's station, with the consent of the said subscriber, or go to a public call station, in some other locality.

(3). Calls sent from a public call station are entered in the service register with the addition of the letters A.V. If the sender does not transmit the call himself, he has to write it down on the service form for this purpose, (i.e., series G. 122).

(4). The manner of procedure indicated in *Article 56, Section 3, is also followed in the case of charges that are collected in public call stations that are not connected to a responsible central telephone exchange, or to a telegraph station.

(*Article 56, Sections III. and IV. (added to the said article in 1903):—(III.) Charges collected in public call stations that are not connected with (annexed to) a central telephone exchange, responsible for keeping the accounts, or to a telegraph station, and which for this reason cannot be entered directly in the accounts, are converted into telegraph stamps, which are cancelled and affixed to the service register, Series G 75. Public call stations which do not have these telegraph stamps have to purchase the same for cash at the post office or at the nearest telegraph bureau. (IV.) The persons sending communications are supplied gratis on request, with a receipt for the charges paid. This receipt has to state the amount of charges collected and the time when the connections were made. The stamp with the date has to be supplied.)

(5). Calls sent from a subscriber's station are not accepted (transmitted) unless the subscriber has made a deposit, in order to guarantee the management that the charges will be paid.

73. A call from a public call station is transmitted directly to the delivery bureau by the sender, and if sender refuses to do so, or is not present himself, the call has to be transmitted by the operator in the public call station.

(2). 'Subscribers' stations are connected at once with the delivering (distributing) bureau.

(3). The call is 'phoned to the responsible transmitting central exchange, either by the subscriber or in public call stations, by the sender or operator, in the cases mentioned in section 1 of the present article.

(4). The responsible central exchange re-transmits the call to the delivery (distributing) station, or in the case of a call for a subscriber to the station of the said subscriber.

(5). If the 'calling' central exchange cannot get into connection with the 'called' central exchange, owing to the telephone arrangements not being practicable, the operator must transmit the call to the central exchange in the best position to forward the same to its destination. The request for connections in order to transmit a telephone call is announced to the 'called' central exchange by the abbreviation 'A V' (i.e., avis).

(6). If the call has to be sent to a subscriber's station, the connection has to be entered in the service register, Series G. 58, of the responsible 'called' central exchange. This entry has to mention the 'calling' central exchange, the number of the subscriber's station to which the call is sent, and the time when the connection was made. The abbreviation 'A V' (i.e., avis) is also entered in the column headed 'remarks.'

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(7). If the subscriber's station does not respond after three series of calls, repeated at intervals of 5 minutes, the calling central exchange, after being notified by the 'called' central exchange, transmits the call to the delivering (distributing) bureau, within the radius of which the subscriber resides, to whom the call has to be sent. If the said subscriber resides beyond the radius of free delivery, the 'called' central exchange receives the call in transit, and retains it in the meantime. The said exchange sends in another call, a few minutes before the hour fixed for the connection. If no response is obtained, the said central 'exchange' informs the sender of the situation, at the time when the latter asks for the connection.

(8). The charge for the call must always be placed to the account of the subscriber.

(9). No subscriber is obliged to receive the call over the 'phone.

74. Besides the part printed on the transmitting form, the text of the call comprises the following points:—

- (a) The name and surname, &c., of the receiver, as well as any other information necessary for finding the said person, by the messenger that is appointed to deliver the message.
 - (b) The time when the receiver is desired to converse with the sender.
 - (c) The name of the sender, and the designation of the station where the sender will be present to converse, at the time specified.
- (2) These points (to the exclusion of all others) must be noted down on the form supplied for this purpose.
 - (3) In the important central exchanges telephone calls are received by the chief operator, who makes the necessary arrangements for forwarding the same.
 - (4) At the 'called' exchange the call has to be written carefully and legibly with blue pencil, or, if this is not available, with black ink. When the call is received, in transit, it is written down with black pencil.
 - (5) It is forbidden to scratch out, erase, or to write one word over another, in such a way as to render the first words that are written down illegible. In case of error, the letter, figure or passage at fault, has to be scored through, but in such a manner that it may always be possible to read what was first written down.
 - (6) When the call has been transcribed, the operator has to acknowledge reception of the same, by repeating it over again, and by taking all the precautions that have been specified for telegrams transmitted by 'phone.
 - (7) The time when the transmission or receipt terminates has to be entered on the sheet (form).

75. Except in the case of Brussels, where several stations are authorized to deliver telephone calls, this duty, as a general rule, devolves upon the bureau (station) in each locality, which is charged with the duty of transmitting telegrams by telephone, or, if there is no bureau of this kind, the call has to be forwarded by the telephone bureau.

- (2) The delivering bureau fills up the counterfoil of the call, detaches it from the form (sheet), and proceeds with the forwarding, just as if it were a telegram. When the call has to be sent to a non-subscriber, residing in a locality where there is no public call station, the receiving form on which the call is written down is completed by having a special ticket affixed, which supplies the receiver with the necessary information for obtaining the connection (conversation) requested. This ticket is drawn up in French and Flemish, after the following form:—

'Conversation by telephone can be requested:—

'(1) From a subscriber's station, by the consent of the said subscriber. For interurban conversation, subscribers have to make a deposit, in order to guarantee the payment of the charges.

'(2) From a public call station, situated in some other locality.'

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- (3) If the call cannot be forwarded, the bureau has to retain the same, making every possible effort to have it forwarded later on, provided that the management is not put to any expense in the matter.
- (4) When it is impossible to forward the call, the delivering bureau must inform the called exchange of the circumstance, in order that the latter may be able to notify the sender, at the time when he asks for the connection, with the person for whom the call is intended.

76. As soon as the service is closed for the day, or on the following day, the counterfoil receipts, relating to the telephone calls, in local service, sent from the subscribers' stations, have to be forwarded by the first mail from the delivering bureau to the central exchange responsible for keeping the accounts.

- (2) The other counterfoil receipts and the copies (minutes) of the calls, are sent in to the management, or as the case may require, they are added to the register of the public call station, or to the documents relating to the telegraph service.
- (3) The 'calling' central exchange responsible for keeping the accounts, has to enter, on the following day, into service register, series G-58, the messages sent from subscribers' stations. The charges due are noted down in the said register, along with each call entered. These charges must be kept separate from those for long-distance connections. The said charges are added up, and the amount is carried over, as verified receipts, to the accounts, under the heading 'Telephone calls.' Afterwards these charges are entered into the separate accounts of the various subscribers. Series G. 71.
- (4) The copies of the telephone calls, the counterfoils from the delivering bureaux and the service registers where these are entered, are to be sent in to the technical management, along with the other documents from the bureau.

77. The connections arranged for by telephone calls are made at the request of either the sender or the receiver of the said call. These connections are subject to the regulations of the ordinary service, and are treated as if the preliminary call (advance call) had not been sent.

BELGIUM—*Continued.*

No. 2921.

(Translation.)

ROYAL DECREE OF NOVEMBER 6, 1882, RELATING TO THE CONNECTING OF PRIVATE TELEGRAPH AND TELEPHONE LINES TO THE GOVERNMENT TELEPHONE SYSTEM.

(Doc. II., Sup. 9.)

1. The Minister of Public Works may permit private individuals to have their premises connected to the government system, either by telegraph or telephone.

2. Rules are to be drawn up, by the said minister, fixing the general conditions on which this permission is to be granted. Special conditions, however, may be introduced, according to circumstances, by authoritative decrees.

3. Telegrams sent from or to the premises connected to the government system are received and transmitted by the bureau concerned, without any extra charge. Service despatches exchanged between the two points, either relating to the working of the line, or to the service between the subscriber and the station to which he is connected, are exempted from any charges.

The same rule applies to any kind of telephonic communications, when these have not to be transmitted again by writing. If telephonic communications, sent to the bureau, have to be transmitted by telegraph, by post, or by messenger, they are treated as telegrams, and are subject to the ordinary rates.

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4. An authoritative decree will fix the amount to be paid for the service from the subscriber's residence, and also for the use of the instruments supplied by the government.

5. The Royal Decree, of December 6, 1878, is revoked. The Minister of Public Works will fix the period of time within which the dispositions of the present decree are to be applied to connections that have already been made.

GENERAL RULES FOR CONNECTING PRIVATE TELEGRAPH AND TELEPHONE LINES TO THE
GOVERNMENT TELEGRAPH SYSTEM.

(Doc. II., p. 24.)

1. The request for connection is to be addressed to the Minister of Public Works. The said request must specify the point to be connected, the route to be followed, and the bureau with which connections are to be made.

2. The line is constructed and maintained by the telegraph management, or by the person obtaining permission to receive the service.

3. The telegraph management supplies such instruments and accessories, in the bureau with which connections are made, as the said management may consider necessary for the service. The management undertakes the maintaining of these instruments and accessories.

4. The telegraph management—

(1) furnishes, installs and maintains the instruments and accessories required at the subscriber's premises;

(2) furnishes the materials required for the use of the instruments, such as paper strips, ink, chemicals, &c.;

(3) furnishes instruction to the person using the arrangements or to his agents, at his premises, on payment of 10 francs (\$1.93) per day.

5. If the line has to be carried over the property of other persons, the applicant has to procure the permission of the proprietors, tenants, and other persons interested, and send in the same to the management.

Any costs (compensation) resulting from the construction, maintenance, or the repairing of the connections (line), have to be borne exclusively by the subscriber.

6. An authoritative decree will determine the kind of instruments and accessories to be employed, and also the conditions of installation and connection. It will also fix the annual amount to be paid by the applicant to the government, for the construction and maintenance of the lines installed by the telegraph management. This amount is fixed, by contract, per kilometre of wire (line) at the rate of:—40 francs (\$7.72) for a contract of 10 years; 60 francs (\$11.58) for a contract of 5 years; and 25 francs (\$4.82½) for each of the 5 years which may follow this last period. Any fraction of distance less than 5 kilometres is charged for as a half kilometre (½ mile). Any fraction more is charged for as a full kilometre (⅓ mile). The residence connected to the telegraph system pays over and above, in all cases, a fixed sum of 125 francs (\$24.12½) annually, for the service of the station installed in the bureau, and for the maintenance and use of the apparatus that are supplied by the government to the said bureau. The charges for the apparatus, rented from the government, that are installed in the subscriber's residence, are fixed according to the nature and importance of the same, in each special case.

7. The subscriber is forbidden, unless authorized by the Minister of Public Works to have any connections made between his own private line, and any other line.

8. No charge is allowed to be collected for the use of the lines. When any contravention is reported, the Minister of Public Works may suspend the connection, without any reduction being made in the rates for the period of interruption.

9. The service of the private lines is always subordinate to the requirements of the general service. The regulations and decrees that are in force for the government system, apply also to the private connections (lines).

10. All telegraphic or telephonic communications sent from or to the government premises are dealt with by the agents (employees) of the management.

11. The charges due by the subscriber for the transmission of his despatches are collected by means of telegraph-stamps, which he hands over to the bureau with which he is connected, or are deducted from an amount previously paid in as a guarantee. The stamps and the deposit are renewed as soon as request is made by the said bureau. The first copies of the private despatches transmitted by telegraph, are sent to the bureau concerned on the day after they are transmitted. Each despatch that has to be sent by writing to the person for whom it is designed, is regarded as a telegram, and is charged for as such, without regard to the method by which it is forwarded.

12. The agents of the management have the right to inspect, whenever they may consider it necessary, the subscribers' stations, and to inquire as to the nature of the despatches that are exchanged.

13. The permission given by the Minister of Public Works may be revoked at any time, without any compensation being given. An order for the cancelling of a connection passes into effect six months after notification of the same is sent to the person concerned.

14. The government is not responsible, in any way, for the connections which it constructs, maintains, or authorizes.

15. If the government concedes to any private enterprise the duty of constructing and maintaining the connections, the person obtaining the concession shall have the benefit of charges and rights resulting from previous authorizations. If the new general tariff is more favourable, the subscriber is to have the benefit of the same.

REGULATIONS RELATING TO PRIVATE TELEGRAPH AND TELEPHONE LINES NOT CONNECTED TO THE GOVERNMENT SYSTEM.

(Doc. II., Sup. 10.)

The following regulations have been adopted for the purpose of regulating the construction and operation of private telegraph and telephone lines not connected with the government system:—

1. Private telegraph or telephone lines are to be used exclusively for the service of those who have constructed them. It is strictly forbidden to collect any charge or rates, directly or indirectly, for the transmission of messages sent by other persons than those operating the lines.

2. Any private line set up, either wholly or partly, on the government property, must be authorized by the Minister of Railways, Posts and Telegraphs.

3. Any part of a private line which has to be installed on government property, is to be constructed and maintained by the telegraph management.

4. If the person concerned requests it, the government may also undertake the construction and maintenance of the private lines not set up on government property.

5. The applicant must obtain the permission of the proprietors and occupants of the property over which, or under which the wires have to be led; and also the permission of the authorities of the provinces and communes which have the control of the public roads through which, or over which, these wires are led. The applicant must bear all the expenses and compensations that may be necessary.

6. The contracts are concluded for a period of 5 years, or 10 years.

7. The charge to be paid to the government for the use of the lines constructed by the same, is fixed according to the period of contract. The charge covers both the use of the line and of the public property, the expense of maintaining or renewing the same, and the cost of removing it when the term of contract expires.

8. If the government cedes to a private enterprise the construction of private lines, then the government must furnish at the same time, the contracts which it has already carried out. The private individuals must receive the same privileges from those who obtain the concession to construct the private lines, as are received BELGIUM.

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from the government. On the other hand, they must pay the same charges, unless the amount should be reduced to the level of the general tariff adopted by those who obtain the concession.

BELGIUM—*Continued.*

No. 292m.

(Translation.)

LAW OF JUNE 11, 1883, CONCERNING THE ESTABLISHMENT AND OPERATION OF TELEPHONE SYSTEMS.

(Doc. II., p. 13.)

1. The government is authorized to undertake itself, or to concede, in conformity with the conditions annexed to the present law, the establishment and operation of telephone systems.

2. The penal laws, and the police regulations relating to telegraph arrangements are applicable to the telephone lines, constructed or conceded by the government. The law of March 1, 1851, is also extended to telephonic communications.

3. Any person who operates a telegraph or telephone line for the purpose of collecting rates without being supplied with a regular concession, is to be punished with a fine of from 100 to 500 francs.

4. Proprietors and occupiers are bound to tolerate above their buildings or grounds the wires of the telephone lines that are covered by the present law, but without attachment or contact. The government fixes the conditions which determine the carrying of these wires over the public roads and grounds. Proprietors and occupiers are entitled to compensation for any damage which may supervene, from the application of the foregoing enactment. It is forbidden to undertake any work on or under private property, without having first obtained the consent of the proprietor, and, if requisite, the consent of the occupier.

REMARKS.

3. As a general rule, the telegraph management must no longer authorize or defend the practice of keeping collection boxes at the residences of subscribers in the telephone service, for the purpose of collecting donations for philanthropic objects. Moreover, it must be understood that wherever these collection boxes may be placed, the inscription affixed thereto must not in any way refer to the use of the telephone. In like manner, no persuasion or solicitation must be made to any person whom the aforesaid subscriber may authorize to use the telephone. Any infraction of this regulation shall render the offenders liable to be prosecuted according to the terms of Article 3 of this present law.

4. Although the conditions annexed to this law are not applicable to the operating of the telephone service by the state, yet Article 13 of these 'conditions' has to be maintained in force. This article states that 'the proprietor shall have the right to build, plant, and change the existing condition of his property, in whichever way he may see fit. The grantee (in this case the telegraph management), having been duly apprised of these alterations, must, at his own expense, and within a period of eight days, take all necessary steps, in order that the said proprietor may freely exercise his rights.

LAW OF MAY 20, 1898, EXTENDING THE POWERS OF THE GOVERNMENT IN TELEPHONE MATTERS.

(Doc. II., p. 15.)

1. The government has the authority to carry out all works necessary for the construction, and the maintenance in good working order, of overhead and underground

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telephone lines, on or under the squares, thoroughfares, streets, roads, streams and canals, which form part of the public domain of the state, of the provinces, and of the communes.

- 2. This occupation must not infringe the use of the said public domain, and must not involve any dispossession.

3. A notification of the work proposed to be carried out, must be sent, by registered letter, to the authorities of the province or commune, at least twenty days before the proposed work is begun. Plans and diagrams of the work intended to be carried out, must be sent with the said notification.

When the proposed work comprises the construction of underground lines, either underneath, or above (on) the works (constructions) belonging to the service of the provinces, or communes, or, rather when the work proposed involves the changing or removal of one of these works (constructions), it is assumed that the two managements are agreed on the matter, if no objection has been made, within a period of twenty days from the time that the notification was given. If no agreement is arrived at, the matter is decided by a royal decree, signed by the Minister of the Interior and of Public Instruction. Sewers, water pipes and gas pipes, as well as all existing constructions, are to be treated with as much care as possible. The same manner of procedure applies to overhead lines. In all cases, these lines must not interfere with existing constructions, nor must they stand in the way of subsequent constructions.

4. The government will give compensation to the provinces and communes for any damages that may result from carrying out the work, specified in Article 1, after an estimate has been made of the same, either by mutual agreement or by some competent judge. These damages comprise:—

- (1) Any changes made in the existing constructions.
- (2) Any special work which has to be carried out by the said provinces or communes, on account of the construction of the telephone lines.
- (3) Any additional expenses in maintaining constructions, &c., which may be caused by the said works or changes.

5. When the carrying out of the work specified in Article 1 causes detriment to those who have rights on the public roads, the government will give compensation to such persons, according to the manner specified in Article 4.

ROYAL DECREE

OF OCTOBER 15, 1876, RELATING TO WORKS CONSTRUCTED ALONG THE ROUTE OF OVERHEAD AND UNDERGROUND TELEGRAPH LINES.

N.B.—The enactments of this royal decree are applicable to the telephone lines constructed or conceded by the government (Article 2, of the Law of June 11, 1883).

1. No person is allowed to begin any work such as lopping or cutting down trees, making excavations, trenches, constructions, or pulling down buildings, or any other work along the route of a telegraph or telephone line, which may interfere with the service of the said line, or damage it, without having first notified the management. This notification must be sent in writing to one of the two nearest telegraph stations at least five days before the commencement of the work. A dated receipt will be given therefor. The official in the telegraph station (collector or manager), who receives the notification of a work to be carried out under the aforementioned conditions, is bound to give a dated receipt for the same, and to give notice of it at once by telegram, to the manager of the technical section of the telegraph stations concerned, or to the manager of the telephone system, as the case may require.

2. Any contravention of the preceding article will be punished with a fine of 25 francs (\$4.82½), and from 1 to 7 days' imprisonment, or one of these penalties.

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RUSSIA.

No. 293.

(Translation.)

ST. PETERSBURG, Aug. 24, 1905.

Sept. 6,

General Management of the Post Office and
Telegraph Department of the Russian Empire.

SIR,—In answer to your letter of May 1 of the present year, I have the honour to send you the accompanying documents, in the Russian language,* viz:—

- (1) The regulations regarding the telephone service between St. Petersburg and Moscow.
- (2) The regulations regarding the organization and general working of the local telephone systems, by private contractors.
- (3) The regulations regarding the organization and general working of the municipal telephone systems.

With the assurance of my highest esteem,

I am, sir,

The Director General,
SEVASTIANOFF.

* (Not translated.)

Sir WILLIAM MULOCK, K.C.M.G.,
Postmaster General
Ottawa, Canada

No. 293a.

(Translation.)

ANSWERS TO QUESTIONS.

(Original is in French.)

Nearly all the long-distance lines in Russia are owned and operated by the government. The total pole route length of these is 2,292 versts (1,521 miles). There are generally from 16 to 20 poles to each verst (1,167 yards). The cost of the St. Petersburg-Moscow line, comprising two bronze metallic circuits, was \$492.44 per mile. (See Table No. 1 for long-distance charges, &c.)

Subscribers circuits are overhead and underground. The former are principally of bronze, with a diameter of 1.2 mm. (S.W.G. No. 18), but there are also circuits of iron wire, with a diameter of 3 mm. (S.W. G. No. 10½) for country subscribers. In the case of underground cables, the circuits are copper. The diameter of the wire is 0.66 mm. (S.W.G. No. 22½).

The revenue from the communications between St. Petersburg and Moscow, in 1904, was 162,563 roubles (\$83,704.50); and during 1903, 123,515 roubles (\$63,610.23). Between Warsaw and Lodz, in 1904, 21,024 roubles (\$10,827.36); and, during 1903, 18,448 roubles (\$9,500.72). The total expenditure upon the operation and maintenance of the telephone service between St. Petersburg and Moscow, during each year, is 35,000 roubles (\$18,025).

For the telephone service between St. Petersburg and Moscow, the surplus last year was 70,000 roubles (\$36,050).

Some of the long-distance lines are used for simultaneous telephony and telegraphy. (See accompanying table No. 1.)

The local telephone systems are mostly owned by the government. The remainder are operated by private individuals, by local municipalities, and by stock companies, under the conditions of a grant, lasting 18 years; at the expiration of which, the telephone systems pass into the possession of the government free of cost.

The question regarding the supplying of telephone facilities to the people living in the rural districts, is decided by leaving the matter to the discretionary power of the local municipal authorities, who are at liberty to organize and operate telephone systems in their various districts, in accordance with the conditions specified in the accompanying documents.

With regard to the local rates, the subscribers that belong to the telephone lines, owned by the state, are divided into two classes:—

- (1) The first class is composed of subscribers who reside at a distance of two versts, or less, from the central exchange, the distance being measured in a direct line.
- (2) The second class is composed of subscribers who reside at a distance of more than two versts (1 mile, 573 yards) from the central exchange, the distance being measured in the same manner.

The rates for subscribers are as follows:—

- (a) For subscribers of the first class, having a single telephone, connected by a special wire, from 75 roubles (\$38.63) annually.
- (b) For subscribers of the second class, also from 75 roubles (\$38.63) annually, with an extra charge of 15 roubles (\$7.73) for each additional verst (1,167 yards) over and above the two first versts (1 mile, 573 yards).
- (c) If two telephones served by the same wire, are installed in different premises, belonging to the same subscriber, the station at the end of the circuit (that is to say, the station that is furthest from the central exchange) determines the class to which the subscriber belongs. In this case, the rate for the use of the intermediate station (i.e., the one nearest the central exchange) is from 50 roubles (\$25.75) annually.
- (d) The rate for a subscription including several persons is the same as the rate specified for single subscribers.
- (e) A charge of 5 roubles (\$2.58) per year is made for connecting and installing a separate bell in another room on the same premises, as the subscriber's telephone.
- (f) A charge of 3 roubles (\$1.55) per year is made for an additional receiver.
- (g) When the subscriber makes request to have two telephones installed in the same premises, connected by the same wire, with the central exchange, the yearly rate for the use of the second telephone is 10 roubles (\$5.15). In this case, the additional telephone is purchased by, and installed at the expense of the subscriber.

Reductions in the above-mentioned rates are made in favour of a few telephone systems only. The rates for the telephone systems operated by private individuals vary considerably; but these all conform with the stipulation that the rates specified for the said systems must not exceed the rates fixed for telephone systems belonging to the government.

In telephone systems organized and operated by the municipal authorities of the various districts, there are, for the most part, no fixed subscription rates. The cost of organizing and operating the said systems is divided among the persons concerned.

The greatest distance spoken over is between St. Petersburg and Moscow. The conversations are heard very well, so that in Russia we have not yet reached those limits where it is not possible to understand what is spoken over the long-distance lines.

The type of telephones used are mostly those supplied by the 'Ericsson' factory at St. Petersburg.

APPENDIX No. 1

All the long-distance telephone lines are overhead. Cables are only used for carrying the lines across rivers.

(The manager of the telephone line connecting St. Petersburg and Moscow receives 1,800 roubles (\$927) per annum, and the manager of the line connecting Warsaw and Lodz, 1,500 roubles (\$772.50).

The other lines have no special managers.

The foremen mechanics receive 1,200 roubles (\$618) per annum.

Assistant mechanics receive from 750 to 1,000 roubles (\$386.25 to \$515) per annum.

Operators of class II., 900 roubles (\$463.50).

" " III., 750 " (\$386.25).

" " IV., 600 " (\$309).

" " V., 450 " (\$231.75).

Overseers (foremen), 'surveillants,' from 360 to 450 roubles (\$185.40 to \$231.75).

Workmen (labourers), messengers, &c., 180 roubles (\$92.70) per annum.

The switch-board in most general use has an equipment of 100 single lines, is made in the 'Ericsson' factory at St. Petersburg, and costs 550 roubles (283.25). The same switch-board, with an equipment of 100 metallic circuits, costs 600 roubles (\$309). Multiple switch-boards are also made at the same factory, and cost from 7 to 10 roubles (\$3.61 to \$5.15) for each number.

A switch-board with magneto generator for operating magneto-bells for two lines having double circuits, costs 10 roubles (\$5.15). The same for two lines with single circuits, costs 9 roubles and 25 kopecks (\$4.76). A simple switch for two lines with double circuits, costs 1 rouble and 40 kopecks (72 cents). The same for two lines with single circuits, costs 85 kopecks (44 cents).

Wall and desk telephones cost 32 roubles (\$16.48) each.

A lead covered cable, with 37 pairs of conductors, costs 5 roubles and 50 kopecks (\$2.83) per toise (6 feet 4 in.). The same with 112 pairs of conductors, costs 10 roubles (\$5.15) per toise. The same with 400 pairs of conductors, costs 26 roubles (\$13.39) per toise.

Bronze wire of a diameter of 1.02 mm. costs from 20 to 22 roubles (\$10.30 to \$11.33) per poude (36 pounds). Iron wire of a diameter of 3 mm. costs about 2 roubles and 50 kopecks (\$1.29) per poude (36 pounds).

Wooden poles, of about 4 toise (25½ feet) in length, cost from 3 to 4 roubles (\$1.55 to \$2.06); and the same with a length of 5 toise (31½ feet) cost from 4 to 5 roubles (\$2.06 to \$2.58). Iron poles are very seldom used, and the price of the same varies considerably.

Arms, brackets, &c., cost 3 roubles and 50 kopecks per poude (36 pounds).

Telephone insulators cost 12 kopecks (6½ cents) each.

Telephone bolts cost 7 or 8 kopecks (3½ to 4 cents).

Concessions for the organization and operation of local telephone systems, for the use of the general public, are granted to private contractors upon tenders received. The general results are not yet apparent.

The question of payment by the government for wayleave facilities has not yet been fully decided by law.

TABLE NO. 1.—LONG DISTANCE TELEPHONE LINES.

Particulars.	POINTS CONNECTED BY LONG DISTANCE LINES.							
	St. Petersburg and Moscow.	St. Petersburg and Iver.	Moscow and Iver.	Warsaw and Lodz.	Rostov and Taganrog.	Eupatoria and Saki.	Jaroslav and Rybinsk.	Riga and Mitau.
Distance Versts.	620	460	160	135	72	20	74	40
" Miles.	411	305	106	89½	47¾	13¼	49	26½
Number of wires	4	2	2	4	2	2	2	2
Class of wire	Bronze.	Bronze.	Bronze.	Bronze.	Iron.	Iron.	Iron.	Iron.
Size of wire	4 m.m. (S.W. G. No. 8)	4 m.m. (S.W. G. No. 8)	4 m.m. (S.W. G. No. 8)	2½ m.m. (S.W. G. No. 11)	4 m.m. (S.W. G. No. 8)	4 m.m. (S.W. G. No. 8)	4 m.m. (S.W. G. No. 8)	4 m.m. (S.W. G. No. 8)
Cost of construction Roubles.	393,000			61,000	14,500	900	800	950
" " Dollars.	202,395			31,415	7,467.50	463.50	412.00	489.25
" " per mile Roubles.	956.20			681.57	303.66	67.92	16.32	35.85
" " " Dollars.	492.44			351.00	156.39	34.98	8.41	18.46
Toll charges for 3 minutes conversation	1.50 roubles 77c.	1.20 roubles 62c.	0.75 rouble 39c.	0.75 rouble 39c.	1 rouble 52c.	0.30 rouble 15c.	0.50 rouble 26c.	0.50 rouble 26c.
When no reply received	25 kopecks 13c.	25 kopecks 13c.	25 kopecks 13c.	50 kopecks 26c.	50 kopecks 26c.		25 kopecks 13c.	25 kopecks 13c.
When call is cancelled after call sub- scriber replies.	50 kopecks 26c.	50 kopecks 26c.	50 kopecks 26c.	100 kopecks 52c.	100 kopecks 52c.		50 kopecks 26c.	50 kopecks 26c.
Lines used for simultaneous telephony and telegraphy.	No.	No.	No.	No.	No.	No.	Yes. Gvosdeff system.	Yes. Gvosdeff system.

TABLE NO. 1.—LONG DISTANCE TELEPHONE LINES—Continued.

Particulars.	POINTS CONNECTED BY LONG DISTANCE LINES.						
	Riga and Majorenhof.	Mitau and Majorenhof.	Odessa and Nikolaiev.	Odessa and Kherson.	Kherson and Nikoliev.	Odessa and Kishenev.	Sevastopol and Jalta.
Distance..... Versts.	22	62	184	118	66	178	84
"..... Miles.	14½	41	122	78¼	51¾	118	55¾
Number of wires.....	2	2	2	2	2	1	1
Class of wire.....	Iron.	Iron.	Iron.	Iron.	Iron.	Iron.	Iron.
Size of wire.....	4 m. m. (S. W. G. No. 8)	4 m. m. (S. W. G. No. 8)	4 m. m. (S. W. G. No. 8)	4 m. m. (S. W. G. No. 8)	4 m. m. (S. W. G. No. 8)	4 m. m. (S. W. G. No. 8)	4 m. m. (S. W. G. No. 8)
Cost of construction..... Roubles.	1,150		1,800			7,000	3,800
" "..... Dollars.	592.25		927.00			3,605	1,957
" " per mile..... Roubles.	79.31		14.75			59.32	68.16
" " "..... Dollars.	40.85		7.60			30.55	35.10
Toll charges for 3 minutes conversation.....	0.30 rouble 15c.	0.50 rouble 26c.	1 rouble 52c.	1 rouble 52c.	0.50 rouble 26c.	1 rouble 52c.	0.50 rouble 26c.
When no reply received.....	15 kopecks 8c.	25 kopecks 13c.	25 kopecks 13c.	25 kopecks 13c.	25 kopecks 13c.	25 kopecks 13c.	25 kopecks 13c.
When call is cancelled after call subscriber replies.....	30 kopecks 16c.	50 kopecks 26c.	50 kopecks 26c.	50 kopecks 26c.	50 kopecks 26c.	50 kopecks 26c.	50 kopecks 26c.
Lines used for simultaneous telephony and telegraphy.....	Yes. Gvosdeff system.	Yes. Gvosdeff system.	Yes. Gvosdeff system.	Yes. Gvosdeff system.	Yes. Gvosdeff system.	Yes. Picard system.	Yes. Picard system.

RUSSIA—*Concluded.*

No. 293c.

(Translation.)

GOVERNMENT TELEPHONE SYSTEMS.

TABLE NO. 2.

Cities and other Places having Telephone Service.	Number of Subscribers on January 1.		Population.
	1903.	1904.	
1 Tsarskoe-Sels.....	147	161	25,000
2 Kiev.....	1,554	1,724	248,000
3 Kharkov.....	1,363	1,510	175,000
4 Kazan.....	602	660	132,000
5 Saratov.....	578	640	140,000
6 Nikolaiev.....	331	365	92,000
7 Moscow (Long Distance System).....	214	220	*1,200,000
8 Tsaritzin.....	302	344	56,000
9 Astrakhan.....	693	737	113,000
10 Kursk.....	142	164	53,000
11 Kishinev.....	283	300	109,000
12 Sevastopol.....	207	205	51,000
13 Taganrog.....	272	264	52,000
14 Bialystok.....	134	142	64,000
15 Sosnovitzky.....	212	207	2,000
16 Ekaterinburg.....	283	298	56,000
17 Tula.....	359	369	112,000
18 Irkutsk.....	645	699	52,000
19 Kremenchug.....	105	113	60,000
20 Kertch.....	139	121	30,000
21 Elizabetgrad.....	120	129	62,000
22 Orel.....	126	141	70,000
23 Tiflis.....	888	940	170,000
24 Voronej.....	214	231	84,000
25 Poltava.....	122	139	55,000
26 Simferopol.....	163	170	49,000
27 Ivanovo-Voznesensk.....	271	278	54,000
28 Tumen.....	120	121	30,000
29 Tomsk.....	415	458	53,000
30 Jaroslav.....	222	307	71,000
31 Smolensk.....	170	170	47,000
32 Tchernigov.....	77	76	27,000
33 Gatschina.....	88	100	16,000
34 Gatta.....	319	358	15,000
35 Theodosia.....	115	112	27,000
36 Ekaterinodar.....	257	308	65,000
37 Batum.....	154	172	29,000
38 Samara.....	393	433	92,000
39 Kurizovo and Kudintzovo.....	7	6	1,000
40 Mariupol.....	133	136	32,000
41 Ekaterinoslav.....	416	453	122,000
42 Perm.....	249	267	46,000
43 Berdiansk.....	59	61	27,000
44 Novorossisk.....	145	138	22,000
45 Vilna.....	496	545	160,000
46 Riazan.....	96	105	45,000
47 Alexandrovsk-Gruchevsh.....	42	43	16,000
48 Kherson.....	168	184	70,000
49 Lnublin.....	87	88	50,000
50 Balaklava.....	8	7	2,000
51 Minsk.....	249	274	92,000
52 Blagovestchenok.....	301	303	33,000
53 Jitomir.....	115	119	66,000
54 Kamienietz-Podolsk.....	75	73	35,000
55 Peterhof.....	166	182	12,000
56 Poti.....	48	56	8,000
57 Archangelsk.....	222	230	21,000
58 Tver.....	130	140	54,000
59 Tambov.....	137	160	48,000

* In the city

RUSSIA.

APPENDIX No. 1

GOVERNMENT TELEPHONE SYSTEMS—*Concluded.*TABLE No. 2—*Concluded.*

Cities and other places having Telephone Service.	Number of Subscribers on January 1.		Population.
	1903.	1904.	
60 Ufa	215	228	50,000
61 Penza	140	144	62,000
62 Vladikawkas	167	190	44,000
63 Simbirsk	131	146	44,000
64 Krasnojarsk	165	176	44,000
65 Kronstadt	140	160	60,000
66 Orenburg	220	239	73,000
67 Alexandrovsk and Khortitza	74	93	19,000
68 Stavropol	151	161	42,000
69 Grushina	156	159	16,000
70 Chuja	49	51	19,000
71 Kozlov	50	63	41,000
72 Vologda	134	162	28,000
73 Siverskaja	16	20	1,000
74 Mineral Springs (Caucasus)	193	227	15,000
75 Tehita	177	206	18,000
76 Eupatoria	70	72	18,000
77 Kaluga	83	95	50,000
78 Armavir	135	172	6,000
79 Slaviansk	38	39	16,000
80 Sarapul	70	66	22,000
81 Krasnoe-Sels	63	68	10,000
82 Kostroma	140	148	41,000
83 Duvance	85	98	73,000
84 Syzran	67	67	33,000
85 Semipolatinsk	72	81	27,000
86 Juriev	66	73	43,000
87 Volsk	71	71	27,000
88 Petrovsk	67	75	10,000
89 Bybinsk	144	152	25,000
90 Narva	50	59	17,000
91 Lodz	944	928	315,000

II.—THE MORE IMPORTANT OF THE TELEPHONE SYSTEMS, BELONGING BY RIGHT OF CON-
CESSION, TO PRIVATE INDIVIDUALS, COMPANIES, ETC.

Cities which have Telephone Systems.	Population.	Number of Subscribers on January 1, 1903.
1 St. Petersburg	1,370,000	7,480
2 Moscow	1,200,000	4,211
3 Warsaw	640,000	2,746
4 Odessa	450,000	1,987
5 Riga	257,000	1,991
6 Rostov on the Don	120,000	945
7 Reval	65,000	285
8 Nijni Novgorod	96,000	505
9 Libau	65,000	442
10 Baku	114,000	1,177

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PIETERMARTITZBURG, NATAL.

No. 294.

POSTMASTER GENERAL'S OFFICE.

PIETERMARTITZBURG, NATAL, September 6, 1905.

SIR,—In accordance with the request contained in your communication of May 1, addressed to the Controller of Telegraphs, Pietermaritzburg, I have the honour to forward herewith the replies to the various questions raised therein.

I regret that statistics are not at the present moment available to allow of my replying to the question asked under No. 24.

The delay in furnishing the statistics is due, I should explain, to the controller of telegraphs being absent on leave in England, where, owing to your communication being addressed personally to him, your letter was forwarded to him and returned to me.

In future please address communications to either the Postmaster General or Secretary.

I have the honour to be, sir,
Your obedient servant,

A. F. NORRIS,
Postmaster-General.

The CHAIRMAN,
Select Committee on Telephone Systems,
Ottawa, Canada.

No. 294a.

ANSWERS TO QUESTIONS.

Pietermaritzburg has a population of 15,000 Europeans and 15,000 coloured. The government owns and operates the telephone system. There are 560 subscribers connected by direct wire, 46 outside extension lines, and 31 internal extension telephones.

The rates per annum within a radius of two miles, are as follows: Business, £10 (\$48.70); residence, £5 (\$24.35). outside extensions, £1 (\$4.87), plus additional wire rental of £1 (\$4.87) for each succeeding $\frac{1}{4}$ mile; internal extensions, £1 (\$4.87).

The service is continuous.

The charge to non-subscribers for local conversation is 3d. (6c.).

There are no long-distance lines in use at present. The greatest distance subscribers can converse is nine to ten miles.

The subscribers, telephones, both wall and table, are of Ericsson's make. The lines are metallic bronze, copper and iron wire, $2\frac{1}{2}$ miles of which is underground, and 63 miles overhead.

The cost of the plant to December, 1904, was £35,476 (\$172,768.12). The revenue for the year 1904-05, was £6,115 (\$29,780.05); £4,562 (\$22,216.94), was expended in 1904-05, for management, operation, maintenance and depreciation.

The wages paid are: Manager, £450 (\$2,191.50) per annum; foreman, 16s. (\$3.90), instrument men, 12s. (\$2.93), and wiremen, 11s. (\$2.68) per day.

The cost of material is as follows:—

- Wall telephones, £3 14s. (\$18.03).
- Desk telephones, £3 15s. (\$18.27 $\frac{1}{2}$).
- Wire, £3 5s. 2d. (\$15.87) per mile.
- Poles, £6 1s. (\$29.46 $\frac{1}{2}$) each—average.
- Iron cross-arms, 6s. (\$1.46) each.
- Insulators and bolts, 1s. (24 $\frac{1}{2}$ c.) each.
- Cable duct, 1s. (24 $\frac{1}{2}$ c.) per foot.

We employ a 'ring through' metallic system, with earthed (grounded) 'ring-off.'

NATAL.

APPENDIX No. 1

AUSTRALIA.

No. 295.

STATE OF TASMANIA,
 (For State of Victoria, see page 354.)
 POSTMASTER-GENERAL'S DEPARTMENT,
 HOBART, September 7, 1905.

SIR,—I have the honour to acknowledge the receipt of your communication of May 1st last, and in reply, beg to enclose herewith answers to list of questions submitted by you concerning the telegraph and telephone system in operation in Tasmania.

I have the honour to be, sir,
 Your obedient servant,

E. EDWARDS,
Inspector of Lines.

The CHAIRMAN,
 Select Committee on Telephone Systems,
 Ottawa.

No. 295a.

ANSWERS TO QUESTIONS.

The telephone system is owned and operated by the Commonwealth government. The following are the exchanges, with the number of telephones, population, &c.:—

Name of Town.	Population.	Number of Subscribers.	Direct Lines.	Outside Extensions.	Inside Extensions.
Hobart.....	27,795	694	698	68	108
Launceston.....	23,000	381	388	35	17
Bellerive.....	920	20	22		
Burnie.....	2,710	34	36	4	
Devonport West.....	3,175	18	19		
Evandale.....	750	2	2		
Franklin.....	1,000	11	16	1	
Gormanston.....	1,490	20	21		
Huonville.....	850	9	12		
Longford.....	1,530	13	15		
New Norfolk.....	1,700	24	27	3	
Queenstown.....	7,775	24	45	3	
Strahan.....	1,200	11	13		
Zeehan.....	5,280	63	68		

The rates are as follows: Business, £6 (\$29.22); residence, £4 10s. (\$21.92); extension telephones, £2 10s. (\$12.18) for telephone and switch and for all extra wire over a mile (including the distance between the exchange and the subscriber's first station), 10s. (\$2.44) each quarter mile or fraction thereof. See Reg. 15 (page 639).

The service is continuous in Hobart and Launceston, others on average, 9 a.m. to 8 p.m.

The charge to non-subscribers for local conversations is 3d.

The long-distance charges vary according to distance, *vide* Regulations, Telephone Trunk Lines, page 641. The greatest distance spoken over is, at present, 133 miles. The subscribers' telephones are Western Electric standard wall sets and table sets, Ericsson standard wall sets, fixed transmitters. The local lines are single-grounded circuit iron and copper. The proportion underground and overhead is: Underground, 179 miles, overhead, 1,271½ miles.

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Thirty-eight thousand nine hundred and sixty-nine pounds (\$189,779.03) has been expended on the system to date. The revenue is £10,155 (\$49,454.85). The cost of operation, maintenance and depreciation is £4,400 (\$21,428). The amount of surplus last year was £5,755 (\$28,026.85).

The wages paid are as follows: Manager (also telegraph manager), £335 (\$1,631.45); foreman (mechanician), £228 (\$1,110.36); instrument and wiremen, £110 to £162 (\$535.70 to \$788.94). switch attendants, minimum, £30, maximum, £84 (minimum \$146.10, maximum \$409.08).

The cost of equipment is as follows:

Switchboards for 50 lines, £35 (\$170.45); average of smaller about 15s. (\$3.66) per shutter.

Wall telephones, £3 1s. 2d. (\$14.89) each.

Desk telephones, £3 9s. 4d. (\$16.89).

Lead-covered paper insulated cables, containing 104 pairs of conductors, £503 (\$2,449.61) per mile.

Copper, wire No. 14 gauge, £82 (\$399.34) per ton (2,240 pounds).

Wood poles, sawn square for city use, 13s. (\$3.17) per 100 feet super. Round (natural-grown timber), for country use, price varies from, say, 2s. 6d. to 7s. 6d. (61c. to \$1.83) each, according to difficulties of supply. No iron poles used.

Insulators and bolts, 6½d. (13 cents) each.

The long-distance lines are operated by this department, and are used for simultaneous telephoning and telegraphing on the condenser system designed and installed by W. P. Hallam, chief operator, Hobart central staff.

Subscribers using the long-distance lines lodge a cash deposit against which all connections are recorded, and it is renewed on advice from department that the deposit is becoming exhausted. Non-subscribers get connection by payment of prescribed fee in cash.

There is no competition.

The exchange telephone system throughout the state is worked on the single line method. Boards in use are 50-line, and under, according to requirements. The winding of the shutter coils vary from 80 to 100 ohms. The ring-off coils in some boards are in series (80 to 100 ohms). In others in leak, ironclad, winding 600 to 1,000 ohms. Hobart and Launceston are the only exchanges in the state subscribers which exceed 100 in number. The boards are single line, non-multiple, with provision for cross connecting.

At Launceston (381 subscribers) the attendants have to call one to another to make the necessary cross connections.

At Hobart (694 subscribers) a call wire system is in use which enables an attendant at one position to put herself in connection with the head-gear of an attendant at any other position by pressing a button. The cross-connection is thus given telephonically.

At Hobart five trunk lines are in connection with the exchange, four of which are condenser trunks, that is, telegraph lines are used. On some the call is received on a telephone relay in the form of a 'toot,' on others the calling current actuates a relay and a shutter drops. An induction coil with vibrator is used for calling.

At Launceston there are four trunks for all of which telegraph lines are used on the condenser principle.

On the larger exchanges battery polechangers are used for calling.

At country exchanges the call is by magneto.

The present central switchboards are now obsolete and are being immediately replaced by up-to-date equipments, the particular design being not yet decided on—probably central energy.

TASMANIA—*Continued.*

No. 295b.

TELEPHONE REGULATIONS.

REGULATIONS, TELEPHONE EXCHANGES.

1. Applications for connection with the telephone system must be made to the Deputy Postmaster-General.

2. All telephone lines, instruments, &c., in connection with the telephone system are erected and supplied by the Postmaster-General, the cost being borne by the government, and no persons, except employees of the department, are to be allowed to interfere with any wires, instruments, &c., under the department's control. In the event of any such interference the subscriber concerned may have his line disconnected. The following rates will be charged for the use of the lines and of one telephone set complete, in addition to service at the respective exchanges, viz.:—

Commercial Subscribers (places of business, medical and legal practitioners, &c.)—The annual subscription to a central telephone exchange, for any distance not exceeding a mile, shall be £6, and for every additional quarter of a mile or fraction thereof, 10s.

Domestic Subscribers (private houses at which no profession or business is carried on) may be connected with an exchange at an annual rental of £4 10s. for the first mile, and 10s. for each additional quarter of a mile or fraction thereof.

For the foregoing charges all requisite attendance shall be given, and necessary adjustments, repairs, and renewals of lines, instruments, and batteries effected.

In all cases where submarine cables, or other special arrangements are required in the construction of a line, the charges shall be fixed according to circumstances.

3. Telephone lines must be rented for not less than one year, or such longer period as the Deputy Postmaster-General may determine, and the use of any such line may be discontinued after the expiration of that period, or of any subsequent half-year, by the subscriber giving one calendar month's previous notice of his intention to discontinue the use of such line.

4. Rent payable in respect of any telephone line shall be charged from the date on which such line has been connected with the exchange. The first year's rent of any such line must be paid in advance, the next payment must be (in advance) for the proportion of rent payable for the period ending the calendar half-year immediately following the expiration of the first year, and thereafter rent must be paid half-yearly in advance: Provided, however, that in respect of lines, the cost of the construction of which will exceed the amount payable as rent for the first year, the subscriber may be called upon to pay in advance rent for such period as will cover the cost of construction of such line.

5. If any subscriber make default in payment of rent and other charges due by him and on being requested by notice to pay such rent and charges, shall fail to pay the same within fourteen days from the date of such notice, the Deputy Postmaster-General may order that the telephone used by such subscriber be disconnected from the exchange, may cancel the agreement, cause the name of such subscriber to be removed from the list, and may order the removal of all wires, instruments, &c., without prejudice to his right to recover the rent payable to the end of the term for which such line was rented.

6. A fee of 5s. in addition to any other amounts due shall be paid by any subscriber whose telephone has been disconnected from the exchange for non-payment of rent or other charges due, before the telephone is again connected with the exchange. If the instrument or wires have been removed, any application for reconnection with the exchange shall be treated as an application for a new line.

7. Except where natural obstructions exist, when the actual mileage may be charged, mileage shall be calculated radially, from the telephone exchange with which

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the line is connected as the centre. In the case of extension lines the mileage shall be calculated from the starting point of such extension, allowance being made for any shortage on the exchange line.

8. All telephone instruments, batteries, &c., shall be supplied at the cost of the government, and be the exclusive property of the Postmaster-General. Upon the termination of the agreement the Postmaster-General may remove such instruments, &c., for which purpose, as also to permit of their inspection, when considered necessary, his officers shall have free access to the premises of the subscriber. The subscriber must pay for all damage to instruments, &c., beyond fair wear and tear.

9. Before a suburban or country telephone exchange shall be established, fifteen persons must agree to rent lines, if only a day service (*i.e.*, between the hours of 9 a.m. and 8 p.m.) be required, or twenty-five persons must so agree if a day and night service be required. The Postmaster-General shall have the right, in all cases, to determine whether an exchange shall be established, and, notwithstanding anything contained in the foregoing regulations, he may, if he consider it undesirable to establish an exchange, authorize connections to be made with an existing exchange, and may, in such case, charge such rates as would be applicable if a new exchange were established and the connections made therewith.

10. Telephone lines connected with the exchanges must be used only by the subscriber, his family, or employees, and exclusively on his own business, except in cases where licenses have been granted by the Postmaster-General to persons to use subscribers' telephones, in accordance with the regulations prescribing the terms upon which such licenses may be granted. Any breach of this regulation shall render the subscriber liable to have his telephone disconnected, without prejudice to the right of the Postmaster-General to recover the rent and other charges payable to the end of the term agreed upon. Provided, however, that in case of emergency, a subscriber may permit the use of his line by the subscriber for another line connected with the same exchange. The use of any subscriber's line may, with his consent, be granted to a non-subscriber to summon medical aid in urgent cases, to give notice of fire, or to call the police. In the case of hotels and lodging-houses, the telephones may be used by any person residing on the premises, but not by casual callers.

11. Should a subscriber require his telephone to be removed to another address or position, or any alterations to be made, he shall be required to pay the actual cost of labour entailed in making alterations to the line (unless the rental be increased) plus the total cost of refitting the telephone; but, if the rental be increased, only the cost of refitting the telephone shall be charged.

12. No telephone messages shall contain unbecoming expressions, or language of an obscene or offensive nature, or of a character calculated to provoke a breach of the peace. Any violation of this regulation shall render the subscriber liable to have the telephone disconnected, and any instruments, &c., belonging to the Postmaster-General removed, without prejudice to the right of the Postmaster-General to recover the rent and other charges payable to the end of the term agreed upon.

13. The name of every subscriber may be inserted once free of charge in each issue of the *Telephone Directory*, but an annual fee of 5s. shall be charged for each additional name inserted at the request of a subscriber, but more than six names shall not be inserted at the request of any one person. However, before any such additional name can be inserted in the directory, evidence must be produced to the satisfaction of the Deputy Postmaster-General that the applicant is acting as agent for the person or firm whose name he desires to be so inserted, and in no case shall any person other than such applicant or his employees be allowed to use the telephone on behalf of such person or firm.

14. Persons occupying offices in the same building may jointly subscribe under the one exchange number, on payment (in addition to rental as for one person at the respective rates herein set forth) of £3 per annum for each additional set of instruments fixed in the several offices of such joint-subscribers, or, if additional instru-

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ments be not required, £2 per annum for each additional name to be inserted in the *Telephone Directory*.

If additional instruments be required, the joint subscribers shall provide an attendant for their own local switchboard. Switch and bell, or switchboard, may be supplied by the Postmaster-General on rental, at the rate of 10s. per annum for switch and bell or per number on the switchboard.

Persons jointly occupying the same private residence may subscribe under the one exchange number, on payment (in addition to rental as for one person at the respective rates herein set forth) of £1 per annum for each additional name to be inserted in the *Telephone Directory*.

15. When any existing line is extended, and such extension does not increase the total radial mileage of the line beyond that for which rent is being paid at the time, the subscriber requiring the extension to be made shall pay the cost of labour in connection therewith. He shall also pay the prescribed annual rental for such extra instruments (if any) as may be required on the extension.

When the extension of an existing telephone line does increase the total radial mileage of such line beyond that for which rent is being paid at the time, the cost of making such extension shall be borne by the Postmaster-General, but the subscriber shall pay the prescribed annual rental for the mileage of the line as extended, and also for such extra instruments (if any) as may be required on the extension.

16. The annual rental charge for extra apparatus shall be:—

	£	s.	d.	
Additional telephone instruments—ordinary . . .	2	0	0	(\$9.74)
Additional telephone instruments—special, including table sets.	2	10	0	(\$12.18)
If, instead of an ordinary wall set, the subscriber wishes to have a table telephone, the rental shall be increased by	0	10	0	(\$2.44)
For each shutter or jack on a switchboard . . .	0	10	0	(\$2.44)
Intermediate switches or switches used to cut off a circuit from one telephone to another, with magneto bell—per set.	0	10	0	(\$2.44)
Magneto extension bells—including two-way switch.	0	5	0	(\$1.22)
Trembling-bell, 3 in., with battery—including two-way switch.	0	10	0	(\$2.44)
Trembling-bell, 5-in., with battery—including two-way switch	0	15	0	(\$3.66)
Special appliances as per agreement.				

17. Charitable institutions supported wholly or partly by public subscriptions shall be charged half the ordinary business rates.

18. No subscriber shall be allowed to use any line joining two exchanges for more than five minutes at one time in the case of the city or suburban telephone exchanges, or ten minutes in the case of a country exchange. Any person exceeding this limit may be disconnected if there be other applicants waiting to use the line. Subscribers shall be connected, as far as possible, in order of application.

19. (a) Persons who are not subscribers to a telephone exchange may, with the concurrence of a subscriber, be granted a license by the Deputy Postmaster-General to use such subscriber's telephone.

(b) The subscriber whose telephone is used by any such person (hereinafter termed a licensee) shall pay in advance a fee of £2 (\$9.74) per annum to the Deputy Postmaster-General for every such license. Payments must be so arranged that renewal fees will fall due on January 1 in each year.

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(c) The licensee's name shall appear in the *Telephone Directory* opposite the number of the subscriber whose telephone he uses.

(d) The subscriber and licensee must make their own arrangements as to calling a licensee when wanted, and as to the conditions under which the licensee may enter the subscriber's premises for the purpose of using the telephone.

(e) The number of licenses in connection with any one subscriber's telephone shall be limited to two, except in cases where a larger number have been licensed prior to the publication of these regulations.

(f) The application for a license must be forwarded to the Deputy Postmaster-General by the subscriber whose telephone it is desired to use, and all notices of discontinuance must be forwarded in the same manner.

(g) The Deputy Postmaster-General shall have absolute power to refuse to grant a license and to cancel a license so granted at any time.

(h) The granting of a license shall in no way bind the Postmaster-General to guarantee to the licensee the use of the subscriber's telephone referred to in such license, and no responsibility will be accepted by the Postmaster-General in respect thereto.

In cases where lines have been constructed, prior to the publication of these regulations, under what is termed the 'purchase system,' the lines, as well as the instruments, &c., connected therewith shall remain the property of the persons who paid for same; they shall be subject to the maintenance fees hitherto charged, so long as the owners of such lines remain in their present premises; but

(a) Should an owner desire any additions or alterations to the line within such premises, he shall be required to pay the actual cost of such additions or alterations, but no addition or alteration shall be made unless he give an undertaking, in writing, to surrender his line when called upon to do so, at a valuation made by an officer of the department on the basis of its then present value.

(b) Should an owner remove from such premises service shall only be given at the new address under 'rental' conditions, and the old line and apparatus may be taken over at a valuation to be made by an officer of the department.

These lines shall otherwise be subject to the same regulations as rented lines.

Maintenance fees must be paid yearly, in advance, dating from January 1 in each year.

20. A telephone line connecting any two offices of the department, at neither of which a telephone exchange has been opened, may be used for conversations by the general public, subject to the following conditions, and on payment of the fees set forth hereunder, provided that such use by the public shall not interfere with the ordinary work of the department:—

(1) When it is not necessary to send a messenger for the person to be spoken to, the fee payable by the person initiating the conversation shall be the same as is specified for conversations on telephone trunk lines.

(2) When it is necessary to send a messenger for the person to be spoken to, the following charges shall be made in addition to the charge specified in the last preceding clause:—

(a)* For a messenger sent to call to the telephone any person who resides within the usual radius of free delivery of telegrams, 6d (12½ cents).

(b)* For a messenger sent to call to the telephone any person who resides beyond the radius of free delivery of telegrams, in addition to the fee of 6d., the usual portorage fees charged for the delivery of telegrams shall be made.

*At offices where messengers are not divided by the department the services specified in sub-sections (a) and (b) of clause 2 of this regulation cannot be performed.
TASMANIA.

APPENDIX No. 1

REGULATIONS FOR THE USE OF SUBSCRIBERS' TELEPHONES BY THE PUBLIC ON THE TICKET SYSTEM.

1. These regulations shall take effect on the 14th day of January, 1904.
2. Any subscriber to a telephone exchange who pays a subscription at the business rate may apply to the Deputy Postmaster-General for permission to place his telephone at the service of the public.
3. The Deputy Postmaster-General may, if he thinks fit, grant the permission applied for, and thereupon the telephone shall be available for public use, subject to these regulations.
4. The subscriber shall, if the permission is granted, exhibit a plain and legible notice in a prominent position on his premises, indicating that the telephone is available for public use.
5. A charge of three pence (6 cents) for each conversation of three minutes or part of three minutes shall be made and shall be paid by ticket as herein provided.
6. Tickets for the payment of conversation charges shall be issued by the Postmaster-General's Department and sold at the price of threepence each. Books containing twelve tickets each may be purchased on application at the general post office.
7. Any person who desires to use the telephone shall place a ticket in a locked box, to be provided and kept by the subscriber, but opened and cleared only by an officer of the Postmaster-General's Department, and may then use the telephone.
8. An additional ticket must be placed in the box for each three minutes or part of three minutes by which the conversations exceed the first three minutes.
9. The subscriber shall be entitled to receive one penny from the Postmaster-General for each ticket removed from the box by the officer who opens it.
10. Nothing in these regulations shall affect the use of the telephone by the subscriber, his family, or employees in his business.

TELEPHONE TRUNK LINES—RATES (OTHER THAN PRESS).

Where telephone trunk lines connect two towns, such lines may be used for conversations on payment of the fees prescribed hereunder:—

For each conversation on lines.	First three minutes.		Each additional three minutes.	
	s.	d.	s.	d.
25 miles in length or under	0	6 (12½c.)	0	4 (8c.)
Over 25 miles and under 50 miles in length.	0	10 (20½c.)	0	6 (12½c.)
“ 50 “ 75 “	1	2 (28½c.)	0	9 (18½c.)
“ 75 “ 100 “	1	6 (37c.)	1	0 (24½c.)
“ 100 “ 125 “	1	10 (44c.)	1	2 (28½c.)
“ 125 “ 150 “	2	2 (53c.)	1	5 (35c.)
“ 150 “ 175 “	2	6 (61c.)	1	8 (41c.)
“ 175 “ 200 “	2	10 (69c.)	1	10 (44c.)

TELEPHONE TRUNK LINES—PRESS RATES.

Where telephone trunk lines connect two towns at both of which telephone attendants are employed during the night, the charge for conversations in the nature of press telegrams between the hours of 8 p.m. and 8 a.m. shall be as follows:—

Distance.	Rate for five minutes' conversation.
Not exceeding 50 miles	Six pence (12½ cents).
“ 100 “	Nine pence (18½ cents).
“ 150 “	One shilling and one penny (26½ cents).
“ 200 “	One shilling and five pence (37 cents).

The period for which a line may be used by any one person shall not exceed six (6) minutes in cases where other persons are waiting to use the line.

PRIVATE TELEPHONE LINES BETWEEN HOUSES, OFFICES, ETC.

Private telephone lines (special single wire and instruments not connected with any exchange) may be provided and maintained between private houses, offices, warehouses, mines, factories, or other places on payment of the following rates annually in advance for a term of not less than three years, and subject to the same general conditions as lines to the telephone exchanges:—

If within a radius of 20 miles of the capital or other large centre:—

	Per annum.		
	£	s.	d.
For each quarter mile or fraction thereof, radially, up to 1 mile.	1	5	0 (\$6.09)
For each additional half-mile or fraction thereof, radially, up to 20 miles	1	5	0 (\$6.09)
Outside 20 miles radius, at such rate as may be fixed by the Postmaster-General.		
Each set of telephones (magneto)	2	0	0 (\$9.74)

NOTE.—In cases where on private telephone lines between houses, offices, &c., on account of electric tram interference, a single wire is found to be unworkable, and when metallic circuits can be provided without inconvenience to the department, the charge shall be 50 per cent above that fixed by this regulation for a single wire.

REGULATIONS WITH REGARD TO PRIVATE TELEPHONE LINES IN COUNTRY DISTRICTS.

1. The Postmaster-General reserves the right to erect all private lines within the boundaries of any railway line, municipality, township or village, or along any public road.

2. Any person wishing to erect a private telephone line passing beyond the boundary of his own land must submit a plan and specification showing the route to be followed, especially marking where roads are to be crossed or entered upon, and describing the nature and dimensions of the materials to be used in the construction of the line, and any other particulars which may be required, upon receipt of which the Deputy Postmaster-General may direct an officer of the department to examine such plan and specification, and, if necessary, make an inspection of the route, the cost of such examination and inspection to be borne by the person wishing to erect the line; and should the report of such officer disclose that the line will not in any way interfere with or endanger any other line of telegraph, whether belonging to the Postmaster-General, the railway authorities, or any private person, and that the material and method of erection described in the specification are satisfactory, the Postmaster-General, may, upon payment of the necessary fees, grant permission to erect such line: Provided, however, that such permission shall in no case be granted where a line is to run from a point in the vicinity of a telegraph office to another point in a like vicinity, or in the event of the route of such proposed line being along any public road, railway, or track; or over or across any private land other than land belonging to the person desirous of erecting such private line, unless and until the necessary permission of the local authority or the owners of such private land (as the case may be) shall have been obtained, and satisfactory evidence to that effect shall have been forwarded to the Deputy Postmaster-General.

3. If the line crosses a road, track, or other public place, the height of the wire above the highest portion of the road, track, &c., shall not be less than 18 feet, and the poles carrying the wire at such places shall be of a substantial character and be strutted or stayed, if necessary, to stand the strain of the wire.

4. All fittings upon such poles, such as brackets, pins, insulators, wires, &c., shall be of approved material and make.

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5. The person to whom such permission has been granted, shall, upon the completion of the line, inform the Deputy Postmaster-General thereof, and an officer of the department may then be sent to inspect the line and report whether the work has been satisfactorily carried out. The cost of such inspection shall be borne by the person to whom permission to erect the line has been given. If the work be not to the satisfaction of the inspecting officer, he shall issue instructions as to what is required, and on the defects being made good a license to use the line may be issued.

6. Should the person to whom permission has been granted to erect the line fail to make good the defects pointed out, the Deputy Postmaster-General may take such steps as he may deem necessary to remove the portions objected to, and a license to use the line shall not be issued until the requirements of the Deputy Postmaster-General have been satisfactorily complied with.

7. On the completion of the line to the satisfaction of the Deputy Postmaster-General a license to use it shall be issued. A license fee of 5s. (\$1.22) per annum, payable in advance, shall be charged, irrespective of the length of the line. This fee covers the use of one line only. If the line be extended so as to connect additional stations, a further fee of 5s. (\$1.22) per annum for each additional line shall be charged; and, in the case of a line joining two pastoral holdings, a separate license-fee shall be charged for each holding occupied by a different lessee, irrespective of the length of the line, and such fee must be paid in advance.

8. Where such a line is erected partly on existing poles the property of the Postmaster-General, a sum of 25s. (\$6.09) per annum per mile, payable in advance, shall be charged for the portion erected on such poles, in addition to the license fee mentioned. The wire on such poles shall be erected and maintained by the Postmaster-General, and the licensee must undertake to rent the line for a period of six years.

9. If such line connect with a telegraph office, the following shall be the charges payable in respect thereof:—

For every telephone communicating with any telegraph office a fee of £1 (\$4.87) per annum shall be payable in advance. A further charge of £1 (\$4.87) per annum shall be payable in advance for the maintenance of the telephone in use at the telegraph office, which will be supplied by the Postmaster-General. The telephone for the use of the licensee may be either provided by him or purchased from the Postmaster-General, but must be maintained by the licensee to the satisfaction of the Postmaster-General.

10. Every message passing in either direction over any private line connected with any telegraph office, shall be considered as a telegram, and charged for at the following rates:—

- (a) For every message intended for transmission over the wires of the Postmaster-General in the usual way, the ordinary telegraphic charges shall be made.
- (b) For every message intended for delivery within a radius of one mile from the telegraph office in which the telephone is fixed, 6d. (12½ cents).
- (c) For every message handed in at the office in which the telephone is fixed for transmission over the telephone wire to the licensee's office, a charge of 6d. (12½ cents) shall be made.
- (d) The licensee shall deposit with the officer in charge of the telegraph office with which the line is connected a sum calculated to meet the cost of all communications passing over the line for a period of one month, such deposit to be renewed monthly, or more frequently, if necessary, and the licensee must accept the statement of such officer as to the charges.

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11. If the licensee of a line connected with any telegraph office desires to call any person to speak to him on such line, the following charges shall be made:—

For a messenger sent to call any person residing within the usual radius of free delivery of telegrams to the telegraph office, 6d. (12½ cents).

To call persons from beyond the radius of free delivery of telegrams the usual portage charges in addition to the above-mentioned charge of 6d. (12½ cents) shall be made.

If any person desires to speak from any telegraph office to the licensee of a line connected with such office he may do so upon payment of a sum of 6d. (12½ cents) for each conversation: Provided that the telephone is so placed in the post and telegraph office as not to require access to portions of the premises which by regulations are not open to the public except as above specified. Any attempt to use licensed lines for other than the business of the licensee may be met with by a withdrawal of the license to use such line and the forfeiture of any payments made.

12. The Deputy Postmaster-General may direct an official inspection of private telephone lines to be made periodically, and the officer making such inspection may direct the licensee to make such alterations or repairs as may to him appear necessary, and the licensee shall immediately carry out the same. In the event of his failing to do so within a reasonable time, the officer shall report to that effect, and the license to use such line may be cancelled.

13. The licensee shall be wholly responsible for the repair and maintenance of the line (except as regards the portion of it erected on poles the property of the Postmaster-General, and therefore maintained by the Postmaster-General) to the satisfaction of the Deputy Postmaster-General, and he shall undertake to maintain the same in a thoroughly efficient manner at his own cost, and any alterations, repairs, or other works which the Deputy Postmaster-General may, in the interest of the public safety or convenience, order to be done, shall be charged to the licensee, and may be recovered by the ordinary process of the law.

14. The licensee of a private line shall be responsible for any injury to life, limb, or property caused by the poles, wire, or other parts of such line (except, however, such portion of the line as may be erected on poles the property of the Postmaster-General, or which is maintained by the Postmaster-General).

15. When a private line does not connect with a telegraph office the licensee shall undertake that it shall be used for his own private purposes only, or by those authorized by him, with the approval of the Deputy Postmaster-General, to connect by telephone en route, and in no case shall he charge or accept a fee for the use of the line or for the transmission of any communication over the same; and in the event of it being proved that he has done so at any time, the license issued in respect of such line may be cancelled.

16. In the event of a licensee's line being found to interfere in any way with the erection of any lines by the Postmaster-General or the railway authorities, the Deputy Postmaster-General may direct the licensee's line to be altered, removed, re-erected in another position, or otherwise dealt with as may be deemed necessary.

17. The Deputy Postmaster-General may authorize the use, by any government official on public business, of any private telephone line erected after the publication of these regulations.

If the owner or licensee of any such private telephone line refuses to allow any such official, authorized as aforesaid, to use such line, the license issued in respect thereof may be cancelled.

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TELEPHONING OF TELEGRAMS.

LOCAL TELEPHONOGRAMS.

Transmission of Telegrams by Telephone.

Subscribers to telephone exchanges may transmit by telephone to any telegraph office which may be connected with a telephone exchange messages intended to be further transmitted from the telegraph office to the respective destinations of such messages as telegrams; provided they pay the usual cost of such telegrams in addition to the rates for transmission through the telephone.

Subscribers may also, at their own option, have telegrams addressed to them forwarded by telephone from the telegraph office of destination to their telephonic address, provided such telegraph office is connected with a telephone exchange; and copies of such telegrams will at the same time be posted for delivery to their address, stamped on the face 'Transmitted by telephone.'

Subscribers may elect to pay either an annual fee of £5 5s. for the transmission of telegrams by telephone or they may pay for each individual telegram transmitted.

The charges for transmitting telegrams through the telephone, when the annual fee of five guineas (£5 5s.) has not been paid, shall be as follows:—

	s.	d.	
For the first twenty words or under	0	3	(6 cents)
For each additional ten words or under	0	1	(2 cents)

Where telegrams are required to be transmitted by telephone over trunk lines for the use of which special fees are chargeable, these fees must be paid in addition to the above charges or the annual fee.

In addition to these rates the usual cost of the telegrams forwarded for transmission by wire must be paid, and persons wishing to avail themselves of the above-mentioned arrangement will be required to deposit with the department a sum sufficient to cover the cost of such telegrams for one month, such deposit to be renewed monthly, or more frequently if necessary.

The transcription of telegrams telephoned by subscribers will, so far as the department is concerned, become the original telegrams, but the department will not assume, or be subject to, any liability by reason or on account of any failure, delay, or mistake in or about the transmission, receipt, or delivery of any telegram under this arrangement from whatever cause the same may arise.

Subscribers may transmit messages through the telephone for delivery within a radius of one mile from the telegraph office connected with the telephone exchange at the ordinary telegram rate, to be paid either by the sender or addressee.

The precaution of asking the officer who receives a message by telephone to repeat it through the telephone after transcribing it and before transmitting it by wire to destination, must always be adopted. It must then be accepted by the sender as correct.

Telephonograms will not be transmitted over trunk lines.

Telephonograms advising the movements of shipping will be sent from the various stations connected by telegraph in any state to telephone subscribers on application, on payment of the ordinary telegram rates.

REGULATIONS TO PROVIDE FOR THE ERECTION OF PUBLIC TELEGRAPH OR TELEPHONE LINES
UNDER GUARANTEE.

1. Any person may apply in writing to the Postmaster-General for the construction of a telegraph or telephone line under these regulations.
2. Each application will be dealt with on its merits, but no application will be granted unless the Postmaster-General is satisfied that the line applied for is required in the public interest.

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3. No application shall be granted for the construction of a line not likely to yield a minimum revenue within a period of eight years after the construction of the line, unless the Postmaster-General is satisfied that there are special circumstances rendering its construction desirable.

4. If the line is not likely to yield, annually, an amount sufficient to provide—

- (a) For the cost of operating the line; and
- (b) Ten per cent on the cost of constructing the line and supplying the instruments (to cover maintenance, renewals, &c.).

(which amount is referred to in these regulations as a minimum revenue), the applicants shall, for the purpose of guaranteeing the receipt of that amount, comply with the following conditions, namely:—

- (a) The applicants shall deposit with the Postmaster-General a sum of money sufficient to pay the estimated cost of operating the line for two years, together with a sum equal to not less than ten per cent per annum for two years on the estimated cost of constructing the line and supplying instruments.
- (b) The applicants shall enter into a joint and several bond, in a sum to be fixed by the Postmaster-General, conditioned to make good any sum by which the receipts from the line in any year during a period of seven years after the completion of the line fall short of a minimum revenue.

5. The sum deposited with the Postmaster-General shall be placed to his credit in a savings bank, and such sum and any interest thereon shall be available for the purpose of making good in any year any amount by which the yearly receipts from the line fall short of a minimum revenue, and the sums required for that purpose may be withdrawn from the bank and paid to the consolidated revenue fund at such times as the Postmaster-General thinks proper.

6. The bond shall be in a form approved by the Postmaster-General, and payments under it shall be made within one month after demand by the Postmaster-General; but no such demand shall be made so long as the sum deposited, or any balance thereof, is sufficient to make good the amount required.

7. After the expiration of seven years from the completion of the line, the bond may be renewed or a new bond executed for such further period as the Postmaster-General directs, and if the bond is not so renewed or a new bond executed, the Postmaster-General may, unless he is satisfied that the line will yield a minimum revenue, remove it and the instruments.

8. Any balance of the sum deposited or interest thereon may after the expiration of seven years from the completion of the line, be returned to the applicants.

9. The line and instruments shall remain the property of the Postmaster-General.

10. These regulations shall take effect forthwith.

PUBLIC TELEGRAPH (OR TELEPHONE) LINES ERECTED AND MAINTAINED BY THE PERSONS
DESIRING SUCH LINES, INSTEAD OF BY THE DEPARTMENT UNDER GUARANTEE.

1. In cases where the estimated probable telegraph (or telephone) revenue is not sufficient to justify the erection and maintenance by the department of a telegraph (or telephone) line for public use without guarantee, and where it is considered by the persons applying for the erection and maintenance of such lines that it will be to their advantage to construct and maintain such lines at their own expense, the Postmaster-General may authorize the construction and maintenance of the line by such persons subject to the following conditions:—

- 1. The erection of the line shall be subject to the regulations with regard to private telephone lines in country districts so far as they apply, with the following exceptions:—

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- (a) Notwithstanding anything contained in the Post and Telegraph Act, 1901, or in any regulations, the persons constructing the lines shall not have or exercise any power to enter upon or interfere with any private land without the consent in writing of the owner thereof, the onus of obtaining which consent to lie upon the persons constructing the line.
 - (b) Where the line is erected on private land, the method of construction shall be at the option of the persons constructing the line, subject to the approval in writing of the owners of the land, the onus of obtaining which approval shall lie upon the persons constructing the line.
 - (c) Where the line is erected upon public land of the commonwealth or of a state, or on or across a road, railway, track, or other place used for traffic or accessible to the public, the method of construction and the poles and other material to be used shall be subject to the approval of the Deputy Postmaster-General, but the approval shall not be unreasonably withheld.
 - (d) No license fees shall be charged.
2. The persons constructing and maintaining the line shall nominate and submit to the Postmaster-General the names of one or two persons as the trustees for the line to represent them, and to receive on their account the amounts payable by the Postmaster-General, as hereinafter provided, for the use of the line for public purposes.
3. Upon the completion of the line the Postmaster-General may make arrangements for its use for public business, and provide for such attendance as may be necessary for operating the line at the cost of the department.
4. The charges for the use of the line by all persons, including those by whom it has been erected, and by whom it is to be maintained, shall be those prescribed by the Act or regulations, for the time being, for telegrams or telephonic conversations.
5. In consideration of the erection and maintenance by the persons concerned of the line for public business, the Postmaster-General shall pay to the trustees for the line such a proportion of the earnings of the line as may from time to time be agreed upon, but not more than two-thirds of the rates determined for suburban telegraph messages, or for telephonic conversations with the office with which the line is directly connected.
6. The Postmaster-General may at any time take possession of the line provided he make payment to the owners thereof at a valuation to be mutually agreed upon, or, failing such mutual agreement, by arbitration in the manner provided by section 155 of the Post and Telegraph Act, 1901.

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COMMONWEALTH OF AUSTRALIA.

(See also pages 354 and 635.)

EXTRACTS FROM A REPORT BY JOHN HESKETH, ESQ., ELECTRICAL ENGINEER, POSTMASTER-GENERAL'S DEPARTMENT, QUEENSLAND, ON MATTERS INVESTIGATED BY HIM DURING HIS RECENT TOUR IN AMERICA AND EUROPE, &C.

The SECRETARY,
Postmaster-General's Department.

I beg to submit herewith the following reports upon the points of chief interest among those investigated during the tour of inspection just completed:—

- I. Report upon the present position of the telephone art, with suggestions as to the action desirable for the proper development of the telephone systems of the Commonwealth of Australia.
- II. Report upon recent telegraphic developments in America and Europe.*
- III. Report on wireless telegraphy.*
- IV. Report upon methods of simultaneous telegraphy and telephony.
- V. Report upon the question of injurious affection of telegraph and telephone lines by strong current works.*

These reports will, as opportunity permits, be followed by others on minor or supplementary matters, as also upon the various technical details.

JOHN HESKETH,
Electrical Engineer.

Postmaster-General's Department, Queensland, March 12, 1905.

I.—REPORT UPON THE PRESENT POSITION OF THE TELEPHONE ART, WITH SUGGESTIONS AS TO THE ACTION DESIRABLE FOR THE PROPER DEVELOPMENT OF THE TELEPHONE SYSTEMS OF THE COMMONWEALTH OF AUSTRALIA.

In reporting upon the result of such a tour of inspection as that just completed, it appears well that an endeavour should be made to avoid technical or other unnecessary details, and to present conclusions supported only by outlined arguments, reserving for supplementary reports the technical and other detailed evidence in support of the conclusions.

It is assumed that a simple history of towns visited, and things seen would be valueless, unless accompanied by a statement of the lessons learnt, and that it were better to give a clear conclusion rather than a mass of evidence.

The conclusions will therefore be stated in this report, and the technical details reserved for supplements to be submitted as early as they can be prepared.

It will also be convenient to divide the report into the following sections:—

1. Development policy.
2. Charges, general consideration of.
3. Party lines.
4. Draft scheme of charges.
5. Rates in other countries.
6. Pay stations or call offices.

*Not printed.

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7. Country district lines and trunk lines.
8. Traffic questions.
9. Construction methods.
10. Construction costs.
11. Engineering methods and staff.
12. Selection of system.
13. Transmission standards.
14. Funds and administration.
15. Summary and recommendations.

1.—*Telephone Development Policy.*

It is noticeable that in some parts of the world the number of telephone instruments in use per hundred of population reaches a very high figure. Even in large cities, such as San Francisco, 12 per cent is attainable, while in small towns as high a figure as 23 per cent has been met. The percentage of telephones to population is generally spoken of as the 'development.' In Australia this development does not exceed 2 per cent.

It is a reasonable assumption that any telephone administration desires the system to be of the greatest good to the greatest number, and if there are any recognized means whereby this is to be obtained, then such should be adopted.

It is fair to assume that the policy which will insure a high development in San Francisco, or elsewhere, will do the same in Sydney or Melbourne, for though the development is controlled to some extent by local conditions, by far the preponderating factor is the policy.

Speaking generally, it is found that the highest development is to be found in those cities giving the best of services, at rates varying with the extent to which the service is used.

A cheap service is not necessarily one with a high development, and it is almost invariably inefficient.

On the other hand (although there are not lacking notable instances of high rates being accomplished by a most inefficient service), while high rates enable a high efficiency to be obtained, it is usually accompanied by a low development.

Between low rates and inefficient service, and high rates with a low development, there is a mean where the highest commercial efficiency and soundest development go together.

The question of development is inevitably connected with that of—

2.—*Telephone Charges.*

In this connection it is well to consider the experience of the independent telephone companies in the United States. In the majority of instances these companies commenced operations with but a faint conception of the possibilities of development. They built for subscribers in hundreds, and obtained them in thousands. Flat rates were adopted for competitive reasons, and were cut as low as inexperience suggested. These undertakings are now almost without exception endeavouring to find some means whereby the charges may be increased. They also recognize that the original scheme of flat rates (uniform rates for unlimited and varying services) was wrong in principle. They now wish to adopt the measured service basis of charging, but find it difficult to change from one to the other.

This is not the experience of the independent companies of America alone. It is the consensus of opinion of the world. It is no exaggeration to say that there are very few, if any, telephone engineers or administrators in the world who do not admit that telephone charges should be on the measured service; *i.e.*, the payment should vary with the extent to which the service is used.

This principle is carried into practice in various centres in the United States, Germany, Austria, Sweden, Switzerland, and, in short, in every well-developed centre.

It is noticeable that even where the measured service has not yet been introduced, provision is being made in modern equipments for metering each subscriber's calls separately. It is now a recognized feature in new equipments. Although the metering is not automatic, but usually effected manually by the operator, no serious trouble arises with subscribers through their accounts being questioned.

Having in view the existing charges in Australia, the question naturally arises how a measured service could be adopted there. In my opinion the most satisfactory way would be to refuse subscribers at the old flat rates from a given date, say, January 1, 1906, and from that date introduce a new scale of charges, the basis of which would be payments to vary with the size of the network, and the extent to which a line was used.

Before, however, going on to propose a definite scheme of charges, it is best to consider a second section of the question of development and charges, which is the subject of party lines.

3.—Party Lines.

It is beyond argument that to provide separate lines for each subscriber is generally more costly than to provide apparatus to enable two or more people to use the same line. Therefore, however low the rates for separate lines may be, the rates for party lines might be lower, and would enable a larger development to be obtained.

There are several kinds of party-line services, each possessing certain advantages, and giving good service. In the United States lines serving two, four, eight, ten, or even twenty different stations, have been used with every success, depending only upon the standard of service desired.

On all party lines only one party can use the line at a time, though the other parties on the same line can in some instances or systems 'listen in.'

On two-party 'selective' lines, if the line be disengaged, each party can be called, or can call the exchange without disturbing the other.

On four-party 'semi-selective' lines, if the line be disengaged, any party can call the exchange without disturbing the other parties, but when the exchange calls one party, one other also hears the call, and two of the four do not.

On party-lines having more than four instruments connected, each party hears calls for half the total number of instruments connected, but as each is called by a special call number of rings, the users soon become accustomed to this, and consider it no serious disadvantage.

The various different systems in use the world over have been carefully studied, and I would recommend for use in Australia the following:—

On all exchanges worked by suitable systems—

I. Two-party lines with selective ringing.

On branch exchanges for residences—

I. Two-party lines with selective ringing.

II. Four-party lines with semi-selective ringing.

For country districts service only, in addition to I. and II.—

III. Lines up to twenty parties, code ringing.

Each user on a two-party line should be restricted to an average of not more than ten outward calls a day, and each user of a four-party line to an average of not more than five. All inward calls (*from* other subscribers *to* party-line subscribers) are free.

Party-line calls should be restricted to not more than five minutes' duration.

These two provisions are necessary for the preservation of the privileges of the other parties on the line.

It would also be necessary to make certain stipulations as to the locality of party-line subscribers. That is to say, the subscribers to a four-party line should be required to be within a circle of a certain prescribed radius, or in the case of a city,

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so located that the connecting wires need not cross streets; but these would be matters for inclusion in draft regulations when the broad principle has been approved.

The technical details connected with party-lines will be dealt with at greater length in a later report; but it may be sufficient here to state that the foregoing selection is made with a view to giving the greatest range to the service (*i.e.*, the possibility of attracting users of widely varying needs) while preserving a system free from costly complication.

It should be clearly understood that party-lines and the consequent cheaper services are impossible on our present systems.

There is, however, no reason why a new system should not work in conjunction with the old one for a time. That is to say, a common battery system could be adopted and new party lines connected thereto without necessarily interfering with the existing equipment. There are objections to this course from traffic considerations, but it would be far better to work two dissimilar switchboards in one office than to continue the disabilities of our present obsolete systems.

It will be seen, therefore, that the necessary preliminaries to a satisfactory revision of our methods of service are:—

- I. The adoption of a system enabling party lines to be operated.
- II. The adoption of a measured service.

4.—*Draft Scheme of Charges.*

Any revised scheme should, in my opinion, include varying charges for Exchanges of different sizes. The estimated ultimate size of the Exchange is that to be kept in view when fixing the charges. It is, however, well to have in view, first, a scale showing the main charges for differing services in the largest Exchanges.

It is first necessary to lay down the number of calls to be included in the fixed annual charge. In laying down this number, care should be taken that it is not placed too high, or the minimum charge will prove also the maximum revenue per subscriber, as measured service users will cut down the use to a minimum. It is best to allow a minimum which is found to meet the requirements of the smaller users, larger users paying for the additional service. I, therefore, suggest two calls a working day, or 600 per annum as a fair allowance. This is about the average number of conversations per subscriber in Switzerland.

Additional calls should be charged for at as low a rate as will be remunerative. Although it appears a very low figure, I should be strongly in favour of adopting a rate of £1 for every 500 calls, or, say, a half-penny per call, over the number covered by the annual subscription. This is the rate adopted by the National Telephone Company, England.

Party lines should produce a revenue equal to that from a separate line, plus the cost of providing the necessary extra instrument and additional wire, and attending to all extra calls.

To suggest a definite schedule of charges is not at all an easy task. The rates at present charged are far too low for an unlimited service, and by comparison any figures on measured service basis suffer. Unconsciously, the judgment on any revised scheme is biased by that at present in force.

I have not with me all the necessary figures of the present costs in Melbourne or Sydney to enable a close calculation to be made, but I am strongly inclined to the opinion that if the capital necessary for the carrying out of the proposed works is kept distinct, and the new work regarded as financially separate from the old, then on the measured service suggested above, namely, with only 600 calls per annum free, the following rates for services within one mile from the Exchange would be remunerative, even in the largest Australian centres if the systems are given proper commercial management:—

Separate line.	£7 0 0	per annum.
Two party lines, each party.	5 0 0	"
Four party lines, each party.	3 10 0	"

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UNLIMITED SERVICE CHARGES.

While in what has gone before, it has been assumed that the whole of the services would be measured and charged accordingly on any revision being made, it is but fair to state that in many large centres where the measured service has been adopted there is in vogue at the same time a system of charging for unlimited service. These fixed charges are, however, calculated on a measured basis, and are correspondingly high. The difference between the highest measured service rate and the lowest charge for an unlimited service is always great.

Assuming that fifteen calls are made on each working day, or 4,600 per annum (and this is exceeded by many users in the state capitals), a fixed annual charge on the measured basis should not be less than—

Separate line and 600 calls.	£7 0 0
4,000 extra calls at £1 per 500.	8 0 0
	£15 0 0

This is equivalent to saying that if a large user guarantees to use the line fifteen times a day, he is given free as many more calls as he cares to make.

In my opinion, however, by far the greater proportion of our telephone users of the future will be those who use the instruments from three to five times a day, and it is by the attraction of such users that the best development of the system is attained. It is for this large majority of the so-far unreached public that any new scheme should be drafted.

Large users must have the service. They know its value, and need no attractions offered to them. Smaller users must be attracted by rates in conformity with their use of the service, and by special facilities to meet their special needs.

I am aware that these suggestions, if adopted, will at least mean withholding the present rates from some future subscribers, some of whom may consider that they have cause to complain, but the proposed scheme will mean that a far larger number of subscribers will be attracted by lower rates, and that in the end the greatest good to the greatest number will be attained.

These suggestions mean that a small shopkeeper on a branch Exchange may have an efficient telephone service on a wire shared by three others, and make two outward calls a day (receiving all inward calls free) for £3 10s. a year. A shopkeeper requiring a freer service, shared only by one other, on the central, or any other Exchange, would pay £5, while a person requiring a line for his special use would pay £7. They would all be on the same basis as regards payments for calls beyond the 600 a year covered by the fixed annual charge, paying for such extra calls at the schedule rates.

It should also be noted that these are the rates considered suitable for the largest centres, such as Sydney or Melbourne, and that for smaller towns, rates as much as 20, or possibly 25 per cent lower may, according to the estimated ultimate size of the Exchange, be calculated upon with safety.

The questions for settlement on this subject of rates are therefore—

- I. Shall the present rates be withdrawn, and measured service on the above or a modified basis be substituted?
- II. Shall the existing flat rates be withdrawn altogether; or
- III. Shall they be allowed to existing subscribers so long as their existing services are continued in the present form?

My recommendation in the latter portion of this report is in favour of I. and III., and against II. III. would, however, mean that any change in existing services would be followed by a withdrawal of present rates, and the introduction of the new scale of charges.

I would, however, point out in the strongest manner possible, that to amend the rates to any but a measured service basis will prejudice the success of the systems of the Commonwealth, while if a graded measured service, somewhat on the lines in AUSTRALIA.

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icated is adopted, I am confident that the results obtained elsewhere will be found also in Australia.

5.—*Rates in other Countries.*

I append hereto a schedule showing typical rates of subscription in various Exchanges visited. The schedule could be extended to cover other Exchanges, but the present list is typical, embodying all classes of service and charges. The extended schedule can be submitted at any time if desired.

I beg to ask that the present schedule be read with the greatest caution. The rates themselves in many instances appear most attractive, but they are one side of the picture only.

As indicating the effect of local conditions, Stockholm may be instanced. Here operators receive 50 kr. a month, or, say, £36 per annum, as compared with £110 in Australia. The tariff being arranged on a measured service basis, the calls per subscriber are reduced, and each operator is enabled to attend to 250 subscribers; two and-a-half times as many as in Sydney, or over three times as many as in Melbourne.

The net effect of this is, that the cost of *operating alone* in Australia is about £2 per annum per subscriber higher than in Stockholm.

The costs of labour on construction are in a ratio equally unfavourable to similar low rates in Australia, labourers receiving the equivalent of 3s. 6d. to 4s. 6d. a day. Add to this the fact that the cheap rate subscribers in Stockholm are connected to separate old pattern boards where they are given an admittedly inferior service, and the exceptional rates are explained.

The Swiss figures are, if anything, more misleading, for the fee indicated is the minimum, and includes no calls. Five centimes is charged for every call. Further, in the administration report for 1903, the following conclusion appears in connexion with a report called for as to the ways and means to be adopted to establish a better equilibrium between the receipts and expenditure of the Telegraph and Telephone Department.

‘The telephone rates do not bear a just relation to the cost of construction and maintenance.’

It is worthy of note also that in 1903 (see Swiss Departmental Report) the average charge for telephone service throughout Switzerland was £3 14s. for under 600 calls for each subscriber. Yet, at the Swiss rates, if the service, instead of being used only twice a day, had been used twelve times a day, a lower average than that in Melbourne or Sydney, the average charge would have been £9 12s., or a higher rate than in Melbourne or Sydney for a less service. This takes no account of the lower pay for operators in Switzerland, £50 as against £110 in Australia.

The American Independent movement is now suffering from the effects of having fixed the rates too low. In only one independent company was I told that the rates were adequate, and in this instance they were higher than the competing Bell Company. In all the other cases there was a movement in favour of higher rates, as those now in force did not allow the class of service required to be maintained. Even the post-office London rates have been fixed by considerations of policy, and not finance.

Briefly stated, the lessons to be learnt as to rates are that a service can be given at almost any rate that is fixed, but that for a good service a good price must be paid. A bad telephone service is dear at any price.

The service of the New York Telephone Company may be taken as a great example of good service. There is no better telephone service in the world, but the rates are the highest I know of. Every detail of the work of this company is admirably carried out, and the users do not grudge the seeming heavy payment, because they receive such splendid service.

6.—*Pay Stations or Call-offices.*

Call-offices play a prominent part in the development of any American Telephone system. They are situated in every block, and are largely used, not only by non-subscribers, but by subscribers.

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In one large city the revenue for one month from prepayment instruments alone (nickel in the slot) was over £10,000. This will give some idea of the extent to which such services are used. These were not all necessarily call-offices, but could be used as such if subscribers desired.

It appears to be desirable in forming a policy of telephone development, to be as liberal as possible with such call-offices. It seems advisable to open them, not only where any small shopkeeper is prepared to guarantee the minimum party-line revenue, but also where the departmental officers estimate that such a minimum revenue will be obtained.

It also is desirable that the installation should be made in advance, on the assumption that the instruments will be used, instead of waiting for a weighty request for the installation.

It is just as important that the Department should seek out desirable places in which to fix instruments as call-offices, as it is that possible subscribers should be sought out and obtained as clients.

Call-offices tend to assist in the full development of any scheme. They can be opened on a party-line if there is any doubt that a separate line would not be remunerative; and, in fact, can be graded in service just as can subscribers' instruments.

I think that the call-office fee could, under the new conditions, be reduced to 2d., and even later to 1d., with safety.

7.—*Country District Lines and Trunk Lines.*

The independent telephone movement in the United States, in my opinion, owes its success to the manner in which it has dealt with the problem of country district lines; and where it fails to obtain the desired hold upon the public, it is by reason of the failure to establish a good toll line service.

Where the Bell Company, or its licensees, first appear to have invited opposition is in those places where they adopt conservative methods, confining their attention to comparatively large centres, and neglecting the outlying district. They appear to have thought that, because their hold upon a city was strong, they could neglect the country districts. This has proved to be a most mistaken idea.

To briefly condense the conclusion, it is impossible to avoid after a close study of American conditions, I believe that to establish any telephone system upon secure lines—lines which will induce the greatest number of people to partake in its privileges, is not to leave the outside districts until the large centres are fully provided for, but to build from the outside districts in towards the large centres, or, at the very least, to give to the outside districts an equal share of attention.

It were better to leave the cities to press their requirements, and to go out offering the advantages to the country districts, than to do the reverse. The business men in cities know the use and convenience of a good telephone system; the farmer may not. Therefore special care should be taken that the advantages are pointed out to him, and that he is given every facility for sharing them.

By reason of their length and small number, such lines may appear costly to construct, but they can be so arranged as to serve 10 to 20 points, so that the cost per station connected may be reasonably low. It is useless trying to develop a country district scheme on a 'one-line, one-instrument' basis, or upon the class of construction adopted in cities. Ten, or even twenty, instruments can work well on a line up to 20 miles long, or even longer, and the line itself may be of cheap construction. Trees should be used wherever possible, or, failing them, short poles (erected so as to be clear of traffic), bracket pins and glass insulators, or 'screwed stem' insulators, with iron or steel wire, is a class of construction quite adequate for such lines.

The instruments must be of the best, with high-grade transmitters, high-resistance bell coils (branching system), and strong generators; but with such instruments and care, even cheap line construction will allow the users to speak over trunk lines connected thereto up to 500 or 600 miles, or even further.

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But, as such country district lines usually connect to small towns, it is necessary to connect these small towns by trunk lines to the nearest large centre.

Here, again, it is found good commercial practice to build feeder lines cheaply, and to be liberal in providing them. From the experience gained on this tour of inspection, there would appear to be every justification for being far more liberal in the future in preparing estimates of the revenue to be derived from the opening of trunk lines to small country townships.

It is reasonably possible further to lay down general lines upon which an approximate estimate of the earning capacity of any proposed line may be made. For instance, there are definite known relations between the population and the trunk line revenue, and also between the construction cost and revenue necessary to make that cost commercially remunerative. Similar figures, which must be governed largely by local conditions, should shortly be obtainable in Australia, and form the basis for a similar policy of trunk line development.

It seems desirable that a special study be made of existing trunk lines, so that constants may be arrived at for future guidance.

While, however, cheap methods of construction are adopted for feeder lines, the greatest care is taken in the States that this cheap construction is not carried to the point where it imports inefficiency. Each case should be considered upon its merits, and designed so as to afford the convenience ultimately to be required, at a minimum cost.

But, while it is the practice to provide such lines freely in America, the use of them is not given free. There is a definite, and not very wide, area, within which any annual subscription entitles a subscriber to communicate from a given exchange. Beyond this area all conversations are taxed.

The usual charge for the use of trunk lines in America is \$0.006 ($\frac{6}{100}$ of a cent) per mile for three minutes. That is to say, 3 minutes' conversation over a line 100 miles long costs 2s. 6d. It is an axiom in most American telephone systems that the toll lines pay the dividends.

In some countries in Europe, the policy adopted in New South Wales of allowing subscribers the free use of lines joining two exchanges far apart, and not properly to be regarded as within the same area, has been followed, but in every instance it is regarded as bad policy, to be broken away from as soon as possible, and not to be extended. It is nowhere to be found in practice in America.

It is the practice in America to make the unit of time for trunk line conversations three minutes, but to allow subsequent minutes to be taken, and charged for separately. This is different from our practice, where the unit of time is indivisible, whether it be the first or subsequent three-minute periods, all must be paid for as full periods.

It is also the practice to allow conversations at night time for lower rates than during the day. Both these practices seem worthy of adoption, in some degree, in Australia.

The methods adopted to encourage the use of country district lines in America have been various. Briefly, they may be classed as follows:—

1. The service is provided entirely by the telephone company.
2. The service is provided jointly by the telephone company and the user, or users.

In the latter case the telephone company give advice to the users, and assist them by obtaining standard materials, &c., to enable them to build a line in conformity with the standard practice.

The extent to which the telephone company, or the users, are responsible for the different sections of the work varies widely, and it seems useless detailing the different propositions in this report.

It appears to be most desirable to adopt a very flexible scheme of charges to meet the varying conditions in Australia. It appears, also, to be advisable that means be

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taken by advertisement in journals circulating in country districts, and by the preparation of special explanatory pamphlets or circulars, to set clearly before the farmers and settlers generally the terms upon which the advantage of telephonic communication may be obtained, and the steps necessary to be taken to have such lines constructed.

14.—*Funds and Administration.*

It will probably be conceded that the administration of a government telephone department should be conducted on strictly business lines. Subscribers should be attracted by rates as low as the cost of the service will allow, and by an irreproachable system. Further, the advantages of partaking in the telephone system should be set before such as are ignorant of them. For this purpose agents or canvassers should be employed in all large centres.

I am convinced that if the policy outlined in this report is adopted, there will be such an influx of telephone business as will tax all the resources of the staffs in the different centres.

A large expenditure on construction account will also be unavoidable. It is, of course, impossible in this report to include even an approximate estimate of the expenditure for, say, each of the next five years, but it will exceed that of the past inasmuch as the number of subscribers will increase.

It will be necessary to prepare detailed estimates for each centre upon the lines indicated, if the suggestions are approved.

While the expenditure on construction account must inevitably increase as the business expands, I venture to place before the minister the great desirability of ascertaining definitely the financial position of the telephone section of the department in each state, so that it may be treated as though it were a separate organization as far as possible. I am convinced that it can be readily made into a profit-earning section, even though it be not so at the present time; and I feel sure that upon its being shown that the telephone section is profitable, there will be no difficulty placed in the way of obtaining funds for the necessary extensions.

I venture to comment thus upon the financial aspect of the undertaking, as it is observable in some countries that when a government department fails to properly administer the telephone work, there is a tendency to pass on the franchise to private companies. Such companies succeed in turning the business into a dividend-earning undertaking.

I am sure that any proposition to 'farm out' the telephone business in Australia would meet with little support, especially should a commercial policy be adopted by the department. But a commercial policy is impossible without capital and commercial methods. The proper extension of the telephone systems in the large centres will inevitably demand both these. Unless the necessary funds are forthcoming, and unless the methods found commercially successful elsewhere are adopted, proper telephone development is impossible.

I would, however, repeat that with proper management, whatever capital is invested, will earn not only working costs, maintenance, interest and sinking fund, but a margin beyond.

The lines indicated in this report are those which commercial companies have found to succeed. I see every reason for believing that, if adopted, they will be equally successful in Australia.

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IV.—REPORT UPON METHODS OF SIMULTANEOUS TELEGRAPHY AND TELEPHONY.

Simultaneous systems may be broadly divided as follows:—

- I. Metallic circuit lines with telegraph superimposed.
- II. Two metallic circuit telephone lines with third telephone superimposed.
- III. Single wire telegraph circuit with telephone superimposed.
- IV. Two single wire telegraph circuit with telephone superimposed.

The first class has been well developed and works well under almost all circumstances. There is a slight loss in efficiency, but with the latest methods this need not be serious. It has already been used with success in Queensland for some time over distances up to 80 miles.

This method should be of great use in Australia, where the erection of one additional wire will enable a metallic circuit telephone trunk line to be provided. It has the advantage that the telephone portion of the line can be worked in conjunction with ordinary telephone exchanges without detriment.

The second method, of working three metallic circuit telephone lines over four wires, is also one which has had extensive application. It is used in various parts of the Commonwealth with good success, where the conditions are favourable. This method is usually employed most successfully on open aerial lines. If used on cables it is not suitable for distances over a few miles unless the cable has been specially constructed. Cables, as usually manufactured, are not suitable for 'Phantom' working, as this method is sometimes called.

The third method is that which is usually most attractive, but the difficulty of obtaining perfectly satisfactory results, especially for exchange working are very great, although the principle upon which the system depends is well known, and has been used for quite a long time in various parts of the world. I know it to have been successfully worked in Victoria for many years, and in Queensland since 1896.

The system was first introduced extensively in Belgium, where it is still employed freely where the conditions are suitable. It is, however, noticeable that even in Belgium properly constructed metallic circuits are used for the more important trunks where the traffic is such as to demand the more efficient and more perfect method.

In America the telephone companies do not use this method at all. They use methods I. and II., but III. is used only by railways and such companies, and almost exclusively for point-to-point working, *i.e.*, not for exchange purposes.

For railway point-to-point purposes of superimposed working, the American Telegraph and Telephone Company have developed a most successful instrument which I had the opportunity of testing and inspecting in ordinary operation.

At these tests, I was able to speak over these instruments upon a telegraph line 40 miles long, having five telegraph stations on it, three being intermediate between the two telephone stations tested. There were five telephones superimposed on this circuit which was erected upon a line of poles carrying fifteen other Morse lines.

The ringing was firm and reliable, and the speech was good. The Morse signals were practically blotted out. All their sharpness was gone and practically they did not interfere with speech to any appreciable extent. Other circuits were tested with equally satisfactory results.

Turchi and Brune's system is a most promising one, but it has not yet been widely applied by any administration, so far as I could learn, and the practicable results cannot be definitely stated.

From trials I have made of the system, it has no advantages over that of the A. T. & T. Co., which depends upon a closely allied principle.

There is no perfect system of superimposed working, nor in the nature of them can any such be expected. All methods have varying prejudicial influence upon either

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(or possibly both) telegraph or telephone. It is not practicable to get both as perfect as though they were using separate lines. The aim usually is to influence that which has the greatest margin. This usually is the telegraph. It is not advisable to superimpose a telephone upon a telegraph line having little margin, but as telegraph lines worked on the Morse system have usually a fair margin, the method so far generally adopted has been to choke down the telegraph impulses till their sharpness is gone, and they are inaudible in the telephone. The A.T.T. Co.'s method is not entirely dependent upon the usual choking devices which are, as a rule, in series with the telegraph relays, &c. It uses an impedance coil as a shunt across the receiver in the telephone set, compensating for the loss of telephone currents by increasing the speaking battery. Speaking generally, this is by far the most promising system so far seen for services of the third-class.

The fourth method is more effective than the third. It is the one upon which the Townsville to Charters Towers telephone trunk line was first worked in 1897 or 1898, and on which the revenue was sufficient to show that a proper copper line was fully justified. For this method apparatus and connections are fairly standard, but they are not much used in countries where commercial competition compels the best of commercial methods.

General Considerations.—It appears that the following generalizations can safely be made from the consensus of the practical experience of the world.

Methods I and II. may with advantage be used in very many instances. Their advantages and economies are obvious where the limiting conditions of commercial speech are not approached, that is to say, where there is any margin.

III. is a most useful method for 'point-to-point' working, but it is in very few instances that it will be found sufficiently good to allow it to be used for trunk line purposes, especially where the users have before them a good standard of comparison.

Method IV. is the most promising means of utilizing existing wires, but its range is, unfortunately, somewhat limited.

The experience gained during the past eight months will, however, I trust, enable me to embody in my later technical notes on this subject, conditions which have been found to enable the various methods to succeed, and to suggest certain standards for general adoption. It appears evident that in the case of new trunk lines, where the revenue is problematical, the possibilities of methods III. and IV. should be fully exhausted before the expenditure necessary for a trial of I. or II. is recommended.

I do not, however, hold out much hope that either III. or IV. will prove of service for long distances than 100 miles, unless a comparatively low standard of transmission is accepted as sufficient in such cases.

III. will be found mainly of use in country districts for 'point-to-point' working, and IV. for tentative lines, for exchange working, where it is not known that the revenue will justify a better and, therefore, a more expensive method.

The technical notes hereon will be submitted as early as possible.

JOHN HESKETH,
Electrical Engineer.

Postmaster-General's Department, Queensland, March 12, 1905.

APPENDIX No. 1

No. 297.

SUMMARY OF REPLIES RECEIVED BY 'THE UNION OF CANADIAN MUNICIPALITIES' FROM VARIOUS CITIES AND TOWNS
RE LOCAL TELEPHONIC CONDITIONS

QUESTION No. 1.

Have you a municipal system? If so, please send all particulars of capital cost, operation, extent of business, progress, satisfaction, and all other useful particulars?

The answer 'No' was received from the following:—

Ontario.

Almonte, Belleville, Brockville, Cornwall, Deseronto, Gananoque, Goderich, Hawkesbury, Hespeler, Hintonburg, Kincardine, Kingston, Meaford, Merritton, Mount Forest, North Bay, Paris, Peterborough, St. Thomas, Sarnia, Seaforth, Stratford, Trenton, Walkerton, Whitby, Woodstock.

Quebec.

Calumet, Montreal, Ormstown, Outremont, Richmond, St. Hyacinthe, Scotstown, Stanstead.

Maritime Provinces.

Moncton, St. Stephen, North Sydney, Westville.

British Columbia.

Chilliwack, Revelstoke, Rossland, Slocan, Victoria.

Manitoba.

Carberry, Emerson, Portage la Prairie, Winnipeg.

QUESTION No. 2.

What telephone company or companies are operating within your municipality?

Ontario.

Answer No. 1.—'The Bell Telephone Company of Canada.'—Almonte, Belleville, Brockville, Cornwall, Deseronto, Gananoque, Goderich, Hawkesbury, Hespeler, Hintonburg, Kincardine, Kingston, Meaford, Merritton, Mount Forest, North Bay, Paris, St. Thomas, Sarnia, Seaforth, Stratford, Trenton, Walkerton, Whitby, Woodstock.

Answer No. 2.—'The Bell Telephone Company. The Canadian Machine Telephone Company is installing a plant and will be in operation in about two weeks.'—Peterborough.

Quebec.

Answer No. 1.—'The Bell Telephone Company.'—Calumet, Ormstown, Outremont, St. Hyacinthe.

Answer No. 2.—'The Bell Telephone Company and Merchants Telephone Company.'—Montreal.

Answer No. 3.—'The Bell Telephone Company and the People's Telephone Company.'—Richmond, Stanstead.

Answer No. 4.—'The Belle Telephone Company and Canadian Telephone Company.'—Scotstown.

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New Brunswick.

- Answer No. 1.—‘The New Brunswick Telephone Company.’—Moncton, N.B.
 Answer No. 2.—‘The New Brunswick Telephone Company. (Another company is asking for leave to run wires through the streets, and has a charter from the legislature but no agreement with the town.)’—St. Stephen, N.B.

Nova Scotia.

- Answer No. 1.—‘The Nova Scotia Telephone Company.’—New Glasgow, N.S., Westville.
 Answer No. 2.—‘The Eastern Telephone Company.’—North Sydney.

British Columbia.

- Answer No. 1.—‘The British Columbia Electric Company.’—Chilliwack, Rossland, Victoria.
 Answer No. 2.—‘The Revelstoke, Trout Lake and Big Bend Telephone Company, Ltd.’—Revelstoke.
 Answer No. 3.—‘None.’—Slocan.

Manitoba.

- Answer No. 1.—‘The Bell Telephone Company.’—Carberry, Emerson, Portage la Prairie, Winnipeg.

QUESTION NO. 3.

Have you any agreement with the company? If so, what are its terms?

Ontario.

- Answer No. 1.—‘No.’—Almonte, Cornwall, Deseronto, Gananoque, Goderich, Hawkesbury, Hespeler, Hintonburg, Kincardine, Meaford, Merritton, Mount Forest, Paris, Sarnia, Seaforth, Whitby.
 Answer No. 2.—‘The Bell Telephone Company pays for exclusive franchise, as follows:—
 Belleville—‘\$300 per annum.’
 Brockville—‘\$350, town to use poles for fire alarm wires free of charge.’
 Kingston—‘\$700, and gives the city ten connections, long-distance equipment, at a reduction of one-third off rates for business telephone.’
 North Bay—‘Furnishes three instruments for five years without charge.’
 Stratford—Placed wires underground, provided facilities for fire alarm wires.’
 St. Thomas—‘\$500.’
 Trenton—‘\$100, and gives three free telephones.’
 Woodstock—‘The Bell Company has an exclusive franchise in return for placing wires in the business portion of Dundas street in conduits.’
 Peterborough—‘No agreement with Bell Telephone Company. Has an agreement with the Canadian Machine Telephone Company, copy of which has been supplied to Committee.’ (Printed in Appendix ‘A,’ page 24).
 Walkerton—‘Town pays \$100 for an all-night service and has four ‘phones free.’

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Answer No. 1.—'No.'—Calumet, St. Hyacinthe, Scotstown, Stanstead.

Answer No. 2.—'The Bell Telephone Company. Terms not stated.'—Ormstown, Outremont.

Richmond—'The People's Telephone Company furnish the corporation with ten 'phones, and charge \$70 per annum for same.'

Montreal—'The Merchants' Telephone Company has a special agreement, of which the following is a summary:—

'The company has the right to erect poles in certain streets, provided that the Central Electric Company, the Citizens' Light and Power Company, the Temple Electric Company, and the St. Henri Light and Power Company have the right to use the said poles at prices agreed upon or to be fixed by experts, that said poles be erected in lanes as much as possible, and that the said company and other companies shall put their wires underground when requested to do so by the city.'

Maritime Provinces.

Answer No. 1.—'No.'—Moncton, N.B., North Sydney, N.S., Westville, N.S.

St. Stephen, N.B.—'No. Except in respect to painting its poles and other minor matters.'

British Columbia.

Answer No. 1.—'No.'—Chilliwack, Revelstoke, Slocan, Victoria.

Rossland—'The city uses the poles of the British Columbia Telephone Company and pays therefor \$100 per year, the company giving one business 'phone free.'

Manitoba.

Answer No. 1.—'No.'—Carberry, Emerson, Portage la Prairie, Winnipeg.

QUESTION No. 4.

What is the annual charge made by the company (a) for public telephones, (b) residence or (c) party line service? Any other charge?

SUMMARY OF REPLIES.

Municipality.	Business.	Residence.	L. D. Equipment.	Party Lines.	Remarks.
	\$	\$	\$	\$	
Scotstown, Que.	12	12			Canadian Telephone Co.; local service.
"	15	15			Long distance, two centrals.
Kincardine, Ont.	15	15			
Mount Forest, Ont.	15	15			
Seaforth, Ont.	15	15			
Richmond, Que.	15	15			(Bell); also charge for outside service.
"	15	15			(Peoples); no charge for outside service.
Almonte, Ont.	20	15			
Cornwall, Ont.	20	15			For ordinary wall sets.
Hespeler, Ont.	20	20			
"		15			For residence of business subscribers; charge us extra everything it is possible to charge for.
St. Hyacinthe, Que.	20	20			For residence of business subscriber.
"		10			
St. Stephen, N.B.	20	20			
"	15	15			For second and subsequent connections; \$5 extra for connection with N.E. Tel. Co.'s lines in Calais.
Deseronto, Ont.	20	20	35		
Goderich, Ont.	20	20	25		
Hawkesbury, Ont.	20	20			
Meaford, Ont.	20	20			
Paris, Ont.	20	20	25		
Trenton, Ont.	20	20	25		
Orms town, Que.	20	20			
Brockville, Ont.	25	20			Extra charge for long distance.
Gananoque, Ont.	25	25			
"	20	20			On three years contract.
North Bay, Ont.	25	20			
Peterborough, Ont.	25	20		15 to 18	Bell Co.
"	20	15			Canadian Machine Co.
"	15	15			C. M. Co.; business and residence of same subscriber.
St. Thomas, Ont.	25	20		15	Three on same line.
Sarnia, Ont.	25	25	30		
Stratford, Ont.	25	20	30 and 25		
Whitby, Ont.	25	20			
Stanstead, Que.	25	25	35		
Moncton, N.B.	25	20			
"	20	20			Business and residence of same subscriber.
Carberry, Man.	25	15			
Emerson, Man.	25	18			Desk phones \$2.50 extra.
Belleville, Ont.	30	30			
"	25	25			On three years contract.
Kingston, Ont.	25	20	30 and 25	18	Two on same line.
"				15	Three or four on same line.
Woodstock, Ont.	30	25			
Walkerton, Ont.	30	20			
North Sydney, N.S.	30				
Westville, N.S.	30	30			
Portage la Prairie, Man.	30	20			
Calumet, Que.	35	35			
Merriton, Ont.	40	20			
Hintonburg, Ont.	45	25			Plus \$5 per quarter mile distant from Ottawa.
Revelstoke, B.C.	48	30			
Rossland, B.C.	48	36		24	
Victoria, B.C.	48	36		24	
Winnipeg, Man.	50	30			
Outremont, Que.	40	35			Within half mile of Mount Royal Avenue.
"	60	40			Beyond half mile.
Montreal, Que.	50	30	55 and 35		

QUESTION NO. 5.

What is the annual contribution of the company to the funds of the municipality?

Ontario.

- Gananoque, Hintonburg, Peterboro, Stratford, Hawkesbury, Kincardine, Sarnia, Woodstock—'Nothing.'
- Almonte—'Assessed now for 60 per cent of gross receipts; assessment is about \$1,400, on which they pay taxes.'
- Belleville—'\$300, as above, besides taxes on premises used and ordinary assessment.'
- Brockville—'\$300.'
- Cornwall—'Their taxes do not reach \$200.'
- Deseronto—'Taxes only.'
- Goderich—'Taxes only, \$41.25 last year.'
- Hespeler—'Taxes only, \$30.75 last year.'
- Kingston—'\$700.'
- Meaford—'They only pay a municipal tax on \$1,000 assessment. Last year's tax was \$28.40.'
- Merriton—'\$16.18.'
- Mount Forest—'\$12.'
- North Bay—'Taxes only.'
- Paris—'\$23.'
- St. Thomas—'\$500.'
- Seaforth—'\$12.25 last year; municipal tax on plant.'
- Trenton—'\$100; 3 telephones \$60.'
- Walkerton—'Assessed at \$1,500.'
- Whitby—'Taxes, 1904, \$16.08.'

Quebec.

- Calumet, Montreal, Ormstown, Outremont, Scotstown, Stanstead—'Nothing.'
- Richmond—'All telephone, telegraph and electric companies pay annual tax of \$20.'
- St. Hyacinthe—'\$100 tax.'

Maritime Provinces.

- Moncton, N.B.—'Nothing, only city gets what telephones they want at \$20 per year instead of \$25.'
- St. Stephens, N.B.—'Nothing.'
- North Sydney, N.S.—'Taxes about \$30.'
- Westville, N.S.—'Taxes, 1904, \$16.50.'

British Columbia.

- Chilliwack and Victoria—'Nothing.'
- Revelstoke—'\$10 license and taxes last year \$26.'
- Rossland—'\$100 per year for license and nominal tax on plant.'

Manicoba.

- Carberry—'Between \$20 and \$30.'
- Emerson—'Nothing.'
- Portage la Prairie—'Taxes \$130.'
- Winnipeg—'Company subject to usual municipal taxation, and business tax on the property of the company, i.e., exchange wires and appliances.'

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QUESTION No. 6.

Does the company furnish free telephones for corporation use; if so, how many?

Ontario.

- Almonte, Brockville, Belleville, Cornwall, Deseronto, Gananoque, Goderich, Hespeler, Hintonburg, Kincardine, Kingston, Meaford, Mount Forest, Paris, Peterboro, Seaforth, Whitby—'No.'
 Hawkesbury—'One only in clerk's office.'
 Merritton—'One.'
 North Bay—'Three.'
 St. Thomas—'Three, and a reduced rate on waterworks phone.'
 Sarnia—'Six (the company has also been keeping the fire alarm wires in repair without charge.'
 Stratford—'Two.'
 Trenton—'Three.'
 Walkerton—'Four.'

Quebec.

- Calumet, Montreal, Ormstown, Outremont, Richmond, St. Hyacinthe, Scottstown, Stanstead—'No.'

Maritime Provinces.

- 'No'—Moncton, N.B., North Sydney, N.S., Westville, N.S.
 St. Stephens—'One for fire department and one for street department.'

British Columbia.

- 'None'—Chilliwack, Revelstoke, Victoria.
 'One'—Rossland.

Manitoba.

- Emmerson, Portage la Prairie, Winnipeg—'Nothing.'
 'One'—Carberry.

QUESTION No. 7.

When does the franchise expire?

Ontario.

- Brockville—'January 1, 1908.'
 Belleville—'1907.'
 Peterborough—'Canadian Machine Company, January 1, 1915.'
 St. Thomas—'April 5, 1909.'
 Sarnia—'April 1, 1905.'
 Stratford—'1910.'
 Trenton—'July, 1905.'
 Woodstock—'July, 1908.'

Quebec.

- Montreal—'The Bell Telephone Company was incorporated by Act of parliament by which the company was granted an unlimited franchise.'

Maritime Provinces.

- St. Stephen—'Never.'

APPENDIX No. 1

British Columbia.

Chilliwack—'Never. None granted by its municipality.'

Victoria—'Under the provisions of the Victoria and Esquimalt Telephone Company (the original company) the charter expires in 1917. What privileges the present company may have acquired through the purchase of new charter on the mainland of British Columbia, not able to say.'

Manitoba.

Winnipeg—'Subject to Dominion and provincial charters.'

QUESTION No. 8.

Is the company subject to any rights of the municipality as regards placing of poles and wires, character of poles, conduits, opening up of pavements, &c. If so, what are the facts?

Ontario.

Almonte—'Not subject to municipal control.'

Brockville—'Yes, the company has to erect all poles under the supervision of a street committee, or some one else appointed, and all damages to pavements, or in any other way must be paid by the company.'

Mount Forest—'The company complies with any request of the corporation so far.'

Peterborough—'Have no control over Bell Company. The Canadian Machine Telephone Company as per agreement.'

St. Thomas—

Sarnia— } 'Poles to be erected under supervision of city engineer or
Woodstock— } officer appointed by council.'

Stratford—'Some few restrictions as to height of poles on certain streets.'

Quebec.

Montreal—'The company must notify city authorities before placing any poles in the streets, and must also have location given by civic official.'

In regard to conduits, the company must restore all pavements disturbed by their work.'

Maritime Provinces.

St. Stephen, N.B.—'Company is to place poles under the approval of Road Commissioner as to site.'

North Sydney, N.S.—'The company is subject to the municipality as regards placing poles, wires, character of poles, opening pavements and, &c.'

Westville, N.S.—'Are subject to the town council as to the character of poles and location on the street.'

British Columbia.

Chilliwack—'A company have now a franchise over the roads and streets of the municipality—must begin construction before August 12, 1905, includes town line to New Westminster, to be completed August 12, 1907; exclusive rights 25 years; franchise ceases unless completed in time limit.'

Revelstoke—'Municipality regulates placing of poles which are placed in lanes or alleys.'

Victoria—'The line of poles in the street is determined by the city engineer, the distance apart by the company.'

QUESTION No. 9.

If there are more than the two systems, what are the facts? All replies received in the negative.

QUESTION No. 10.

Is your municipality interested in telephone questions. If so, why?

Ontario

- Almonte—'The question has not arisen to any extent.'
- Belleville—No reply.
- Brockville—No reply.
- Cornwall—'Yes. Think there should not be a monopoly in such matters.'
- Deseronto—'Yes, on general principles.'
- Gananoque—'Yes. Bell Company too exacting. We are in favour of main lines being owned and conducted by Dominion government and free competition in local municipalities.'
- Goderich—'Only generally. Our municipality prides itself in its beautiful streets and desires particularly to control mutilation of same.'
- Hawkesbury—'No particular interest.'
- Hespeler—No reply.
- Hintonburg—'The council consider the rate charged too high.'
- Kingcardine—'Not very much, the charges are not excessive.'
- Kingston—'Yes. Because it believes in municipal ownership of public utilities.'
- Meaford—'We have not taken any special interest in the question, but believe they should be much cheaper and a great many more would be used.'
- Merritton—'Yes, we think charges are too high.'
- Mount Forest—'Think rates too high.'
- North Bay—'Board of Trade is at present agitating question, as it is felt that existing arrangements are unfair to town.'
- Paris—'Would like cheaper rates.'
- Peterborough—'Yes. To secure better control of our streets. To keep prices at proper figures. To secure for independent companies trunk line facilities, and with a view to local municipal systems in accordance with the principle of municipal and government control of public utilities.'
- St. Thomas—'We have had no difficulty here with the Bell Company.'
- Sarnia—'Only one system.'
- Seaforth—'This municipality has not taken any steps to agitate the matter so far.'
- Stratford—'Not that I know of.'
- Trenton—'Yes, we pay too much for telephones for the service rendered.'
- Walkerton—'Yes, would like a cheaper system.'
- Whitby—'No agitation.'
- Woodstock—'Present system unsatisfactory.'

Quebec.

- Calumet—'Not interested at present.'
- Montreal—'The question has not yet been agitated.'
- Ormstown—'No.'
- Outremont—'Interested in obtaining low rates.'
- Richmond—'Yes, we would like to have the People's Company's 'phones in the railway station, but Bell Company control situation.'
- St. Hyacinthe—'No.'
- Scotstown—'No.'
- Stanstead—'No.'

Maritime Provinces.

- Moncton, N.B.—'No.'
- North Sydney, N.S.—'Yes, we have a most unsatisfactory service.'
- Westville, N.S.—'Nothing more than that we think their annual charge is somewhat expensive.'

APPENDIX No. 1

No. 298.

LIST OF BELL TELEPHONE EXCHANGES showing number of telephones, population and inhabitants per telephone (compiled for the information of the committee.)

Exchange.	Province.	Telephones, January, 1905.	Population in 1901.	Number of Inhabitants to one Telephone.
Montreal	Quebec	14,995	267,730	18
Toronto	Ontario	12,714	208,040	16
Winnipeg	Manitoba	4,121	42,340	10
Ottawa	Ontario	2,999	59,929	20
Quebec	Quebec	2,363	68,840	29
Hamilton	Ontario	2,020	52,634	26
London	"	1,930	37,981	20
Windsor	"	698	12,153	17
Kingston	"	688	17,961	26
St. Catharines	"	648	9,946	15
Sherbrooke	Quebec	609	11,765	19
Peterborough	Ontario	604	11,239	19
Brantford	"	596	16,619	28
Guelph	"	492	11,496	23
Chatham	"	468	9,068	19
Calgary	Alberta	460	4,865	11
St. Thomas	Ontario	453	11,485	25
Brockville	"	418	8,940	21
Sault Ste. Marie	"	415	7,169	17
Three Rivers	Quebec	392	9,981	25
Galt	Ontario	391	7,866	20
Brandon	Manitoba	387	5,380	13
St. Hyacinthe	Quebec	360	9,210	26
Stratford	Ontario	359	9,959	28
Niagara Falls	"	354	4,344	12
Sarnia	"	338	8,176	24
Belleville	"	337	9,117	27
Woodstock	"	320	8,833	28
Berlin	"	309	9,747	31
Portage la Prairie	Manitoba	307	3,901	13
St. Johns	Quebec	295	4,030	14
Owen Sound	Ontario	288	8,776	30
Pembroke	"	277	5,156	19
Cornwall	"	274	6,704	24
Regina	Assiniboia	268	2,645	10
Smiths Falls	Ontario	226	5,155	23
Lévis	Quebec	215	7,783	36
Lindsay	Ontario	211	7,003	33
Ingersoll	"	209	4,573	22
Valleyfield	Quebec	198	11,055	56
Barrie	Ontario	180	5,949	33
Orillia	"	174	4,907	28
Joliette	Quebec	167	4,220	25
Cobourg	Ontario	157	4,239	27
Coaticook	Quebec	154	2,880	19
Perth	Ontario	153	3,588	23
North Bay	"	151	2,530	17
Lachine	Quebec	151	5,561	37
Goderich	Ontario	150	4,158	28
Carleton Place	"	150	4,059	27
Arnprior	"	148	4,152	28
Oshawa	"	145	4,394	30
Renfrew	"	138	3,153	23
Collingwood	"	136	3,902	29
Port Hope	"	133	4,188	36
Petrolia	"	131	4,135	32
Sorel	Quebec	129	7,057	55
Farnham	"	128	3,114	24
Fort William	Ontario	128	3,997	31
Bowmanville	"	127	2,741	22
Clinton	"	127	2,547	20
Cowansville	Quebec	127	699	5
Waterloo	Ontario	127	3,411	27
Granby	Quebec	119	2,773	23
Sudbury	Ontario	117	2,027	17

BELL EXCHANGES.

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BELL Telephone Exchanges, showing number of telephones, population, &c.—*Con.*

Exchange.	Province.	Telephones, January, 1905.	Population in 1901.	Number of Inhabitants to one Telephone.
Waterloo	Quebec.	117	1,797	15
Grimsbv	Ontario.	115	1,001	8
Buckingham.	Quebec.	114	2,936	26
Lethbridge.	Alberta.	113	2,326	21
Midland	Ontario.	112	3,174	28
Napanee	"	111	3,143	28
Paris.	"	111	3,229	29
Trenton	"	109	4,217	39
Richmond	Quebec.	109	2,057	19
Simcoe	Ontario.	108	2,627	24
Picton	"	106	3,698	35
Wingham.	"	103	2,392	23
Prescott.	"	101	3,019	30
Wallaceburg	"	100	2,763	28
Orangeville.	"	99	3,511	35
Medicine Hat.	Assiniboia	98	1,975	20
Carberry	Manitoba	97	1,023	11
Tilsonburg	Ontario.	97	2,241	23
Strathroy.	"	96	2,933	31
Listowell	"	95	2,693	26
Walkerton	"	95	2,971	31
St. Jerome	Quebec.	92	3,619	39
Seaforth	Ontario.	91	2,245	25
Welland	"	91	2,200	24
Warton.	"	90	2,443	27
Morden.	Manitoba	88	1,522	17
Almonte	Ontario.	87	3,023	35
Ridgeville (Pelham.)	"	86	2,490	29
Gananoque	"	85	3,085	36
Winona.	"	85	400	5
Montmagny.	Quebec.	85	1,919	23
Parry Sound.	Ontario.	83	2,884	35
Carman.	Manitoba	83	1,439	17
Danville.	Quebec.	82	1,019	12
Aylmer.	Ontario.	76	2,204	29
Newmarket	"	76	2,125	28
Prince Albert.	Saskatchewan.	76	219	3
West Selkirk.	Manitoba	76	400	5
Leamington.	Ontario.	75	2,451	33
Meaford	"	73	1,916	26
Magog	Quebec.	73	3,516	48
Wetaskiwin.	Alberta.	73	630	9
St. Mary's	Ontario.	72	3,384	47
Brampton.	"	71	2,748	39
Minnedosa	Manitoba	71	1,052	15
Souris	"	71	450	6
Bedford.	Quebec.	69	1,364	20
Dundas.	Ontario.	68	3,173	47
Amherstburg	"	65	2,220	34
Preston	"	65	2,308	36
Port Colborne.	"	64	1,253	20
Jordan Station	"	62	272	4
Penetanguishene.	"	62	2,422	39
Winchester	"	60	1,100	18
Etchemin	Quebec.	60	2,500	42
Beaverton	Ontario.	59	855	14
Hawkesbury	"	58	4,150	72
Whitby	"	57	3,100	54
Shawinegan Falls.	Quebec.	57	2,720	48
Alliston	Ontario.	56	1,256	22
Huntsville	Ontario.	55	2,152	39
Mount Forest	"	55	2,019	37
Hospeler	"	54	2,457	45
Grand Mere	Quebec.	54	2,511	46
Huntingdon	"	54	1,122	21
Rock Island	"	54	615	11
Aurora	Ontario.	52	1,590	31

BELL EXCHANGES.

APPENDIX No. 1

BELL Telephone Exchanges, showing number of telephones, population, &c.—*Con.*

Exchange.	Province.	Telephones, January, 1905.	Population in 1901.	Number of Inhabitants to one Telephone.
Emerson	Manitoba	52	840	16
Norwich	Ontario	51	1,269	25
Ste. Agathe	Quebec	50	894	18
Elora	Ontario	49	1,187	24
Deloraine	Manitoba	49	678	14
Gravenhurst	Ontario	48	2,146	45
Harriston	"	48	1,637	34
Kingsville	"	48	1,537	32
Lachute	Quebec	48	2,022	42
Alexandria	Ontario	47	1,911	41
Bracebridge	"	47	2,479	52
Ste. Anne de Bellevue	Quebec	47	1,343	29
Mitchell	Ontario	46	1,945	42
Uxbridge	"	46	2,200	48
Dundalk	"	45	762	17
Fergus	"	45	1,396	31
Red Deer	Alberta	45	851	19
Georgetown	Ontario	44	1,313	29
Terrebonne	Quebec	44	1,822	41
Forest	Ontario	43	1,553	36
Longueuil	Quebec	43	2,935	68
Beamsville	Ontario	42	832	20
Palmerston	"	42	1,850	44
Knowlton	Quebec	42	760	18
Morris	Manitoba	42	465	11
Grand Valley	Ontario	41	751	18
Milton	"	41	1,372	33
Oakville	"	41	1,643	40
Port Perry	"	40	1,465	37
Cookshire	Quebec	40	804	20
Atwood	Ontario	39	504	13
Chesley	"	39	1,734	44
Dunnville	"	39	2,105	54
Exeter	"	39	1,792	46
Colborne	"	37	1,017	27
Niagara	"	37	1,258	24
Ridgetown	"	37	2,405	65
Vankleek Hill	"	37	1,674	45
Macgregor	Manitoba	37	441	12
Durham	Ontario	36	1,422	39
Lakefield	"	36	1,244	35
St. Lambert	Quebec	36	1,362	38
St. Scholastique	"	36	865	24
Copper Cliff	Ontario	35	2,500	71
Shelburne	"	35	1,188	34
Thessalon	"	35	1,300	37
Tottenham	"	35	800	23
Blenheim	"	34	1,653	49
Bridgeburg	"	34	1,356	40
Canmington	"	34	1,058	31
Dresden	"	34	1,613	47
Morrisburg	"	34	1,683	50
Marieville	Quebec	34	1,306	38
Parkhill	Ontario	32	1,430	45
Kincardine	"	31	2,077	67
Thornbury	"	30	1,150	38
Pointe Claire	Quebec	30	1,550	52
Burk's Falls	Ontario	29	849	29
Beauharnois	Quebec	29	1,976	73
St. Raymond	Ontario	29	1,272	44
Elmira	"	27		
Cardston	Alberta	27	915	34
Gretna	Manitoba	27	666	25
Essex Centre	Ontario	26	1,391	53
Marshville	"	26	153	6
Sutton	Quebec	26	1,000	38
Weston	Ontario	25	1,300	52
Thetford Mines	Quebec	25	3,000	120

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BELL Telephone Exchanges, showing number of telephones, population, &c.—*Con.*

Exchange.	Province.	Telephones. January, 1905.	Population in 1901.	Number of Inhabitants to ons Telephone.
Hanover	Ontario	24	1,392	58
Chambly	Quebec	24	849	35
St. Cesaire	"	24	1,200	50
Acton	Ontario	23	1,484	65
Brighton	"	23	1,378	60
Actonvale	Quebec	23	1,175	51
Mansonville	"	23	336	15
Orono	Ontario	22	510	23
Ridgeway	"	22		
Beeton	"	21	634	30
Bruce Mines	"	21	894	43
Brussels	"	21	1,114	53
Fenelon Falls	"	21	1,132	54
Millbrook	"	21	917	44
Compton	Quebec	21	457	22
St. Eustache	"	21	1,079	51
Ayr	Ontario	20	827	41
Coldwater	"	20	633	32
L'Original	"	20	1,026	51
Newcastle	"	20	645	32
New Hamburg	"	20	1,208	60
Delhi	"	19	823	43
Erin	"	19	511	27
Lucknow	"	19	1,111	58
St. Felix de Valois	Quebec	19	600	31
Ste. Marie Beauce	"	19	2,500	131
Ailsa Craig	Ontario	18	744	41
Blyth	"	18	871	48
Button	"	18	863	48
Markham	"	18	967	54
Southampton	"	18	1,636	91
Watford	"	18	1,600	89
Cap St. Ignace	Quebec	18	300	17
Victoriaville	"	18	1,693	94
Cobden	Ontario	17	734	43
Rockland	"	17	1,998	118
Tilbury Centre	"	17	1,000	59
Beloil Station	Quebec	17	500	29
Chesterville	Ontario	16	932	58
Mildmay	"	16	1,035	65
Oil Springs	"	16	1,018	64
Stouffville	"	16	1,200	75
Berthier	Quebec	16	1,364	85
Breslau	Ontario	15	223	15
Burlington	"	15	1,119	75
Embro	"	15	595	40
St. Eugene	"	15	500	33
Batiscan	Quebec	15	500	33
Shawville	"	15	648	43
Agincourt	Ontario	14	47	3
Creemore	"	14	654	47
Crysler	"	14	284	20
Glencoe	"	14	1,034	74
Port Rowan	"	14	657	47
Tara	"	14	825	59
Lacolle	Quebec	14	360	26
Roxton Falls	"	14	818	58
St. Raymond	"	14	1,272	91
Vaudreuil Station	"	14	700	50
Arthur	Ontario	13	1,285	99
Bradford	"	13	984	76
Holstein	"	13	227	17
Omeme	"	13	574	44
Paisley	"	13	1,086	84
Springfield	"	13	700	54
Victoria Harbour	"	13	1,500	115
Waterford	"	13	1,500	115
Campbellville	"	12	200	17

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BELL Telephone Exchanges, showing number of telephones, population, &c.—*Con.*

Exchange.	Province.	Telephones, January, 1905.	Population in 1901.	Number of Inhabitants to one Telephone.
Cardinal.....	"	12	1,378	115
Inglewood.....	"	12	254	21
St. Jacobs.....	"	12	600	50
Wheatley.....	"	12	400	33
Fort Coulonge.....	Quebec.	12	482	40
OrNSTOWN.....	"	12	841	70
St. Hilaire Station.....	"	12	100	8
St. Polycarpe.....	"	12	405	34
St. Rond.....	"	12	400	33
Waterville.....	"	12	576	48
Burford.....	Ontario.	11	480	44
Cookstown.....	"	11	329	30
Plattsville.....	"	11	416	38
Port Elgin.....	"	11	1,313	119
Severn Bay.....	"	11	97	7
Tavistock.....	"	11	1,100	100
Victoria.....	"	11	550	45
Wellington.....	"	11	800	73
Baden.....	"	10	695	69
Corrie.....	"	10		
Hepworth.....	"	10	459	46
Markdale.....	"	10	892	89
Millken.....	"	10	25	2
Mount Elgin.....	"	10	192	19
Pakenham.....	"	10	394	39
Teeswater.....	"	10	1,250	125
Aylmer.....	Quebec.	10	2,291	229
Louiseville.....	"	10	1,655	165
St. Adèle.....	"	10	1,546	155
Brigden.....	Ontario.	9		
Cayuga.....	"	9	771	86
Elmvale.....	"	9	714	79
King.....	"	9	292	32
Lucan.....	"	9	848	94
New Dundee.....	"	9	255	25
N. Williamsburg.....	"	9	223	28
Pickering.....	"	9	534	59
Rockwood.....	"	9		
Stevensville.....	"	9	300	33
Quyon.....	Quebec.	9	682	76
Neepawa.....	Manitoba.	9	1,418	158
Alfred.....	Ontario.	8	344	43
Ayton.....	"	8	396	49
Brooklin.....	"	8	351	44
Cargill.....	"	8	235	29
Fordwich.....	"	8	94	12
St. George.....	"	8	700	87
Wabashene.....	"	8	1,500	187
Bury.....	Quebec.	8	300	37
Ste. Anne de la Parade.....	"	8	2,843	355
St. Bruno.....	"	8	450	56
St. George Beauce.....	"	8	400	50
St. Martine.....	"	8	400	50
Bolton.....	Ontario.	7	702	100
Bothwell.....	"	7	907	129
Drayton.....	"	7	791	11
Dublin.....	"	7	192	27
Jarvis.....	"	7	421	60
Marbleton.....	Quebec.	7	694	99
St. Francois Beauce.....	"	7	500	71
Avonmore.....	Ontario.	6	320	53
Casselman.....	"	6	707	118
Clifford.....	"	6	608	101
Lancaster.....	"	6	583	97
Neustadt.....	"	6	466	78
Port Dover.....	"	6	1,177	196
Sunderland.....	"	6	600	100

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BELL Telephone Exchanges, showing number of telephones, population, &c.—*Con.*

Exchange.	Province.	Telephones, January, 1905.	Population in 1901.	Number of Inhabitants to one Telephone.
Coteau Landing.....	Quebec.....	6	578	96
Grand Piles.....	".....	6	300	50
Rigaud.....	".....	6	779	130
St. Anicot.....	".....	6		
St. Benoit.....	".....	6	250	42
Olds.....	Alberta.....	6	207	34
Comber.....	Ontario.....	5	608	122
Desbarats.....	".....	5	80	16
Iroquois.....	".....	5	1,097	219
Port Credit.....	".....	5	486	97
Russell.....	".....	5		
St. Davids.....	".....	5	300	60
The Brook.....	".....	5	150	30
Campbell's Bay.....	Quebec.....	5	100	20
Chateaugay.....	".....	5	102	20
Como.....	".....	5	628	126
Plessisville.....	".....	5	1,586	317
Rolland.....	Manitoba.....	5		
Milverton.....	Ontario.....	4	698	175
Myrtle.....	".....	4	175	44
Newton.....	".....	4	150	37
St. Joseph Beauce.....	Quebec.....	4	1,117	279
Windsor Mills.....	".....	4	2,149	537
Winkler.....	Manitoba.....	4	500	125
Finch.....	Ontario.....	3	283	94
Kenwood.....	".....	3		
Mount Albert.....	".....	3	402	134
Plantagenet.....	".....	3	583	194
Port Stanley.....	".....	3	552	184
Unionville.....	".....	3	500	167
Deschambeault.....	Quebec.....	3	1,200	400
Pierreville.....	".....	3	1,108	369
St. Anne de Beaupre.....	".....	3	500	167
St. Barthelemy.....	".....	3	800	267
St. Hubert.....	".....	3	300	100
Verchères.....	".....	3	900	300
Altona.....	Manitoba.....	3	356	119
Lacombe.....	Alberta.....	3	450	150
Magrath.....	".....	3	423	141
Bobcaygeon.....	Ontario.....	2	914	457
Cameron.....	".....	2	69	34
Columbus.....	".....	2	111	55
Flesherton.....	".....	2	437	218
Gen. P. L. O. D.....	".....	2		
Hagersville.....	".....	2	1,020	510
Kirkville.....	".....	2		
Clemburg.....	".....	2	190	95
Lefavre.....	".....	2	200	100
Maxville.....	".....	2	749	374
Metcalfe.....	".....	2	36	18
Moose Creek.....	".....	2	655	327
Port Burwell.....	".....	2	544	272
Rodney.....	".....	2		
Sombra.....	".....	2	250	125
Streetsville.....	".....	2	850	425
Vars.....	".....	2	200	100
Wales.....	".....	2	350	175
Bryson.....	Quebec.....	2	508	254
Jeune Lorette.....	".....	2		
Laprairie.....	".....	2	1,451	725
L'Assomption.....	".....	2	1,606	802
North Hatley.....	".....	2	261	130
St. Anne de Stukeley.....	".....	2		
St. Bazile.....	".....	2	350	175
St. Casimir.....	".....	2	2,700	1,350
St. Madeleine.....	".....	2	516	258
St. Martin.....	".....	2	400	200
St. Thérèse.....	".....	2	1,541	770

BELL EXCHANGES.

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BELL Telephone Exchanges, showing number of telephones, population, &c.—*Con.*

Exchange.	Province.	Telephones, January, 1905.	Population in 1901.	Number of Inhabitants to one Telephone.
St. Vincent de Paul	Quebec	2	1,462	731
Scotts	"	2	290	100
Scotstown	"	2	791	395
Allenford	Ontario	1	238	238
Alvinston	"	1	898	898
Beachville	"	1	248	248
Caledonia Springs	"	1	50	50
Caledonia	"	1	801	801
Claremont	"	1	400	400
Drumbo	"	1	343	343
Echo Bay	"	1	87	87
Elmwood	"	1	406	406
Everett	"	1	123	123
Fesserton	"	1	490	490
Floradale	"	1	178	178
Formosa	"	1	166	166
Garden Hill	"	1	64	64
Garden River	"	1	686	686
Hallville	"	1	122	122
Hawksville	"	1	189	189
Hensall	"	1	822	822
Inwood	"	1	231	231
Locust Hill	"	1	200	200
Linden	"	1	314	314
Martintown	"	1	357	357
Merlin	"	1	235	235
Morewood	"	1	167	167
Mountain	"	1	130	130
Oakwood	"	1	282	282
Pendleton	"	1	38	38
Queenston	"	1	132	132
Sheffield	"	1	200	200
Stayner	"	1	1,450	1,450
Sutton	"	1	700	800
St. Clements	"	1	200	200
Tupperville	"	1	30	30
Union	"	1	300	300
Warsaw	"	1	300	300
Wellesley	"	1	800	800
West Lorne	"	1	750	750
Woodville	"	1	800	800
Abbotsford	Quebec	1	300	300
D'Israeli	"	1	1,018	1,018
Drummondville	"	1	1,450	1,450
Henriville	"	1	800	800
Isle aux Noix	"	1		
L'Ange Gardien	"	1		
Port Neuf	"	1	697	697
St. Augustine	"	1	1,292	1,292
St. Charles de Bellechasse	"	1	2,000	2,000
St. Gabriel de Brandon	"	1	1,199	1,199
St. Jacques L'Achigan	"	1	800	700
Ste. Julienne de Montcalm	"	1	500	500
St. Liboire	"	1	600	600
St. Ours	"	1	609	609
St. Stanislaus	"	1	250	250
South Ham	"	1	500	500
Stanford	"	1	600	600
Valcourt	"	1	300	300
Warwick	"	1	1,200	1,200
Yamachiche	"	1	1,400	1,400
Bagot	Manitoba	1	41	41
Miami	"	1	280	280
Sidney	"	1	40	40

No. 299.

AN ACT RESPECTING MUNICIPAL TAXATION.

CLAUSES RELATING TO TELEPHONE COMPANIES.

(Chapter 23, 4 Edward VII., 1904—Ontario.)

Assessment of Telephone Companies, on Income, in Cities, Towns, Villages and Police Villages.

14. (1) Every telephone company carrying on business in a city, town, village or police village, shall in addition to any other assessment to which it may be liable under this Act, be assessed for 60 per cent of the amount of the gross receipts belonging to the company in the city, town, village or police village, from the business of the company for the year ending on December 31 next preceding the assessment. Providing that in cities having a population of over 100,000 inhabitants such company shall be assessed for 75 per cent of such gross receipts.

Assessment of Telephone Companies on Mileage in Townships.

(2) Every telephone company shall be assessed in every township for one ground circuit (being a single wire for carrying a message) or metallic circuit (being two wires for carrying a message), as the case may be, placed or strung on the poles or other structures operated or used by the company in the township, and in use on the 31st day of December next preceding the assessment, at the rate of \$135 per mile and in case any line of poles or other structures carries more than one ground circuit or metallic circuit, at the rate of \$7.50 per mile for each additional ground circuit or metallic circuit, as the case may be, placed or strung on the 31st day of December next preceding the assessment.

Wires in Police Villages and Branch Lines Included.

(3) In the computation of the length of said telephone wires and additional wires for assessment in the township aforesaid, the wires placed or strung within the area of any police village, and the wires of all branch and party lines, which do not exceed 25 miles in length, shall not be included.

Telegraph Companies, Assessment on Income in Cities, Towns, Villages and Police Villages.

(4) Every telegraph company carrying on business in a city, town, village or police village, shall in addition to any other assessment to which it may be liable under this Act be assessed for 50 per cent of the amount of the gross receipts belonging to the company in such city, town, village or police village from the business of the company for the year ending on the 31st day of December next preceding the assessment.

Assessment on Mileage in Townships.

(5) In every township there shall be assessed against every such telegraph company a sum equal to \$40 for every mile of the length of one wire placed or strung on the poles or other structures operated or used by the company in the township and in use on the 31st day of December next preceding the assessment and a sum equal to \$5 per mile for each additional wire so placed or strung on the 31st day of December next preceding the assessment.

Wires in Police Villages and Branch and Loop Lines Excluded.

(6) In the computation of the length of said telegraph wires and additional wires for assessment in a township as aforesaid the wires placed or strung within the area of any police village and the wires of all branch and loop lines which do not exceed twenty-five miles in length, shall not be included.

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What to be Measured as Separate Wires.

(7) In the measurement of such additional wires, the length of every telegraph wire and of every telephone wire forming a ground circuit or pair of wires forming a metallic circuit, as the case may be, placed or strung in cables or other combinations, and used or capable of being used as an independent means of conveying messages shall be computed.

Exemption From Other Assessments.

(8) Every company assessed as provided in this section shall, in townships, be exempt from assessment in any other manner or on any other property for municipal purposes, and shall, in cities, towns, villages and police villages be exempt from assessment in respect of all plant, appliances or machinery wherever situated and in respect of all structures placed on, over, under, or affixed to any highway, road, street, lane, or public place or water.

Poles and Wires on Township Boundaries.

(9) Where the poles or wires of a telegraph or telephone company are placed on the boundary line between two townships or so near thereto that the poles or wires are in some places on one side and in other places on the other side of the boundary line or are placed on a road which lies between two townships, although it may deviate so as in some places to be wholly or partly within either of them, the company shall be assessed in each township for one-half of the amount assessable against it under subsection 2 or subsection 5, as the case may be, in both the townships taken together.

Tax to be a Lien on Lands of Company.

(10) The taxes payable by a company in any municipality under this section shall be a lien on all the lands of the company in the municipality.

Returns by Telegraph and Telephone Companies.

15. (1) Every telegraph and telephone company doing business in Ontario shall on or before the 1st day of February in each year:—

1. Deliver to the Provincial Secretary a statement in writing showing:—

- (a) The gross receipts of the company in the province and the gross receipts of the company in each city, town, village and police village in the province, from its business for the year ending on the 31st day of December then last past;
- (b) The length in miles of one wire or a pair of wires forming a metallic circuit, placed or strung on all the poles or other structures operated or used by the company in each township in Ontario;
- (c) The number of miles in length of one wire or of one pair of wires, as the case may be, forming a metallic circuit operated or used by the company in each township in Ontario, including in the measurement the length in each township of every wire or pair of wires, as the case may be, placed or strung in cables or other combinations, and used or capable of being used as an independent means of conveying messages.

2. Deliver or mail to the assessment commissioner, or if there be no assessment commissioner, to the clerk, of every city, town and village, and to the clerk of the township in the case of a police village in which the company does business, a statement in writing of the amount of the gross receipts of the company in such city, town, village or police village for the year ending on the 31st day of December then last past.

(2) Every such statement shall be signed by or on behalf of the company and shall be verified in the same manner as assessment returns are required by section 19 to be verified.

No. 300.

BOARD OF RAILWAY COMMISSIONERS FOR CANADA.

RE FORT WILLIAM AND PORT ARTHUR & C. P. R. CO. APPLICATION FOR TELEPHONE CONNECTION.

Judgment.

THE CHIEF COMMISSIONER:

This is a joint application by the towns of Fort William and Port Arthur, in the province of Ontario, for an order under section 193 of the Railway Act, 1903, directing the Canadian Pacific Railway Company to provide telephonic connection and communication with and within the respective stations of the company at both Fort William and Port Arthur.

The application came up for hearing, when counsel appeared on behalf of the railway company and the Bell Telephone Company and objected to the making of such an order.

The towns of Port Arthur and Fort William are duly incorporated towns under the municipal law of the province of Ontario. Each has a separate telephone system, built and owned by the town, and each connected with the other. The Canadian Pacific Railway passes through both towns, in each of which the company has a passenger station and other premises. Each town desires to have its telephone system installed in the stations and premises of the railway company, and to have telephonic connection therewith.

The principal objection taken to the order arises under an agreement between the railway company and the telephone company, bearing date the 1st day of May, 1902, by which the telephone company agreed to furnish the railway company with telephone connections at all points in Canada free of charge; to issue to the railway company's officials annual passes or franks over long distance lines of the telephone company free of charge, and to maintain local exchanges at the railway company's head office in Montreal; and the railway company agreed to furnish annual passes to the telephone company's officials over its railway and telegraph lines, and free transportation for telephone employees, and that the telephone company should have the exclusive right of placing telephones, instruments, apparatus, and wires in the several stations, offices and premises of the railway throughout Canada, where the telephone company had or might, during the life of the contract, establish telephone exchanges. The contract also provided that each company, so far as it might properly do so without prejudice to its own business, granted the other company facilities for carrying its wires and lines through or over the poles, subways, bridges and other premises on equitable terms to be agreed on, and that the railway company would not grant similar facilities to any other telephone company.

It was urged by both the railway company and the telephone company (1) that the Board had no power to make an order requiring the railway company to act in contravention of this agreement; (2) that, if the Board had such power, it should not be exercised because it would be an infringement upon the contractual rights of the two companies, and because adequate compensation could not be made for infringement of the rights created under the contract.

In answer to these contentions it was argued on behalf of the towns, that the provisions for giving the Bell Telephone Company the exclusive rights provided for were illegal and void as being against public policy.

Upon consideration the Board expressed its intention to make an order under section 193 of the Act 'granting leave to the Port Arthur municipality to connect, operate and maintain their telephone systems within the passenger and freight stations of the Canadian Pacific Railway Company at Port Arthur'; but, being of opinion that compensation should be given, directed that the issue of the order by the Board should be suspended until determination respecting this point.

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The several members of the Board expressed at some length their reasons for the conclusions reached; Mr. Commissioner Mills dissenting from the other members of the Board upon the question of the validity of the contract mentioned.

A further hearing of the application was then had upon the question of compensation, but before any conclusion had been reached, Hon. Mr. Blair resigned the position of Chief Commissioner, and the matter remained in abeyance up to the time of my appointment. Subsequently, the parties interested were asked to state to the Board whether they were willing that the Board, as then constituted, should dispose of the applications without further hearing, and, if so, to submit in writing any further arguments which they desired to lay before the Board. The parties agreed to the disposition of the matter in this way, and submitted some further arguments.

It does not appear to me that anything has been done which amounts to a binding decision upon any point; but there seems to be no reason for re-considering the questions upon which the members of the Board expressed their opinions, and I feel bound to follow the conclusions of the majority of the Board. Therefore, without discussing the main questions any farther, we should, in my opinion, proceed upon the view that the contract giving the Bell Telephone Company an exclusive right to telephone connection with the stations and premises of the Canadian Pacific Railway Company was and is valid and binding between the parties to it; that, notwithstanding this, the Board has power, under section 193 of the Act, to order the railway company to provide for the telephone connection or communication asked for, and that the Board, in its discretion, will do so upon such terms as to compensation and otherwise as it may think proper to impose.

While the expression by the former chief commissioner of the decision of the Board referred only to the municipality of Port Arthur, I take it that the board did not intend to thus limit its decision, but that it applied to both of the towns.

With reference to the question of compensation, the Hon. Mr. Blair said: 'While it is not the purpose of the board to name a sum or definitely determine the principles which will govern us in arriving at the amount of compensation, without giving all parties an opportunity of being heard, it will be convenient and desirable, perhaps, for parties to be informed as to the way in which the minds of the commission are tending on this phase of the subject.

'We shall preserve an open mind until we have again heard the parties, who may desire to be heard; but we incline to the view that this is not an instance which will call for the imposition of onerous terms.

'We hold the opinion that the Bell agreement is what is known to the courts as an entire and indivisible contract.

'The exclusive privilege granted the Bell Company is the essential consideration upon which the contract, on the part of the Bell Company is founded. We believe there would not have been the same inducement to the Bell Company to make the expenditures and render the service they have done, if this element in their contract had been wanting. We think also that a failure to maintain intact the exclusive feature of the agreement, as to a part of the Bell Company's territory, though such failure may be solely due to the intervention of parliament, is, at least, a partial failure in the performance of the contract, sufficient to entitle the Bell Company to have the contract nullified.

'It does not follow, however, that because the contract is entire, and may be nullified, that either party will consider it to its interest, that the existing arrangement should be terminated in its entirety, nor do we regard it as probable, in view of the profitable and satisfactory character of the service, that it will be disturbed to an extent beyond what may be necessary to give effect to such order as the board may make. Any actual pecuniary loss which may be shown will result to either the railway or Bell Company by reason of our order, we will be disposed to consider. Beyond that, as at present advised, we do not think we ought to go, as respects this branch of the question of compensation.'

Hon. Mr. Bernier said: 'I have followed the argument of the chief, but I think, if I may be permitted to say so, the conclusion he has drawn is going too far, that is, in saying that in every case compensation for the infringement of the agreement should be determined. I am of the opinion that the intervention of the board cannot set aside the agreement between the two corporations, as long as it is not against public interest. . . . With regard to the compensation that will have to be determined later on. I am not willing, nor ready, now to carry the principle by way of stating that the Canadian Pacific Railway or any other railway corporation is entitled, *ipso facto*, to compensation for damages, leaving that to be determined after hearing the case which may be presented by the Canadian Pacific Railway, or any other railway company, in support of damages. For these reasons I will be ready to hear and consider the question of compensation, not because of the fact that there is an agreement, but from the fact that nobody should take advantage of another party without giving compensation, if due.'

Mr. Commissioner Mills, after giving his reasons for concluding that the agreement for an exclusive privilege was invalid, said, that this 'as a consequence, debars the contracting parties in the agreement from all claims for compensation against the municipality of Port Arthur, or any other municipality which, with the consent and approval of the Board of Railway Commissioners, may install telephones at its own expense in the stations of the Canadian Pacific Railway Company, upon payment of reasonable compensation for use of the premises occupied and the expenses of operating their telephones in the said stations.'

It is clear, I think, that compensation should be made to the railway company for the use of its railway stations by the towns for the purpose of their telephone system and the interference with the property of the railway company incident to establishing the instruments and connections therein.

I think it also clear that compensation should be made to the Bell Telephone Company for the loss of the exclusive privilege of telephone connection with the stations of the railway company in the two towns respectively. If the municipal system of one of these towns be installed under the authority of the statute and the order of this board, it will, I think, be lawfully established, and the Canadian Pacific Railway Company will not be liable for violation of the provisions of the contract granting the exclusive privilege. For the loss of that right of action, the telephone company should certainly be compensated.

It has, however, been argued before the board that the result of the establishment of the municipal telephone systems in the stations in these two towns, or either of them, under an order of the board, will be to avoid the contract between the two companies; that the contract is exceedingly valuable to both companies, and that both should be compensated for the entire loss of all the benefits accruing to it from the contract, and the Bell Telephone Company, in addition, for the expense and deterioration of the value of its plant and machinery, which will be caused by their removal from the various premises of the railway company throughout Canada.

In the written arguments that have recently been submitted on behalf of the Bell Telephone Company, the language of the Honourable Mr. Blair, which I have cited, is relied on as determining that the effect of giving either of these towns this telephone connection will be the avoidance of the contract, and as making that point *res judicata*. Of course, it is not *res judicata* in the strict sense, for upon that question, just as upon all the others on which the members of the board have expressed their opinions with reference to these applications, it is still open to the board to reach other conclusions. But, for the same reason for which I accepted the previously-expressed conclusions of the board on other points, I accept the views expressed by the Honourable Mr. Blair upon this point. It does not appear to me, however, that Mr. Blair intended to express the opinion that the effect of the installation of the municipal system would be to avoid the contract *ipso facto*. On the contrary, his remarks appear to me to convey the opposite view, for he said: 'It does not follow, however, that because the contract is entire, and may be nullified, that either party will consider it to its interest,

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that the existing arrangement should be terminated in its entirety, nor do we regard it as probable, in view of the profitable and satisfactory character of the services, that it will be disturbed to an extent beyond what may be necessary to give effect to such order as the board may make.'

The contract shows that it was made in the city of Montreal, in the province of Quebec, and it describes each company as having its principal office in that city. I proceed upon the view that the effect of installing the municipal system under the order of the board must be determined by reference to the law of the province of Quebec. By the Civil Code of that province, Art. 1065, 'Every obligation renders the debtor liable in damages in case of a breach of it on his part. The creditor may, in cases which admit of it, demand also a specific performance of the obligation, and that he be authorized to execute it at the debtor's expense, or that the contract from which the obligation arises be set aside, subject to the special provisions contained in this code, and without prejudice, in either case, to his claim for damages.'

The language is, 'that the creditor.....may demand.....that the contract.....be set aside.' The article of itself does not avoid the contract; it merely places it within the power of the injured party to require this. If authority could be considered necessary for the proposition that the party who has failed in his obligations cannot demand, as against the other party, the setting aside of the contract, it is furnished by the decision of Langelier, J., in *Dupuis v. Dupuis*, R.S.Q., 19 C.S., 500, stated in *Beauchamp* on the Civil Code, p. 1030, to have been confirmed in the Court of Revision. The correctness of this view appears to me so clear as not to require further discussion, whether the system of law to be applied is that of the province of Quebec or that of any other province.

So far, then, as the Bell Telephone Company is concerned, it will be its own fault if the contract is determined upon or after the installation of a municipal system in one of these stations. Counsel for the railway company insisted, and now insists, that the contract is still in force and valid. The railway company resists its avoidance, and insists upon its performance by the Bell Telephone Company. After the Board had expressed the view that an order should be made, some correspondence upon this point was exchanged between the railway company and the telephone company, the result of which was, as claimed by counsel for the telephone company upon the subsequent hearing, that the Bell Telephone Company had treated the contract as already rescinded, and so notified the railway company. The railway company, however, would not accept this view, but regarded the correspondence as indicating merely an intention to rescind upon the making or carrying out of an order. Certainly nothing had, up to that time, been done, and nothing has, so far as we are informed, yet been done which could entitle the telephone company to have the contract rescinded. If the telephone company intended to argue that, under the interpretation of the statute given by the Board, the statute of itself operated to nullify the contract, and if this view were accepted, the result would be that no compensation for the loss of the contract should be awarded to any one. These two towns, happening to be the first applicants, should not be burdened with the loss thus arising. I cannot see how even the order of the Board authorizing the installation of the municipal system could have this effect. The order might never be acted upon. It could only be the violation of the contract by the railway company, voluntarily or under the direction of the Board, that would give the telephone company the right to demand the rescission. If the right shall raise and be exercised, the loss will be due to the action of the company itself, and the towns should not be obliged to give compensation therefor.

In my opinion, then, no compensation should be given to the Bell Telephone Company, except for the damages which it will sustain through the loss of the exclusive privilege for the towns of Port Arthur and Fort William respectively. The position of the railway company is different. Nothing has yet occurred producing a rescission of the contract. The railway company insists upon its performance. If the installation of the municipal system in one of the railway stations should result in the

loss to the railway company of this contract, it should receive compensation therefor. Apparently, it is a very valuable contract to the railway company. This value has been estimated as being about \$18,400 per annum, over and above the value of the service rendered by it to the telephone company; but it is still as uncertain as it was when Mr. Blair spoke that the contract will be rescinded in consequence of any action by the Board. It is true that the Bell Telephone Company has announced very positively the course which it will take; but if the officials of the telephone company honestly value the benefit of the contract to that company as highly as the company's counsel claimed, it appears by no means certain that, after learning that it must act without compensation, the company will persist in the course indicated.

The evidence does not furnish a satisfactory basis for definitely fixing the sums to be allowed for compensation. I propose to make some suggestions with the hope that either they will be accepted as a basis of action or some other basis reached by agreement or allowed to be settled by the Board after hearing the objections of the parties.

The exclusive right of the Bell Telephone Company is estimated by one of its officials at \$5 per instrument per year. Mr. Ahearn, the only other witness who testified to the point, valued it even more highly. The Board has been informed that the company has two hundred instruments in Fort William and Port Arthur. How these are divided between the two towns does not appear. It was suggested that some of these were furnished free of cost; and, while this was not admitted, sufficient was said to produce the impression that the suggestion was well founded. Probably it will be better to take the estimate of \$5 per instrument per annum as a basis and that the parties should endeavour to arrive at the exact number of telephone instruments furnished by the Bell Telephone Company in each town respectively, for remuneration. If the Telephone Company is willing to allow a representative of the towns to inspect its records for this purpose, the parties ought to be able to agree upon having it done by an officer of the Board or some other independent party.

To deal with the Canadian Pacific Railway Company, I think that, on behalf of the towns, it should be stated what space and in what parts of the respective stations and what facilities are desired by them respectively, and that they should name some annual payment to be made to the railway company by either town for connection with the company's stations in that town. If any such offer be not accepted, probably the best course would be to have an amount fixed by some independent person or by arbitrators appointed in the usual way.

If the municipalities, or either of them, desire to contest the question of the effect of the installation of the municipal system as giving to the telephone company a right of rescision, and to have it determined by the Supreme Court, a case should be stated to raise that point.

The payment of the compensation to the Bell Telephone Company should be a condition precedent to the installation of the system in each town. The making of the first of the annual payments suggested to the railway company should be a condition precedent to the establishment of the telephone connection. Subsequent annual payments should be made in advance, subject to a condition for rescision of the leave to maintain the telephone connection in the event of non-payment.

As to the possible loss of the railway company through rescision of the contract by the telephone company, I think that the towns should only be required at the present time to give security for the making of such compensation as the board shall hereafter order. I would suggest that the joint and several bonds of the towns in the sum of \$35,000 should be accepted as such security. If they are not willing to give the security, and wish first to have the decision of the Supreme Court upon the points raised, no order should go until this is given.

The Deputy Chief Commissioner:

I concur in the allegations and conclusions of this draft order, leaving the questions of compensation and damages to be determined later on.

OTTAWA, July 4, 1905.

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No. 301.

CANADIAN MACHINE COMPANY, LIMITED.

HEAD OFFICE, DUNCAN STREET,
TORONTO, July 13, 1905.Sir WILLIAM MULOCK,
Postmaster General,
Chairman Select Committee on Telephones,
House of Commons,
Ottawa, Ont.

HONOURABLE SIR,—We regret exceedingly that we met with four or five weeks' delay in delivery of portions of the electrical plant for our central office installation at Peterborough, and have therefore not been able to forward an invitation to yourself and the Select Committee to visit Peterborough to inspect our system in operation.

We understand that parliament is likely to adjourn at a very early date. We had hoped that the session, already prolonged, would have continued for a few weeks longer and thus enable us to have the committee inspect our Peterborough plant before concluding their labours for this session.

We are very anxious that the committee should have an opportunity to judge of the service we can give with our apparatus and also of seeing the manner of our construction at Peterborough, but we know how unsatisfactory it often is to invite inspection and have opinions passed on anything in an unfinished state. We have our central office plant complete at Peterborough now and are engaged testing out the apparatus before putting out services to the public. As ours is an entirely new apparatus and this is our first commercial exchange, you will readily appreciate the necessity of our exercising the greatest care to reduce to a minimum all possible causes of trouble in service. This is true of any new apparatus, but in our case it has particular force owing to the fact that our service is to be given to the public, that we are sure to run the gauntlet of strong opposition and that the future interests involved are not confined to Peterborough but are as widespread as the telephone business itself.

While, therefore, we feel that we could at the present time show yourself and the members of the committee much that would be interesting at Peterborough, it might possibly be the part of wisdom and more satisfactory to yourself and the committee if the visit were delayed until such times as we had our plant in full operation with services throughout the town. However, if the committee desires to make a visit to Peterborough at the present time, we will be most pleased to show them over our plant and make an effort to demonstrate the working and advantages of our system. If the committee decide to come at once they will, we feel certain, grant us full consideration for the plant being in an incomplete condition.

If the committee decide to delay their visit we will be pleased to send notification as soon as our plant is in full operation, and we will then be delighted to have you fix a date for a visit.

We beg to remain, honourable sir,
Very respectfully yours.

Canadian Machine Telephone Company (Ltd.),
F. D. MACKAY,
Manager.

No. 302.

LAWS OF STATE OF ILLINOIS PERTAINING TO TELEPHONES.

TELEPHONE COMPANIES—REGULATION OF.

Section 1.—Companies already organized subject to provisions of this Act.

Section 2.—Injuries to telephone lines subject to laws concerning telegraph lines.

Section 3.—Telephone wires over rails of steam or electric roads.

Section 4.—Condemnation of property for use of telephone companies same as for telegraph lines.

Section 5.—Mortgages and deeds of trust executed by telephone companies—recording, &c.

Approved May 16, 1903.

FOR AN ACT RELATING TO THE POWERS, DUTIES AND PROPERTY OF TELEPHONE COMPANIES.

Section 1.—Be it enacted by the people of the State of Illinois represented in the General Assembly: That each corporation heretofore or hereafter having power under its charter or under any special or general law of the State of Illinois to construct or operate telephone lines or exchanges in or through Illinois shall possess the powers and privileges and be subject to the duties, restrictions and liabilities prescribed in this Act.

Section 2.—All Acts now or hereafter in force relating to the injuring, molesting or destroying any part or parts of any telegraph line, wire or cable, pole, pier, abutment, or any material or property or effects belonging thereto, and to the cutting, damaging, breaking, tapping, or making any unlawful connection with any telegraph line, wire, cable or instrument, shall apply to such telephone lines and exchanges, with all the fines, penalties, judgments, and punishment provided in such Acts applicable to telegraph companies or their lines or property.

Section 3.—Whenever the lines or cables of any such company are erected or constructed over the rails of any steam or electric railroad within the State of Illinois, such company shall maintain such wires or cables not less than twenty-five (25) feet above the surface of the rails. Any failure or refusal so to do shall render such company liable to a fine of not more than fifty dollars (\$50) for each offence, to be recovered upon conviction thereof before any court of competent jurisdiction. All fines collected by virtue of this Act shall be paid into the common school fund of the township in which the offence is committed.

Section 4.—Every such company may, when it shall be necessary for the construction, maintenance, alteration or extension of its telephone system, or any part thereof, enter upon, take or damage private property in the manner provided for in, and the compensation therefor shall be ascertained and made in conformity to the provisions of 'An Act to revise the law in relation to telegraph companies,' approved March 24, 1874, and in force July 1, 1874, and every such company is authorized to construct, maintain, alter and extend its poles, wires, cables and other appliances as a proper use of highways, along, upon, under and across any highway, street, alley, water or public ground in this state, but so as not to incommode the public in the use thereof: Provided, that nothing in this Act shall interfere with the control now vested in cities, incorporated towns and villages in relation to the regulation of the poles, wires, cables and other appliances, and provided, that before any such lines shall be constructed along any such highway it shall be the duty of the telephone company proposing to construct any such line, to give the highway commissioners having jurisdiction and control over the road or part thereof along and over which such line is proposed to be constructed, notice in writing of the purpose and intention of said company to construct such line over and along said road or highway, which said notice shall be served at least ten days before said line shall be placed or constructed over along said highway; and upon the giving of said notice it shall be the duty of the said

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highway commissioners to specify the portion of such road or highway upon which the said line may be placed and constructed, and it shall thereupon be the duty of the said company to construct its said line in accordance with such specifications; but in the event that the said highway commissioners shall, for any reason, fail to make such specification within ten days after the service of such notice, then the said company, without such specifications having been made, may proceed to place and erect its said line along said highway by placing posts, poles and abutments so as not to interfere with other proper uses of said road or highway. Provided, that such telephone company shall not have the right to condemn any portion of the right-of-way of any railroad company except so much thereof as is necessary to cross the same.

Section 5.—Any mortgage or deed of trust which shall hereafter be executed by any telephone company upon its real and personal property in the manner provided for the execution of mortgages upon real estate shall be and constitute a valid lien against the rights and interests of any third persons upon all and every part of the property of said company which is described in said mortgage, and which is situated in any county in this state where said deed of trust or mortgage shall be recorded in the manner provided for the recording of mortgages upon real estate, and all mortgages or deeds of trust which have heretofore been executed and recorded in the manner provided by law for the execution and recording of mortgages upon real estate, shall be and constitute valid liens as against the rights and interests of third parties which shall be acquired subsequently to the recording in any county where any property of said corporation may be situate of confirmatory conveyance or assurance: Provided, if said original mortgage or deed of trust shall not have been recorded in any county where any property of said company shall be situated, then the recording of the original instrument in such county shall make said deed of trust or mortgage a valid lien against the rights and interests of third parties acquired subsequently to such recording of said instrument.

No. 303.

THE NECESSITY FOR STATE AND NATIONAL ORGANIZATION.

By JAMES B. HOGE, PRESIDENT OF THE NATIONAL INTERSTATE TELEPHONE ASSOCIATION,
U. S. A.

(Reprinted from 'Finance,' May 20th, 1905.)

Organization is the watchword for the 20th century. Everybody organizes, from the newsdealer and the peanut peddler to the transcontinental railway corporation, the billion dollar manufacturing plant and others of minor importance. Some for profit, some for protection, and others for political and social preferment. The question for us to consider is that of applying organization to the independent telephone companies of to-day. In order to get a fair bird's-eye view of the situation, past, present and prospective, let us consider a few points of history, a brief view of the situation to-day, and draw a picture of the ideal condition of the future.

The telephone was invented in 1876. After being in use for more than eighteen years there were less than 300,000 telephones in use attempting to serve a population of over 65,000,000, or one for every two hundred and sixteen inhabitants. The earnings of the American Bell Telephone Company for 1894, the last year of its monopolistic control, according to the published statement was \$30 per instrument, or \$60 for each complete telephone in their system. These figures are taken from the Wall Street Journal and from W. H. Poor & Company's publication, the

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former showing the company's earnings covering a period of twenty years, and the latter showing the growth of the telephone in the United States. Hence, I think these figures are correct, and I feel safe in making the statement that there was less than one per cent of the 300,000 telephones located outside of the limits of incorporated cities, which we now call farmer or rural telephones.

In 1895 the situation changed. The basic patents expired, and a long suffering public were allowed by their expiration to secure the service for which they had been negotiating so many years. The independent telephones from the start were successful; they worked in most cases far better than those of the Bell Telephone Company. At first every one thought that the public would require twice as many telephones as the Bell Company had furnished, but no one anticipated that they would require fifteen times as many. Yet there are fifteen times as many telephones working in the United States to-day as there were when the original patents expired, the majority of which are connected with the independent system. In Indiana there are over thirty times as many, and in Ohio at least twenty-five times as many. Now think of these percentages! A growth in two states of over 2,600 per cent! What other business of the country vitally important to such a large percentage of the citizens has shown half of this remarkable growth? Are we through with growth? No; and will not be until there is, at the least calculation, ten million telephones installed in the United States, or one for every nine people. If we keep up with our present percentage of gain during the time necessary to bring the business up to ten million telephones the independents should have at least six million of these telephones, or approximately one and one-half as many more telephones as we now have. There is no question in my mind that the growth will go to a point where there will be at least one telephone for every nine people in the United States. We now have one for every fifteen people in the state of Ohio, and one for every twelve people in the state of Indiana. I know of places where there is one for every six people.

How shall we get the greatest benefit from the growth of the future? Shall we allow it to go on in a haphazard sort of way, or shall we take care of it in the same way as all other successful lines of business are handling their growth? I venture the assertion that there is not a single person within the sound of my voice that does not favour organization. That being settled, what kind of organization will best serve our interests? The plan adopted by the National-Interstate Telephone Association, commonly known as the 'Ohio plan,' is familiar in a general way, I take it, to all. Therefore, I will not take up your time outlining the plan, but, will undertake in a few moments to point out some of the advantages of such an organization over that of any other plan that has been proposed. By having a delegate organization made up of representatives from each group of companies who are selected and sent to the state or national convention, and who will make it their business to study the needs of their constituents, the same as members of Congress or the United States Senate study the needs and requirements of those who have elected them, the interests of every member of our organization will be taken care of.

The ablest men should be selected as these delegates. Only such matters as are important should be introduced for consideration. Matters that concern only a district should be disposed of by that district, if possible. Matters concerning a state should be disposed of by that state. Matters that cannot be disposed of by district or state organizations should then be referred to arbitration or to the organization higher in authority. Matters of interest to a large percentage of the companies should be presented for consideration by the national convention. By operating in this way it is comparatively easy to handle the business at any time without its getting unwieldy.

For the last few years the steel companies of the United States have been operating as a community of interests, the same as the great railroad corporations, and it has not only proved satisfactory to the patrons of the companies, but has also proven eminently satisfactory from an operating and security-holding view-point. At this time there is a meeting in Washington city of the International Railway Congress,

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made up of representatives of the various steam railways in the world. They hold their conventions every five years, this being the first one ever held in the United States. Their plan is that of presenting subjects of special importance which are afterwards taken up in a logical way and discussed, then submitted to a committee, which brings in what seems to them the consensus of opinions of the delegates present. That report is then discussed, and if it receives the approval of a majority of the delegates present is ratified as the report of the convention. This does not in any way bind any of the railway systems to adopt it, but it is quite likely to be very carefully considered by all successful railway operators.

Is there any reason why the independent telephone companies of the United States, made up as they are to-day, of between six and seven thousand separate companies, should not be brought closer together by organizing? There is no other business in the world where the properties are operated simultaneously and as one property to the same extent as in the telephone business. We are, therefore, interested in standardization along every line. Some of the most important points to be considered at once are standardization of operating rules and regulations, forms of accounting and equipment. Not that all equipment should be manufactured by one concern, but that it should be thoroughly standardized, the same as the railway companies have standardized the gauge of their tracks, and the make-up of their couplings, brakes and numerous other parts of their equipment. Is there any way to do this except by organizing? I feel safe in saying that it is impossible to do it in any other way.

Our competitor is trying in every way to break into our ranks. He is trying to disintegrate the interests of the various states and districts by selecting one company here and another there that can be connected with his system. In addition to that he is attacking our securities and our methods of doing business by subsidizing a newspaper in Iowa to publish misrepresentations about some independent telephone company in Ohio or Indiana, then subsidizing a newspaper in Tennessee or Kentucky to tell what a wonderful failure the independent movement has been in Iowa. The newspapers of Boston are subsidized to tell the Bell employees and stockholders that the independent movement throughout the country has been a dismal failure, when, as a matter of fact, Boston is being called upon every month to furnish from ten to twenty-five thousand dollars to meet the pay-rolls of the Central Union Telephone Company in the Central West, due to the independent telephone companies' success and the Bell Company's failure to compete successfully. Looking at it from that point of view, the independent movement has been a failure for the Bell Company.

Gentlemen, with proper organization the victory is yours! Is there any reason why the citizens of the various cities in Indiana, Ohio and other states should not own and manage the telephone properties of those communities, the same as they own and manage other public service corporations, banks, mercantile establishments and manufacturing plants? Why should we not continue to be interested in them under a proper working arrangement with our neighbouring cities and states?—(Read at the banquet at Indianapolis, given by the Indianapolis Telephone Company last week.)

No. 304.

THE UNITED STATES TELEPHONE COMPANY.

801 ELECTRIC BUILDING, CLEVELAND, OHIO,

Sir WILLIAM MULOCK,

July 11, 1905.

Postmaster General,

Ottawa, Canada.

DEAR SIR,—Your letter of June 9 attaching a number of questions, has been received and referred to me, for reply, and you will find the questions referred to answered below:—

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The United States Telephone Company, of Cleveland, Ohio, has pole lines over most all of Ohio and a portion of Michigan and Indiana. The stock and bond issue is: \$2,000,000 common stock, \$363,200 preferred stock and \$2,085,000 in bonds.

The company has been operating six years.

This company is a toll line company only and connects with the various independent exchange companies, furnishing them with their long distance service.

The length of our lines is 15,000 circuit miles. The cost of same is about \$80 per circuit mile.

We have about 2,600 miles of poles.

All our lines are aerial, except a few feet just outside of each office.

We do not own any switchboards but have a number of toll boards connecting with all manner of systems, including magneto, central energy, central signalling and local talking, also automatic.

Our toll boards are manufactured by the Stromberg-Carlson Telephone Manufacturing Company, Kellogg Switchboard and Supply Company, and the North Electric Company and the Sterling Electric Company.

We have no telephones at all.

Our rates for long-distance service are measured on the air-line basis and are made not to exceed $\frac{3}{4}$ of a cent per mile, excepting for short distances, when the rates are made up as follows:—10 miles or less, 10 cents; 10 to 20 miles, 15 cents; 20 to 30 miles, 20 cents; 30 to 39 miles, 25 cents; 39 to 48 miles, 30 cents; 48 to 56 miles, 35 cents, &c.

Six per cent per annum is paid on preferred stock.

Five per cent interest is paid on our bonds.

Nothing is set aside for depreciation of property, but it is kept in good shape each year and is charged to maintenance. Any rebuilding of lines is taken care of right out of the earnings and charged up to maintenance expense.

Our surplus last year was \$70,270.39.

The United States Telephone Company connects with all local exchange companies in the state of Ohio and also makes connection with the long-distance companies of Indiana, Michigan, Pennsylvania, West Virginia and Kentucky, so that it has connection with all companies in those states. We pay the local company originating a call, 25 per cent not to exceed \$0.125 on any 3-minute conversation. If the message is carried over some other company's toll lines in addition to our own, after the commission is deducted, the balance is divided pro rata according to the air-line distance carried by each company.

The 'Bell' had about 25,000 telephones in Ohio before the advent of competition. Now they have about 90,000.

The 'Bell' rates vary according to the size of the town and location. They do not seem to have any regular rates. They charge whatever they can get; if there is no competition they charge a great deal, if there is a very strong competition, they give the service away.

In our construction department we pay our foremen from \$60 to \$75 per month; the linemen, \$40; the groundmen, \$25 and \$30 per month, and in addition to the above wages we pay their expenses. You will understand, of course, that all of our work is outside of towns and cities. Our troublemen who are stationed at various points along our line, receive from \$60 to \$65 per month and their expenses when they are away from home. Our inspectors receive from \$60 to \$80 per month, depending upon their ability and the class of work they are on. We have no wiremen in the strict sense of that term. We have but a few operators as the local exchanges operate our lines in most cases. There are a few cases, however, in which we pay the operators, and their wages run from \$15 up to \$50 for the chief operator.

As we do not have any central exchanges, we do not buy any of the material referred to, excepting wire for over-head work, poles, arms, insulators and bolts. These

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prices vary a good deal, depending upon the time of year they are purchased and the demand for material at the time.

Our plant was built to give the independent exchanges in Ohio connection with each other and with adjoining states. We do all of our construction work and maintain our own lines and toll boards. The local companies are paid a commission of 25 per cent not to exceed \$0.125 per three minute conversation on originating business and their proportion, if any, of the toll line haul. This 25 per cent covers the operators as well as other expenses. Where the United States Telephone Company employs its own operators, it pays the local company 15 per cent instead of 25 per cent. The United States Telephone Company has general supervision, of course, and has contracts with all of the local exchanges and the local exchanges operate toll lines as directed by the long-distance company.

If there is any further information that you may need, I will be glad to furnish it for you if I can.

Yours very truly,

M. B. OBERLY,
General Manager.

No. 305.

A REPORT UPON THE LORIMER SYSTEM OF AUTOMATIC TELEPHONY.

(By. S. G. McMeen.)

In accordance with instructions from Mr. D. J. Johnson and Mr. A. O. Wisner, dated December 17, 1904, I have made an investigation of the system, the machinery, and the patent applications developed and prepared by the American Machine Telephone Company, of Piqua, Ohio, under the inventions of James Hoyt Lorimer and George William Lorimer.

The scope which I have given to my investigation has been such as to include a study of the general plan outlined by the inventors early in their work, and pursued to success afterward; the physical form which they have given to the system after developing it to the point where it becomes an operative system, and a study of their patent applications in the United States to determine how thoroughly the invention as made has been covered by the specifications and claims, and in a reasonable degree what bearing a patent issuing thereupon would have with reference not only to the thing to be protected, but also with reference to other systems of automatic telephony developed by others, and already in use, or possible to be put into use.

I.—THE SYSTEM AS A CONCEPTION.

The general plan laid down by the inventors at the time of beginning the real work which resulted in producing this system is that of bringing the lines of a telephone exchange from the subscribers to a central office, equipping these lines with a very small amount of apparatus per line, and further, installing in that central office a mechanism which may be called a machine, and which, disregarding the mentioned small amount of equipment per line may be said to be made up wholly of machine-units intended to make connections between lines. The distinction I am trying to make in this sentence is important, and may be stated in another way:—

Telephone exchanges not having automatic apparatus in their central offices, contain switchboards commonly known as manual switchboards, and at these switchboards operators sit, answering the calls of certain subscribers and connecting their lines

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with those of the subscribers called. These connections are made by units containing plugs, flexible cords, and other machinery, and each operator is provided with a dozen or more such units of apparatus, one being quite like another. In the manual system, the cord circuits and the things that really belong with them as connecting devices, are relatively inexpensive. The equipment belonging to the lines makes up quite the larger part of the central office outfit.

In the Lorimer system almost all the machinery may be said to be made up of mechanical devices electrically controlled, each one of these devices corresponding in its function with the single-cord circuit in the manual switchboard. Incidentally this mechanical cord circuit in the Lorimer system is automatic in its action, doing the things it must do as a result of mechanical and electrical power applied to it, and without the assistance of a human being, as is necessary in the manual switchboard. Even more important, however, is the distinction that the mechanical cord circuits of the Lorimer system, while very different from and more complicated and expensive than, cord circuits in a manual board, constitute, when taken as a whole, nearly the entire central office equipment. The very considerable saving in investment which may result from carrying out this fundamental plan is one of the features upon which I am reporting in detail in a later part of this writing. It is of interest to note in passing that this is a feature of the system about which relatively little has been said by the inventors and owners, but which really contains within it the whole spirit of the attempt from its beginning.

I desire to record at this point the fact that the task which the inventors set for themselves in the beginning, has been carried out consistently, and that the scheme of things now disclosed by the apparatus in operation in Piqua, Ohio, and by the specifications and drawings of the applications, is in substantial harmony with the problem of telephone switching as it requires to be met in commercial practice.

II.—THE SYSTEM AS MECHANICALLY DEVELOPED.

My study of the mechanical development of the system was made upon the exhibit machine of 200 lines capacity, now in operation in the factory of the American Machine Telephone Company, in Piqua, Ohio. It consists of two similar sections of machinery, each of which has a capacity of 100 metallic circuit telephone lines. Each section has, as one of its main parts, a group of things individual to the single group of 100 lines brought to that section. The remainder of the section is composed wholly of the mechanical cord circuits which I have mentioned. In the machines I tested there were five such cord circuits per section, although the number might be anything from one upward, and the fundamental facts which must control how many there shall be, will form the subject of some definite discussion later on in this report.

The business of the group of things first mentioned above as forming part of the section, is to keep on the lookout for calling lines in the group of 100 lines handled. When a line does call, this part of the machine immediately identifies it, and calls upon a cord circuit to take charge of it. As soon as this happens—and the operation is very quick—the cord circuit takes complete charge of operations, and the part of the machine which identifies the called line goes on with a similar identifying service for other lines which are calling. The cord circuit having completed the required connection with the calling line, permits the desired subscriber to be rung up by the calling subscriber, and when the conversation is completed, the cord circuit releases itself from both lines, and is ready for another connection, which may be given to it instantaneously after the complete release of the first one. The ringing of the called subscriber by the calling subscriber is done by the latter merely by pressing a button on his telephone.

The operation of seizing the calling line, transferring it to a cord circuit which is available for use, and disestablishing the connection when the conversation is over, are all accomplished, so far as energy is concerned, by means of power taken from some convenient source, such as an electric motor, gearing from a rotating shaft, a
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gas or gasoline engine, or whatever is convenient. Control of the various parts which require to be moved is primarily electrical, but there appears to be a distinct absence of electrical and magnetic means of doing things wherever they can be done as positively by mechanical arrangements.

The term 'cord circuit' I have chosen merely because of the similarity between the unitary features of the Lorimer system, and the actual cord circuit used for the same purpose in the familiar manual system. The term used by the inventors in their description and specifications 'division,' if understood, is equally explanatory. It is to be noted that in calling the division a cord circuit, I do not mean to imply that there are any flexible cords used. The absence of the flexible cords is a minor but important distinction between manual and automatic systems, as the maintenance and depreciation expense connected with the large equipment of flexible cords in a telephone switchboard was formerly one of the greater expenses of operating, and still remains, with vastly improved methods, as an important feature of manual expense.

The Lorimer system provides each subscriber's telephone with a certain amount of mechanism having to do with the making of a call. The simplest form of a subscribers' telephone is that used with manual switchboards, there being in such an outfit merely a telephone receiver, a telephone transmitter, a signal bell, and a switch associated with the hook upon which the receiver is placed, these parts being associated together with the necessary mounting box and wiring. All of these parts are necessary in the Lorimer system, and in addition there must be provided the implements for transmitting the signal impulses to and from the central office in getting a connection. While there is a distinct difference in the mechanism, some idea of what the Lorimer subscribers' station involves may be gained from a comparison with the subscribers' telephone apparatus used in the Strowger system of automatic telephony, as used in Chicago and elsewhere. This Strowger system, however, involves a further element in the subscribers' telephone, this being a battery furnishing current for the transmitter. Two cells of such battery are used in the Strowger system, as these circuits and apparatus have not yet been arranged to furnish the current for the subscribers' transmitters over the line from the central office. The widely used 'common battery' or 'central energy' manual systems of to-day have dispensed with the chemical battery at the subscribers' telephone, all current for signals and talking being sent out from one large storage battery or machine in the central office.

The Lorimer system is designed on a basis of complete common battery or central energy current supply, and there is no necessity for equipping each telephone with two or more cells of battery. Taking as a basis the market prices of dry batteries and the accumulated experience in their use in manual systems, it seems that the use of the dry batteries inflicts an average expense of \$1 per subscriber per year. Whereas the cost of current furnished over the line from the central office for the conversations varies with the method of getting the current, from five to six cents per subscriber per year when gas engines are used for charging the storage batteries, up to ten or fifteen cents per subscriber per year when the current is purchased from an electric power company at higher gross cost.

There is a further disadvantage in the use of primary batteries in the subscribers' telephone which is that most dry batteries, which are for many reasons the best form, if any are used, lose their power merely by lapse of time even if not used at all, so that the telephones which are used least require almost as much expense for batteries each year as those which are heavily used. In all common battery systems, however, the current for transmitter supply is greater or less as the telephones are used more or less, so that the expense in this direction varies in proportion to the use of the system; and in the measured service method of charging, varies in proportion to the gross income from the service. This feature of varying with the service will be found to reappear in other features of the system, as discussed elsewhere in this report, and I invite attention to each element which I shall identify as this feature.

I have referred in the foregoing to the fact that the divisions, which I have also referred to as cord circuits, constitute much the larger part of each section. In this

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I have no reference to bulk, although the statement is true for that also, but to the complexity of parts and the cost of manufacture. This means, in other words, that a central office equipment on the Lorimer principle is composed mainly of devices adapted to connect lines together when called upon to do so. Bearing in mind that the whole function of the telephone exchange central office is merely to connect lines together, permit conversations, and disconnect them at the close of conversation, it is easily seen that, divested of technicalities, telephone exchange central office switching is merely a manufacturing procedure, the product of manufacture being telephone service. Viewed in this simple way, the most logical procedure is to build a central office mechanism composed of units especially designed to make connections and permit conversations, and to place as many of those in a central office as shall be found necessary by dividing the number of connections to be made by the ability of each unit to make them.

But the success or failure of an effort to simplify the telephone exchange problem in this way, and produce a central office equipment for handling the work, naturally must be determined, when the effort has been completed, by finding out whether, with a particular form of equipment, the cost of making telephone service has been reduced below the cost of making it by other automatic or manual equipments already perfected.

In my investigation of the exhibit of machinery for 200 lines in the Piqua factory, I caused the machine to make and eliminate a large number of actual connections, the called station being rung up, and conversation held in enough of the cases to establish actual performance of the equipment as to its calling and talking ability. In a very much more exhaustive degree I caused the machinery to make and unmake connections in connection with my study of its details.

The time required to set up a complete connection between two lines varies between certain close limits. For a given speed of the driving motor, or driving shaft, there is a certain minimum length of time, and a certain maximum length of time which will be utilized in a connection. Both of these limits at least and greatest time are dependent upon the main speed of the driving shaft, so that by increasing the general speed furnished to that shaft, all the operations are speeded up.

As I first studied the machinery, a certain fundamental main shaft was rotated 20 times a minute, and the time required for a complete connection under these conditions was either $7\frac{1}{2}$ seconds at the fastest, $10\frac{1}{2}$ seconds at the slowest, or something between. The average of a considerable number of tests under those circumstances was 9 seconds.

By running the main shaft faster than 20 revolutions per minute, corresponding reductions were made, and in another series wherein the main shaft was speeded up to about 24 revolutions per minute, connections were made with equal certainty and reliability, the average of the tests in that case being 7 8-10 seconds.

I have made a considerable study of the details of the mechanism along the distinct line of decreasing still further the time of completing connections, and it is clear to me that if it should be desired to bring the total average of completing a connection down to 6 seconds, this can be done without endangering the certainty of the operation of the machine in any degree.

That this conclusion is important will easily be believed, when it is remembered that not only is rapid service of much importance in satisfying subscribers, and that other things being equal the speedier the service the more popular it will be, but also that the speedier the connecting and disconnecting, the greater the efficiency of each of the divisions or cord circuits of such a system as the Lorimer. By thus increasing the efficiency of each division, the cost of the central office equipment is reduced, if the average length of conversation remains constant.

While this may seem somewhat technical, it is elemental in telephone working, and as it has so strong a bearing on economics, I insert it here in its logical place.

In my examination of the exhibit machine in Piqua, I gave close attention also to those features in which the relation of the machine to troubles and faults in the outside plant differs from that relation in other systems. What I mean by this is that in the manual system of the present highest type, the outdoor system of lines in aerial LORIMER SYSTEM.

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and underground cables, conduits, &c., must have certain excellence, and a certain rigid character of inspection and maintenance, in order that it may operate satisfactorily, without deranging the central office equipment and service.

This outdoor plant is, with any equipment, the most expensive part of the telephone exchange system. To build and keep up the outdoor plant well enough for the old form of telephone systems, in which the central office was called by turning the crank of the instrument, costs a certain annual sum. To do the same thing for the present common battery manual system costs more, and it is believed that to do this for the present Strowger automatic system costs still more.

The results of my applying these tests to the Lorimer machine, setting up artificially the exact conditions which outside troubles can cause, and analysing the results with painstaking care, lead me to the conclusion that with the proper and best construction of the Lorimer system in actual cases of commercial application, the outdoor plant need not be more expensive than present conditions require, nor will there be more serious interference with service in times of considerable outdoor trouble.

I have given enough study to that phase of the situation to enable me to reach this conclusion, and I refrain from reciting at length all the reasons which lead me to it.

Applying the information which I have gained to the consideration of the system applied in practice, I am enabled to give the following conclusions :—

III.—THE SYSTEM IN COMMERCIAL APPLICATION.

In a manual equipment of the standard common battery type, in which multiple switchboards are used, placing all the lines of the office within reach of the connecting cords of each operator, there are such relations between the amount of machinery required per line, and the amount required per cord circuit or unit of line-connecting-things, as to produce this cost condition : While the equipment for an office in which there are many calls per line is more expensive than the equipment of an office having few calls per line (the number of lines in the two cases being the same), the difference between the costs is not directly proportional to the difference in the total connections to be made.

In the Strowger automatic system of equipments for central offices, the original equipment has to be installed large enough for the maximum rate of calling which is expected will exist at the time of heaviest calling; and even if the rate of calling be low, there is an expensive equipment to be provided for each line. In the Strowger system, the difference between the cost of the central office equipment capable of handling a large number of calls per line, and that capable of handling a small number of calls per line, is relatively very small. It is much less marked than in the case of manual systems.

In the Lorimer system, the things required to be purchased in a degree corresponding exactly with the number of lines are relatively inexpensive. The things required to be purchased in direct proportion to the number of calls to be handled, ordinarily called the 'traffic,' are relatively expensive. It follows that the expense of central office equipment varies almost as to the work to be done.

In order to determine the next important fact, whether the elements in the Lorimer system, when manufactured in a commercial way, could be sold at a price enabling this important advantage of variation to mean anything financial to the purchaser and user, I made as careful estimates and as close inquiry as my time would permit upon the costs of the machines as they have been made in the limited way already practiced. I supplemented this investigation by some calculation and study on the matter of what the machines as designated ought to cost when made under modern principles in a well-equipped, systematized factory.

It is my conclusion that the cost of the elements of the Lorimer system, when so manufactured, can be kept such that, after adding a liberal and satisfactory profit, equipments can be installed in offices of 600 lines or more, at a price less than that required for the installation of manual apparatus of the highest type; still more

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markedly less than that of the Strowger system of apparatus of the present type, and that the difference in favour of the Lorimer system grew greater as the number of lines increases, as the number of calls per line per day increases, or as both increase.

It will be observed that I have set a limitation of a minimum size of 600 lines in the statement of my conclusions. This is because I am not able at this time to submit a conclusion based upon the application of the Lorimer system to the smaller offices. So far as I can generalize at this time, my conclusions have stronger bearing on the larger sized offices, because it is in those that the savings of the Lorimer principle began to be most strongly apparent. Whether 600 lines, or some other small number of lines is the limiting point, is not easy to be said, nor indeed is it probably important. An answer on this point would be provided immediately upon a more accurate determination of final manufactured cost of the elements.

It may be noted that I have referred frequently to the different rates for calling of lines. I do so for an important reason, which is two-fold:

First. The tendency of telephone development is, and for some time has been, towards the placing of more telephones in a community, and naturally this means that it is the people who could not afford or thought they did not need telephones heretofore, who are getting them now. Many of them now are taking telephones at low prices with limited facilities.

Second. The tendency of the management in all large exchanges is away from the flat rate method of charging for the service, and toward the message rate or measured service method. In New York city there are no flat rates, although the system was operated originally on that basis exclusively.

Wherever the message rate plan of charging has been adopted, the rate of calling on such lines has fallen off in a distinct degree. This is most natural. In New York city the rate of calling diminished so much that instead of being at an average of fifteen calls or so per line per day throughout Manhattan Island under the flat rate plan, it fell to 9.2 calls per line per day in that area. It is believed that in time the message rate system will be the final one. When this is so, the most economical central office equipment will be that one in which there is the least amount of equipment per line, and the most flexible amount of equipment per call.

In the manual systems involving a multiple of all the lines entering an office—this meaning the carrying of all the lines within reach of each of the operators—the addition of sections of switchboard to increase the capacity of the office in lines, means that work must be done in and upon all the sections which are already in place, and the magnitude of the operation is more serious than easily described in words. In the Strowger system the installation labour is not so serious, the principal feature being the cost of the additional switches added. In the Lorimer system, the installation of additional equipment is a matter of much simplicity, the added equipment being set in place with little reference to that which already has been installed.

Further features of the probable commercial service of the equipment, so far as I have been able to judge by an examination of the exhibit, are that the electrical contracts made by the machine and involved in each connection for conversation, are very positive and are equal to the rather exacting requirements of telephone work. They are as good as these which exist in the best manual practice; they are better in quality than any I have seen in other automatic systems.

Being automatic, no operators are required. I am not prepared to say what will be the probable cost of skilled attendants in the sense of mechanics. It is my belief, however, that these attendants should cost much less than the amount saved by eliminating operators.

I observed the workmanship of the exhibit exchange to be of an excellent character. If this character is maintained in commercial apparatus, the cost of maintaining the machine elements should be low for that reason.

The feature of setting the number of the called line plainly before the calling subscriber in figures, and of turning in the call by a simple movement of a handle, ap-

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pealed to me as being direct, positive and satisfactory. There is a slight additional advantage in the fact that upon failing to get a station because its line is busy, one may repeat the call from moment to moment by merely giving a turn of the calling handle. This runs into a question of remembering versus forgetting the called number, and it may be that it has advantages greater or less than they seem to me to be.

The precise difference in character between the outdoor plant suitable for use with the manual system under the best conditions, and the outdoor plant suitable for the Lorimer or Strowger automatic systems under the best conditions, lies in the necessity of a ground wire at each of the subscriber's stations. This ground wire is in addition to the two line wires leading to the central office, is needed only at party line stations in the manual system, and is needed at each station in automatic systems. The increase in expense by having this ground wire at each subscriber's station is not great, and in the most expensive construction, the ground wire cost is but a small percentage of the line cost per station.

IV.—THE PATENT APPLICATION.

In accordance with my instructions, I have visited New York on this study, consulting with Mr. H. C. Townsend, who has in charge the applications for patents on the Lorimer system. The applications which are pending in the United States are two in number. One was filed April 24th, 1900, and has for its subject matter the system as a whole. The other was filed November 26th, 1901, and has for its subject matter a minor phase of the system, which, while essential and important, requires no extended discussion.

The application of April 24th, 1900, was supposed to be in process of examination in the United States Patent Office when a patent on an automatic exchange system issued under date of November 19th, 1901, to Ernest A. Faller, of Baltimore, Maryland, this patent being No. 686,892.

The Faller patent covered an automatic exchange apparatus of a specific character different from that of the Lorimer system, but contained claims which were distinctly upon important features of the Lorimer mechanism. The attention of the Patent Office was called to the fact that the Faller patent covered matter disclosed and claimed in the Lorimer application, filed long before the filing of the Faller application, and it resulted that the Patent Office on February 3rd, 1902, declared the Faller patent and the Lorimer application in interference, this being interference No. 21,584.

Extensive testimony was taken, and the result of the proceeding was that on April 20th, 1904, the Examiner of Interferences of the United States Patent Office rendered his decision, in which for many reasons he adjudged priority of invention to James H. and George W. Lorimer.

Faller appealed to the Examiners-in-Chief, citing that the issues were not patentable in view of another earlier patent to another person. The Examiners-in-Chief failed to take this view, or any view advanced by Faller, and on September 17th, 1904, awarded judgment of priority to Lorimer and Lorimer.

The limit of appeal from the decision of the Examiners-in-Chief was made November 17th, 1904. This appeal was to the Commissioner of Patents, and in filing, Faller assigned no less than eighteen errors in the decision of the Examiners-in-Chief. He was not present at the hearing before the Commissioner, nor was he represented by counsel. He did not file a brief in support of his numerous reasons for appeal. The Commissioner of Patents did not confine himself to a mere confirmation of the judgment of the two lower tribunals, as he might have done with justice in the absence of any appearance by or for Faller, but rendered a decision quite full, clear and exact, terminating with the conclusion that there was no error in the finding of the Examiner of Interferences or of the Examiners-in-Chief, and that their decision in awarding priority of invention to Lorimer and Lorimer was affirmed. This he did December 12th, 1904.

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The limit of appeal from the decision of the Commissioner of Patents to the only other tribunal, is forty days from December 12th, 1904, and this limit expires January 21st, 1905. The appeal is to the Court of Appeals of the District of Columbia.

I have been told that it is not the intention of Faller to appeal, and in view of minor reasons, and the fact that he said he would not appear before the commissioner, and did not, it would seem reasonably probable that the commissioner's decision is final.

I have made as close a study of the disclosure of the system in the specifications and drawings of the principal Lorimer application as has been permitted by my time, and the further conclusions which I have reached are these :—

The specifications and drawings are given a scope and clearness such as to cover the case well, and to support the claims which have been made in a manner probably quite adequate.

The claims introduced so far are 293 in number. Seven of these were required to be made in order to meet the Faller issue, and take advantage of the interference. The Patent Office lately was called upon by Mr. Townsend to furnish a statement as to the claims which were deemed to be allowable, and 72 of them were so reported on. It was stated at that time by the office that many other of the claims were deemed also to be allowable, when they shall have been subjected to such slight modification of form as suggested by the office. As to those remaining claims said to require modification, my study indicates that many of the modifications are minor ones, and may be made with advantage or without disadvantage, and in the cases of many others, the open question between the examiner and the solicitor might be settled by argument in such a way as to avoid modification of form.

Beyond and beside all this, my study of the application convinced me in a distinct though quite general way, that there is more in the system than has been claimed; that additional claims along new lines can be added to the application; that these will be supported by the drawings and specifications as they stand, and that the value of the patent finally to issue would be greatly enhanced by such action.

I am equally convinced that there is still another class of claims which the invention will support, and to the protection of which the inventors are entitled, because the invention contains the elements, but which the drawings and specifications as they stand do not properly support.

When it is borne in mind that a claim, which when allowed stands as a distinct patent for the thing it covers, must be read in the light of the disclosure of the specifications and drawings, the force of my last statement will be apparent.

It is my recommendation, therefore, that the application be continued in its amendment by having its present claims prosecuted as carefully as heretofore, that every effort be made to discover what additional claims may justly be supported by the disclosure, and that the specifications, and if need be, the drawings, be amended in all necessary degree to support the additional claims of the character of which I am speaking. This amendment of the drawings and specifications is not intended to mean such a change as will in any way constitute the insertion of new matter. It is only that I think it highly likely that occasional changes of wording and addition of sentences in the specifications and possible slight modifications of the drawings, may make the real invention clear, in order that the new claims may be drawn with accuracy and certainty. It is, of course, true that anything at all of a nature of new matter, even though it may have been in the invention since its beginning will be made the subject of a new application, or new applications.

While it is inexpedient for me to report in detail as to what I mean by this broadening of the scope of the application, it will be understood that I have in mind that so important an application may well be strengthened in every possible way before allowing the patent to issue.

My reasons for considering the application important are several. One is that the work on the invention began as long ago as 1897, since which time much that is valuable has been done.

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able to-day in automatic exchanges generally has been produced. The effort of the Lorimers may seem to be on lines quite different from the efforts of those who produced the automatic exchanges which are in operation, yet on close analysis there are fundamental principles in common in the two systems. Whether or not the scope of the Lorimer invention may include and in some degree dominate these other features, is a question not to be lightly regarded.

It is to be borne in mind that the general art of automatic telephony has been in existence for about twenty-five years; but not until 1898 or later did there appear in commercial use a system capable of supplying telephone service to lines in groups of several thousand each at a reasonable cost. The work that has been done by inventors and engineers to produce such a practical system has been accomplished in very recent times, and not many patents have issued disclosing the apparatus of these more modern systems.

My examination of the applications, the actions of the Patent Office, the references cited, and the history and testimony of the hard-fought interference, lead me to believe that the prima facie evidence indicates that the patents which will issue on these applications will contain many claims which will be valid.

I may say further, and my knowledge of the subject is based on a considerable intimacy with it, that I know of no rights given to others, by virtue of patents in the prior art, that would seem to bear at all seriously on the right of the Lorimers or their assigns, to make, use and sell the invention. This, as I have said, is the entirely probable truth.

I trust that the work I have done for you and this report, will be believed to be thoroughly and carefully done, and with a view to learning and setting down the plain facts involved in the situation.

Respectfully submitted,

S. G. McMEEEN.

To Messrs. D. J. JOHNSON and A. C. WISNER,
Chicago, January 7th, 1905.

No. 306.

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HOUSE OF COMMONS. SESSION 1905.

REPORT FROM THE SELECT COMMITTEE ON POST OFFICE (TELEPHONE AGREEMENT).

The select committee appointed to consider the agreement of the 2nd day of February, 1905, between the Postmaster General and the National Telephone Company, and to report as to any recommendations thereon whether it is desirable in the public interest that the agreement should become binding, with or without modifications, and also whether the interests of the employees of the National Telephone Company, have been duly considered, have agreed to the following report:—

1. The situation which has occasioned the provisional conclusion of the agreement referred to us as above is as follows:—

The license to the National Telephone Company to carry on telephonic business, either in London or elsewhere in the United Kingdom, is about to expire on December 31, 1911. That company at present carries on about 90 per cent of the telephonic business of the country. At the end of 1911, therefore, with the exceptions mentioned below, practically the whole of the facilities for telephonic communication now enjoyed by the public would, if nothing had already been done and if nothing were to be done in the interval between now and then, entirely disappear. Exception has to be made

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in the case of a few provincial areas where municipalities have installed telephonic services in competition with the company under licenses which will expire at dates varying from 1913 to 1926.

2. The case of the district known as the London exchange area has already been provided for by an agreement, dated November 18, 1901, between the Postmaster General and the National Telephone Company (hereinafter called 'the London agreement').

3. That agreement provided for the purchase of the plant of the company in the London exchange area on December 31, 1911. Among other conditions, the plant was to be purchased at its value *in situ*, and no payment was to be made in respect of compulsory purchase, goodwill or past or future profits. The company received underground facilities, and undertook to give intercommunication between the systems of the Postmaster General and of the company in London during the continuance of the company's license, and to concede uniformity of rates.

4. The London agreement was never expressly submitted to parliament, but is considered to have received parliamentary approval by the negating of an amendment to the address on January 27, 1902, and it has since been acted upon.

5. It is proposed by the agreement now referred to your committee to extend to the provinces, where the conditions materially differ, some of the principles of the London agreement.

6. The case of the provinces differs from that of London chiefly in the fact that in certain provincial towns a municipal telephone system exists side by side and in competition with that of the National Telephone Company. These municipal systems are conducted under licenses from the Postmaster General; and it is provided by the Telegraph Act of 1899 that where a municipality receives a license extending beyond December 31, 1911, the license of the National Telephone Company to carry on business in the same area shall enjoy an extension for the same period. Another enactment of the Telegraph Act, 1899, provides that where in consequence of the grant of a license to a municipality, the company obtain an extension of their license for as much as eight years beyond December 31, 1911, they are bound (on certain conditions) to grant intercommunication within the exchange area.

7. The only places where the above enactments now have effect are the following: Hull, whose license expires December 31, 1911; Glasgow, whose license expires December 31, 1913; Swansea, whose license expires December 31, 1920; Brighton, whose license expires April 30, 1926; Portsmouth, whose license expires July 30, 1926.

The resulting effect is that in Hull the municipal right to carry on telephonic business will expire at the same time as the company's right; in Glasgow, Swansea, Brighton and Portsmouth, the company's right will remain alive for various periods after 1911; and in Swansea, Brighton and Portsmouth the company will enjoy the extended period subject to an obligation to give intercommunication to the subscribers to the municipal system.

8. Elsewhere than in the London area and the towns mentioned above, and the few places in which the post office are working telephonic services, the National Telephone Company is at present practically the only agency supplying telephonic facilities.

It is to provide for the situation which will arise at the end of 1911 that the agreement of February 2, 1905, was entered into between the Postmaster General and the National Telephone Company. It will come into force on August 31, 1905, if not previously disapproved of by the House of Commons. For more convenient reference, we append a copy of it to our report.

9. Broadly speaking, that agreement adopts the same method as was applied in the London area by the agreement of 1901. The Postmaster General undertakes to purchase at the end of 1911 some, but not the whole, of the plant, land and buildings that will then be in the hands of the company. The agreement contains provisions designed to secure that the property so taken over shall not be obsolete or otherwise unsuitable for the Postmaster-General's requirements. As to the sufficiency of those

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provisions, we shall have more to say hereafter. For the present, it suffices to note that the agreement contemplates the preservation of certain selected assets of the National Telephone Company, and the ensuring that they shall be made both available and useful to their successors. It follows that, so far as concerns those assets, the National Telephone Company is relieved of the otherwise difficult task of finding a purchaser, and their shareholders are relieved, as regards so much of their property, of the fear of losing it by the expiration of the license in 1911. In return the company undertakes (besides the obligation of making and keeping their property good and serviceable for the purposes of the transfer in 1911) to give certain advantages not hitherto enjoyed by telephone users.

10. It should be mentioned here, as an exception to the provision that goodwill and profits shall not be considered in fixing price, that goodwill up to a maximum amount will have to be assessed on what is called the private wire business of the company, which the company give up under the agreement, notwithstanding that not requiring a license it could be carried on after 1911. Goodwill will also have to be paid for in the few cases of unexpired rights that the company will enjoy after 1911 in the areas of the competing municipalities mentioned above.

11. We have carefully considered the bearing of the agreement on the public interest, and to enable us to do so we have heard evidence as to the policy of the proposed purchase, as to the provisions in the agreement designed to secure that the assets to be taken over shall be properly selected and valued, and as to the possible consequential effects of the agreement on the interest of the public, whether regarded in its national capacity or as organized in municipalities which now carry on telephonic services or may in the future desire to do so. We have also considered the probable effect of the adoption of the agreement on the interests of the employees of the National Telephone Company.

12. On the general question of the policy of this purchase, protests were made not only by the present telephone-owning municipalities, but also on behalf of the London County Council, which claimed to represent one-fifth of the telephone users of the kingdom. Such witnesses have pointed out that the municipal services are both good and cheap and that their competition with the National Telephone Company has greatly improved and cheapened the company's services in their areas. They have alleged that in London, where, under the agreement of 1901 the Postmaster General has taken the field as a competitor of the National Telephone Company, the public has got a service neither so good nor so cheap as the municipal services. They have expressed fears that between now and 1912 it will be possible under the agreement for the National Telephone Company to institute so severe a competition with the municipal services as to starve them out of existence. And to prevent this, they have claimed that either the minimum rates allowed by the agreement should be fixed higher, or that favour or preference should be prohibited not merely, as under the agreement, between individual subscribers in the same area, but also between bodies of users in different areas.

13. But in the case of all the municipal witnesses it has become apparent that while they have been drawing our attention chiefly to the apprehended effects of the agreement during the intermediate and transitional period between 1905 and 1911, their chief fears have been as to its permanent effects after the disappearance of the company at the end of that time. They have pointed to the danger of their services being absorbed and superseded by the post office in a manner and on terms which would inflict financial loss on their ratepayers, inconvenience and detriment upon their constituent users, and an interference with that rapid development which they believe is fostered by municipal enterprise.

14. We are bound to say that some ground was given for these fears by the fact that the post office witnesses enunciated before us, as the present view of the Postmaster General's Department, the opinion that the post office should, after 1911, become the universal and exclusive provider of telephonic services in the United King-

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dom. Among other things, the Postmaster General had stated in a recent letter to Glasgow that 'he did not anticipate any prolongation of existing licenses or otherwise,' and Sir George Murray said 'that it was desirable in the future that municipal telephones should be absorbed by the state.' The case was not made better in this respect by the fact that these announcements were thought to be out of harmony with previous and even recent utterances of the same department. So recently as March 23, 1904, Lord Stanley, the present Postmaster General, said in this House: 'He would be only too ready to help in every way any municipality that wished to start its own telephones, and he hoped that the present difficulty, that a municipality could not get an extension beyond 1911 without the company receiving the same extension, might be overcome when they came to a general agreement.' This policy, however, of unification under state management, though advocated by the Postmaster General's witnesses, is not in the present agreement. It has been contended that one consequence of the agreement would be that during the transitional period 1905-1911, no fresh municipal licenses could be expected to be granted, nor could extensions of existing municipal licenses be promised.

15. We have not felt it necessary to go into the question of the comparative merits of municipal and national telephonic services, a question which we do not consider to have been referred to us. Nor have we followed up the controversies which arose as to the mechanical efficiency or financial stability of the existing municipal undertakings. For we felt no doubt that the relative claims of municipal and national systems will be settled by parliament on higher considerations than that some municipalities may have made mistakes at their first essay. We express no opinion as to whether such mistakes have been made; but we see no reason to suppose that, even if they have, municipalities will not be able and willing to profit by the experience gained.

16. In favour of the general policy of purchase in 1911, the solicitor (Sir R. Hunter), the secretary (Mr. H. Babington Smith), and the engineer-in-chief (Mr. Gavey) to the post office, appeared before us, and, directing their attention mainly to the period 1905-1911, argued substantially as follows:—

- (a) That the continuance, without break, of the supply of telephonic services after December, 1911, is secured in the best practicable way, without wasteful duplication of plant.
- (b) That a motive is provided and an enforcement secured for the maintenance of the company's plant in a fully efficient state.
- (c) That even if the company were left alone until their rights expire, no competitor could in the meanwhile make much profit who had not secured the intercommunication, which the agreement secures, with the company's subscribers.
- (d) That the agreement precludes preferential charges and unfair discriminations between subscribers in the same area.
- (e) That the rates charged by both post office and company will be confined within maximum and minimum limits.
- (f) That the experience gained under the London agreement showed that its policy had been justified by success. In two years 44,000 new subscribers (equally divided between the two systems) had been added.
- (g) That the immediate erection of new plant by the Postmaster General, even if not financially imprudent, could not, except under extreme pressure, be accomplished in the time available before the disappearance of the company's system.
- (h) That the fullest right of starting or licensing competitive systems is an added guarantee of efficiency, and is made effective by the right of intercommunication, without which competition could not pay.
- (i) That it would be a proper course for the post office to acquire any municipal exchange which is unable to maintain itself against the competition of the company.

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17. By way of securing that the assets to be bought by the Postmaster General shall be properly selected and valued, the agreement in the first place (clause 4) makes all questions of price in case of disagreement the subject of arbitration. Except in the few cases mentioned in paragraph 10 of this report, the price will receive none of the enhancements that usually attend a statutory expropriation. Many indeed of such elements of added price are expressly negatived. The words of clause 4 (1) are as follows:—

- ‘4. (1) The value on the 31st day of December, 1911, of all plant purchased by the Postmaster General in pursuance of the provisions hereof, shall be deemed to be its fair market value at the time of the purchase, due regard being had to the nature and then condition of such plant and to the state of repair thereof and to the circumstance that it is in such a position as to be ready for immediate working and to its suitability for the purposes of the Postmaster General’s telephonic service, and no addition shall be made to such value in respect of compulsory purchase or of goodwill, or of any profits which might have been or be made by the company by the use of such plant and in determining the value of any plant, no advantage arising from the construction of such plant by leave of the Postmaster General upon any railway or canal over which the Postmaster General possesses exclusive rights of way for telegraphic lines shall be taken into account.’

18. The words ‘fair market value at the time of purchase’ are identical with those used in the London agreement (clause 9 (3)). They occur also in the corresponding part (clause 30) of the licenses usually granted to municipalities, of which the model form as revised in 1902 is printed in the appendix.

Some exception was taken to these words on the ground that they differed from those employed in the Tramway Act of 1870. The words there were ‘the then value.’ These became the subject of a judicial decision of the House of Lords to the effect that they excluded past or future profits and compensation for compulsory sale and fixed the proper value of the property in question at such sum as it would cost to construct and establish the same, less an appropriate deduction in respect of depreciation. We regard it as important to secure the adoption of the words which carry the authority of a legal decision. We, therefore, recommend that clause 4 (1) in the agreement should be so amended as to run as follows:—

- ‘1. The value on the 31st day of December, 1911, of all plant, land, buildings, stores and furniture purchased by the Postmaster General in pursuance of the provisions hereof shall be the then value (exclusive of any allowance for past or future profits of the undertaking or any compensation for compulsory sale or other consideration whatsoever) of such plant, land, buildings, stores and furniture having regard to its suitability for the purposes of the Postmaster General’s telephonic service and in determining the value of any plant, no advantage arising from the construction of such plant by leave of the Postmaster General upon any railway or canal over which the Postmaster General possesses exclusive rights of way for telegraphic lines shall be taken into account.’

This involves the consequential deletion of clause 4 (2).

19. We are unable to suggest a better method than arbitration for settling the purchase price in case of disagreement. The process of arbitration has, however, to be applied to the determination of other questions besides that of price. The agreement proposes to resort to it for the purpose of testing plant in some instances in respect of its ‘suitability for the requirements of the telephonic service of the post office.’ In respect of these cases we should mention that it has been contended before us that the Postmaster General should be his own judge of suitability. It becomes necessary therefore to examine the provisions of the agreement under which it is designed to effect a proper discrimination between the assets to be taken over.

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20. From an examination of clauses 2 and 3 of the agreement it appears that except as mentioned below the Postmaster General will, as regards every item that he has to buy, have the protection afforded by the fact that either—

- (a) It has been acquired or constructed with his consent, or
- (b) It comes up to the scheduled specification in point of technical efficiency, or
- (c) It is found by an arbitrator to be suitable for the Postmaster General's requirements.

The exceptions to the above are:—

- (i) Land or buildings acquired before the agreement in non-competitive areas, if in use on February 2, 1905.
- (ii) Plant acquired before the agreement, not coming up to specification, and being switchboards or other internal plant in use in non-competitive areas on August 15, 1904, and specified in list by company to Postmaster General before August 2, 1905.

All plant, land and buildings must, in order to be qualified for purchase be actually 'in use,' by the company on the 31st day of December, 1911, for the purpose of the licensed telephonic business of the company (see clause 2 [1a]). So that it may be remarked of (i) *supra* that land or buildings bought or erected before February 2, 1905, in use then, and still in use nearly seven years later, are not very likely to be not worth taking under the carefully guarded conditions of the arbitration.

And as regards (ii) it is to be remarked that these classes of assets will also have to be still 'in use,' under clause 2 (1a), on December 31, 1911, and that should they be then worn out, obsolete, or otherwise unsuitable, the want of newness or the unsuitability can still be urged before the arbitrator in reduction of the price. The switchboards and other plant mentioned in (ii) were stated before us to amount to not more than 1 per cent of the whole amount of plant to be purchased.

21. A variety of detailed objections were taken to many of the provisions of the agreement, in respect of which it was sought to show that the terms of purchase were too favourable to the National Telephone Company, and that this was evidenced by a substantial rise in the value of the company's stocks as between certain dates. No doubt it would be possible to bring to an end the existence of the company in ways which would have been most unfavourable to the company. Had that been the Postmaster General's object he could doubtless have aimed at it by settling in his own favour every point which tended in that direction. Indeed he could in that case have done without the company's plant, and he could have done without an agreement altogether. But it does not follow that by so doing he would have furthered the interest of the public. Loss to the telephone company's shareholders is not necessarily, and in any event, gain to the public, and putting an end to the company's existence is not the only thing that the public interest requires. The main interest that the public have is in the maintenance of a cheap, efficient and improving service without break of continuity.

22. In the course of these criticisms it was sought to show that the specifications in the third schedule to the agreement were not of adequate stringency to secure that the plant taken over should be modern and efficient. In particular it was contended that the specifications of this agreement were less stringent than the corresponding requirements attached as conditions to licenses granted to municipalities. The questions here involved were of necessity highly technical, and our task was not rendered easier by the fact that we had not before us the evidence of any witness who had not been employed either on the installation of the post office or on those of the telephone owning municipalities. Neither side called an independent expert. The case for the post office with respect to the specifications was that they represented the latest standard practice, not merely of the National Telephone Company, but of the Postmaster General's own telephone system; and that they followed the better and more modern

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practice of specifying results (such as audibility, &c.) to be aimed at, without too greatly limiting discretion as to how those results were to be attained. Indeed, it was said that it was intended to alter in the same direction the corresponding specifications in the municipal licenses.

23. If the price to be paid is not excessive and the specifications and other safeguards are sufficient to secure that the plant shall be good the only question that remains is whether it would be possible, and if possible, better for the telephone users and the taxpayers, for the Postmaster General to provide his own plant.

24. On the question of possibility the post office witnesses estimated that at least six or seven years would be required to construct a plant which, when completed, would be equal to three times the capacity of that now owned by the National Telephone Company, which is estimated to be the minimum probable requirements of 1911. For the weighty reasons appearing in the answers to questions 200-203, the Postmaster General has not availed himself of the option that was open to him on December 31, 1904, to give six months' notice to purchase the undertaking of the company. He has, therefore, only the period from the present time to December 31, 1911, in which to replace with all their accessories the 250,000 telephones that the National Telephone Company had in the provinces on March 31, 1905, besides creating the large additional number that will be wanted by the beginning of 1912. It is fair to mention that Mr. Bennett, the engineer to the telephone-owning municipalities, estimated that this work could be accomplished in four years. In this period, however, he had made no allowance for the time likely to be occupied in the compulsory acquisition of lands.

25. But even if it were possible to complete this duplicated installation by the beginning of 1912, it must be borne in mind that from now till then, should the policy of duplication be preferred to that of the agreement, the telephone users of the one system will get no intercommunication with those of the other; and those of the company's system in areas in which the post office have not set up competition will have to submit to whatever high rates, preferential charges and other vexatious treatment it may be competent to the company in the exigencies of conducting an expiring business to impose upon them. At the same time the taxpayer will for some time have to go without interest on the necessarily large sums that will have to be raised for the purpose of equipping and starting the new service.

26. The cases of Glasgow and Hull present some special features. Glasgow (in the year 1900) took a license expiring in 1913. Hull (in 1902) took a license expiring in 1911. In both cases it was represented to us that the short term was accepted in the expectation that the government, having thereby been spared the inconvenience of the consequent prolongation of the company's license, would recognize the forbearance of those municipalities by renewing their licenses in 1913 and 1911 respectively. In the case of Hull it was even said that at an interview with the Postmaster General in 1901 a renewal had been expressly promised. After hearing some of those present at that interview on both sides, we found that, though there was no substantial conflict of testimony as to the words used, there were irreconcilable differences of opinion as to the inferences to be drawn. In any case Hull had felt so far encouraged by what had passed as to feel justified in going forward with the installation of a competing system with no better security for their hope that the license would be extended beyond 1911 than assurances said to have been given in a conversation never reduced to writing. Both Hull and Glasgow professed, therefore, to have received with surprise and some sense of hardship the subsequent uncompromising pronouncements of the post office in favour of the unification of all services under the management of the state.

We think that these two cases should receive special consideration in the event of any parliamentary action being taken such as we foreshadow in paragraph 28.

27. On a careful review of the bearing of the agreement as a whole upon the interest of the public, we find that the policy of purchase is to be preferred to the other alternatives, and that if safeguarded as we recommend in paragraph 28, it will leave

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the position of the municipalities unprejudiced as regards the period succeeding the cesser of the company's rights in 1911. We are of opinion that in order to make it clear that municipal licenses can be granted between August 31, 1905, and December 31, 1911, without giving the National Telephone Company rights to compensation under the Telegraph Act of 1899 in respect of licenses granted after August 31, 1905, it is desirable that the agreement should be modified by omitting on page 6, paragraph 2 (1) *b*, line 6, the word 'whether' and the words 'or after.'

After allowing due weight to the criticisms that have been passed upon details, we think that the agreement provides on balance the best security available in the circumstances that the property purchased shall be good and suitable in quality and that no more than a reasonable price shall be paid.

28. While therefore we recommend that in the general public interest the House of Commons should not disapprove of the agreement, we think that the agreement, with the modifications that we have proposed, should not be allowed to become operative until a pledge has been given to the House that between now and January, 1912, nothing shall be done by the government whereby the question of the future ownership and management of local telephone installations (as distinct from the ownership and management of trunk lines) may be prejudiced, and that, unless by a vote of the House it has otherwise been determined, the post office shall continue to grant licenses to municipalities on terms not more onerous in respect of royalties than the terms of the standard telephone license as revised in January, 1902.

29. We recommend that the purchase of any plant by the Postmaster General from the municipalities shall be governed, if the municipalities so desire, by schedule 3 attached to the agreement.

30. We also suggest the following amendment to the agreement: Add to clause 9, line 4, after the word 'exchange' the words 'or any municipal system established under a license granted after August 31, 1905.'

31. We pass to the consideration of the probable effects of the adoption of the agreement on the interests of the employees of the National Telephone Company. We interpret this part of the reference to us as meaning that we should inquire whether those employees will, if the agreement becomes binding, be thereby placed in a substantially worse position than that which they occupied on February 2, 1905.

We have heard evidence on this subject from the secretary to the post office, the manager of the National Telephone Company, and representatives of the workpeople and others on their behalf. The total number of employees at present is 14,227, which, it is anticipated, will have been largely increased in 1911. The claims put forward on behalf of the staff were, mainly, for a guarantee of continuity of employment, when the service is taken over by the Postmaster General, compensation for loss of office for those whose services are not retained, and a claim to pensions. Those members of the company's staff with a salary of £100 a year and upwards, who at present number about 1,200, and are beneficiaries in a pension scheme started by the company in 1896, which is secured by a trust-deed and financed by a contribution of 2½ per cent from salaries and a like amount contributed by the company, asked that the assets and liabilities of the pension fund should be taken over and the fund continued on its present basis, and be kept alive for the benefit of its members, or alternatively, that the Postmaster General should take over the assets of the scheme and count the employees' years of service with the company for superannuation purposes as if they had been spent in the service of the state. Unless something of this kind were done, it was stated, the staff would lose considerably by the transfer. Operators and others who, had they been employed in the Civil Service, would have been entitled to superannuation benefits, have asked that their years of service with the company shall, on their being taken over in 1911, count as if spent in the civil service. In support of these claims, Mr. Gaine, the general manager of the National Telephone Company, stated that unless they were conceded the effect would be very detrimental to the telephone service since the class of people required would not offer themselves for training in a concern where

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they had no safety for continuity of service. Further that the constant development of the telephone system would speedily absorb any surplus which might be caused in the post office by taking over the entire staff. In this latter view, Mr. Babington Smith concurred and further stated that the Postmaster General had in effect given an assurance that in 1911 the existing staff would be taken over *en bloc*.

The only clause in the agreement which deals with the case of the staff is clause 8. By that clause the Postmaster-General has reserved a free hand; but he has given certain assurances to deputations of employees. It is clear from the tables of wages presented to us by the National Telephone Company and by the secretary to the post office, and from the evidence, that the terms of employment under the post office, having regard to the conditions of service, are very similar to those of the company; and it has to be remembered that the employees of the National Telephone Company, including the pensionable class, have entered on their employment subject to a liability to be dismissed on notices varying from a week to a month, and also with a knowledge of the fact that the license to the National Telephone Company expires in December, 1911. Having regard to these facts, we recommend as follows:—

- (a) All officers and servants who shall have been not less than two years continuously in the service of the company on December 31, 1911, shall as from that date become officers and servants of the Postmaster General on the terms of hiring and conditions of employment which obtain in the grade to which they are transferred.
- (b) Such officers and servants as are not beneficiaries of the pension scheme of the National Telephone Company, but who, if in the service of the Postmaster-General, would be on the established list, on entering the service of the Postmaster General, shall for the purpose of superannuation and of being placed on the established staff, be entitled to count their past years of continuous service with the National Telephone Company, subsequent to 1909, as years passed in the civil service of the Crown.
- (c) The company should be required to submit all candidates for the National Telephone Company's service from August 31, 1905, to the same, if any, medical examination as that required for officers and servants entering the government service in the same grade. And we recommend that employees of any class now in the service of the company, and in their service on December 31, 1911, should, if taken over by the post office, not be required to submit themselves to medical examination.

We recommend an undertaking by the Postmaster General that no servant of the company taken over by the post office shall suffer by this transfer whenever it takes place, *i.e.*, that the employees of the company shall have the option of either continuing on the same terms as to pensions which they now enjoy under the company, or adopting the superannuation terms and conditions of the post office service.

Having regard to what we have recommended, and assuming that those recommendations are carried out, we do not think that the coming into operation of the agreement will place the staff in any worse position than that in which they stood on February 2, 1905.

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No. 306a.

EXTRACTS FROM APPENDICES TO THE FOREGOING REPORT.

APPENDIX No. 45.

See Report, paragraph 18.Paper handed in by *The Chairman*, July 25, 1905.

STANDARD TELEPHONE LICENSE.

FORM A.—LOCAL AUTHORITY.

Dated 19 .

POST OFFICE TELEGRAPHS.

HIS MAJESTY'S POSTMASTER-GENERAL

AND

THIS INDENTURE made the _____ day of _____ One thousand
 nine hundred and _____ Between the Most Honourable
 Charles Stewart, Marquess of Londonderry, K.G., His Majesty's Postmaster General
 (who and whose successors in the office of His Majesty's Postmaster General for the
 time being are intended to be hereinafter included in the term 'the Postmaster Gen-
 eral') on behalf of His Majesty of the one part and

(who and whose successors for the time being are intended to be hereinafter included
 in the term 'the Local Authority') of the other part.

Whereas, the Local Authority are desirous of carrying on the business of con-
 structing, manufacturing, maintaining, working, and using within the area defined in
 the first schedule hereto (which area is hereinafter referred to as 'the licensed area')
 telegraphs the transmitting and receiving instruments of which consists of telephones
 and of letting on hire such telegraphs as aforesaid for the purposes of such working
 and user as aforesaid (which business is hereinafter referred to as 'telephonic busi-
 ness'):

And whereas, by reason of the provisions of the Telegraph Acts, 1863 to 1899, such
 part of the telephonic business as is intended to be hereby licensed cannot be carried
 on without the license or sanction of the Postmaster General:

And whereas, at the request of the Local Authority and in order to enable them
 to carry on telephonic business in manner hereinafter authorized the Postmaster Gen-
 eral has agreed to grant to the Local Authority the licenses, powers and authorities
 hereinafter expressed and contained for the period upon the terms and subject to the
 stipulations and conditions hereinafter appearing:

Now this Indenture witnesseth, that in consideration of the premises and of the
 matters hereinafter appearing, it is hereby agreed and declared between and by the
 parties hereto and the Local Authority (as to the covenants and agreements hereinafter
 contained on their part) do hereby covenant and agree with the Postmaster General
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and the Postmaster General (as to the covenants and agreements hereinafter contained on his part) in exercise of all powers and authorities enabling him in this behalf doth hereby covenant and agree with the Local Authority in manner following (that is to say):—

Interpretation Clause.

1. In these presents and in the schedules hereto, the following words and expressions shall have the several meanings hereinafter assigned to them unless there be something either in the subject or context repugnant to such construction (that is to say):—

The word 'telephone' means and includes any telegraphic transmitting or receiving instruments used or intended to be used at any office for the purpose of transmitting or receiving spoken messages or communications by means of electricity.

The expression 'telephonic message' means a spoken message or communication transmitted by telephone.

The word 'office' means and includes any building or part of a building or any place which is telegraphically connected or intended to be connected either permanently or temporarily by a telegraph wire or telegraph wires with some other building, part of a building or place (whether such buildings, parts of buildings, or places, respectively, be occupied or used by any person solely or jointly with any other person) and in which telephones are or are intended to be used for the purpose of enabling any person to transmit from and receive at such building, part of a building, or place, such telephonic messages as are hereinafter authorized.

The word 'exchange' means and includes any building telegraphically connected or intended to be so connected with two or more offices by telegraph wire and used or intended to be used for the purpose of enabling telephonic messages to be transmitted direct between such offices by means of or with the aid of such wires and of appliances placed in the exchange.

The expression 'exchange subscriber' means any person with whom the Local Authority, the Postmaster General or any other person working an exchange has entered into an agreement for the purpose of enabling such person to communicate with other persons through the medium of an exchange.

The expression 'exchange system' means an exchange or group of exchanges worked by the Postmaster General or situate within an area within which the Postmaster General has licensed telephonic communication to be carried on by some other person together with the lines connecting any such exchange with the offices of subscribers or call offices, or in the case of a group of exchanges connecting such exchanges with each other.

The expression 'exchange area' used in connection with the National Telephone Company, Limited, means an exchange area as defined by an indenture, dated the 25th day of March, 1896, and made between the Postmaster General on behalf of Her late Majesty, of the one part, and the National Telephone Company, Limited, of the other part.

The expression 'trunk wire' means a telegraph wire used for telephonic communication and connecting the exchange system of the Local Authority with another exchange system, no part of which is within the licensed area.

The expression 'trunk line' means and includes a trunk wire and all posts, cables, tubes or other works supporting or containing such wire.

The expression 'call office' means an office open to the public for the purpose of the transmission therefrom of telephonic messages over an exchange system or over trunk lines.

The expression 'establish telephonic communication' between two offices means to connect such offices with each other by telegraph wires and the telephones connected therewith in such manner that telephonic messages may be transmitted from one of such offices to the other, and such expression includes the maintenance of such communication where it already exists.

The expression 'on an exchange' when used in relation to an office, means that such office is telegraphically connected with such exchange for the purpose of enabling telephonic messages to be transmitted direct between such office and other offices similarly connected with such exchange, or with any other exchange in the same exchange system.

The expression 'exclusive line' means a telegraphic line connecting an exchange with one or more offices of one and the same exchange subscriber and no other office.

The expression 'party line' means a telegraphic line connecting an exchange with the respective offices of two or more exchange subscribers without the interposition of any exchange between those offices.

The expression 'main circuit' means that portion of a party line which is provided for the service of two or more exchange subscribers.

The expression 'spur circuit' means that portion of a party line which is provided for the service of one exchange subscriber only.

The expression 'extension line' means a telegraphic line carried from an office of an exchange subscriber to another office of the same subscriber by way of continuation of an exclusive line or a party line, as the case may be.

The expression 'telegraphic line' has the same meaning as in the Telegraph Act, 1878.

The word 'plant' includes works, materials and plant.

The word 'person' includes the Local Authority and also any other corporation and any joint stock company and any other association or aggregate of individual persons.

License to Carry on Telephonic Business.

2.—(1) Subject to the provisions of this indenture the Local Authority shall during the term or period commencing on the _____ day of _____ one thousand nine hundred and _____ and terminating on the _____ day of _____ one thousand nine hundred and _____ have license and permission from the Postmaster General (subject as hereinafter provided) to work and use within the licensed area telegraphs of which the transmitting and receiving instruments shall be telephones (but no other kind or description of telegraphs) for the purpose of enabling any person to transmit direct from and receive at any office to and from any other person at any other office telephonic messages (but no other description of telegrams) relating to the business or private affairs of such persons respectively, or one of them, and the Local Authority shall (subject to the provisions of this indenture) have license and permission to receive from all such persons for or in respect of the purchase or hire or maintenance or working or use of the said telegraphs, or any part or parts thereof, for the purpose aforesaid or for or in respect of the right or permission to transmit or receive or otherwise in respect of the transmission or receipt of such telephonic messages as aforesaid by means of the said telegraphs such sums of money or other valuable considerations as shall be agreed upon between the Local Authority and the said persons respectively.

(2) The term 'business' used in this article shall not be construed or held to mean or include the business of collecting, receiving or delivering messages or other communications transmitted or intended for transmission by telegraph or any other business of a like kind.

(3) All telegraphs used for the transmission of telephone messages under this indenture shall be constructed in accordance with the specification and rules set out in the second schedule hereto or such other specification and rules in modification or in lieu thereof as the Postmaster General may from time to time in writing prescribe or approve.

(4) The Local Authority may establish telephonic communication between an exchange of the Local Authority within the licensed area and an exchange subscriber's office situate outside that area. Provided that such office is, in the opinion of the Postmaster General, situate within a reasonable distance of the licensed area, and that the

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charges for the establishment of such communication are not made with reference to the number of messages transmitted by the subscriber.

(5) The Local Authority shall not establish any exchange or save as provided in the sub-clause immediately preceding, transact any other kind of telephonic business outside the licensed area.

(6) The Local Authority shall not establish telephonic communication between any exchange of the Local Authority and any office (even though within the licensed area) which is for the time being on any exchange situate outside the licensed area.

No Written Messages to be Conveyed.

3.—(1) Neither any office, whether in the occupation of the Local Authority or of any other person nor any such telegraphs as aforesaid nor any part thereof shall be used by the Local Authority or by any other person either on their behalf or by their permission for the transmission or receipt of telegrams of any kind except such telephonic messages as are hereinbefore expressly authorized.

(2) No office or part of any office in the occupation of the Local Authority either solely or jointly with any other person shall be used by the Local Authority or any other person or be permitted or suffered by the Local Authority to be used by any other person for the purpose of making any copy, transcript, memorandum or note of any telephonic message or of the contents, substance, purport or effect of any such message received at such office by means of the said telegraphs or any part thereof—it being the express intention of these presents and of the license and permission hereby given that no written message or communication or any written copy, memorandum or note of any message or communication, or of the contents, substance, purport or effect of any message or communication transmitted to any such office as aforesaid by means of the said telegraphs, shall be made or taken at or conveyed from any such office by any person whomsoever for any purpose whatsoever.

(3) The Local Authority shall make due provision and take all necessary and proper precautions for the observance of the conditions contained in this article by each and every person who may be from time to time or at any time entitled or permitted to use any office in the occupation of the Local Authority or any part thereof or the said telegraphs or any part thereof.

(4) Nothing in this article contained shall prevent either the sender or receiver of any telephonic message from making a note or memorandum of the purport of such message for the purposes of the business or private affairs of such sender or receiver.

No Messages to be Collected or Delivered.

4.—(1) No office, whether in the occupation of the Local Authority or of any other person, shall be used by the Local Authority or any other person for the collection or delivery of telegrams of any kind.

(2) No written message or communication or written copy, memorandum, or note of any message or communication, or of the contents, substance, purport or effect of any message or communication transmitted to any office by means of the said telegraphs, shall be delivered from such office or any other office.

(3) Subject to the provisions of this indenture no money or other valuable consideration shall in respect of the transmission or receipt of any telegram by means of the said telegraphs or any part thereof be or be promised to be paid or given to any person (other than the Local Authority) entitled or permitted to use the said telegraphs by any other person whomsoever.

(4) The Local Authority shall take all necessary and proper precautions for the observance of the conditions stated in this article, and shall, in entering into every contract or agreement with any person or persons in relation to the aforesaid business of the Local Authority, make due provision for the summary determination by the Local Authority of such contract or agreement on breach of any such conditions by any such person or persons.

Public Use of Telephones.

5. Where the charges for the establishment of telephonic communication with the office of any exchange subscriber are made with reference to the number of messages transmitted, such subscriber may (notwithstanding anything contained in this indenture) allow the telephones supplied to him to be used by any other person, and may charge for the use of such telephones.

Provisions as to Breach of Conditions.

6. In case any person or persons with whom the Local Authority may make any contract or agreement in relation to telephonic business or who may be for the time being permitted by the Local Authority to use at any office the said telegraphs or any part thereof for the purposes hereinbefore authorized, shall at any time during the continuance of these presents use any office or the said telegraphs or any part thereof respectively for any purpose or by any means or in any manner other than as hereinbefore expressly authorized and according to the conditions hereinbefore expressly authorized and according to the conditions hereinbefore declared, the following provisions shall apply:—

- (1) The Local Authority shall forthwith determine any such contract or agreement with or withdraw such permission from any and every such person so using such office or the said telegraphs or any part thereof;
- (2) If such office belong to or be occupied by such person either solely or jointly with any other person or persons, the Local Authority shall forthwith disconnect such office from any other office which is or may be telegraphically connected therewith by means of the aforesaid telegraphs;
- (3) The Local Authority shall give notice forthwith to the Postmaster General of such determination of contract or agreement or withdrawal of permission, as the case may be, together with full particulars of the reasons for the same. and
- (4) The Local Authority shall not, without the special license and authority of the Postmaster General, re-establish telegraphic communication between such office and any other office or enter into any other contract or agreement with such person in relation to telephonic business or permit him to use the said telegraphs at any other office.

Unlicensed Telegraphs not to be Used for Local Authorities' Business.

7.—(1) The Local Authority shall not at any time use or permit, or suffer to be used for any of the purposes of these presents, or any of the licenses, powers, or authorities hereby granted any telegraph of the kind or description hereby licensed or any part of any such telegraph.

- (a) which has been supplied to or has come into the possession of any person otherwise than by purchase, hire or loan from the Local Authority; or
- (b) in respect of which or of the purchase or hire or maintenance or working or user or right of user of or permission to use which any money or other valuable consideration has been given or agreed to be given to the Local Authority before such telegraph or part of such telegraph as aforesaid was telegraphically connected with the aforesaid telegraphs of the Local Authority, or has been given or agreed to be given to any person other than the Local Authority either before or after the execution of these presents

unless and until the Local Authority shall have given notice in writing to the Postmaster General of their desire to use such telegraph or part of such telegraph as aforesaid three clear days at least before the user thereof.

(2) Until such notice has been given, no such telegraph, or part of such telegraph, shall be deemed to be within the license and permission granted by these presents and from and after the expiration of such notice, the Local Authority may work and use

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such telegraph or part of such telegraph as aforesaid in the same manner as any other telegraph or part of any telegraph hereby licensed, subject on the part of the Local Authority to the payment of the royalty hereinafter mentioned in respect thereof and to the observance and performance of the several covenants and conditions herein contained affecting the same.

Connection of Post Offices and Exchanges.

8.—(1) Unless unable (after exercising all powers in that behalf vested in them) to execute and maintain the necessary works in that behalf, the Local Authority shall at any time and from time to time at the request of the Postmaster General and at the cost and expense of the Local Authority establish telephonic communication between any exchange of the Local Authority and any post office (situate within a radius of one mile from such exchange which the Postmaster General may from time to time specify in that behalf (which post office is hereinafter referred to as a 'prescribed post office') and shall maintain such communication until otherwise requested by the Postmaster General.

(2) The number of telegraph wires and of telephones necessary to establish telephonic communication under the preceding sub-clause of this article shall be such and telephonic communication shall be established in such manner as the Postmaster General may from time to time prescribe.

(3) The Postmaster-General may at any prescribed post office establish a call office on any exchange of the Local Authority: Provided that the use of such call office for communications to subscribers to the exchange of the Local Authority shall be subject to such charges as are for the time being made at other call offices of the Local Authority.

Telephonic Communication Through Post Offices.

9.—(1) Where and so long as telephonic communication is established between an exchange and a prescribed post office, the Postmaster General and the Local Authority shall respectively do all such acts and things as may be necessary to enable telephonic messages to be transmitted

- (a) between any two offices on such exchange; and
- (b) by means of the trunk wires of the Postmaster General between any office on such exchange and any office on any other exchange system (whether belonging to the Postmaster General or to any licensee of the Postmaster General).

(2) Where and so long as telephonic communication is established between an exchange and a prescribed post office the Postmaster General will receive a telephonic message from any office on such exchange—

- (i.) At the prescribed post office for any of the following purposes (that is to say):—
 - (a) for transmission over the postal telegraphs and delivery as a telegram; or
 - (b) for delivery as an express letter; or
 - (c) for conveyance and delivery as an ordinary letter; and
- (ii.) At any post office with which the prescribed post office is telephonically connected for delivery as an express letter;

and the local authority and the Postmaster General will respectively do all such acts and things as may be necessary to enable such telephonic messages to be received at such post offices as aforesaid, and to be so transmitted, conveyed and delivered as aforesaid.

(3.) Where and so long as telephonic communication is established between an exchange and a prescribed post office, the Postmaster General will receive at such post office any message from an exchange subscriber calling for the service of a post office express messenger, and the Local Authority and the Postmaster General will respect-

tively do all such acts and things as may be necessary to enable such messages to be received and to comply with such requests respectively.

(4.) Where and so long as telephonic communication is established between an exchange and a prescribed post office, the Local Authority shall, if and when required by the Postmaster General, and on such conditions as may from time to time be prescribed by him, do all such acts and things as may be necessary to enable telegrams received at the prescribed post office over the postal telegraphs, and addressed to an exchange subscriber, to be telephonically transmitted (in lieu of delivery by messenger) through the medium of the exchange to the office of such subscriber provided such subscriber desire such transmission, but the Postmaster General shall not be bound to transmit any such telegrams in manner aforesaid.

Post Office Regulations.

10. The transmission of all telephonic messages over trunk wires or exchange systems of the Postmaster General, or over any other postal telegraphs, the receipt of telephonic messages at post offices in accordance with the provisions of this indenture, for the purposes therein specified, the transmission and delivery of telephonic messages, whether as telegrams or as letters, and the supply of post office express messengers, in compliance with telephonic messages in that behalf, shall be subject in all respects, both as to charges and otherwise, to the regulations made by the Postmaster General, with the consent of the Treasury and in force for the time being, in respect to the several matters aforesaid and to such other rules and conditions not inconsistent with such regulations as the Postmaster General may from time to time prescribe.

Charges for the use of Local Authority's system.

11. The charges for the use of the system of the Local Authority shall be calculated after the manner and according to the scales specified in the third schedule hereto, and the said charges shall not exceed the maximum charges or fall below the minimum charges set out in the said schedule in relation to the respective services therein specified: Provided that the Local Authority may, with the consent in writing of the Postmaster General, make charges of a character or according to scales different from those specified in the said third schedule hereto.

Intercommunication with National Telephone Company.

12. If the Local Authority at any time under the powers conferred by the Telegraph Act, 1899, and the order of the Postmaster General made thereunder, with the approval of the Treasury, and dated the 26th day of September, 1899, requests the National Telephone Company, Limited, to afford facilities for the transmission of messages between persons using the system of the Local Authority and persons using the system of the company in the licensed area, then—

- (a) The Local Authority shall afford similar facilities for such transmission; and
- (b) The Local Authority may make such terminal charges, where the message originates on an exchange of the company, as are prescribed by the aforesaid order of the Postmaster General, but shall not make any higher charges.

Corporation to afford further intercommunication in certain events.

13. In case the Postmaster General should hereafter establish an exchange system within any part of the licensed area, and the Postmaster General should request the Local Authority to afford facilities for the transmission of messages between persons using the system of the Local Authority and persons using the system of the Postmaster General, the Local Authority shall afford such facilities on such terms and conditions as may, in case of difference, be settled by arbitration.

Terminal charges on trunk wire messages.

14.—(1) Where a telephonic message is transmitted over the trunk wires of the Postmaster General between an office or an exchange of the Local Authority and an

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office on an exchange of the National Telephone Company, Limited, such message shall be subject to the following charges (hereinafter called 'terminal charges') in addition to the Postmaster General's charge for the use of the trunk wires, viz. :—

- (a) Where the message originates on the exchange of the Local Authority, to such charges (if any) as the company may from time to time fix; and
- (b) Where the message originates on the exchange of the company, to such charges (if any) as the Local Authority may from time to time fix.

Provided that the charges fixed by the Local Authority shall in no case exceed the following charges (that is to say) :—

Where the Postmaster General's charge for the use of a trunk wire does not exceed eightpence, a charge of threepence.

Where the Postmaster General's charge for the use of a trunk wire exceeds eightpence, but does not exceed three shillings, a charge of fourpence.

Where the Postmaster General's charge for the use of a trunk wire exceeds three shillings, a charge of sixpence.

And provided that if at any time the National Telephone Company, Limited, abstain from making terminal charges on messages originating on the exchanges of the Local Authority, the Local Authority shall, so long as such abstention continues, make no terminal charges on messages originating on the exchanges of the company.

(2) Where a telephonic message is transmitted over the trunk wires of the Postmaster General, between an office on an exchange of the Local Authority and an office on an exchange of the Postmaster General, no terminal charge shall be made by the Local Authority or by the Postmaster General in respect of such transmission.

(3) Where a telephonic message is transmitted over the trunk wires of the Postmaster General, between an office on an exchange of the Local Authority and an office on an exchange of some licensee of the Postmaster General, other than the Local Authority or the National Telephone Company, Limited, no terminal charge shall be made by the Local Authority in respect of such transmission.

Repairs and Renewal of Telephones.

15.—(1) Where in establishing telephonic communication between an exchange of the Local Authority and a prescribed post office the Local Authority have erected any wires upon or supplied any wires or apparatus for use within such post office, all such wires and apparatus shall be under the sole care and management of the Postmaster General but the Local Authority shall reimburse the Postmaster General the expense of all such repairs of such wires and apparatus as he in his discretion may think necessary from time to time, and the Local Authority shall, at the request of the Postmaster General, from time to time renew such apparatus.

(2) The Postmaster General shall make no charge to the Local Authority for working the wires and apparatus of the Local Authority placed in prescribed post offices for the purpose of establishing telephonic communication with the exchanges of the Local Authority.

Collection of Charges.

16.—(1) Except where such sums as hereinafter mentioned are in the first instance paid at a prescribed post office the Local Authority shall pay to the Postmaster General all sums due to him in respect of telephonic messages transmitted through an exchange belonging to the Local Authority to a post office and thence transmitted, conveyed or delivered as telegrams or letters, and in respect of the use of the Postmaster General's trunk lines and of communications with any subscriber on an exchange of the Postmaster General and of the services of the post office express messengers, rendered in pursuance of any such messages, and shall also pay to the Postmaster General all sums due to any licensee of the Postmaster General other than the Local Authority in respect of telephonic messages transmitted from an office on an exchange belonging to the Local Authority.

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(2) The Postmaster General shall collect and account to the Local Authority for all charges payable at any call office established at a prescribed post office so far as such charges relate to communications with subscribers to the exchange of the Local Authority, and the Postmaster General shall also collect and account to the Local Authority for all sums payable by any subscriber on an exchange of the Postmaster General or by any licensee of the Postmaster General other than the Local Authority in respect of telephonic messages transmitted from an office on an exchange of the Postmaster General or of such licensee to an office on an exchange of the Local Authority, but the Postmaster General shall not be responsible for any such charges or sums as aforesaid which he is unable to collect.

(3) The Postmaster General shall allow to the Local Authority and the Local Authority shall allow to the Postmaster General (as the case may be) a commission of five per cent upon all sums paid by the Local Authority to the Postmaster General or collected by the Postmaster General on behalf of the Local Authority respectively, as provided by this Article.

(4) Any such sum of five per cent may be deducted either by the Postmaster General or by the Local Authority from any sums payable to the Local Authority or to the Postmaster General, as the case may be.

(5) In reckoning the commission payable to the Local Authority, every telephonic message transmitted as a foreign telegram shall be reckoned as though it were an inland telegram not exceeding twelve words in length, and the sum upon which commission is allowed to the Local Authority in the case of a telephonic message transmitted to any place abroad, shall be the sum to which the Postmaster General is entitled in respect of such message in account with any foreign government.

(6) All accounts between the Postmaster General and the Local Authority relating to the provisions of this article shall be rendered and settled monthly, and the first accounts shall be rendered at the expiration of the first calendar month after the day of one thousand nine hundred and and shall include the whole period which has elapsed from that day until the end of such month.

Royalties.

17. In addition to all other moneys which may become payable to the Postmaster General under these presents, the Local Authority shall pay to the Postmaster General the following moneys hereinafter called royalties (that is to say):—

- (1) The Local Authority shall pay to the Postmaster General a royalty equal to ten per cent of the gross amount of every sum of money paid or payable by any person to or on behalf of the Local Authority for or in respect of any telegraph of the kind or description hereby licensed or for or in respect of any office occupied by the Local Authority or otherwise in respect of telegraphic messages transmitted by means of any such telegraph or otherwise howsoever, in relation to any such telegraph, and whether such sum of money be a gross sum or be payable periodically or by instalments, and every such royalty shall become due so soon as the sum of money in respect of which it is payable or by the amount of which it is regulated shall be paid or shall by virtue of any express or implied contract or otherwise be payable, whichever event shall first happen.
- (2) (a) In case any person should give to or confer upon the Local Authority any valuable consideration or benefit (not being money or a contract solely for the payment of money) for or in respect of any such telegraph or for or in respect of any office occupied by the Local Authority, either solely or jointly or otherwise in respect of telegraphic messages transmitted or received by means of any such telegraph or otherwise howsoever in relation to any such telegraph, the Local Authority shall pay to the Postmaster General a royalty equal to ten per cent of the value in money of such consideration or benefit.

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(b) For the purpose of estimating the amount of such last-mentioned royalty, the value in money of such consideration or benefit shall be determined by the certificate of such officer of the post office as the Postmaster General shall appoint for that purpose, or in case of dispute, by arbitration, as hereinafter provided.

(c) Such royalty shall be payable and paid at such time or times and by such instalments and generally in such manner as the Postmaster General shall appoint, and shall be payable in addition to such royalty or royalties (if any) as shall be payable in respect of such person under the stipulations hereinbefore contained.

(3) In case any sum of money be paid or payable to or other valuable consideration or benefit be given to or conferred upon the Local Authority by any person or persons for or in respect of any telegraph maintained or used solely for the transmission of telegrams which are by law excepted from the exclusive privileges of the Postmaster General (hereinafter for brevity styled a 'Private Telegraph') in addition to any sum of money paid or payable or other valuable consideration given to or conferred upon the Local Authority by the same person or persons for or in respect of any telegraph of the kind or description hereby licensed, the Postmaster General may, at his option, apportion such sums or other valuable considerations respectively, either in whole or in part, between the said private telegraph and such other telegraph as aforesaid in such manner or in such proportions as he may deem fit and proper, and thereupon such sums or other valuable considerations respectively as he shall apportion accordingly shall, as between the Local Authority and the Postmaster General for the purposes of these presents be deemed to be the sums or valuable considerations respectively paid or given by such persons as aforesaid in relation to such private telegraph and such other telegraph as aforesaid respectively in lieu of the sums or valuable considerations actually paid or given by such persons in relation to such telegraphs respectively.

(4) In case the Local Authority shall as hereinbefore provided, use, or permit or suffer to be used, for any of the purposes of these presents, or any of the licenses, powers or authorities hereby granted any telegraph of the kind or description hereby licensed, or any part of any such telegraph

(a) which has been supplied to or has come into the possession of any person otherwise than by purchase, hire or loan, from the Local Authority, or

(b) in respect of which any money or other valuable consideration has been given or agreed to be given to the Local Authority before such telegraph or part of such telegraph, as aforesaid, was telegraphically connected with the aforesaid telegraphs of the Local Authority, or has been given or agreed to be given to any person other than the Local Authority, either before or after the execution of these presents.

the Local Authority shall pay to the Postmaster General such a royalty in respect thereof as under all the circumstances of the case shall be fair and reasonable, and the amount thereof shall be determined by the certificate of such officer of the post office as the Postmaster General shall appoint for that purpose, or in case of dispute, by arbitration, as hereinafter provided, and shall be payable and paid at such time or times and by such instalments and generally in such manner as the Postmaster General shall appoint.

(5) Nothing herein contained shall entitle the Postmaster General to receive any royalties from the Local Authority on any money or other valuable

consideration received by the Local Authority on the sale of any telegraph which the Local Authority after such sale do not work or use under this indenture, it being the intention of these presents that all royalties payable to the Postmaster General in respect of any such telegraph shall be paid by the person working or using the same. Provided always that the Local Authority shall seven days at least before any such sale of any such telegraph as last aforesaid, deliver a notice in writing of such intended sale at the General Post Office in London, and such notice shall contain the name, address and occupation of the intended purchaser or purchasers of such telegraph, and also full particulars of the offices intended to be connected by means thereof.

- (6) In this article payments made or considerations or benefits given 'for or in respect of any telegraph' mean and include payments made or considerations or benefits given for or in respect of the purchase or hire or maintenance or working or user or right of user of or permission to use any such telegraph or any part thereof and payments made or consideration or benefits given 'in respect of an office,' mean and include payments made or considerations or benefits given in respect of the user or right of user of or permission to use any such office or any part of such office.

Accounts of Business to be Kept by Local Authority.

18. The Local Authority shall at all times keep all such books of account as the Postmaster General may from time to time reasonably require of and relating to their telephonic business and their aforesaid telegraphs (including all private telegraphs worked or used by persons respectively entitled or permitted to use any other telegraphs of the Local Authority and also all telegraphs sold by the Local Authority which the Local Authority after the sale thereof do not work or use as aforesaid) and all moneys and other valuable considerations received by them in respect thereof as aforesaid, and such books of account shall contain all such particulars as the Postmaster General shall from time to time reasonably require, and the Local Authority shall preserve all vouchers of the said accounts and all contracts and agreements between them and all or any such persons as aforesaid respectively, and the Local Authority shall from time to time and at all reasonable times produce for the inspection of the Postmaster General and his officers at the chief office for the time being of the Local Authority, all or any such books, accounts, vouchers, contracts, agreements, and other documents as aforesaid, and all other books, accounts, vouchers, contracts, agreements and other documents in any way relating to any telephonic business carried on by them and the Postmaster General, and his officers may make copies of and extracts from all or any of such books, accounts, vouchers, contracts, agreements and other documents.

Account to be Furnished to Postmaster General.

19.—(1) Subject to the provisions of this indenture respecting sums received by the Local Authority for the Postmaster General and commission allowed by the Postmaster General to the Local Authority and by the Local Authority to the Postmaster General, the Local Authority shall, within twenty-eight days after the thirty-first day of March, the thirtieth day of June, the thirtieth day of September, and the thirty-first day of December, in every year, render to the Postmaster General a statement or statements of account in writing, in such form or forms as the Postmaster General may from time to time require, showing the amounts of all sums of money and the nature of all other considerations and benefits which from the date hereof or from the date up to which the last statement or statements of account (if any) shall have been rendered, have been paid or become payable or been given or conferred by all such persons as aforesaid in respect of all the matters aforesaid, or any of them respectively, or which have either before or since the execution of these presents been paid or be-

them contained, and particularly and without prejudice to the generality of this provision, the Local Authority shall be subject to the provisions of the following sections of the said Acts, that is to say, sections 42 and 48 to 52, inclusive, of the Telegraph Act, 1863, and sections 5 and 7 of the Telegraph Act, 1892.

- (3) The Local Authority shall not be entitled under the authority hereby conferred to exercise any power or enjoy any right, benefit or advantage conferred upon the Postmaster General by the Telegraph Act, 1863, the Telegraph Act, 1878, or the Telegraph Act, 1892, otherwise than in relation to the execution of works.
- (4) Section 4 of the Telegraph Act, 1892, shall not apply to the Local Authority.
- (5) Nothing in this indenture shall be construed to give the Local Authority any wayleave or right of way under, in, upon, over, along, or across any railway or canal, or any right to execute any work under, in, upon, over, along, or across any railway or canal, or to call upon the proprietors or lessees of any railway or canal, or the directors or persons having the control thereof to execute any such work.
- (6) The Local Authority shall give to the Postmaster General not less than seven days' notice in writing of their intention to commence the execution of any work under the powers hereby conferred, specifying in such notice the nature of the work and the streets or public roads affected thereby.

Local Authority's Telegraphs not to Interfere with Postal Telegraphs.

23. All telegraph posts, wires and telegraphic appliances used or intended to be used as part of or in connection with the telegraphs of the Local Authority, shall be so erected, fixed, placed and used as not either directly or by reason of the working or user thereof to interfere with the efficient or convenient maintenance, working or user of any telegraph posts, wires or telegraphic appliances of the Postmaster General which may from time to time exist, or which it is probable that the Postmaster General may have occasion to erect, place, fix or use, or to expose any such posts, wire or appliances to risk of damage or to risk of interference with the efficient or convenient working or user thereof.

Removal of Injurious Telegraphs.

24. In case any telegraph post, wire or telegraphic appliance used or intended to be used as part of or in connection with the telegraphs of the Local Authority, or the working or user of any such post, wire or appliance shall in the opinion of the engineer-in-chief for the time being of the post office, certified by writing under his hand directly or indirectly damage or interfere with the efficient or convenient maintenance, working, or user of any telegraph post, wire or telegraphic appliance of the Postmaster General for the time being existing or expose any such post, wire or appliance to risk or damage or to risk of interference with the efficient or convenient working or user thereof, or make it impracticable to erect, place, fix or use any telegraph post, wire or telegraphic appliance which the Postmaster General desires to erect, place, fix or use.

- (a) The Local Authority shall within twenty-four hours after service on them of notice in writing by the Postmaster General in that behalf, either remove the post or posts, wire or wires, or telegraphic appliance or appliances complained of in such notice, or refix, alter or repair the same to the satisfaction of the engineer-in-chief for the time being of the post office, and
- (b) If the Local Authority shall make default in so doing within the time aforesaid, it shall be lawful for the Postmaster General to remove, alter or repair the post or posts, wire, or wires, or telegraphic appliance or appliances complained of in such notice, and the Local Authority shall

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on demand pay to the Postmaster General the cost of any removal, alteration or repair by the Postmaster General of the posts, wires and telegraphic appliances complained of in such notice or any of them.

Local Authority to Pay Cost of Repairing Damage Done to Postal Telegraphs by Their Telegraphs.

25. In case any telegraph post, wire or telegraphic appliance of the Postmaster General shall be damaged or the efficient working or user thereof shall be wholly or partially interrupted or otherwise interfered with and the engineer-in-chief for the time being of the post office shall certify by writing under his hand that such damage interruption or interference has been caused directly or indirectly by any telegraph post, wire or telegraphic appliance used or intended to be used as part of or in connection with the telegraphs of the Local Authority, or by anything done by or on behalf of the Local Authority in relation thereto, the Local Authority shall, on demand, pay to the Postmaster General all costs that shall be reasonably incurred by him in repairing such damage and in removing or altering such post, wire or telegraphic appliance, so as to restore the same to efficient working order and in addition thereto or substituting therefor, either temporarily or permanently, any other posts, wires or telegraphic appliances, if the said engineer shall certify that such addition or substitution is reasonably required.

License Not to be Assigned.

26. Except with the consent in writing of the Postmaster General the Local Authority shall not—

- (1) assign, underlet or otherwise dispose of the benefit of the covenants herein contained, or of any of such covenants or the licenses, powers or authorities hereby granted, or any of such licenses powers or authorities, or
- (2) sell, assign, transfer, or deliver or underlet to any other licensee of the Postmaster General, any plant used by the Local Authority in supplying the means of telephonic communication under these presents, or allow such licensee in any manner to have the use, benefit, or enjoyment of any such plant in connection with his undertaking, or
- (3) purchase, lease or acquire, any interest in the business or plant of any other licensee of the Postmaster General or any part of such business or plant, or enter into any working or other agreement with such other licensee.

Further Assurance.

27. The Local Authority and the Postmaster General shall from time to time do and execute, or cause to be done and executed all such acts, deeds and things whatsoever as may be required by the Postmaster General or the Local Authority (as the case be) to give effect to the covenants and agreements in this indenture contained.

Provisions for Determination of License in Certain Events.

28. In any of the following cases (that is to say):—

- (a) In case the Local Authority does not within two years from the date of this indenture establish an exchange system, and so long as the licenses, powers and authorities hereby granted shall continue, maintain such system in effective working, to the satisfaction of the Postmaster General, or
- (b) In case any sum of money which ought to be paid by the Local Authority to the Postmaster General under or by virtue of these presents shall be in arrear and unpaid for one calendar month after the time at which the same ought to be paid under or by virtue of the covenants herein contained, or
- (c) In case of any breach, non-observance or non-performance by or on the part of the Local Authority of any of the covenants (other than a covenant for the payment of money) or conditions herein contained and on the part of the Local Authority to be observed and performed

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soever upon such terms as he shall in his discretion think fit. And (save as in this indenture provided) nothing herein contained shall be deemed to authorize the Local Authority to exercise any of the powers or authorities conferred on or acquired by the Postmaster General by or under the Telegraph Acts or any of them.

Notices, &c.

33. Any notice, request or consent (whether expressed to be in writing or not) to be given by the Postmaster General under these presents may be under the hand of any one of the secretaries or assistant secretaries for the time being of the post office, and may be served by sending the same by registered post letter to the Local Authority, and any notice to be given by the Local Authority under these presents may be served by sending the same by registered post letter addressed to the secretary of the post office at the General Post Office, London.

In witness whereof the Postmaster General hath hereunto set his hand and seal, and the Local Authority have caused their common seal to be hereunto affixed the day and year first above written.

THE FIRST SCHEDULE before referred to.

Description of Licensed Area.

Note.—If there is any discrepancy between the description of the licensed area and the area as shown on the said map the boundary is to be as shown on the map.

THE SECOND SCHEDULE before referred to.

SPECIFICATION AND RULES AS TO PLANT.

1. In this specification—

The term 'exchange subscriber's circuit' means the wires and apparatus connecting a subscriber's office or offices or a call office with a telephone exchange;

The term 'junction circuit' means the wires and apparatus which connect any two separate exchanges or an exchange and a prescribed post office in the same telephone area;

The term 'exchange subscriber' includes a person using a call office.

2. All circuits, whether exchange subscribers' or junction circuits, shall be metallic. Any necessary earth connections shall be made either at the centre of balanced resistances of high inductance bridged across the circuit, or by means of appropriate electrical devices, so that speaking circuits when in use shall be free from inductive or other disturbances. All circuits shall be so arranged that exchange subscribers shall be unable to overhear what passes on any other than their own circuits or those with which they are connected.

3. The use of iron conductors in any portion of a speaking circuit shall not be permitted.

4.—(1) With the under-mentioned exceptions the main lines of wire in towns shall be laid under ground, but the distributing wires from selected points to exchange subscribers' offices may be either open and above ground or under ground as may be considered desirable.

(2) Open wires, other than distributing wires, may, however, be erected above ground:—

(a) Where power to execute underground work is unobtainable;

(b) Where the number of wires required is insufficient to justify the cost of underground work, regard being had to the subsequent cost of maintenance.

(3) Where underground wayleaves can be obtained the Postmaster General will not consider wires above ground justifiable in cases where a line of poles carries, or is intended to carry, upwards of 25 circuits or 50 wires; and he will regard underground

wires in towns as being more suitable for acquisition by the post office than wires above-ground.

(4) A line of poles extending less than a quarter of a mile from a distributing point will be considered as a distributing line. A line of poles in excess of this length will not be considered a distributing line.

5. Where wires are placed underground—

(a) Dry core cables of electrostatic capacity shall be used, and the conductors shall fulfil the following conditions:—

The copper to be used shall have a conductivity of not less than 98 per cent, according to Matthiessen's standard of pure annealed copper, that is to say, the resistance at 60° F. of a bar of the material one square inch in cross sectional area shall not exceed .04318 of the standard ohm per mile. For exchange subscribers' circuits within half a mile of an exchange the conductors shall be not less than No. 22 standard wire gauge weighing 12½ lbs. per mile. Exchange subscribers' circuits extending beyond the half-mile limit and junction circuits less than five miles in length shall have conductors of a minimum size of No. 20 standard wire gauge weighing 20.7 lbs. per mile. Junction circuits of more than five miles in length shall have conductors not less than No. 18 standard wire gauge weighing 36.8 lbs. to the mile.

(b) All underground cables, other than those in subways or tunnels, shall be efficiently protected by pipes or ducts of approved materials, or by such other means as the Postmaster General may have approved before the cables are laid. Cables in subways or tunnels shall be supported in such a manner as to prevent fracture of the lead covering.

6. Open wires erected above ground shall comply with the following conditions:—

They shall not be less than No. 18 standard wire gauge weighing 36.8 lbs. to the mile for exchange subscribers' circuits and for junction circuits less than five miles in length. For junction circuits exceeding five miles in length the wires shall not weigh less than 100 lbs. per mile.

7. A thoroughly efficient method of calling the exchange and of signalling the close of a conversation shall in all cases be provided on every exchange subscriber's circuit, and the calling and clearing signals shall be effective in all conditions and upon the longest circuits in use in an area when connected together.

8. Switch-jacks on multiple panels of local subscribers' sections shall be connected on the branching system unless otherwise authorized by the Postmaster General.

9. Junction circuits connecting exchanges with prescribed post offices shall be provided with automatic signalling arrangements of a character approved by the Postmaster General and suitable for working in connection with his trunk circuits, and shall be worked in accordance with such regulations as he may from time to time prescribe.

10. The apparatus fitted at exchange subscribers' offices shall be efficient for trunk circuit communication, and where separate batteries are provided at each exchange subscriber's office for speaking purposes, the electromotive force shall not at any time fall below two volts, and such apparatus shall be so fitted as to admit of a clearing signal being transmitted by the exchange subscriber to the post office trunk centre to indicate the close of a trunk conversation.

11. With a view to avoid difficulty under the last two preceding clauses, the Local Authority shall at least six months before the opening of an exchange furnish the Postmaster General with diagrams illustrating both the exchange subscribers' circuits connections and the method by which it is proposed to actuate the indicators or signalling apparatus on the junction circuits at the post office trunk centre.

12. Where an electric light or electric traction system, constructed above ground, co-exists in a town with a telephone system, and where such telephone system is partly or wholly above ground, suitable safety devices, including fuses and heat coils, shall

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be provided in all circuits likely to be effected, both at the exchange and at the exchange subscribers' offices.

13. Efficient lightning protectors shall be provided on all circuits.

14. Proposals for the modification of the foregoing specification, brought about by the progress of invention, will be favourably considered by the Postmaster General.

The THIRD SCHEDULE above referred to.

CHARGE FOR USE OF THE EXCHANGE SYSTEM OF THE LOCAL AUTHORITY.

Service.	Maximum Charge.	Minimum Charge.
A.—FOR EXCLUSIVE LINES.		
(a) Where in the office of the exchange the subscriber is within of the exchange with which such office is immediately connected : I. For the establishment of telephonic communication between any exchange and the office of any exchange subscriber and the transmission of an unlimited number of messages of the subscriber to any office on an exchange in the exchange system of the Local Authority.	Per annum.....	Per annum.
(i) For the first line.....	"	"
(ii) For each additional line direct from the exchange to the same or any other office of the same subscriber.	"	"
II. (1) For the establishment of the telephonic communication between any exchange and the office of any exchange subscriber exclusive of the transmission of messages.	"	"
(2) For the transmission to each message of the subscriber to any office on any exchange in the exchange system of the Local Authority.	d	d
Provided that the amount payable by the subscriber for the transmission of messages shall be at least per annum.		
(b) Where the office of an exchange subscriber is situate more than from the exchange with which such office is immediately connected. Over and above the respective charges aforesaid.	Per annum.....	Nil.
For every additional or part thereof an additional charge of		
B.—FOR PARTY LINES.		
(a) Where the main circuit does not exceed in length and the spur circuits do not respectively exceed in length—		
I. (i) For the establishment of telephonic communication between any exchange and the office of any exchange subscriber where not more than two exchange subscribers use the same party line exclusive of the transmission of messages:	Per annum (per exchange subscriber.	Per annum (per exchange subscriber).
(ii) For the transmission of each message of the subscriber to any office on any exchange in the exchange system of the Local Authority.	d	d
Provided that the amount payable by the subscriber for the transmission of messages shall be at least per annum (per exchange subscriber).		
II. (1) For the establishment of telephonic communication between any exchange and the office of any exchange subscriber where more than two and not more than ten exchange subscribers use the same party line exclusive of the transmission of messages.	Per annum (per exchange subscriber.)	Per annum (per exchange subscriber).
(2) For the transmission of each message of a subscriber to any office on any exchange on the exchange system of the Local Authority.	d	d
Provided that the amount payable by the subscriber for the transmission of messages shall be at least per annum (per exchange subscriber).		
(b) (1) Where the main circuit exceeds in length—In respect of every additional or part thereof—		
For every exchange subscriber whose spur circuit issues from the main circuit at a point exceeding from the exchange.	Per annum.....	Per annum.
(2) Where the spur circuit exceeds in length—In respect of every additional or part thereof—		
For the subscriber served by the spur circuit.....	"	"

CHARGE FOR USE OF THE EXCHANGE SYSTEM OF THE LOCAL AUTHORITY—*Continued.*

Service.	Maximum Charge.	Minimum Charge.
C.—EXTENSION LINES.		
(1) Where the two offices connected by the line are situate in the same building or curtilage—		
(a) Where the line does not exceed of double wire in length.	"	"
(b) Where the line exceeds of double wire in length—		
For the first of double wire	"	"
For each additional of double wire or part thereof	"	"
(2) Where the two offices connected are not situate within the same building or curtilage—		
(a) Where the line does not exceed of double wire in length.	"	"
(b) Where the line exceeds of double wire in length—		
For the first of double wire	"	"
For each additional of double wire or part thereof	"	"
D.—FOR CALL OFFICES.		
For the transmission of a message from a call office to any other office on an exchange in the exchange system of the Local Authority. . . .	<i>d</i>	<i>d</i>

NOTE.—The distances referred to in so much of this schedule as relates to exclusive lines and extension lines shall be deemed to be measured in a straight line on a horizontal plane.

Signed, sealed and delivered }
by the Postmaster General in }
the presence of }

The Common Seal of the }
Local Authority was hereunto }
affixed in the presence of }

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(See Question 2034.)

PAPER handed in by *Sir Robert Hunter*, Solicitor to the Post Office, Great Britain, July 5, 1905.

STATUTORY RULES AND ORDERS, 1899. No. 751.
TELEGRAPH.—REGULATIONS.

The Telegraph (Telephonic Inter-communication) Order, 1899. Dated September 26, 1899.

Whereas it is enacted by section 3, sub-section (5), of the Telegraph Act, 1899, that if the license of an existing company (hereinafter referred to as 'the Company') is under the provisions of section 3 of the said Act, extended in respect of any exchange area for a period of not less than eight years, the company shall, at the request of any other licensee of the Postmaster General providing public telephonic communication in the whole or any part of that exchange area (which other licensee is hereinafter

GREAT BRITAIN.

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referred to as 'the new licensee') and under such circumstances and on such terms and conditions as within six months from the passing of this Act may be prescribed by an order of the Postmaster General made with the approval of the treasury, afford all proper facilities for the transmission of telephonic messages between persons using the system of the company (either in the whole or in part of the exchange area, as the Postmaster General may prescribe) and persons using the system of such other licensee, provided that the licensee so requiring inter-communication shall in any such case afford similar facilities:

Now, therefore, I, Henry, Duke of Norfolk, Her Majesty's Postmaster General, by virtue of the powers vested in me for that purpose as aforesaid, and of all other powers vested in me in that behalf, do, with the approval of the treasury, order as follows:—

1. When the subscribers of the new licensee at the date when inter-communication is requested, equal or exceed in number one-fourth of those of the company at that date, in the area specified in the new license, or number 500, whichever first happens, but not before, mutual inter-communication shall be afforded by the company and the new licensee between their respective subscribers and other persons using their respective systems in the area specified in the new license only. Such inter-communication as aforesaid is hereinafter referred to as 'restricted inter-communication.'

2. In any case in which the company's exchange area, as defined by agreement with the Postmaster General, exceeds in extent the area specified in the new license, then when the subscribers of the new licensee at the date when inter-communication is requested, equal or exceed in number one-fourth of those of the company throughout the whole exchange area of the company at that date, but not before, mutual inter-communication shall be afforded by the company and the new licensee between their respective subscribers and other persons using their respective systems throughout the whole exchange area of the company. Such inter-communication as last aforesaid is hereinafter referred to as unrestricted inter-communication.'

3. The fact that restricted inter-communication exists with reference to the system of any new licensee shall not prejudice that licensee in requesting unrestricted inter-communication, and the two kinds of inter-communication may exist side by side on different terms.

4. The company and the new licensee may make terminal charges not exceeding the following:—

In the case of restricted inter-communication—

- (a) When the subscribers of the new licensee at the date when inter-communication is requested, number 500, but are less than one-fourth in number of the company's subscribers at that date in the area specified in the new license. 1½d. per call.
- (b) When the subscribers of the new licensee equal or exceed in number one-fourth (but do not equal in number one-half) of the company's subscribers for the time being in the area specified in the new license. 1d. per call
- (c) When the subscribers of the new licensee equal or exceed in number one-half of the company's subscribers for the time being in the area specified in the new license Nil.

In the case of unrestricted inter-communication—

- (a) When the subscribers of the new licensee at the date when inter-communication is requested, equal or exceed in number one-fourth (but do not equal in number one-half) of those of the company at that date in the whole of the company's exchange area—in respect of inter-communication with the subscribers

of the company and other persons using the system of the company in the portion of the company's exchange area which is not included in the area specified in the new license

1d. per call.

- (b) When the subscribers of the new licensee equal or exceed in number one-half of those of the company for the time being in the whole exchange area—in respect of such inter-communication as last afore-said

Nil.

5. Any new licensee requesting facilities for inter-communication shall satisfy the Postmaster General that such licensee possesses the required number of *bonâ fide* subscribers actually working.

6. When inter-communication has once been established—

- (a) It shall be maintained, notwithstanding that the number (actual or relative) of the subscribers to one or other of the inter-communicating systems may subsequently fall below the number which would entitle a new licensee to request inter-communication, and
- (b) No terminal charge shall be increased because the number (actual or relative) of the subscribers to one or other of the inter-communicating systems may fall below the number which first justified such charge, and
- (c) If terminal charges have ceased, they shall not under any circumstances be reimposed.

7. The term 'subscriber' means any person with whom the company, or the new licensee (as the case may be) has entered into an agreement for at least one year for the purpose of enabling such person to communicate from time to time with other persons through the medium of an exchange, and does not include persons using call offices on an exchange.

8. This Order may be cited as the Telegraph (Telephonic Inter-communication) Order, 1899.

Given under my Seal of Office, this 26th day of September, 1899.

NORFOLK, [L.S.]
Her Majesty's Postmaster General.

Approved by the Lords Commissioners of Her Majesty's Treasury.

H. T. ANSTRUTHER,
W. H. FISHER.

APPENDIX No. 1

GREAT BRITAIN—Continued.

No. 306c.

APPENDIX No. 5.

(See Questions 850-52.)

PAPER handed in by Mr. *Daniel Macaulay Stevenson*, Deputy Chairman, Telephone Committee of the Glasgow Corporation.

COMPARATIVE TABLE OF TRUNK TELEPHONE TARIFFS.

	Distance in *Kilometres.	Cost of Conversa- tions per 3 Minutes.	Cost of Conversations for 3 Minutes between same places according to—		
			Swedish Tariff.	German Tariff.	French Tariff.
		s. d.	s. d.	s. d.	s. d.
Glasgow to Edinburgh.....	65	0 6	0 2	0 6	0 4
" Carlisle.....	135	1 0	† Coy. free.	1 0	0 5
" Newcastle.....	195	1 6	0 4	1 0	0 7½
" Liverpool.....	280	2 0	0 6½	1 0	0 9½
" Manchester.....	290	2 6	0 6½	1 0	0 9½
" Hull.....	345	2 6	0 6½	1 0	1 0
" Cardiff.....	440	4 0	0 6½	1 0	1 2½
" London.....	555	4 6	0 6½	1 6	1 7
Aberdeen to Dover.	700	5 6	0 10	1 6	2 0
" Portsmouth.....	710	5 6	0 10	1 6	2 0
" Plymouth.....	760	6 0	0 10	1 6	2 2½
" Penzance.....	815	6 6	1 1½	1 6	2 5

* These distances have been measured on the map as the crow flies, and are probably all understated.

† The Allmänna Company give free communication within a radius of 43 miles.

GREAT BRITAIN—Continued.

No. 306d.

APPENDIX No. 6.

(See Question 853.)

PAPER handed in by Mr. Daniel Macaulay Stevenson, June 23, 1905.

TYPICAL CONTINENTAL TARIFFS FOR TRUNK TELEPHONE CONVERSATIONS.

FRANCE.

					Fr.	s.	d.
Up to	25 Kil.	=	15 miles	.....	0.25	=	0 2½
From 25 "	75 "	=	15 "	to 46 miles	0.40	=	0 4
" 75 "	150 "	=	46 "	93 "	0.50	=	0 5
" 150 "	225 "	=	93 "	139 "	0.75	=	0 7½
" 225 "	300 "	=	139 "	186 "	1.00	=	0 9½
" 300 "	375 "	=	186 "	232 "	1.25	=	1 0
" 375 "	450 "	=	232 "	279 "	1.50	=	1 2½
" 450 "	525 "	=	279 "	325 "	1.75	=	1 5
" 525 "	600 "	=	325 "	372 "	2.00	=	1 7
" 600 "	675 "	=	372 "	418 "	2.25	=	1 9½
" 675 "	750 "	=	418 "	465 "	2.50	=	2 0
" 750 "	825 "	=	465 "	511 "	2.75	=	2 2½
Over 825	"	=	511 "	.....	3.00	=	2 5

GERMANY.

					M.	s.	d.
Up to	25 Kil.	=	15 miles	.....	0.20	=	0 2½
From 25 "	50 "	=	15 "	to 31 miles	0.25	=	0 3
" 50 "	100 "	=	31 "	62 "	0.50	=	0 6
" 100 "	500 "	=	62 "	310 "	1.00	=	1 0
" 500 "	1,000 "	=	310 "	620 "	1.50	=	1 6
Over 1,000	"	=	620 "	.....	2.00	=	2 0

SWEDEN.

					Kr.	s.	d.
Up to	100 Kil.	=	62 miles	.....	0.15	=	0 2
From 100 "	250 "	=	62 "	to 155 miles	0.30	=	0 4
" 250 "	600 "	=	155 "	372 "	0.50	=	0 6½
" 600 "	800 "	=	372 "	496 "	0.75	=	0 10
" 800 "	1,000 "	=	496 "	620 "	1.00	=	1 1½
" 1,000 "	1,200 "	=	620 "	744 "	1.25	=	1 4½
" 1,200 "	1,400 "	=	744 "	868 "	1.50	=	1 8
" 1,400 "	1,600 "	=	868 "	992 "	1.75	=	1 11
Over 1,600	"	=	992 "	.....	2.00	=	2 2½

GREAT BRITAIN—Continued.

APPENDIX No. 8.

(See Question 1257.)

PAPER handed in by Mr. A. R. Bennett.

STATEMENT A.

MUNICIPAL TELEPHONE SYSTEMS.

Name of Centre.	Date of Expiry of Licence.	Date of Opening of Exchange.	Number of Stations Working according to last published Accounts.	Gross Capital Expenditure	Capital Cost per Station.	Annual Revenue.	Annual Revenue per Station.	Gross Annual Working Expenses, including Interest and Sinking Fund.	Annual Working Expenses per Station, including Interest and Sinking Fund.	Last Annual Surplus.
				£	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Guernsey.....	1911	1898	1,375	23,590	17 3 1	4,546 8 9	3 6 1 ¹ / ₂	*4,261 14 9	3 2 0	284 14 0
Glasgow.....	1913	1901	11,405	†320,782	28 2 7	49,639 1 2	4 7 0 ¹ / ₂	45,988 3 3	4 0 7 ¹ / ₂	3,650 17 10
Portsmouth.....	1926	1902	2,147	39,240	18 5 6	9,366 12 8	4 7 3	7,393 13 5	3 8 10 ¹ / ₂	1,972 19 3
Brighton.....	1926	1903	1,775	45,323	25 10 8	6,787 16 10	3 16 6	6,374 2 6	3 11 9	413 14 4
Swansea.....	1920	1903	1,207	20,978	17 7 7	3,963 8 9	3 5 8	2,413 14 10	1 19 11 ¹ / ₂	739 11 7
Hull.....	1911	1904	1,341	30,370	†22 12 11	†1,261 16 11	.....	†1,335 1 5	.....	.....
Totals.....			19,250	480,283	Average 24 18 11					

* In the case of Guernsey the working expenses also include depreciation.
five months working only.

† Including £9,957 for preliminary expenses.

‡ Installation not complete;

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STATEMENT B.

PARTICULARS OF MUNICIPAL TELEPHONE TARIFFS.

Telephone Area.	Population.	Tariffs.
Glasgow	1,000,000	Exclusive Line.—Unlimited use, £5 5s. per annum. Toll service—Exclusive line, £3 10s. per annum, and 1d. for each outward call. Two party line.—Unlimited use, £4 4s. per annum. Four party line.—Unlimited use, £3 3s. per annum. All inward calls are free.
Hull	300,000	Exclusive line.—Unlimited use : For business premises, £6 6s. per annum. For business premises (second connection), £5 15s. per annum. For private houses, 5d. per annum. Toll service.—Exclusive line, £3 per annum, and 1 d. per outward call. All inward calls are free.
Portsmouth	250,000	Exclusive line.—Unlimited use, £5 17s. 6d. per annum. Exclusive line.—Unlimited use, second connection, £5 5s. per annum. Exclusive line.—Toll tariffs :— 1. £3 10s. per annum, with $\frac{1}{2}$ d. for each outward call. 2. £2 10s. per annum, with 1 d. for each outward call. 3. £5 per annum to cover 1,800 outward calls ; extra calls $\frac{1}{2}$ d. each. 4. £4 per annum to cover 1,000 outward calls ; extra calls $\frac{1}{2}$ d. each. All inward calls are free.
Brighton	185,000	Exclusive line.—Unlimited use, £5 10s. per annum. Exclusive line.—Toll service, £3 10s. per annum, with 1d. for each outward call. Party lines,— Two party, unlimited use, £4 4s. per annum. Four party, unlimited use, £3 per annum. All inward calls are free.
Swansea	150,000	Exclusive line.—Unlimited use £5 per annum. Exclusive line.—Toll tariff, £3 per annum, with 1 d. for each outward call. All inward calls are free.
Guernsey	40,300	1. £5 per annum to cover 4,000 outward calls ; additional calls five for 1d. 2. £2 10s. per annum and $\frac{1}{2}$ d. for each outward call up to 1,520 ; additional calls, five for 1d. 3. £1 10s. per annum and 1d. for each outward call up to 1,000 ; additional calls, five for 1d. All inward calls are free.

APPENDIX No. 1

GREAT BRITAIN—*Concluded.*

No. 306f.

APPENDIX No. 15.

(See Questions 700 and 1661.)

PAPER handed in by Mr. W. E. L. Gaine, July 4, 1905.

THE NATIONAL TELEPHONE COMPANY, LIMITED.

TABLE showing the approximate average life of the principal classes of plant in use by the National Telephone Company, Limited.

Classes of Plant.	Approximate Average Years of Life.
Overhead lines, bronze.....	20 years.
" lines, copper.....	30 "
" cables.....	9 to 15 years (according to type).
Wooden poles.....	35 years.
Underground conduit.....	70 "
" cables.....	50 "
Subscribers' instruments.....	15 to 20 years (according to type).
Exchange equipment.....	15 to 20 " "

NOTE.—These figures are given upon the authority of the engineer-in-chief of the National Telephone Company, Limited, and are based upon the assumption that the plant will remain *in situ* for the whole period of its life.

WM. E. L. GAINÉ,
General Manager.

TELEPHONE HOUSE, VICTORIA EMBANKMENT, LONDON, E.C.,
June 21, 1905.

SWANSEA.

No. 307.

MUNICIPAL TELEPHONE DEPARTMENT ACCOUNT, FROM APRIL 1, 1904,
TO MARCH 31, 1905.

Forwarded by A. R. Bennett, M.I.E.E.

EXPENDITURE.

Capital Account.	Expended to March 31, 1904.	Expended dur- ing the year.	Total.
	£ s. d.	£ s. d.	£ s. d.
To hand and permanent—			
Buildings.....	£2,412 17 11		
Less credit.....	3 0 0		
	2,449 17 11		2,249 17 11
Works completed and in course of construction. ...	6,192 8 2	4,236 0 8	10,428 8 10
Junction construction.	658 0 6	410 4 4	1,068 4 10
Underground construction.....	4,900 11 9	425 13 8	5,326 5 5
Exchange construction.....	1,365 1 4	340 15 3	1,705 16 7
	15,565 19 8	5,412 13 11	20,978 13 7

SWANSEA.

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SWANSEA—Continued.

INCOME.

Capital Account.	Receipts to	Received	Total.
	March 31, 1904.	during the year.	
	£ s. d.	£ s. d.	£ s. d.
By Swansea Corporation, 4 p.c. debenture holders...	10,963 7 6	5,661 13 6	16,625 1 0
Sundry creditors		1,418 5 4	1,418 5 4
Balance due to Treasurer			2,935 7 3
	10,963 7 6	7,079 18 10	20,978 13 7

REVENUE ACCOUNT FOR YEAR ENDING MARCH 31, 1905.

EXPENDITURE.

	£ s. d.	£ s. d.
Working Expenses—		
Salaries of operators.....	352 7 1	
Line repairs	100 5 1	
Instrument repairs	81 3 11	
Roof repairs	4 6 6	
Wayleave rentals	19 16 2	
Written off tools, &c.....	23 13 11	
		581 12 8
To Office Expenses—		
Salaries, &c.....	168 13 8	
Books and stationery.....	31 10 1	
Postages.....	19 7 1	
Stamp duty	5 2 0	
Written off furniture account.....	3 16 10	
		228 9 8
To General Expenses—		
Management	248 0 8	
Rent, rates, gas and electric light.....	243 4 0	
Advertising.....	3 10 4	
Commission.....	52 9 3	
Terminal charges	130 13 0	
Post office royalty	431 15 3	
Law costs.	18 13 6	
Four per cent debenture bonds.....	180 0 3	
Written off, bad debts.....	103 1 3	
		1,411 7 6
To Net Revenue Account—		
Gross balance transferred.....		1,741 18 11
		3,963 8 9
To interest for year to March 31, 1905.....	474 12 5	
Sinking Fund for year to March 31, 1905.....	527 14 11	
		1,002 7 4
Balance surplus for year to March 31, 1905.....		739 11 7
		£ 1,741 18 11

GENERAL BALANCE SHEET.

LIABILITIES.

	£ s. d.	£ s. d.
To Capital Account—		
Swansea Corporation 4 per cent Debenture Bonds.....	16,625 1 0	
Deduct amount applied in reduction of debt.....	723 17 10	
		15,901 3 2
Reserve Account—		
For Capital and Sinking Fund to March 31, 1904.....	196 2 11	
Add amount carried to the fund for this year.....	527 14 11	
		723 17 10
Carried forward		16,625 1 0

SWANSEA.

No. 308.

(Translation.)

AUSTRIA.

VIENNA, November 20, 1905.

To the Select Committee on Telephone Systems,
Ottawa, Canada.

In answer to your esteemed letter of May 1, 1905, the Royal Ministry of Commerce has the honour to supply the following answers to the questions that have been asked:—

ANSWERS TO QUESTIONS.

The government owns and operates the local and long-distance telephone lines.

At the end of 1903 the length of interurban lines (long-distance) lines was 10,702·08 km. (6,646 miles) of lines or routes. The length of wires was 21,404·16 km. (13,292 miles).

The cost per km. (about $\frac{1}{2}$ mile) of single wire, is about 500 crowns (\$101.50).

In straight routes, the distance between poles is from 40 to 50 metres (131 to 164 feet, or 30 to 40 poles per mile). In curves and in mountain districts the distances are smaller.

The wires for telephone subscribers' circuits are 'Silicium bronze,' 1·5 mm. (No. 17, S.W.G.). The greater part of the subscribers' circuits are metallic.

The diameter of the long-distance wires is 2, 3 and 4 mm. (Nos. 14, 10 $\frac{1}{2}$ and 8 S.W.G.).

The rates for long-distance service are charged to the account of the subscriber, who has to make an adequate deposit; or the amount is paid in cash when use is made of a public call station.

The long-distance lines are used for simultaneous telephony and telegraphy. The arrangement employed for this purpose in the central telephone stations is shown in the accompanying diagrams of the switch system, and the 'explanations' sent along with same. (Not printed.)

The population of Austria is 35,000,000.

At the end of 1904 there were 47,676 local telephone subscribers. The following are the number of subscribers in the principal towns, with the populations:—

	Subscribers. Population.	
Vienna at the end of 1904..	21,423	2,800,000
Prague " " ..	3,832	200,000
Brünn " " ..	1,438	74,000
Trieste " " ..	1,992	125,000
Linz " " ..	570	35,000
Lemberg " " ..	978	88,000

In the smaller places the number of subscribers and populations are:

	Subscribers. Population.	
Baden at the end of 1904..	130	10,000
St. Pölten " " ..	122	9,000
Karlsbad " " ..	672	10,000

We have not yet adopted the 'measured service' system of charges, but we have the intention of doing so.

AUSTRIA.

APPENDIX No. 1

The greatest distances spoken over are between: Vienna and Hamburg, Vienna and Lemberg, Vienna and Meran.

The types of wall and desk telephones employed are those used in the ordinary telephone service, with and without batteries (*i.e.*, with local batteries and 'common battery').

The interurban, or long-distance telephone lines are all metallic circuit. The lines are of 'Silicium bronze' wire. Compound wire is also used by way of exception.

At the end of 1903 the total length of local and long-distance wire was 277,130.20 km. (172,098 miles). Of those, 204,476.72 km. (126,980 miles) were cable lines (underground).

In 1904 the total revenue was 8,199,220 crowns (\$1,664,441.66, or about \$34.91 per subscriber).

The expenditure cannot be estimated, as the cost of working and maintaining is partly combined with the telegraph system.

The wages paid are:—

(a) Managers:—

Officials of class IX., *3,800 crowns (\$771.40) yearly.

Officials of class X., *3,000 crowns (\$609) yearly.

Officials of class XI., *2,200 crowns (\$446.60) yearly.

(b) Mechanics (instrument men). *See* officials of class XI.

(c) Foremen, from 800 to 1,200 crowns (\$162.40 to \$243.60) yearly.

(d) Day labourers, for stretching wires, from 3 to 4 crowns (61 to 81 cents) daily.

The cost of material is as follows:—

Wall telephones, about 85 crowns (\$17.25).

Table (desk) telephones, about 75 crowns (\$15.22).

For the kind of cable in general use, *viz.*: 480, 240, 120 and 60 wire, with insulated paper and pressed lead protection covering, the cost per metre (39½ inches) is 17.14, 10.54, 6.38 and 4.21 crowns (\$3.48, \$2.14, \$1.30 and 85½ cents).

The price of wire per kilogram (2½ lbs.) varies according to the market price of copper. In 1904, the price was 2 crowns (40½ cents) per kg.

Wrought iron poles are charged for according to weight, about 45 hellers (9½ cents) per kg. (2½ lbs.), and wooden poles according to length, from 7 to 14 metres (23 to 46 feet), 5 to 14 crowns each (\$1.01½ to \$2.84).

The insulators mostly used for long-distance lines cost 65 and 52 hellers (13½ and 10½ cents) each.

Block ducts constructed of cement, per running metre (39½ inches), together with laying (imbedding) same, at a depth of 2 metres (6½ feet), cost as follows:—

Type with 8 ducts, 20 crowns (\$4.06); type with 11 ducts, 24 crowns (\$4.87); type with 14 ducts, 26 crowns (\$5.28); type with 18 ducts, 30 crowns (\$6.09); type with 22 ducts, 38 crowns (\$7.71½).

There is no competition in telephones in Austria.

Payment is made for wayleave facilities when required. The amounts vary very much.

For the Director of the Royal Ministry of Commerce,

HOFFMANN.

* Besides this special allowances when on construction work.

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No. 309.

THE CANADIAN INDEPENDENT TELEPHONE ASSOCIATION.

MARKHAM, ONT., October 15, 1905.

WALTER TODD, Esq.,
 Clerk, Select Committee on Telephone Systems,
 Ottawa, Ont.

DEAR SIR,—Herewith I have the honour to inclose three copies of the official report of the proceedings of the organization meeting of the Canadian Independent Telephone Association, held in Toronto, on September 6, 1905.

I also beg to inclose a certified copy of the resolutions passed at such meeting respecting the matters under consideration by your committee.

Our association trust that the Select Committee will be able to include the official report of our organization meeting and constitution in the printed report now being compiled by the committee for publication.

I have the honour to be, &c.,
 Yours respectfully,

A. F. WILSON,
Secretary Canadian Independent Telephone Association.

RESOLUTIONS

ADOPTED AT THE ORGANIZATION MEETING OF THE CANADIAN INDEPENDENT TELEPHONE ASSOCIATION ON SEPTEMBER 6, 1905.

Resolution No. 1.—Whereas, a large number of telephone users in Canada to-day are prevented by the companies operating long-distance lines from having access thereto and the user thereof upon equitable terms; and whereas, the long-distance or trunk lines are a great public utility, and all telephone organizations, whether owned and operated by municipalities or chartered companies or associations, should have access to these trunk lines upon equitable terms; and whereas, the best method of providing for the user of these trunk lines by the various telephone organizations, is for the government to own and control the same; therefore be it resolved, that we urge upon the government of the Dominion of Canada the consideration of the question of the nationalization of the long-distance telephone lines and the giving of access thereto to all telephone organizations doing business in Canada upon equitable terms. On motion by Mr. Bruce, seconded by Mr. J. A. Sprague, resolution adopted.

Resolution No. 2.—Whereas, some of the railway and navigation companies of Canada have made special agreements with some of the telephone companies, whereby they give to the said companies a practical monopoly of the telephone business in connection with these public companies; and whereas, this is in restraint of trade and contrary to public policy, and a hardship to telephone subscribers other than those of the said companies; therefore be it resolved, that the parliament of the Dominion of Canada be requested to enact such legislation as will prevent the railway and navigation companies of Canada, or any of them, making special arrangements with telephone companies by which a practical monopoly may be established in the telephone business in connection with the said companies; and that railway and navigation companies be compelled to give access to their property and premises, upon equitable terms, to be decided by the Railway Commission, but that in any order of such commission no charge should be permitted for the privilege of installing and having a 'phone in any railway station placed there for public convenience.

APPENDIX No. 1

Resolution No. 3.—Whereas, special efforts are being made at the present time by the Bell Telephone Company to obtain control of independent lines by means of special agreements, and also to make agreements with municipalities for a long term for a monopoly within the limits of the municipality, and in view of the present development of the telephone business and the improvements that are being made therein, and in view of the action of the Dominion government in the inquiry which has been going on during the past session into telephone conditions in Canada and elsewhere; therefore be it resolved, that municipalities and independent companies be warned against making special agreements or exclusive franchises for a lengthened term with any company or organization at the present time, or until the Telephone Committee to be appointed at the next session of parliament makes its final report. On motion by Mr. Bruce, seconded by Mr. McKay, resolution adopted.

Resolution No. 4.—We desire to express to the government of the Dominion of Canada our appreciation of the active interest taken in telephone matters by the appointment of a special Telephone Committee, which has during the greater part of last session of parliament been inquiring into the telephone conditions of Canada and elsewhere, and which we trust will be continued during the next session of parliament. Resolution, on motion by Mr. Bruce, seconded by Mr. Sprague, adopted.

CONSTITUTION OF THE CANADIAN INDEPENDENT TELEPHONE ASSOCIATION,

*Adopted at Organization Meeting held at Toronto,
September 6, 1905.*

NAME.

1. The association shall be called 'Canadian Independent Telephone Association,' and its head office shall be in the city of Toronto, in the county of York, in the province of Ontario, or at such other place as the majority of the members may determine.

OBJECTS.

2. The objects of the association are as follows:—

(a) The co-operation of the members for the purpose of bringing into more general use, improving and cheapening telephone service in Canada.

(b) The adoption from time to time of such measures as may be deemed in the best interests of the association and its members, and for the protection of their common business interests.

(c) The maintenance of friendly relations with telephone and telegraph companies in Canada.

(d) To afford its members means of intercourse, mutual helpfulness and instruction in telephone matters.

MEMBERSHIP.

3. The association shall consist of municipalities and of members and shareholders of or in independent telephone companies or associations.

In case a municipality, association or company joins this association not more than two accredited members of such municipality, company or association in favour of independent telephone systems shall be at liberty to vote at any meeting of the association, and only one vote shall be allowed to each member, but this shall not preclude other members from attending and having a voice on all matters coming properly before the meeting.

ADMISSION OF MEMBERS.

4. A candidate for election shall be proposed by one member and seconded by another able from personal knowledge to vouch for such candidate's respectability and fitness to be a member.

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SUBSCRIPTION.

5. The membership fee shall be one dollar per annum. The first fee shall be paid on election, and the annual fee thereafter shall be payable on the first day of September in each year. Any member who, on the day appointed for such payment, shall not have paid his subscription, shall be considered in arrear, and if the subscription be not paid on or before the first day of December, the secretary shall notify the member so in arrear that if the subscription remains unpaid for a further period of one month the defaulter shall cease to be a member, unless he can excuse the default to the satisfaction of the executive committee. The election of a member shall be by the executive committee.

NOTIFYING CHANGE OF ADDRESS.

6. The secretary shall keep a list of the names and addresses of the members, and every member shall, within fourteen days, give notice to the secretary of any change of address. The names of those who cease to be members shall be erased from the list, and no municipality, firm, company or association whose name is not on the list shall have any rights as a member.

EXECUTIVE COMMITTEE.

7. There shall be an executive committee, which shall consist of the president, vice-president, secretary, treasurer and nine members of the association. The committee shall control the management of the association. It shall have power to do all such things as it may deem necessary for the carrying out of the objects of the association. The committee shall have power to confer with associations and representatives of other independent telephone systems.

The committee shall meet from time to time at the request of two members of the committee for general business, and the president, or in his absence the vice-president, or an elected chairman, shall preside and shall have a casting vote only, and five shall form a quorum.

The committee shall have power to appoint a member to fill any casual vacancy on the committee until the next annual general meeting. Any member so appointed shall retire at the next general meeting, but shall be eligible for election as a member of the committee at such meeting.

The election of the committee shall be by ballot. Each member of the association shall have one vote for each vacancy, as herein provided, but no member shall give more than one vote for any one candidate. At least three weeks before a general meeting a notice shall be mailed to each member of the association by the secretary, stating the time and place at which the general meeting of the association is to be held for the election of the committee.

OFFICERS.

8. The officers of the association shall consist of a president, vice-president, secretary and treasurer, who shall remain in office until their successors are appointed, and shall be elected by ballot at a general or special general meeting. Any of the officers or members of the committee shall be removable at any time by a majority of three-fourths of the members present at a special general meeting called for that purpose.

PRESIDENT.

9. The president shall be the chief executive officer and head of the association, and shall have the general control and management of the business and affairs of the association, subject, however, to the right of the executive committee, as hereinbefore defined.

APPENDIX No. 1

VICE-PRESIDENT.

10. The vice-president shall be vested with all the powers and shall perform all the duties of the president in his absence.

TREASURER.

11. The treasurer shall receive all moneys belonging to the association or such as the committee may direct; shall deposit the same in such bank and in such manner as the committee may direct; and further, shall keep such accounts and pay such debts of the association as the committee shall direct; and shall, when required to do so, render to the committee or a general meeting an account of the moneys received and expended by him.

All cheques drawn upon the association account shall be signed by the treasurer and countersigned by the president, or in his absence, by any member of the committee.

SECRETARY.

12. The secretary shall keep a list of the names and addresses of the members of the association, and a subscription book, in which shall be recorded the payments of such members. He shall carry out the directions of the committee. He shall attend all meetings, take minutes of the proceedings, prepare balance sheets, and submit same to such meetings as directed by the committee.

13. There shall be an auditor, who shall remain in office for one year, and who shall be elected at a general or special general meeting. No officer or member of the committee shall be an auditor.

INSPECTION OF BOOKS.

14. Any member having any interest in the funds of the association shall, at all reasonable times, be entitled to inspect all books of account of the association at its office or at any place where the same are kept, and it shall be the duty of the secretary to produce them for such inspection.

GENERAL MEETINGS.

15. A general meeting of the members shall be held in September in each year, on a date and at a place to be fixed by the committee, and at least two weeks' notice shall be given to each member to receive the statements of account and balance sheets, to elect an executive committee and officers for the ensuing year, and to transact such other business as may properly come before the meeting.

SPECIAL GENERAL MEETINGS.

16. A special general meeting shall be called by the secretary, in addition to the cases before provided for, on a requisition signed by seven members, stating the special object thereof. Such meeting shall be held within not less than fourteen days and not more than one month from the date of the receipt by the secretary of the requisition.

AMENDMENT OF RULES.

17. These rules may be added to, repealed or amended by resolution at a special or general meeting, provided that no such resolution shall be deemed to have been passed unless it be carried by a majority of at least two-thirds of the members present and voting thereon.

DISSOLUTION.

18. The association may at any time be dissolved by the consent of three-fourths of its members, testified by their signatures to an instrument of dissolution.

TELEPHONE COMPANIES IN CANADA.

SUMMARY OF INFORMATION FURNISHED BY TELEPHONE COMPANIES AT THE REQUEST OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I. G.*, iron wire, grounded circuit; *I. M.*, iron wire, metallic circuit; *C. G.*, copper wire, grounded circuit; *C. M.*, copper wire, metallic circuit; *C. E.*, central energy system; *L. D.*, long-distance; *Mag.*, magnetic system; *B. M.*, bronze wire, metallic circuit; *B. G.*, bronze wire, grounded circuit; *I. C. C. R.*, iron wire, copper common return.

Particulars.	East Luther Tel. Co., East Luther and Grand Valley, Ont.	Harrietsville Tel. Assn., Ltd., North Dorchester Tp., Harrietsville, Ont.	Wade Tel. Line, Tps. of Brighton, Murray, Ed- ville, Warkworth and Frankford, Ont.	Kirkton, St. Mary's and Exeter Tel. Co.; covers 50 miles of territory, Kirkton, Ont.	Dr. W. F. Eastwood's: Claremont to Broug- ham, Greenwood, Bal- salam, Mt. Zion and Al- tona, Claremont, Ont.
Stock and bonds issued.....	\$1,400; 60 p.c. paid.....	\$1,820 00	Private ownership. . . .	\$5,000 00	Private ownership.
Years in operation.....	3	14, including 1904.....	12	1	4
Population of territory.....	800 excepting farmers....	3,500	6,000	.....	10,000
Number of telephones—					
Residence.....		40	12	7	
Business.....	1	17	12	16	8
Rural.....	5	All rural.....	9	4 included above.....	12
Total.....	6	57	33	23	20
Non-party lines			4		6
Cost per telephone.....		\$56 00	\$22 00		
Class of wire and circuit	I. G.....	I. M.	I. G.	½ I. M., ½ I. G.....	45 miles I. G., 5 miles I. M.
Type of system.....	Mag.....	Mag.....	Mag.....	Mag.....	Mag.
Central plant and instruments mfg. by.	Chicago Telephone Sup- ply Co.	Stromberg-Carlson Co....	Ness, McLaren & Bate, John Starr & Son.	Northern Electric Co., Montreal.	Northern Electric Co., Montreal.

Rates per annum—						
1-2-48	Business.....	Toll charges only	\$9 00	\$10 00	Toll charges only.....	Toll charges only.
	Residence.....	" "	9 00	10 00	" "	" "
	Rural.....	" "	9 00	10 00	" "	" "
Dividends per annum.....	20 per cent.	8 per cent.				
Depreciation per annum.....		10 per cent.				
Surplus.....	\$250 00	\$89 55				
No. of 'Bell' telephones—						
	Before competition.....	30	1	7		
	At this date	35	1	15		
Wages paid—						
	Foremen.....	Permanent staff not employed.	Average \$2 per day			
	Troublemn.....	" "	" "	\$1.50 per day		
	Wiremen.....	" "				
	Operators.....					
Cost of supplies—						
	Central equipment.....		\$102.48 for 14 lines.....		\$152.00 for 11 lines.	
	Wall telephones.....		\$17.00, including duty	\$12 00	\$13.50; L.D., \$17.50.....	
	Poles.....		\$1 25		1 60	
Long-distance lines—						
	Pole mileage..	13	26	45	50	50
	Wire "	13	26	45	75	55
Cost per mile.....	\$50, with 'phones	\$87 10	\$25.00 with poles.			
Long-distance rates.	15c.	5c.	15c.	10c.	10c.	
Remarks.....		See Note A, Page 763...	See Note B, Page 763...	See Note C, Page 763...	See Note D, Page 763.	

SUMMARY OF INFORMATION FURNISHED BY TELEPHONE COMPANIES AT THE REQUEST OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit ; *M.*, metallic circuit ; *I.G.*, iron wire, grounded circuit ; *I.M.*, iron wire, metallic circuit ; *C.G.*, copper wire, grounded circuit ; *C.M.*, copper wire, metallic circuit ; *C.E.*, central energy system ; *L.D.*, long-distance ; *Mag.*, magnetic system ; *B.M.*, bronze wire, metallic circuit ; *B.G.*, bronze wire, grounded circuit ; *I.C.C.R.*, iron wire, copper common return.

Particulars.	Hamilton Mutual Telephone Co., Cold Springs, Ont.	King Township Telephone Co., Kettleby, Ont.	The Markham & Pickering Telephone Co., Ltd., Township and Village of Markham, York Co., and Township of Pickering, Ontario Co.	Central Dufferin Telephone Assn., Shelburne, Ont.	The Sprague Telephone Co., Demorestville, Ont.
Stock and bonds issued.....	\$900	\$365	\$2,100	\$890	Private ownership.
Years in operation.....	1	1½	2½	3	4
Population of territory.....	400	.....	7,000	1,188 and rural.....	5,000
Number of telephones—					
Residence.....			15		163
Business.....			12	6	27
Rural ..	14	20	Included above.....	Included above	163, included above.
Total.....	14	20	27	6	190
Non-party lines ..	1	.....	.....	.....	.....
Cost per telephone.....	\$64	.....	\$48	\$148.33	\$50
Class of wire and circuit.....	I. G.....	I. M.	I. M	I. G.....	I. G.
Type of system.....	Mag.....	Mag.....	Mag.....	Mag.....	Mag.
Central plant and instruments mfg. by.	Northern Electric Co., Montreal.	Northern Electric Co., Montreal.	Stromberg-Carlson Co., and Chicago Tele. Supply Co.	Chicago Telephone Supply Co.	Chicago Telephone Supply Co., Wm. Abbott Co., The Fair Co.

Rates per annum—						
Business	Toll charges only.....	\$9	\$15			\$10
Residence		\$9	\$12			\$1
Rural		\$9	\$12			\$10
Dividends per annum.....		6 per cent			10 per cent.	
Depreciation per annum.....	5 per cent.....					
Surplus.....	\$45	7 per cent			\$25	
No. of 'Bell' telephones—						
Before competition.....			6			
At this date.....			32			8
Wages paid—						
Foremen			\$2 per day.....			Labour, \$1.50 per day with board.
Troublemn.....			\$2 "			
Wiremen			\$1.50 "			
Operators.....		\$1.50 per phone per year.				
Cost of supplies—						
Central equipment	\$35	\$29.72 for six lines.....	\$135 for twenty-five lines.....			
Wall telephones.....	\$24 equipped.....		\$17	\$14.85		\$15
Poles.....	50c.	\$1	55c.	65c.		50 to 80c.
Long-distance lines—						
Pole mileage.....	18	11	22	16		30
Wire "	18	22	44	16		30
Cost per mile.....		\$58	\$30	\$50		\$65
Long-distance rates.....	5c.	10c.	10c.	15c.		
Remarks	See note E., page 763....	See note F., page 763....	See note G., page 763....	See note H., page 763...		See note I., page 763.

SUMMARY OF INFORMATION FURNISHED BY TELEPHONE COMPANIES AT THE REQUEST OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I.G.*, iron wire, grounded circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, metallic wire, grounded circuit; *C.E.*, central energy system; *L.D.*, long-distance; *Mag.*, magnetic system; *B.M.*, bronze wire, metallic circuit; *B.G.*, bronze wire, grounded circuit; *I.C.C.R.*, iron wire, copper common return.

Particulars.	The Bascom & Forrest's Private Line, Uxbridge, Ont.	The North American Telegraph Co. (within a line drawn north from Port Hope on the west and Brockville on the east), Kingston, Ont.	The Fort William Municipal Telephone System, Fort William, Ont.	Dr. Fisher's Private Telephone Line, or Fisher's Glen Line, Vittoria to Fisher's Glen, Ont.	Municipalities of Kenora (Rat Portage) and Keewatin, Ont.
Stock and bonds issued.....	Private ownership. . . .	\$200,000	\$31,500	Private ownership.....	
Years in operation.....	5	18	2	1	
Population of territory.....			7,000		7,000
Number of telephones					
Residence.....	12	198	385		
Business.....		481	115		
Rural.....	Included above	15		Toll stations, 3.....	
Total.....	12	694	500	Toll stations, 3.....	180
Non-party lines.....		664	300		
Cost per telephone.....			\$63		
Class of wire and circuit.....	I. G.....	I. G. & C. M.	I. M and cable.	I. G.	I. M.
Type of system.....	Mag.....	Mag.....	C. E.....	Mag.....	Mag.
Central plant and instruments mfg. by.	Northern Electric Co. . . .	Northern Electric Co. . . .	International Telephone Co., Chicago, Ill.	Kellogg Co., Chicago, Ill.	Northern Electric Co.

ate per annum—				
Business		\$15, \$20 and \$25	\$24	\$35
Residence		\$15, \$20 and \$25	\$12	\$15
Rural		\$15 per mile		
Dividends per annum				
Depreciation per annum				
Surplus			\$1,071	
No. of 'Bell' Telephones—				
Before competition				
At this date				
Wages paid—				
Foremen		\$2.25 per day		\$65 per month.
Troublemens		\$1.50 to \$2 per day	\$65 per month	
Wiremen		\$1.50 per day	25c. per hour	
Operators		\$12 to \$35 per month	\$15 to \$25 per month	Staff, \$107.50 p. month.
Cost of supplies—				
Central equipment		\$219.18 for fifty lines	\$3,440 for 560 lines	
Wall telephones	\$17	\$12; L. D., \$16.65	\$8.50	
Poles	35c.			
Long-distance lines—				
Pole mileage	32	761		3 $\frac{1}{4}$
Wire "	32	2,005		3 $\frac{1}{4}$
Cost per mile				
Long-distance rates	15c.	$\frac{1}{2}$ c. per mile		10c.
Remarks	See note J., page 763.	See note K., page 763.	See note L., page 763.	See note M., page 763.

SUMMARY OF INFORMATION FURNISHED BY TELEPHONE COMPANIES AT THE REQUEST OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I.G.*, iron wire, grounded circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, copper wire, metallic circuit; *C.E.*, central energy system; *L. D.*, long-distance; *Mag.*, magnetic system; *B. M.*, bronze wire, metallic circuit; *B. G.*, bronze wire, grounded circuit; *I. C. C. R.*, iron wire, copper common return.

Particulars.	The Haileybury and Cobalt Tel. Co., Haileybury and Cobalt, Ont.	La Compagnie de Tél. de Bellechasse, Matane, Rimouski, Témiscouata, Kamouraska, L'Islet, Montmagny, Bellechasse, Dorchester, Lévis, and Lotbinière Cos., P.Q.	La Cie de Téléphone de Kamouraska, Fraserville, P.Q.	The Telephone System of Megantic, J. H. Godbout, Proprietor; Megantic and Arthabaska Cos., Laurierville, P.Q.	La Cie de Téléphone Locale, Wm. Lynch, Proprietor; L'Épiphanie, P.Q.
Stock and bonds issued.....	\$5,000 00	\$150,000 00	\$71,000 00	\$13,000 00	Private ownership.....
Years in operation.....	1	12	2	15	11
Population of territory.....	2,000	300,000	60,000	40,000	1,500
Number of telephones.....					
Residence.....		350	258	48	14
Business.....		1,150	174	162	26
Rural.....	Toll stations, 5.....	Nearly all.....		13	
Total.....	Toll stations, 5.....	1,500	432	223	40
Non-party lines.....		1,200			38
Cost per telephone.....		\$100 00			\$28 50
Class of wire and circuit.....		C.G., C.M., I.G., I.M...	I. and C. M.....	I.G.....	I.G.
Type of system.....	Mag.....	Mag.....	Mag.....	Mag.....	Mag.
Central plant and instruments mfg. by.....		Chicago Tel. Supply Co., Kellogg Co., Dean Electric Co.	Sumter Co., Northern Electric Co.	Kellogg, Sumter, Ness, and Northern Electric Cos.	Ness, McLaren & Bate

Rates per annum—					
Business.....		\$15 00 to \$25 00	\$15 00 & \$18 00	} \$15, \$18, \$20 and \$25 }	\$5 00
Residence.....		15 00	15 00		5 00
Rural.....		12 00	13 00		
Dividends per annum.....		7 per cent.....			6 per cent.
Depreciation per annum.....		3 per cent.....			2 per cent.
Surplus.....		15 per cent.....			
No. of 'Bell' telephones—					
Before competition.....		600			85
At this date.....		400			30
Wages paid—					
Foremen.....			\$2.85 per day.....		Proprietor does all necessary work.
Troublemen.....			2.00 ".....		
Wiremen.....		\$9.00 week.....	1.50 ".....	\$1.25 to \$1.50 per day ..	
Operators.....		Commission on receipts..		\$3.00 per 'phone a year..	
Cost of supplies—					
Central equipment.....					\$240 00
Wall telephones.....					17 00
Poles.....	70c.	75c. to \$5.00, 25 to 50 ft.			
Long-distance lines—					
Pole mileage.....	9	1,300	350		100
Wire ".....	10	3,000	600		100
Cost per mile.....	\$25 00	\$150 00	\$140 00	\$85.00 to \$100.00.....	
Long-distance rates.....	25c.	¼c. per mile.....	¼c. to ½c. per mile.....		
Remarks.....	See Note N, page 763....	See Note O, page 764....	See Note P, page 764....	See Note Q, page 764....	See Note R, page 764.

SUMMARY OF INFORMATION FURNISHED BY TELEPHONE COMPANIES AT THE REQUEST OF THE COMMITTEE.

ABBREVIATIONS.—S., single circuit; M., metallic circuit; I. G., iron wire, grounded circuit; I. M., iron wire, metallic circuit; C. G., copper wire, grounded circuit; C. M., copper wire, metallic circuit; C. E., central energy system; L. D., long-distance; Mag., magneto system; B. M., bronze wire, metallic circuit; B. G., bronze wire, grounded circuit; I. C. C. R., iron wire, copper common return.

Particulars.	Beauce Telephone Co., County of Beauce, Que.	The Telephone Co. of St. Zépherin, St. Zépherin and La Baie du Febvre, Qué.	The River du Lièvre Tele- phone Co., Buckingham to Poltimore, Labelle Co., Que.	Wallingford Bros. Pri- vate Line, Perkins Mills, Que.	La Compagnie de Tel. St. Maurice et Cham- plain, Counties of Maskinongé, St. Mau- rice and Champlain, Que.
Stock and bonds issued.	\$30,000 00	\$1,300	\$10,000, \$1,100 paid up..	Private ownership.....	\$12,000
Years in operation.....	10	6	2	.....	1
Population of territory..	60,000	3,000	1,000	500	60,000
Number of telephones					
Residence.....	50	2	15	.....	50
Business.....	350	12	.....	.....	50
Rural.....	200	All .....	.....	Toll stations.. 3	.....
Total.....	600	14	15	3	100
Non-party lines.....	.....	.....	.....	.....	.....
Cost per telephone.....	\$60 00	\$22 00	\$73 34	.....	.....
Class of wire and circuit.....	I. G.....	I. G.....	I. G.....	I. G.....	I. G.....
Type of system.....	Mag.....	Mag.....	Mag.....	Mag.....	Mag.....
Central plant and instruments mfg. by.	Ericsson Co. and Kellogg Co.	.....	Northern Electric Co....	Garrioch & Goddard, Ot- tawa.	Kellogg Co., Dean Elec- tric Co.

Rates per annum—					
Business.....	\$15 00 to \$20 00	\$12 00	\$15 00		\$15 00
Residence.....	12 00 to 15 00	12 00	15 00		15 00
Rural.....	12 00	12 00	15 00		12 00
Dividends per annum.....	7 per cent and 8 per cent.	9 per cent.		8 to 10 per cent.	
Depreciation per annum.....			\$ 200 00		
Surplus.....			\$ 500 00		
No. of 'Bell' telephones—					
Before competition.....	300				800
At this date.....	35				800
Wages paid—					
Foremen.....	\$1.50 per day				\$1.50 per day.
Troublemen.....	1.50 "				1.50 "
Wiremen.....	1.50 "				1.25 "
Operators.....	2 per cent on receipts.				10 to 20 p.c. on revenue.
Central equipment.....					
Wall telephones.....	\$12 00				\$10 50
Poles.....	75c. to 1 50				\$1 00 to \$1 25
Long-distance lines—					
Pole mileage.....	230	35	25	10	100
Wire ".....	230	35	25	10	100
Cost per mile.....	\$140 00		\$64 00		\$140 00
Long-distance rates.....	25c.		10c.	25c.	25c.
Remarks.....	See Note W, page 764...	See Note X, page 764...	See Note Y, page 764...	See Note Z, page 764....	See Note A.1, page 764.

SUMMARY OF INFORMATION FURNISHED BY TELEPHONE COMPANIES AT THE REQUEST OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I. G.*, iron wire, grounded circuit; *I. M.*, iron wire, metallic circuit; *C. G.*, copper wire, grounded circuit; *C. M.*, copper wire, metallic circuit; *C. E.*, central energy system; *L. D.*, long-distance; *Mag.*, magneto system; *B. M.*, bronze wire, metallic circuit; *B. G.*, bronze wire, grounded circuit; *I. C. C. R.*, iron wire, copper common return.

Particulars.	Frs. Gauthier & Cie, Drummondville, Que.	Jos. Archambault, St. Henri de Mascouche, Que.	La Compagnie de Télé- phone de Portneuf, St. Casimir, County Port- neuf, Que.	La Cie du Téléphone St. Laurent, Sorel to Nico- let, St. François du Lac, St. Guillaumed Upton, Pierreville and Notre Dame, St. François du Lac, Que.	Canadian Telephone Co., Cookshire, and counties of Compton and Wolfe, Sawyer- ville, Que.
Stock and bonds issued.....	\$7,970	Private ownership	\$12,000	\$16,400	\$16,000
Years in operation.....		4	1	3½	8
Population of territory.....	5,000	300	10,000		40,000
Number of telephones—					
Residence.....	75	12	18		110
Business.....	40	6	62		165
Rural.....					250
Total.....	115	18	80	160	525
Non-party lines.....	14	18	75		400
Cost per telephone.....	\$27.56	\$25	\$150		\$45
Class of wire and circuit.....	I. G.....	I. G.....	I. G.....		I. G. and I. M.
Type of system.....	Mag.....	Mag.....	Mag.....	Mag.....	Mag.
Central plant and instruments mfg. by.	Northern Electric Co., and Ness, McLaren & Bate.	Supplied by Jos. V. Mar- tel, L'Assomption.	Kellogg Co., Chicago.....		Sumter Telephone Co., International Tele- phone Co.

Rates per annum—					
Business	\$15	\$5	\$15	\$15	\$12
Residence	\$15	\$5	\$15	\$15	\$12
Rural	\$12		\$12; party lines	\$15	\$12
Dividends per annum.....		5 per cent.	6 per cent.		3 per cent.
Depreciation per annum.....		1 per cent.	3 per cent.		
Surplus				600	
No. of 'Bell' telephones—					
Before competition					250
At this date.....		1	2		50
Wages paid—					
Foremen	Permanent staff not employed.				\$2 per day.
Troublemens					
Wiremen					\$1.50 per day.
Operators			On commission.....		25 to 30 per cent on receipts.
Cost of supplies—					
Central equipment					\$200 for 100 lines.
Wall telephones.....	\$15				\$11.50
Poles.....			70c. to \$5; 25 to 50 ft....		70c.
Long-distance lines—					
Pole mileage.....	64		66	70	200
Wire "	64		66	70	575
Cost per mile.....	\$75		\$150		\$45
Long-distance rates.....	25c.		¼c. per mile.....		
Remarks	See note S., page 764.....	See note T., page 764.....		See note U., page 764...	See note V., page 764.

SUMMARY OF INFORMATION FURNISHED BY TELEPHONE COMPANIES AT THE REQUEST OF THE COMMITTEE.

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Particulars.	Villemain Fournier, St-Valère de Bulstrode, P.Q.	H. Lemieux and Son, Charlevoix, P.Q.	The Merchants Telephone Co. of Montreal, P.Q.	The St. Philemon Telephone Co. of Belchasse, P.Q.	The Madawaska Telephone Co., Edmundston, N.B.
Stock and bonds issued.....	Private ownership.. . . .	Private ownership.....	\$166,840 00	\$1,500 00	\$4,000 00
Years in operation.....	8	9	.....	6	10
Population of territory.....	.....	30,000	300,000	10,000	7,000
Number of telephones—					
Residence....	.....	65	145	28	6
Business.....	1	40	1,401	6	32
Rural.....	.....	.....	.....	.....	13 included above.
Total.....	3	105	1,546	34	38
Non-party lines.....	1	90	.....	34	.....
Cost per telephone.....	.....	\$30 00	\$110 00	.....	\$80 00
Class of wire and circuit.....	I. G.	I. G.	I. M.	I. G.	I. G.
Type of system.....	Mag	Mag	Mag	Mag	Mag.
Central plant and instruments mfg. by.....	.....	Mechanic, Supply Co., Quebec, P.Q., Northern Electric Co.	Kellogg Co., Beauchemin et Cie, Montreal.	Jno. Starr Son and Co., Sumpter Tele. Co., Mechanic Supply Co.	Farr Telephone Co.

Rates per annum—				
Business.....	\$20 00	\$30 00	\$8 00	\$18 00
Residence.....	\$20 00	\$25 00	\$8 00	\$18 00
Rural.....				\$18 00
Dividends per annum.....				6 %
Depreciation per annum.....				\$100 00
Surplus.....				
No. of ' Bell ' telephones—				
Before competition.....				
At this date.....				
Wages paid—				
Foremen.....		\$2.15 to \$3.25 per day..		
Troublemen.....		\$9.00 to \$13.00 per week..		
Wiremen.....		\$1.50 to \$1.80 per day..		
Operators.....		\$3.00 to \$5.00 per week..		\$150.00 per year.
Cost of supplies—				
Central equipment.....	Total cost of plant	\$12,000.00 for 3,600 lines.		\$100.00 for 12 lines.
Wall telephones.....	\$10,000 00	\$13 00	\$12.00 and \$15.00.....	\$14 00
Poles.....		\$3.00 to \$14.00, 30 to 60 feet.		
Long-distance lines—				
Pole mileage.....	80		47	40
Wire ".....	80		47	40
Cost per mile.....	\$100 00		\$70 00	
Long distance rates.....			15 cts. and 25 cts.....	25 cts.
Remarks.....	See note D. 1, page 764..	See note E. 1, page 764..	See note B. 1, page 764... See note C. 1, page 764...	See note F. 1, page 765.

TELEPHONE COMPANIES IN CANADA—*Continued.*

SUMMARY OF INFORMATION FURNISHED BY TELEPHONE COMPANIES AT THE REQUEST OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit ; *M.*, metallic circuit ; *I. G.*, iron wire, grounded circuit ; *I. M.*, iron wire, metallic circuit ; *C. G.*, copper wire, grounded circuit ; *C. M.*, metallic wire, grounded circuit ; *C. E.*, central energy system ; *L. D.*, long-distance ; *Mag.*, magneto system ; *B. M.*, bronze wire, metallic circuit ; *B. G.*, bronze wire, grounded circuit ; *I. C. C. R.*, iron wire, copper common return.

Particulars.	Union Telephone Co., Ltd., Florenceville, N. B.	The Restigouche Electric Telephone Co., parishes of Addington and Dal- housie, N. B.	The Albert and West- moreland Telephone Co., Hillsborough, N. B.	The Gloucester County Telephone Co., Ltd., Gloucester County, N. B.	The Nova Scotia Tele- phone Co., Ltd., counties of Halifax, Hants, Lunenburg, Antigonish, Colches- ter, Cumberland and Pictou, N. S.
Stock and bonds issued.....	\$45,000	\$6,500		\$2,000	\$464,350
Years in operation.....	3			4	18
Population of territory.....	30,000	4,000	3,000	5,000	260,000
Number of telephones—					
Residence.....	150	34	8	31	1,500
Business.....	150	44	5	29	2,100
Rural.....	200 included above.....				
Total.....	300	78	13	60	3,600
Non-party lines.....	120			30	
Cost per telephone.....					
Class of wire and circuit.....	M., $\frac{2}{3}$; G., $\frac{1}{3}$	I. G.	Copper.	I. G.	C. M., I. and C. G.
Type of system.....	Woodstock—Automatic ; elsewhere—mag.	Mag.		Mag.	C. E. and mag.
Central plant and instruments mfg. by.	Kellogg Co., American Electric Telephone Co.	Kellogg Co., Jno. Starr Son & Co., and others.		Ness, McLaren & Bate, Montreal.	Northern Electric Co., Kellogg Co., Holtzer- Cabot Co.

Rates per annum—					
Business	\$15	\$25		\$20	\$15 to \$45.
Residence	\$10	15		\$15	\$15 to \$30.
Rural					
Dividends per annum.....	8 per cent.	7 per cent.			6 per cent.
Depreciation per annum.....					10 per cent local ; 7 per cent L.D.
Surplus					\$33,320
No. of ' Bell ' telephones—					
Before competition.....	N. B. Co.,	150			
At this date.....	"	250			
Wages paid—					
Foremen	\$1.50 to \$3 per day	\$3 per day			\$50 to \$75 per month.
Troublemens				\$1.50 to \$2 per day.....	\$40 to \$50 "
Wiremen		\$1.75 per day		\$1.50 to \$2 "	\$1.65 to \$2 per day.
Operators	On commission.....	\$15 per month			\$10 to \$35 per month.
Cost of supplies—					
Central equipment		\$360 for 100 lines.....		\$142 for twenty-five lines.	
Wall telephones	\$15 to \$20	\$15		\$15.50	
Poles		\$1.50 to \$2.50		\$1 to \$1.40.....	
Long-distance lines—					
Pole mileage	370				704
Wire "	400				2,246
Cost per mile.....	S., \$125; M., \$140 to \$180				\$72
Long-distance rates.....	½c. per mile.....				¾c. per mile.
Remarks	See note G. 1, page 765..				See note H. 1, page 765.

SUMMARY OF INFORMATION FURNISHED BY TELEPHONE COMPANIES AT THE REQUEST OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I. G.*, iron wire, grounded circuit; *I. M.*, iron wire, metallic circuit; *C. G.*, copper wire, grounded circuit; *C. M.*, copper wire, metallic circuit; *C. E.*, central energy system; *L. D.*, long-distance; *Mag.*, magneto system; *B. M.*, bronze wire, metallic circuit; *B. G.*, bronze wire, grounded circuit; *I. C. C. R.*, iron wire, copper common return.

Particulars.	Yarmouth Amalgamated Telephone Co., Yarmouth and Digby, N.S.	The Cheverie Telephone Co., Windsor to Walton, Summerville, N.S.	Blandford Telephone Co., Ltd., Hubbard's Cove and Blandford, N.S.	New Ross Telephone Co., Ltd., Chester Basin and New Ross, N.S.	Yarmouth Tel. Co., Yarmouth to Lower East Pubnico and intervening Territory, Yarmouth, N.S.
Stock and bonds issued.....	\$20,000	\$2,400	\$1,000	\$2,000	\$1,500
Years in operation.....	15	16	$\frac{1}{2}$	$\frac{1}{2}$	23
Population of territory.....	20,000	3,000	2,000	.....	.....
Number of telephones--					
Residence.....	88	.....	.....	2	.....
Business.....	188	.....	.....	1	.....
Rural.....	.....	13	.....	.....	.....
Total.....	276	13	5	3	40
Non-party lines.....	56	.....	.....	.....	.....
Cost per telephone.....	\$50 00	\$184 61	.....	.....	.....
Class of wire and circuit.....	C. and I. G.	I. G.	I. G.	I. M.	C. M. and I. M.
Type of system.....	Mag.	Mag.	Mag.	Mag.	Mag.
Central plant and instruments mfg. by.	Northern Electric Co.	Northern Electric Co.	Nova Scotia Telephone Co.	Northern Electric Co.	Northern Electric Co.

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Rates per annum—					
Business.....	\$22 00			\$20 00	
Residence.....	17 00			15 00	
Rural.....					
Dividends per annum.....	6 per cent.	6 per cent.			6 to 15 per cent.
Depreciation per annum.....	10 p.c. local; 7 p.c. L.D.	5 per cent.			
Surplus					\$1,100
No. of 'Bell' telephones—					
Before competition.....					
At this date.....					
Wages paid—					
Foremen.....					
Troublemen.....					
Wiremen	\$20 month				
Operators.....					
Cost of supplies—					
Central equipment.....	\$370 for 200 lines.....				
Wall telephones.....	Blake \$9, L. D. \$18.75.....		\$19 00	\$19 00	
Poles	\$2.50 to \$10, 25 to 45 ft.....		50c.	1 50	
Long-distance lines--					
Pole mileage.. ..	125	38	14	16	78
Wire "	125	38	14	32	126
Cost per mile.....	\$75 00	\$64 00	\$64 65	\$125 00	\$45 to \$50
Long-distance rates.....	20c.	2c. per mile.....	20c.	20c.	20c.
Remarks.	See Note I. 1, page 765.	See Note J. 1, page 765.	See Note K. 1, page 765.	See Note L. 1, page 765.	See Note M.1, page 765.

APPENDIX No. 1

APPENDIX "A"

SUMMARY OF INFORMATION FURNISHED BY TELEPHONE COMPANIES AT THE REQUEST OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I. G.*, iron wire, grounded circuit; *I. M.*, iron wire, metallic circuit; *C. G.*, copper wire, grounded circuit; *C. M.*, copper wire, metallic circuit; *C. E.*, central energy system; *L. D.*, long-distance; *Mag.*, magneto system; *B. M.*, bronze wire, metallic circuit; *B. G.*, bronze wire, grounded circuit; *I. C. C. R.* iron wire, copper common return.

Particulars.	Samuel Gidney, Westport and Digby, and Sandy Cove, Mink Cove, Digby County, N. S.	Elmsdale, Gore and Randon Telephone Co. of Nine Mile River, N. S.	The Economy and Five Islands Telephone Co. Parrsboro, Cumberland County to Bass River, Colchester County, N. S.	The Telephone and Light Company, Ltd. Moosomin and Wapella, Sas.	Yorkton North West Electric Co., Yorkton, Sas.
Stock and bonds issued.	Private ownership.	\$665 00	\$1,095 00	\$8,600 00	\$20,000 00
Years in operation.	17	7	9	3	5
Population of territory.	5,000	5,000	4,000	2,000	1,000 and Rural.
Number of telephones—					
Residence.	14			82	50
Business.	26		Toll offices, 6	68	102
Rural.			6		Included above.
Total.	40	10	12	150	152
Non-party lines.		1		150	92
Cost per telephone.			\$91 25	\$57 34	\$30 00
Class of wire circuit.	C. G. and I. G.	I. G.	I. G.	I. M.	Local I. M., Rural I. G.
Type of system.	Mag.	Mag.	Mag.	M., C. E., W., Mag.	Local C. E., Rural Mag.
Central plant and instruments mfg. by.	Fisk Newhall, Couch and Seebly, and Northern Electric Co.	Northern Electric Co. . .	Northern Electric Co. . .	Stromberg Carlson, Co. . .	Assembled by T. Paul, Esq., Yorkton.

Rates per an num—					
1-2-497	Business.....	\$15 00		\$25 00	\$25 00
	Residence.....	\$10 00		\$12 50	\$12 00
	Rural.....		\$14 00		\$18 00
	Dividends per annum.....			12 %	10 %
	Depreciation per annum.....				
	Surplus.....		\$73 55	\$2,000 00	\$617 57
No. of 'Bell' telephones—					
	Before competition.....				
	At this date.....				
Wages paid—					
	Foremen.....				
	Troublemen.....		\$1.50 per day.....	50 cts. per hour.....	
	Wiremen.....				
	Operators.....		20 % of tolls.....	\$12.50 to \$30.00 month..	\$35.00 per month.
Cost of supplies—					
	Central equipment.....	\$80 00		System cost \$10,600....	
	Wall telephones.....	\$25 00	\$25 00		\$6 00
	Poles.....	35 cts.	25 cts. to \$1.00.....		\$1.00 to 5.00, 18 to 35 ft.
Long-distance lines—					
	Pole mileage.....	60	34	30	20
	Wire ".....	60	34	30	40
	Cost per mile.....		\$25 00	\$36 50	\$50 00
	Long-distance rates.....	20 cts.	15 cts. and 25 cts..	20 cts. and 25 cts..	25 cts. for 3 min.....
	Remarks.....	See note N. 1, page 765..	See note O. 1, page 765..	See note P. 1, page 765...	See note Q.1, page 765.

SUMMARY OF INFORMATION FURNISHED BY TELEPHONE COMPANIES AT THE REQUEST OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit ; *M.*, metallic circuit ; *I. G.*, iron wire, grounded circuit ; *I. M.*, iron wire, metallic circuit ; *C. G.*, copper wire, grounded circuit ; *C. M.*, copper wire, metallic circuit ; *C. E.*, central energy system ; *L. D.*, long-distance ; *Mag.*, magneto system ; *B. M.*, bronze wire, metallic circuit ; *B. G.*, bronze wire, grounded circuit ; *I. O. C. R.*, iron wire, copper common return.

Particulars.	Municipality of Edmonton, Alberta; Edmonton, Strathcona, Port Saskatchewan, St. Albert, Leduc, Beaumont and Clover Bar.	Gladstone Electric Light and Telephone Co. Ltd., Gladstone and Plumas, Man.	Municipality of Neepawa, Neepawa, Man.	J. C. Dudley, Birtle and Solsgirth, Birtle, Man.	The Cranbrook Electric Light Company, Cranbrook, B.C.
Stock and bonds issued.....	\$27,000	\$5,000	\$12,000	Private ownership.	
Years in operation.....	Jany. 1, 1905.	4		1	5
Population of territory.....	16,000	1,000	2,300	600	5,000
Number of telephones—					
Residence.....	124	77	87	14	75
Business.....	329	20	93	20	64
Rural.....	7	12 included above.....		1	
Total.....	460	97	180	35	139
Non-party lines.....	448	85			123
Cost per telephone.....		\$50 00	\$70 00	\$70 00	
Class of wire and circuit.....	I. G.....	C. G.....	I. M.....	I. G.....	I. C. C. R.
Type of system.....	Mag.....	Mag.....	Mag.....	Mag.....	Mag.
Central plant and instruments mfg. by.	Stromberg-Carlson Co., Northern Electric Co.	Chicago Telephone Supply Co., Northern Electric Co.	International Tel. Mfg. Co., McLaren & Bate.	Northern Electric Co....	Kellogg Co.

Rates per annum—					
Business.....	\$30 00	\$20 00	\$20 00	\$18 00	\$36 00
Residence.....	20 00	15 00	10 00	12 00	21 60
Rural.....	20 00	\$15 00 & 20 00		\$12 00 & 18 00	
Dividends per annum.....		12 p.c. 1st and 6 p.c. 2nd stock.	5 per cent.		20 per cent.
Depreciation per annum.....					10 "
Surplus.....					
No. of 'Bell' telephones—					
Before competition.....	1		75		
At this date.....	2		9		
Wages paid—					
Foremen.....	\$75 month.		\$35 month.	\$2.50 per day.....	40c. per hour.
Troublemen.....		40c. per hour.....	20 "		30c. "
Wiremen.....					30c. "
Operators.....	\$20 to \$40 month.		Staff, \$47.		\$35 month.
Cost of supplies—					
Central equipment.....	\$2,000 for 525 lines.....		\$900 00	\$150 for 50 lines.....	
Wall telephones.....	\$14 00	\$8, \$12, \$22	15 00	Blake, \$8.....	\$13 00
Poles.....	\$3 00 to 5 00	75c. to \$3 50	5 00	\$1 00	3 00
Long-distance lines—					
Pole mileage.....	60	15		14	12
Wire ".....	85	45		14	73
Cost per mile.....	\$8 wire only.....	\$125 00		\$15 00	\$60 to \$100
Long-distance rates.....	5c. to 40c. for 3 min.	25c.		25c.	25c.
Remarks.....	See Note R. 1, page 765..	See Note S. 1, page 755..	See Note T. 1, page 765..		See Note U.1, page 765.

SUMMARY OF INFORMATION FURNISHED BY TELEPHONE COMPANIES AT THE REQUEST OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I.G.*, iron wire, grounded circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, copper wire, metallic circuit; *C.E.*, central energy system; *L.D.*, long-distance; *Mag.*, magneto system; *B.M.*, bronze wire, metallic circuit; *B.G.*, bronze wire, grounded circuit; *I.C.C.R.*, iron wire, copper common return.

Particulars.	Yukon Telephone Syndicate, Ltd., Dawson, Klondike City, Grand Forks, Magnet, Cariboo, Gold Bottom and Granville, Dawson, Y.T.	The Telephone Co. of Prince Edward Island.	Eastern Telephone Co., Ltd., Cape Breton County and parts of Richmond and Inverness Counties, Victoria, C.B.
Stock and bonds issued.	\$65,000	\$56,700	\$215,00
Years in operation.	8	20	16
Population of territory.		103,259	80,000
Number of telephones—			
Residence.	106	141	300
Business.	354	389	536
Rural.			80
Total.	460	530	916
Non-party lines.	102	420	578
Cost per telephone.			\$205.08
Class of wire and circuit.	I. M.	I. G. and M.	C. M., B. M., I. G. and B. G.
Type of system.	Mag.	Mag.	Syd. C. E., others mag.
Central plant and instruments manufactured by.	Northern Electric Co.	Northern Electric Co., Kellogg Co. and Holtzer-Cabot.	Northern Electric Co., Mont- real.

Rates per annum—			
Business	\$120, \$180, \$240.....	\$15 to \$45	\$20 to \$40.
Residence.....	\$60	\$15 to \$45	\$15 to \$30.
Rural.....			\$15 to \$20.
Dividends per annum.....	\$104,000 in eight years	6 per cent.	Twenty dividends at three p. c.
Depreciation per annum		10 per cent.	10 per cent local; 7 per cent L.D.
Surplus			\$5,271.60
No. of 'Bell' telephones—			
Before competition			
At this date.....			
Wages paid—			
Foremen	\$350 per month.....	\$50 per month.....	
Troublemen.....	\$250 "	\$35 "	\$1.75 to \$2.15 per day.
Wiremen.....	\$200 "	\$35 "	
Operators.....	\$115 to \$125 per month.....	\$10 to \$25	\$14 to \$20 per month.
Cost of supplies—			
Central equipment.....	\$400 for fifty lines.....		
Wall telephones.....	\$37.50		\$14.50 to \$16.50.
Poles	\$5 to \$12		
Long-distance lines—			
Pole mileage.....	141	434 $\frac{3}{4}$	150
Wire "	359	547 $\frac{1}{2}$	278, including rural.
Cost per mile		\$125	\$105.17
Long-distance rates.....	\$1 to \$3	10c. to 25c.....	$\frac{1}{2}$ c. per mile.
Remarks.....	See note V. 1, page 766..	See note W. 1, page 766.....	See note X. 1, page 766.

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TELEPHONE COMPANIES IN CANADA—*Concluded.*

NOTES

TO FOREGOING STATEMENT.

A.—*Harrietsville Telephone Association, Ltd., Ont.*—Bell Company required three years' guarantee of \$100 per annum for service. Subscribers have free service over all lines

B.—*Wade Telephone Line, Ont.*—Subscribers have free service over all lines.

C.—*Kirkton, St. Mary's and Exeter Telephone Co., Ont.*—Connect with Bell Telephone Co. at St. Mary's and Exeter. Subscribers charged 5c. for Bell local conversations.

D.—*Dr. W. F. Eastwood's Telephone Line, Ont.*—Connect with Bell Telephone Company at Claremont. Subscribers charged 10c. for Bell local conversation.

E.—*Hamilton Mutual Telephone Co., Ont.*—Connect with Bell Telephone Co. at Cobourg. Subscribers charged 10c. for Bell local conversation.

F.—*King Township Telephone Co., Ont.*—Connect with Bell Telephone Co. at Aurora. Subscribers charged 10c. for Bell local conversations. Bell Telephone Co. furnish subscribers with long-distance telephone sets at a rental of \$5 per annum, plus cost of installation.

G.—*Markham and Pickering Telephone Co., Ltd., Ont.*—Holders of one \$50 share have free service in lieu of dividend. Subscribers have free service over all lines. Non-subscribers, 10c. for 5 minutes conversation.

H.—*Central Dufferin Telephone Assn., Ont.*—Toll line only, with six pay stations.

I.—*Sprague Telephone Co., Ont.*—Connect with Bell Telephone Co. at Picton. Subscribers charged 15c. for conversation with Picton. Our subscribers have free service to all points on our system.

J.—*Bascom & Forest's Private Line, Ont.*—Connect with Bell Telephone Co. at Uxbridge. Subscribers charged 15c. for Bell local conversation.

K.—*North American Telegraph Co., Ont.*—Blake 'phones and grounded circuit, \$15 and \$20 per annum. L. D. 'phones and metallic circuit, \$25 per annum. This company also operates telegraph system. The Bell Telephone Co. own all stock in this company.

L.—*Fort William Municipal Telephone System, Ont.*—Four hundred and sixty-five dollars set aside for sinking fund. Depreciation taken care of in cost of maintenance. Operators' wages average \$21.25 per month. Bell rates before competition were \$25 and \$35 per annum; at this date \$12 and \$25.

M.—*Dr. Fisher's Private Telephone Line, Ont.*—Connect with Bell Telephone Co., at Vittoria. Local users charged 10c. for all conversations plus Bell L.D. rates.

N.—*Haileybury and Cobalt Telephone Co., Ont.*—New company. System not yet in full operation. Local rates for subscribers not yet determined.

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O.—*La Compagnie de Telephone de Bellechasse, P.Q.*—System operates principally in rural community. Local rates cover service over at least one county.

P.—*La Cie de Telephone de Kamouraska, P.Q.*—Connect with Bell Telephone Co. at L'Islet.

Q.—*The Telephone of Megantic, P.Q.*—Subscribers have free service over all lines, including interchange with three companies in adjoining territory. Cost of maintenance 35 per cent of revenue. Call office attendants receive one-half of public message fees.

R.—*La Cie de Telephone Locale, P.Q.*—Subscribers pay 25 cents for battery renewals and inspection of telephone when necessary. This system connects with the Duhamel Telephone System via L'Assomption. Toll charge 10c. for ten minutes conversation.

S.—*Frs. Gauthier et Cie., P.Q.*—Operates in rural territory. Subscribers have free service over all lines.

T.—*Jos. Archambault, Esq., P.Q.*—Plant installed by Jos. V. Martel, L'Assomption, under contract, for the sum of \$1,000.

U.—*La Cie de Telephone St. Laurent, P.Q.*—Subscribers have free service over all lines (70 miles). Also to Nicolet and Drummondville. Repairs and operating expenses for past year \$1,550.

V.—*Canadian Telephone Co., P.Q.*—Subscribers have free service with three exchanges. Beyond this 10c. per conversation. Non-subscribers toll rates, minimum 15c., maximum 35c. per conversation. Subscribers pay \$3 per annum extra for L. D. equipment.

W.—*Beauce Telephone Co., P.Q.*—Subscribers have free service over all lines.

X.—*The Telephone Co. of St. Zepherin.*—Subscribers have free service over all lines. The company connects with local systems at Nicolet and Drummondville.

Y.—*Rivière du Lièvre Telephone Co., P.Q.*—Connect with Bell Telephone Co. at Buckingham. Subscribers charged 25c. for Bell local conversation.

Z.—*Wallingford Bros., Private Line, P.Q.*—Connect with Bell Telephone Co. Subscribers charged 25 c. for Bell local conversation.

A. 1.—*La Compagnie de Telephone St. Maurice et Champlain, P.Q.*—Subscribers have free service between all points in three counties. Bell rates cover service with one exchange only.

B. 1.—*Merchants Telephone Co. of Montreal, P.Q.*—Bell rates are, business \$55, residence \$35 per annum.

C. 1.—*St. Philemon Telephone Co. of Bellechasse P.Q.*—Connect with Bell Telephone Co. at St. Michel. Subscribers charged 25c. for Bell local conversation. Total cost of plant about \$2,000.

D. 1.—*Villeneuve Fournier Private Line, P.Q.*—Total cost of plant \$600. Connect with local companies at Nicolet, Yamaska, Drummondville and Megantic.

E. 1.—*H. Lemieux & Son, Charlevoix Co., P.Q.*—Total cost of operation and maintenance \$1,000 per annum.

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F. 1.—*Madawaska Telephone Co., N.B.*—Subscribers have free service over all lines. Connects with systems of the St. John Valley Co. and the Fort Kent Co., Maine, U.S.A.

G. 1.—*Union Telephone Co., Ltd., N.B.*—L. D. charges under 50 miles, 10c., 15c. and 25c. Automatic system at Woodstock cost \$40 per station, plus duty and freight, including subscribers' telephones, but not outside construction.

H. 1.—*Nova Scotia Telephone Co., Ltd., N.S.*—Plant in Halifax and New Glasgow is central energy, with copper metallic circuits. This company in 1887 purchased from the Bell Telephone Co. of Canada, territorial rights and plant then existing in New Brunswick and Nova Scotia, for the sum of \$115,900, of which amount the Bell Co. still hold in stock \$66,450.

I. 1.—*Yarmouth Amalgamated Telephone Co., N.S.*—Connect with Nova Scotia Telephone Co. Subscribers charged \$5 per annum for L. D. equipment. Wiremen paid \$2.50 per day, including team when outside of town.

J. 1.—*Cheverie Telephone Co., N.S.*—Toll lines only. Connect with Nova Scotia Telephone Co. at Windsor.

K. 1.—*Blandford Telephone Co., Ltd. N.S.*—Connect with Nova Scotia Telephone Co. at Hubbards Cove. Toll lines only.

L. 1.—*New Ross Telephone Co., Ltd., N.S.*—Connect with Nova Scotia Telephone Co. at Chester Basin. Subscribers charged 15c. plus N. S. Co. L. D. rates.

M. 1.—*Yarmouth Telephone Co., N.S.*—Connect with Yarmouth Amalgamated and Nova Scotia Telephone Companies. Shareholders get 50 per cent reduction off local toll charges.

N. 1.—*Samuel Gidney Line, Private Ownership, N.S.*—Connect with Yarmouth Amalgamated and Valley Telephone Companies, also the Western Union Telegraph Co. Subscribers charged 15c. plus usual L. D. tariff when connecting with other companies.

O. 1.—*Elmsdale, Gore and Randon Telephone Company, N.S.*—Local toll charge between two offices, 15c., beyond this, 25c. Toll lines only. Connect with Nova Scotia Telephone Company.

P. 1.—*Economy and Five Islands Telephone Company, N.S.*—Local toll charges, 12 miles 20c., beyond, 25c. Connect with Nova Scotia Telephone Co. at Great Village. Subscribers charged 20c. on Nova Scotia Company's local service.

Q. 1.—*Yorkton North-west Electric Co., Saskt.*—Cost of maintaining system, \$1,000 per annum.

R. 1.—*Municipality of Edmonton, Alberta.*—The municipality purchased this system from private owner, January 1, 1905.

S. 1.—*Gladstone Electric Light and Telephone Co., Limited, Man.*—Company operates telephone system only. Cost of second-hand wall telephones, \$8 each; new, \$12 to \$22, including duty and freight.

T. 1.—*Municipality of Neepawa, Man.*—Sinking fund provided in addition to 5 per cent interest paid on bonds.

U. 1.—*Cranbrook Electric Light Company, B.C.*—Cost of construction included in electric light capital, and upon which a dividend of 10 per cent is paid out of the

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profits on both systems. Cost of toll line construction, pole line \$100 per mile, bush line \$60 per mile.

V. 1.—*Yukon Telephone Syndicate, Limited, Y.T.*—Business subscribers pay for direct line, \$240, for two party line, \$180, three party line, \$120 per annum. The \$240 and \$180 rates cover free service between Dawson City, Klondyke City, Magnet, Grand Forks and Bonanza and Eldorado creeks; also half toll rates to other points. Cost price of wall telephones, \$17; freight and duty brings total cost to \$37.50. The Yukon Syndicate is owned practically by two people, the third stockholder having only one share. Up to date \$175,605 has been spent on the system, and the dividends in eight years have amounted to \$104,000.

W. 1.—*Telephone Company of Prince Edward Island, P.E.I.*—Rates per annum: Charlottetown, business direct lines, \$45, two party lines, \$30; residence direct lines, \$45, two party lines, \$20. Summerside, business \$20, residence \$15. Elsewhere, business or residence, \$15. Toll rates within 10 miles, 15c., beyond this, 25c., with a discount of 20 per cent to subscribers.

X. 1.—*Eastern Telephone Co., Limited, C.B.*—In Sydney, Glace Bay and Sydney Mines lines are metallic circuits of copper or bronze. North Sydney grounded circuits of iron or bronze. Victoria and Richmond counties, grounded circuits of iron wire. Rates: Exchanges of 300 telephones and over, business \$35, L. D. equipment, \$40; residence, \$25, L. D. equipment, \$30. L. D. equipment for two party line in residences, \$20. Exchanges of 50 and under 300 telephones, business \$25, residence \$20; L. D. equipment \$5 per annum extra. Exchanges under 50 telephones, business \$20, residence \$15; L. D. equipment \$5 per annum extra. Where grounded circuits are changed to metallic an additional \$5 per annum is charged. Under these rates the distance is limited to one mile from the exchange. Extra mileage charged as follows: Grounded circuits, \$10 per mile per annum; metallic circuits, \$18 per mile per annum.

TELEPHONE COMPANIES IN THE UNITED STATES.

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I.G.*, iron wire, grounded circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, copper wire, metallic circuit; *I.C.C.R.*, iron wire, copper common return; *C.E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L.D.*, long-distance; *Pref.*, preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes.

Particulars.	The Albany and Vales Mill Telephone Co., Albany, Ohio.	The Barlow and Water-town Telephone Co., Fleming, Ohio.	The Star Telephone Co., Ashland county, 5 townships Wayne Co., 7 townships Medina county, Ashland, Ohio.	Fort Recovery Telephone Co., Fort Recovery, Ohio.	The Cuyahoga Telephone Co., Cleveland, Ohio.
Stock issued	\$1,000 00	\$11,000 00	\$85,000 00	\$3,500 00	\$2,263,250 00
Bonds "	Nil.....	Nil	\$22,000 00	\$4,500 00	\$2,265,000 00
Years in operation.....	5	6½	6	3½	5
Population of territory.....	3,000	2,000	45,000	Town..... 1,200	500,000
Number of R. telephones	80	300	} 1,600	149	7,249
" B. "	20	50		71	9,252
" F. "	35	300		69	575
Non-party lines	20	.....	1,000	137	5,400
Cost per telephone.....	.....	\$20 00	\$25 00	\$45 00	\$200 00
Class of wire and circuit.....	I.M.....	I.G. & I.M.....	I.M.....	I.M.....	C.M.
Proportion under ground	Nil	Nil	Nil	Nil	63 per cent.
Type of system.....	Mag	Mag.....	C.E. & Mag.....	C.E. & Mag.....	94 p.c. C.E., 6 p
Annual rates, business.....	\$12 00	\$12 00	\$18 00 & \$24 00	\$12 00	\$72 00
Party line " .....	.....	.....	.....	.....	.....

Residence.....	\$12 00	\$12 00	\$18 00	\$12 00	\$48 00
Party line, residence.....			\$12 00		
Rural.....	\$12 00	\$12 00	\$12 00 & \$15 00	\$12 00	\$18 00
Dividends per annum.....	48½ per cent.		6 per cent.		
Interest on bonds.....			6 "	6 per cent.	5 per cent.
Depreciation per annum.....	25 per cent.				10 "
Surplus.....				\$600 00	\$91,000 00
No. of "Bell" telephones—					
Before competition.....	25			97	3,800
At this date.....	1		6	1	19,000
Wages paid—					
Foremen.....	\$50.00 per month.	\$2.00 per day.	\$70.00 per month		\$3.00 for 8 hours.
Inspectors and troublemen.....	\$30.00 "	\$2.00 "	\$60.00 "	\$40.00 per month	\$65.00 to \$80.00 p. m'th.
Wiremen.....	\$30.00 "		\$40.00 "		\$2.50 for 8 hours.
Operators.....		\$3.50 per week up.	\$12.00 to \$30.00 p. month	\$13.00 to \$21.00 p. month	\$18.00 to \$60.00 p. m'th.
Cost of supplies—					
Central equipment.....				\$846.15 for 200 lines.	
Wall telephones.....				\$9.00 to \$13.00	
Poles.....				\$1.35	
Long distance pole mileage.....	60	18	192	30	
" wire "	120	18	302	50	
Cost per mile, including poles.....		\$35 00	\$83 00		
" wire.....	\$16 00				
Long distance rates.....			10c. to 30c. up to 35 miles		¾c. per mile.
Remarks.....	See Note A, page 801.	See Note B, page 801		See Note C, page 801	See Note D, page 801.

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I.G.*, iron wire, grounded circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, copper wire, metallic circuit; *I.C.C.R.*, iron wire, copper common return; *C.E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L.D.*, long-distance; *Pref.* preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes.

Population.	Hamilton Home Telephone Co., Butler Co., Hamilton, Ohio.	The Sandusky Telephone Company, Sandusky & Erie counties, Ohio.	The Lima Telephone & Telegraph Co., Lima, Ohio.	The Van Wert Home Telephone Co., Van Wert, Ohio.	Chardon Telephone Co., North Port Geauga Co., Chardon, Ohio.
Stock issued.....	\$230,000 00	\$75,000 00	\$248,000 00	\$49,000 00	\$30,000 00
Bonds ".....	\$200,000 00	\$69,000 00	\$128,000 00	\$55,000 00	\$7,000 00
Years in operation.....	2½	10	10	8	10
Population of territory.....	70,000	28,000	35,000	15,000	8,000
Number of R. telephones.....	1,700	900	1,454	814	900
" B. ".....	500	500	579	291	100
" F. ".....	600	100	117	151	450
Non-party lines.....	1,760	250	1,174	955	
Cost per telephone.....		\$125 00	\$110 00		
Class of wire and circuit.....	C. M. & I. M.....	C. M.....	C. M.....	C. M.....	I. G. and I. M.
Proportion underground.....	10 per cent.....	Nil.....	20 per cent.....	10 per cent.....	Nil.
Type of system.....	C. E.....	C. E.....	C. E.....	Auto.....	Mag.
Annual rates, business.....	\$30 00	\$48 00	\$30.00 and \$36.00.....	\$30 00	\$24 00
Party line ".....					

Residence	\$18 00	Not stated	\$18.00 and \$24.00	\$15 00	\$15 00
Party line, residence.....	\$15 00	\$26 00	.....	\$15 00	
Rural	\$15 00	\$18 00	\$18 00	\$15 00	\$15 00
Dividends per annum.....	4 per cent. ....	.....	6 per cent. pref., 4 per cent. com.	6 per cent.	10 per cent.
Interest on bonds.....	5 per cent.	5 per cent and 6 per cent.	5 per cent.	6 "	6 "
Depreciation per annum.....	.....	10 per cent. ....	.....	10 "	10 "
Surplus	\$3,000 00	.....	\$13,500 00	\$9,000 00	\$37,000 00
No. of "Bell" telephones—					
Before competition.....	700	300	210	60	3 toll stations
At this date.....	1,700	1,000	1,500	None.....	4 "
Wages paid—					
Foreman	\$75.00 per month.	\$100.00 per month	\$3.00 per day	\$85.00 per month.....	\$60 per month.
Inspector and troublemen.....	\$60.00 per month	\$40.00 to \$45.00 per month	\$2.50 "	\$50.00 "	\$40 "
Wiremen .....	.....	\$40.00 per month.....	\$2.50 " .....	.....	\$36 "
Operators.....	\$18.00 to \$25.00 per mth.	\$15.00 to \$35.00 per month	8½c. to 10c per hour	\$25 per month	\$5 00
Cost of supplies—					
Central equipment.....	.....	\$12,000.00 for 1,000 lines.	\$16,500 for 1,500 lines...	\$32 per switch.....	
Wall telephones	\$8 50	.....	\$9.50 to \$10.00.....	\$10.00.....	
Poles.....	.....	.....	.....	.....
Long distance pole mileage.....	.....	.....	.....	.....	75
" wire "	200	40	.....	.....	75
Cost per mile, including poles.....	.....	.....	.....	.....	\$49 00
" wire.....	.....	.....	.....	.....
Long distance rates.....	½c. per mile.	¾c. per mile. ....	.....	.....
Remarks	See note E, page 801.....	See note F, page 801.....	.....	.....	See note G, page 801.

TELEPHONE COMPANIES IN THE UNITED STATES—*Continued.*

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I.G.*, iron wire, grounded circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, copper wire, metallic circuit; *I.C.C.R.*, iron wire, copper common return; *C.E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L.D.*, long-distance; *Pref.*, preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes.

Particulars.	The Kenton Telephone Co., 10 miles square, Kenton, Ohio.	The New Ottawa County Telephone Co., Elmore, Ohio.	Mercer County Mutual Telephone Co., Celina, Ohio.	United States Telephone Co., L. D. Lines only, Ohio and parts of Michigan and Indiana, Cleveland, Ohio.	Woodsfield Telephone Co., Woodsfield, Ohio.
Stock issued.....	\$70,000 00	\$124,000 00	.....	\$2,363,200 00	\$25,000 00
Bonds ".....	Nil.....	.....	.....	\$2,085,000 00	.....
Years in operation.....	7	5½	2½	6	12
Population of territory.....	15,000	.....	15 00	.....	15,000
Number of R. telephones.....	900	400	.....	.....	325
" B. ".....	300	400	.....	.....	125
" F. ".....	300	500	700	.....	50
Non-party lines.....	900	800	.....	.....	400
Cost per telephone.....	\$60 00	.....	\$18.00 and poles.....	.....	.....
Class of wire and circuit.....	I. M.....	I. M.....	I. G.....	.....	I. G., I. M., C. G., C. M.
Proportion under ground.....	Nil.....	Nil.....	Nil.....	.....	Nil.
Type of system.....	Mag.....	Mag.....	Mag.....	Mag.
Annual rates, business.....	\$24 00	\$24 00	\$18 00
Party line ".....

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Residence.....	\$12 00	Not stated.....			\$12 00
Party line, residence.....					
Rural.....	\$15 00	\$15 00	\$1 00		\$12 00
Dividends per annum.....	8 per cent	7 per cent.....		On preferred. 6 per cent.	30 per cent.
Interest on bonds.....				5 per cent.....	
Depreciation per annum.....	5 per cent.....	4 per cent.....			
Surplus.....				\$70,270 39	
No. of "Bell" telephones—					
Before competition.....	500	500			2
At this date.....	200	100			10
Wages paid—					
Foremen.....			\$2.00 per day.....	\$60.00 to \$75.00, month..	
Inspectors and troublemen.....	\$50.00 per month.....			\$60.00 to \$80.00 " ..	
Wiremen.....			\$1.50 per day.....	\$40.00 " ..	
Operators.....	\$12.00 to \$18.00 a month.....		All toll receipts.....	\$15.00 to \$50.00 " ..	
Cost of supplies—					
Central equipment.....	\$400.00 for 100 lines.....		\$45.50 for 10 lines ..		
Wall telephones.....	\$10.50 to \$15.00.....		\$11 50		\$9 00
Poles.....	80c. to \$21.00, 25 to 55 ft.....				\$1 00
Long distance pole mileage.....				2,600	100
" wire ".....				30,000	100
Cost per mile, including poles.....				\$40 00	
" wire.....					
Long distance rates.....			10c.		½c. to 1c. per mile.
Remarks.....	See Note H, page 801....		See Note I, page 801....	See Letter, pages { 226 685	

APPENDIX No. 1

APPENDIX "A"

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS—*S.*, single circuit; *M.*, metallic circuit; *I.G.*, iron wire, grounded circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, copper wire, metallic circuit; *I.C.C.R.*, iron wire, copper common return; *C.E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L.D.*, long-distance; *Pref.*, preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes.

Particulars.	The Piqua Home Telephone Co., Piqua, Ohio.	Bambridge Telephone Co., Chagrin Falls, Ohio.	Greenfield Home Telephone Co. (17 miles square), Greenfield, Ohio.	The Auglaize Telephone Co., (parts of Auglaize, Allen, Logan & Hardin Counties, Waynesfield, Ohio.	Mechanicsburg Telephone Co., Mechanicsburg and 2 villages, Ohio.
Stock issued	\$80,000 00	\$8,000 00	\$26,800 00	\$15,000 00	\$35,000 00
Bonds "	Not stated	Nil	\$7,000 00	Nil	Nil.
Years in operation.....	6	8	7	4	5
Population of territory.....	15,000	2,000	10,000	.....	5,500
Number of R. telephones	900	200	650	355	650
" B. "	600	5	150	45	50
" F. "	600	200	150	357	450
Non-party lines.....	900	.....	750	43	250
Cost per telephone.....	\$27 00	\$40 00	\$40 00	\$50 00	\$50 00
Class of wire and circuit.....	I. M	I. G. & I. M	I. M	I. M	I. M.
Proportion under ground.....	Nil	Nil	10,000 ft. duct	Nil	Nil
Type of system	Mag	Mag	Mag	C. E	Mag.
Annual rates, business.....	\$24 00	\$12 00	\$18 00	\$15 00	\$24 00
Party line "

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Residence	\$15 00	\$12 00	\$12 00	\$12 00	\$12 00
Party line, residence.....					
Rural.....	\$15 00	\$12 00	\$12 00	\$12 00	\$12 00
Dividends per annum.....	5 per cent.	10 per cent.	10 per cent.	15 per cent.	8 per cent.
Interest on bonds.....	5 "	Nil.	6½ "		
Surplus.....		10 per cent.			5 per cent.
Depreciation per annum.....			\$4,000 00	\$350 00	
No. of "Bell" telephones—					
Before competition.....	1,000		85		
At this date.....	360		40		
Wages paid—					
Foreman.....		} Average \$1.75 per day {	\$720 00 per year		
Inspectors and troublemen.....			\$500 00 "		\$50 00 per month.
Wiremen.....			\$2 50 per day		
Operators.....			8 c. per hour		\$15 00 to \$22 00 month.
Cost of supplies—					
Central equipment.....			\$2,825 for 500 lines		
Wall telephones.....			\$9 00 to \$10 50	\$9 50	
Poles.....			\$1 00 to \$5 40	81 c. to \$1.08, 20 to 25 ft.	
Long distance pole mileage.....		20	56		
" wire ".....		25	150		
Cost per mile, including poles.....		\$50 00	\$33 00		
" wire.....					
Long distance rates.....	½ c. per mile	¾ c. per mile	1 c. per mile for 5 Min		
Remarks.....	See Note M, page 803	See Note N, page 803	See Note O, page 803	See Note P, page 803	See Note Q, page 804

APPENDIX No. 1

APPENDIX "A"

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS—*S.*, single circuit; *M.*, metallic circuit; *I.G.*, iron wire, grounded circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, copper wire, metallic circuit; *I.C.C.R.*, iron wire, copper common return; *G.E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L.D.*, long-distance; *Pref.* preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes.

Particulars.	Mount Victory Telephone Co., Mount Victory, Ohio.	The Clyde Telephone Co., Clyde, Ohio.	Painsville Telephone Co., Lake County, Ohio.	Vermilion Telephone Co., Vermilion Village and surrounding territory, Ohio.	Home Telephone Co., 12 miles x 6 miles square, Plattsburg, Ohio.
Stock issued	\$19,000 00	\$30,000 00	\$30,000 00	\$27,700 00	\$11,000 00
Bonds	Nil	Nil	\$24,500 00		Nil
Years in operation	4	8	9½	2½	4
Population of territory.....	3,500	6,000	9,000	2,900	1,200
Number of R. telephones.....	275	582	550	215	144
" B. " 	75	68	250	49	6
" F. " 	200	232	100	65	118
Non-party lines.....	135	350	500		
Cost per telephone.....	\$50 00	\$61 00	\$80 00	\$60 00	\$60 00
Class of wire and circuit	I.M.	I.M.	I.M.	I.M.	I.M.
Proportion underground.....	Nil	Nil	16,000 ft. duct	Nil	Nil
Type of system.....	Mag.	Mag.	C. E.	Mag.	1 mag., 1 auto.
Annual rates, business.....	\$12 00	Not stated	\$24 to \$32	\$24 00	\$12 00
Party line " 					

Residence.....	\$12 00	Not stated.....	\$15 to \$20	\$12 and \$18.	\$12 00
Party line, residence.....					
Rural.....	\$15 00	\$15 00	\$15 00	\$18 00	\$12 00
Dividends per annum.....	Pref. 6 p.c., com. 12 p.c.	8 p. c.	6 p. c.	Pref. 5 p.c., com. 1 p. c.	6 p. c.
Interest on bonds.....			5 p. c.		
Depreciation per annum.....	5 p. c.	7 p. c.	10 p. c.		20 p.c. gross earnings.
Surplus.....		\$4,100 00	\$3,000 00	\$1,730 35	
No. of "Bell" telephones—					
Before competition.....			110	85	
At this date.....			367	10	7
Wages paid, foreman.....		\$65 per month	\$2.50 per day.....		\$2 per day.
Inspectors and troublemen.....	\$360 per year.....	\$40 "	\$50 to \$60 per month.....		\$1.50 to \$2 per day.
Wiremen		\$2 per day.....	\$36 to \$48 "		\$1.50 to \$2 "
Operators.....	\$120 to \$240 per year....	\$18 to \$20 per month....	\$13 to \$22 "		\$13 to \$20 per month.
Cost of supplies—					
Central equipment.....	\$450 for 100 lines.....		\$12 per line.....		\$150 for 50 lines.
Wall telephones.....	\$10 to \$12		\$9 00		\$9 to \$18.75.
Poles	\$1 to \$8.75, 25 to 45 feet.		\$1.25 to \$2.50, 25 to 35 ft.		Average \$1.15 for 25 ft.
L. D. pole mileage.....	35		25		
L. wire "	35		25		
Cost per mile, including poles.....	\$50 00		\$48 00		
" wire.....					
Long distance rates.....	10c. up.....		20c., 30 miles.		
Remarks			See note K., page 803...	See note L., page 803...	See note J., page 803.

TELEPHONE COMPANIES IN THE UNITED STATES—Continued.

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, Single circuit; *M.*, metallic circuit; *I.G.*, iron wire, grounded circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, copper wire, metallic circuit; *I.C.C.R.*, iron wire, copper common return; *C.E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L.D.*, long-distance; *Pref.*, preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes.

Particulars.	Rural Telephone Co., Highland County, Ohio.	Doylestown Telephone Co., Doylestown, Ohio.	The Mentor Telephone Co., Mentor, Lake County and Vicinity, West Mentor, Ohio.	The Ada Telephone Ex- change Co., Ada, Ohio.	Colonial Telephone Co., Newburgh City, N. Y.
Stock issued.....	Not stated.....	\$5,000 00.....	\$10,000	\$100,000 00	\$125,000 00
Bonds ".....	".....	Nil.....	Nil.....	Nil.....	\$85,000 00
Years in operation.....	1	6	6	9	3
Population of territory.....	2,000	2,000	.....	15,000	26,000
Number of R. telephones.....	70	100	85	900	323
" B. ".....	30	30	15	100	297
" F. ".....	65	40	2	300	25
Non-party lines.....	5	100	85	700	452
Cost per telephone.....	\$40 00	\$25 00	\$100 00	\$100 00	\$90 00
Class of wire and circuit.....	I. M.....	Mixed circuits.....	I. M. & I. C. C. R.....	I. M.....	C. M.
Proportion under ground.....	Nil.....	Nil.....	Nil.....	Nil.....	$\frac{1}{4}$
Type of system.....	Mag.....	Mag.....	Mag.....	Mag.....	Mag.
Annual rates, business.....	\$18 00	\$12 00	\$18 00	\$24 00	\$24 and \$30
Party lines ".....	\$12 00	.....	.....	.....	.....

Residence.....	\$18 00	\$12 00	\$18 00	\$12 00	\$12 and \$18
Party line, residence.....	\$12 00				
Rural.....	\$12 00	\$12 00	\$18 00	\$12 00	\$18 00
Dividends per annum.....	6 p.c.		6 p.c.	6 p.c.	
Interest on bonds.....					5 p.c.
Depreciation per annum.....	10 p.c.		5 p.c.		15 p.c.
Surplus.....			\$500 00	\$2,000 to \$3,000 a year...	\$15,000 00
No. of "Bell" telephones—					
Before competition.....		1	5	3	500
At this date.....		1	5	4	850
Wages paid—					
Foremen.....					\$16 per week.
Inspectors and troublemen.....	\$35 per month.....		\$35 00 per month half time daily.	<div style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 5px;"> \$15 00 to \$100 per month. </div>	\$15 "
Wiremen.....	\$35 "		\$16 per month.....		
Operators.....	\$10 "				
Cost of supplies—					
Central equipment.....	\$125 for 25 lines.....	\$400 for 100 lines.....			\$4 50 per line.
Wall telephones.....	\$12 00	\$8 50			\$11 50
Poles.....	\$1 00 to \$1 50.....				\$1 50 to \$5 00
Long distance pole mileage.....	15		5	70	
" wire ".....	15		5	140	
Cost per mile, including poles.....	\$50 00				
" wire.....			\$10 00		
Long distance rates.....	$\frac{3}{4}$ c. per mile.....			$\frac{7}{10}$ c. per mile.....	
Remarks.....	See Note R, page 804.....		See Note S, page 804.....	See Note T, page 804.....	

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I. G.*, iron wire, grounded circuit; *I. M.*, iron wire, metallic circuit; *C. G.*, copper wire, grounded circuit; *C. M.*, copper wire, metallic circuit; *I. C. C. R.*, iron wire, copper common return; *C. E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L. D.*, long-distance; *Pref.*, preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes.

Particulars.	Pleasant Plain Telephone Co., Pleasant Plain, Iowa.	Blakesburg Telephone & Telegraph Co., Blakesburg, Iowa.	Mutual Telephone Co., Des Moines, Iowa.	Port Byron Telephone Co., Tps. of Mentz, Montezuma, Conquest and Throop, N. Y.	The Farmington Valley Telephone Co., Towns of Canton and New Hartford, New Britain, Conn.
Stock issued.....	\$6,000 00	\$2,000 00	\$255,000 00	Not stated.....	\$27,000 00
Bonds issued.....	Nil	Nil	\$65,000 00	\$7,500 00	Nil.
Years in operation.....	4	3	8	.....	6
Population of territory	4,000	1,600	80,000	.....	4,000
Number of R. telephones.....	.....	25	2,000	140	150
" B. " .....	.....	25	1,700	20	50
" F. " 	160	200	100	100	200
Non-party lines	30	50	3,100	.....	.....
Cost per telephone.....	\$35 00	.....	\$100 00	\$60 00	.....
Class of wire and circuit	I. G.	I. G. & I. M.....	C. M. & I. M.....	I. M.	I. M.
Proportion under ground.....	Nil	Nil	‡	Nil	Nil.
Type of system	Mag.	Mag.....	C. E.	Mag.....	Mag.
Annual rates, business	\$12 00	\$12 00	\$36 00	\$15 00	\$18 00
Party line .....	.....	.....	.....	.....	.....

Residence	\$12 00	\$10 00	\$30 00	\$15 00	\$12 00
Party line, residence			\$18 00		
Rural	\$12 00	\$3 00	\$24 00	\$15 00	\$12.00 and \$18.00.
Dividends per annum	10 per cent	8 per cent.	10 per cent.		6 per cent.
Interest on bonds			6 "	6 per cent	
Depreciation per annum			7 "		3 per cent.
Surplus		\$300 00			
No. of "Bell" telephones—					
Before competition.....			Cannot ascertain	14	18
At this date.....			2,700	70	60
Wages paid foremen.....	\$50.00 per month.....	\$40.00 per month.....	\$3.00 per day.....	\$2.50 per day.....	\$40.00 per month.
" inspectors and troublemen.....			\$2.75 "		\$40.00 per month.
" wiremen.....	\$40.00 per month.....		\$2.75 "	\$2.50 per day.....	\$2.50 per day.
" operators		\$7.50 to \$16.00 a month.	\$15.00 to \$33.00 a month.	\$5 per week	5c. per hour.
Cost of supplies—					
Central equipment.....	\$225.00 for 50 lines.....				
Wall telephones.....	\$9.00 to \$12.00				
Poles.....	35c.			85c. to \$4.00.....	
Long distance pole mileage.....	5			16	
" wire "	5			26	
Cost per mile, including poles.....	\$40 00				
" wire.....					
Long distance rates.	15c. up				
Remarks		See Note V, page 804 ...	See note W, page 804 . .	See Note U, page 804 ...	

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I. G.*, iron wire, grounded circuit; *I. M.*, iron wire, metallic circuit; *C. G.*, copper wire, grounded circuit; *C. M.*, copper wire, metallic circuit; *I. C. C. R.*, iron wire, copper common return; *C. E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L. D.*, long-distance; *Pref.*, preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes.

Particulars.	Cedar Rapids and Marion Telephone Co., Linn County, Cedar Rapids, Iowa.	Northern Rural Telephone Co., Clay County and north half of Buena Vista County, Spencer, Iowa.	Henry County Telephone Co., Part of South Eastern, Iowa, New London, Iowa.	Sibley Telephone Co., Sullivant Tp., Sibley, Ford Co., Ill.	Galesburg Union Telephone Co., 10 square miles, Galesburg, Ill.
Stock issued	\$300,000 00	\$18 300 00	\$15,000 00	\$8,000 00	\$150,000 00
Bonds "	\$65,000 00	Nil	\$10,000 00	Nil	\$150,000 00
Years in operation	8	3	7	3	4
Population of territory	58,500	,000	4,000	1,600	19,000
Number of R. telephones	1,355	500	100	35	1,565
" B. " 	1,195	50	50	16	458
" F. " 	2,000	500	350	148	
Non-party lines	2,131		80	36	381
Cost per telephone	\$120 00	\$50 00	\$60 00	\$75.00 per mile	\$80.00 to \$90.00
Class of wire and circuit	I. M.	I. G.	I. M.	I. M. and I. G.	I. M.
Proportion under ground	$\frac{1}{3}$	Nil	Nil	Nil	$\frac{1}{10}$
Type of system	C. E.	Mag.	Mag.	Mag.	C. E.
Annual rates, business	\$30 00	\$14 00	\$12 00	\$12 00	\$36 00
Party line " 	\$24 00				\$24 00

Residence.....	\$24 00	\$14 00	\$12 00	\$12 00	\$21.00 and \$24.00.
Party line, residence.....	\$12.00 to \$18.00.				\$12.00, \$15.00 and \$18.00.
Rural.....		\$14 00	\$12 00	\$12 00	
Dividends per annum.....	6 per cent.	12 per cent.	6 per cent.	10 per cent.	
Interest on bonds.....	6 "		6 per cent.		6 per cent.
Depreciation per annum.....	5 "	5 p. c. of gross receipts.	10 p. c. of \$30,000.00.		
Surplus.....		\$500 00		\$800 00	
No. of 'Bell' telephones—					
Before competition.....	300		None.	1	650
At this date.....	1,200		1		750
Wages paid—					
Foremen.....	\$80.00 per month.	\$60.00 per month.	\$80.00 per month.	\$2.50 per day.	\$75.00 per month.
Inspectors and troublemen.....	\$55.00 "	\$45.00 "	\$45.00 to \$60.00 p. month	\$2.00 "	\$60.00 "
Wiremen.....		\$45.00 "		\$2.50 "	
Operators.....	\$15.00 to 25.00 p. month.	\$20.00 to \$25.00 p. month.	\$22.50 per month.	\$25.00 per month.	45 cts. to \$1.08 p. day.
Cost of supplies—					
Central equipment.....				\$35.00 for 60 lines.	
Wall telephones.....	\$8 50	\$14 75			\$7.50 to \$10.00.
Poles.....		85 cts. to \$1.05.		70 cts. to \$1.10.	
Long-distance pole mileage.....	256	200	30		
" wire ".....	800	200	50		
Cost per mile, including poles.....		\$40.00 to \$50.00			
" wire.....			\$5 80		
Long-distance rates.....	1 cent per mile.		1 cent per mile		3 cts. per mile.
Remarks.....		See note X., page 804.			See note Y., page 805.

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit ; *M.*, metallic circuit ; *I.G.*, iron wire, grounded circuit ; *I.M.*, iron wire, metallic circuit ; *C.G.*, copper wire, grounded circuit ; *C.M.*, copper wire, metallic circuit ; *I.C.C.R.*, iron wire, copper, common return ; *C.E.*, central energy system ; *Mag.*, magneto system ; *Auto.*, automatic system ; *L.D.*, long-distance ; *Pref.*, preferred ; *Com.*, common ; *Ex.*, exchange ; *Min.*, minutes.

Particulars.	Eastern Illinois Independent Telephone Co., Kankakee County, Ill.	Leaf River and Egan Mutual Telephone Co., Ogle County, Ill.	Bureau County Independent Telephone Co., Bureau County, Ill.	Huntingdon and Clearfield Telephone Co., parts of Clearfield, Centre, Cambria, Blair and Indiana counties, Clearfield, Pa.	Johnstown Telephone Co., 14 mile radius of Johnstown, Pa.
Stock issued	\$225,000	.....	\$125,000	\$377,050	\$200,000
Bonds "	\$225,000	.....	Nil.	\$335,500	\$200,000
Years in operation	$\frac{1}{2}$	$1\frac{1}{2}$	6	2	9
Population of territory..	Not stated	1,000	43,000	20,000	60,000
Number of R. telephones	1,050	12	2,700	910	1,800
" B. "	250	20	800	836	1,200
" F. "	300	39	1,700	75	100
Non-party lines	1,000	.....	400	1,100	1,500
Cost per telephone..	\$200	.....	\$50	.....	.....
Class of wire and circuit	C. M. and I. M.	I. G. and I. M.	I. G. and I. M.	C. M.	C. M.
Proportion under ground	Nil.	Nil.	Nil.	1 mile.....	City, $\frac{1}{2}$.
Type of system.....	C. E.	Mag.....	C. E. and Mag.	190 mag.; balance, C. E.	C. E.
Annual rates, business.....	\$30	\$6	\$18	Average, \$24.....	\$30
Party line " .....	.....	.....	.....	" \$24.....	.....

Residence.....	\$18	\$6	\$12	" \$24.....	\$24
Party line, residence.....					\$13
Rural.....	\$15	\$6	\$12		\$6 to \$24.
Dividends per annum.....			8 per cent.....	None yet.....	8 per cent.
Interest on bonds.....	5 per cent.....			5 per cent.....	5 "
Depreciation per annum.....			8 per cent.....	Average, 7½ per cent.....	
Surplus.....			\$24,000		\$37,000
No. of "Bell" telephones—					
Before competition.....		1	110	1,000	100
At this date.....		1	15	700	250
Wages paid—					
Foremen.....	\$50 to \$60 per month.....	\$2 per day.....	\$60 to \$75 per month.....	\$60 per month.....	\$75 per month.
Inspectors and troublemen.....	\$50 to \$60 "		\$40 to \$60 "	\$55 and \$60 per month	\$60 "
Wiremen.....	\$50 to \$60 "	\$1.75 per day.....	\$40 to \$60 "	\$40 per month.....	\$65 "
Operators.....	\$12 to \$22 "	40c. per subscriber per month.	\$20 to \$30 "	\$20 "	\$10 to \$40 per month.
Cost of supplies—					
Central equipment.....	\$27,500		\$3.50 to \$5 per line.....	\$410 for 100 lines.....	
Wall telephones.....	\$8 to \$14		\$8.75 to \$10.75.....	C. E., \$7.75; mag., \$10.	
Poles.....		72c. and \$1..		Average, \$3.50.....	
Long-distance pole mileage.....		25	200	160	60
" wire ".....		25	600	1,200	200
Cost per mile, including poles.....					
" wire.....		\$5.15	\$10		
Long-distance rates.....	½c. per mile.....	15c. to 35c.....			10c. to \$2.
Remarks.....	See note Z., page 805.....	See note A. 1, page 805..		See note B. 1, page 805..	

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I. G.* iron wire, grounded circuit; *I. M.*, iron wire, metallic circuit; *C. G.*, copper wire, grounded circuit; *C. M.*, copper wire, metallic circuit; *I. C. C. R.*, iron wire, copper common return; *C. E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L. D.* long-distance; *Pref.* preferred; *Com.*, common; *Ex.*, exchange; *Min.* minutes.

Particulars.	The Camp Dewey Telephone system, Creighton, Neb.	Fremont Telephone Co. Fremont, Neb.	Cambridge Springs Electric Telegraph and Telephone Co., Cambridge Springs, Pa.	Keystone Telephone Co., Philadelphia City and County, and parts of Delaware, Chester, Montgomery and Bucks Counties, Pa.	Mutual Benefit Tele. Co., 35 sq. miles, North East, Pa.
Stock issued..		\$34,850 00	\$21,500 00	\$5,000 000 00	\$1,000 00
Bonds "		\$8,500 00	Nil	\$6,000,000 00	Nil.
Years in operation.. . . .	5	2	8½	3	9
Population of Territory		10,000	4,000	2,000,000	5,000
Number of R. telephones.	250	422	250	1,000	325
" B. "	200	140	200	16,000	100
" F. "	240	28	150	50	150
Non-party lines.		237	250	5,000	
Cost per telephone.		\$80 00	\$40 00	\$200 00	
Class of wire & circuit.	I. G.	I. M.	C. M.	C. M.	I. G. & I. M.
Proportion underground	Nil	Nil	Nil	97 per cent.	Nil.
Type of system.	Mag.	C. E.	Mag.	C. E.	Mag.
Annual rates, business	\$21 00	\$30 00	\$18 00	\$80 00	\$16 00
Party line "				\$52 00	

Residence.....	\$15 00	\$18 00	\$12 00	.....	\$13 00
Party line, residence.....		\$12 00		.....
Rural.....	\$15 00	\$18 00	\$12 00	.....	\$13 00 & 16 00
Dividends per annum.....	33 per cent.	4 per cent	10 per cent.....	None yet.....	
Interest on bonds.....		6 "		5 per cent.....	
Depreciation per annum.....		5 "	20 per cent of net earnings.....		7½ per cent.
Surplus.....	\$2,000 00		\$2,600 00		\$10,000 00
No. of "Bell" telephones—					
Before competition.....		300	50	10,000	2
At this date.....		590	15	30,000	2
Wages paid—					
Foremen.....		\$60 00 per month.....	\$2 50 per day.....	\$75 00 per month.....	\$2 50 per day.
Inspectors & troublemen.....	\$45 00 to \$50 00 a month	\$50 00 "	\$2 00 "	\$65 00 "	
Wiremen.....	\$45 00 to \$50 00 "	\$1 75 per day.....	\$2 00 "	\$2 25 per day.....	\$2 00 per day.
Operators.....		Average \$25 00 month.....	\$16 00 to \$20 00 month.....	Average \$32 00 month ..	\$5 00 to 10 00 per week.
Cost of supplies—					
Central equipment.....					\$450 00 for 100 lines.
Wall telephones.....			\$11 25		\$8 50 to \$11 50.
Poles.....					\$1 25 to \$6 00, 22 to 60 ft.
Long distance, pole mileage.....		30	25	300	
" " wire ".....	375	30	50	3,000	
Cost per mile, including poles.....	\$75 00		\$200 00	\$200 00	
" " wire.....					
Long distance rates.....	25c. for 40 miles.....	1½c. per mile.....			
Remarks.....				See note C. 1, page 805..	See note D. 1, page 806.

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I.G.*, iron wire, grounded circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, copper wire, metallic circuit; *I.C.C.R.*, iron wire, copper common return; *C.E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L.D.*, long-distance; *Pref.*, preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes.

Particulars.	Hooper Telephone Co., Hooper and 10 miles radius, Neb.	The Farmers' Telephone Co., Dodge County, Neb.	Winchester Telephone Exchange, Winchester, Kansas.	Wellington Independent Telephone Company, Wellington, Sumner Co., Kansas.	Waverley Telephone Exchange, N.E. part of Coffey county, Waverley, Kansas.
Stock issued.....	\$13,000 00	Not stated.....	Private ownership.....	\$54,000 00	Private ownership.
Bonds.....		\$3,000 00 (Loans).....		Nil.....	
Years in operation.....	4	5	4	4	2½
Population of territory.....	900		2,000	5,000	
Number of R. telephones.....	190	350	210	323	185
" B. ".....	50	50	30	227	35
" F. ".....	140	225	150	10	8
Non-party lines.....	100	150	110	500	125
Cost per telephone.....	L. \$38 00, F. \$80 00.....		\$35 00		\$40 00
Class of wire and circuit.....	I. M.....	I. M.....	I. G.....	Mixed circuits.....	I. G.
Proportion under ground.....	Nil.....	Nil.....	Nil.....	Nil.....	Nil.
Type of system.....	Mag.....	Mag.....	Mag.....	Mag.....	Mag.
Annual rates, business.....	\$18 00	\$18 90	\$18 00	\$24 00	\$18 00
Party line ".....					

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Residence.....	\$12 00	\$12 00	\$12 00	\$15 00	\$12 00
Party line, residence.....					
Rural	\$15 00	\$12 00 to \$18 00	\$12 00	\$15 00	\$12 00 & \$18 00
Dividends per annum.....					12 per cent.
Interest on bonds.....		8 per cent.			
Depreciation per annum .. .	\$300 00 to \$500 00				
Surplus.....	\$1,900 00				
No. of "Bell" Telephones—					
Before competition.....	15	Connect with Bell system .. .		30	
At this date.....	Nil			10	
Wages paid—					
Foremen.....	\$2 50 per day.	\$72 50 per month..	\$50 00 per month .. .	\$40 to \$60 per month...	
Inspectors and troublemen.....	\$2 50 per day .. .	\$72 50 " .. .		" " .. .	\$30 00 per month.
Wiremen .. .			\$3 50 per week.....		7c. per hour.
Operators.....					
Cost of supplies—					
Central equipment .. .	\$525 00 for 120 lines.....	\$225 00 for 100 lines.			\$475 00 for 150 lines.
Wall telephones.....	\$10 25 to \$12 25	\$12 00 to \$14 00	\$10 00	\$8 50	\$10 00
Poles .. .	75c. to \$1 20, 20 to 25 ft..		\$1 25		60c. to \$7 50.
Long distance pole mileage .. .	15	85	13		
" wire " .. .	30	170	25	200	
Cost per mile, including poles.....					
" wire .. .			\$20 00		
Long distance rates.....	1c. per mile.....	25c.	15c. to 30c.....		
Remarks .. .	See note E. 1, page 806..	See note F. 1, page 806...			

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I. G.*, iron wire, grounded circuit; *I. M.*, iron wire, metallic circuit; *C. G.*, copper wire, grounded circuit; *C. M.*, copper wire, metallic circuit; *I. C. C. R.*, iron wire, copper common return; *C. E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L. D.*, long-distance; *Pref.*, preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes.

Particulars.	Texarkana Telephone Co., Texarkana, Bowie County, Texas and Miller County, Ark.	Kansas City Home Telephone Co., Kansas City, Mo.	Hardin Telephone Exchange, A. B. Hughes, Prop., Hardin, Mo.	Independence Home Telephone Co., Independence, Mo.	The Home Telephone Co., Joplin, Mo.
Stock issued.....	150,000 00	\$1,997,500 00	Private ownership.....	\$40,000 00	\$175,000 00
Bonds ".....	150,000 00	\$2,184,000 00	.....	Nil.....	\$175,000 00
Years in operation.....	2½	1½	3	1½	3
Population of territory.....	25,000	300,000	.....	15,000	10,000
Number of R. telephones.....	768	5,500	250	200	1,500
" B. ".....	441	7,000	25	400	1,500
" F. ".....	30	100	300	38	250
Non-party lines.....	800	10,500	90	300	\$2,700
Cost per telephone.....	.....	.....	.....	\$55 00	\$145 00
Class of wire and circuit.....	I. M.....	C. M.....	I. G.....	I. M.....	C. M.....
Proportion under ground.....	8 per cent.....	.....	Nil.....	Nil.....	Nil.....
Type of system.....	C. E.....	C. E.....	Mag.....	C. E.....	Mag & C. E.....
Annual rates, business.....	\$36 00	\$54 00	\$24 00	\$30 00	\$24 00 and \$30 00.
Party line ".....	\$24 00

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Residence.....	\$24 00	\$36 00	\$12 00	\$18 00	\$18 00
Party line, residence				\$12 00	
Rural.....	\$24 00		\$4 20	\$24 00 plus \$1 per mile beyond limits.	\$18 00
Dividends per annum.....		5 per cent.		12 per cent.	6 per cent.
Interest on bonds.....	6 per cent.	5 per cent.			5½ per cent.
Depreciation per annum.....	2 per cent.				10 "
Surplus					\$23,000 00
No. of "Bell" telephones—					
Before competition.....	725		1	275	Not known.
At this date.....	490		10	700	1,200
Wages paid—					
Foremen.....	\$75.00 per month.	\$80.00 per month.		\$80 00 per month . . .	\$2 75 per day.
Inspectors and troublemen.....	\$70.00 per month.....	\$2.50 per day.....	\$40.00 to \$50.00 month . .	\$45 00 "	\$55 & \$60 per month.
Wiremen	\$70.00 per month.....	\$2.75 per day		\$50 00 "	\$2 50 per day.
Operators.....	\$20.00 to \$30.00 per mth.	\$15.00 to \$35.00 per mth.	\$3.00 to \$4.00 week.....		
Cost of supplies—					
Central equipment.....			\$3.00 per line.....		\$19,000 for 1,500 lines.
Wall telephones	\$8 50	\$8 50	\$9.00 to \$11.50.....	\$8 00 and \$9 00.....	\$8 00
Poles.....			\$1.00 to \$1.50.....		\$2 00 to \$25 00.
Long distance pole mileage.....	70	952			
" wire "	420	6,000			
Cost per mile, including poles.....	\$225 00				
" wire.....					
Long distance rates.....					
Remarks.....	See Note G. 1, page 806.		See Note H. 1, page 806.		See Note I. 1, page 807.

APPENDIX No. 1

APPENDIX "A"

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I. G.*, iron wire, grounded circuit; *I. M.*, iron wire, metallic circuit; *C. G.*, copper wire, grounded circuit; *C. M.*, copper wire, metallic circuit; *I. C. C. R.*, iron wire, copper, common return; *C. E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L. D.*, long-distance; *Pref.*, preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes

Particulars.	The Menominee Range Telephone Co., Iron Mountain, Mich.	Northern Indiana and Southern Michigan Telo., Tel. & Cable Co., LaGrange, Steuben, Indiana and St. Joseph Counties, Mich.	Locke Mutual Tel. Co., NE. part of Ingham and part of Chiwassee and Livingston Counties, Williamston, Mich.	Missaukee Telephone Co., Lake City, Mich.	Adrian Telephone Co., Lenawwa, Adrian, Mich.
Stock issued	\$15,000 00	\$50,000 00	\$10,000 00	\$3,000 00	\$50,000 00
Bonds "	Nil	Nil	Nil	Nil	Nil
Years in operation	9	10	3	1½	8
Population of territory	16,000	25,000	Not stated	4,000	50,000
Number of R. telephones	225	800	240	75	850
" B. "	225	500	10	30	250
" F. "	25	1,000	240	40	200
Non-party lines	425	1,000		85	900
Cost per telephone	\$55 00		\$30 00	\$40 00	\$65 00
Class of wire and circuit	I. C. C. R. and I. M.	Mixed circuits	I. G.	25 p. c. I. M., 75 p. c. I. G.	Mixed circuits
Proportion under ground	Nil	Nil	Nil	Nil	20,000 ft. duct.
Type of system	Mag.	C. E. and Mag.	Mag.	Mag.	Mag.
Annual rates, business	\$24 00	\$18 00	\$12 00	\$18 00	\$24 00
Party line "					

Residence.....	\$18 00	\$12 00	\$12 00	\$12 00	12 00
Party line, residence.....					
Rural.....	\$24 00	\$12 00	\$12 00	\$12 to \$18	12 00
Dividends per annum.....				14 per cent.....	
Interest on bonds.	8 per cent.....	8 per cent.....			6 and 8 per cent.
Depreciation per annum.....					
Surplus.....	10 per cent.....			Last year, 25 per cent.....	6 per cent.
No. of 'Bell' telephones—					
Before competition.....	400	200		0	140
At this date..	400	7		1	800
Wages paid—					
Foremen	\$90 per month.....	\$60 per month.....			
Inspectors and troublemen.....	50 "	\$30 to \$60 per month.....			
Wiremen		" "			
Operators	\$15 to \$25 per month.....	\$10 to \$20 per month.....		\$16 to \$20 month.. . . .	
Cost of supplies—					
Central equipment.....		\$3.50 per line.....		\$700 for 100 lines	
Wall telephones.....		\$11 00	\$12 00	\$10 00	
Poles.....		to \$3, 20 to 35 ft.....		\$1 to \$4 25 to 35 ft.....	
Long-distance pole mileage.....	60	200		60	
" wire "	140			85	250
Cost per mile, including poles.....	\$150 00			\$40 00	
wire.....		\$6 25			
Long-distance rates.....		1c. per mile.....		½c. mile for 3 min..	10c. county ervice.
Remarks		See Note N. 1, page 809.	See Note O. 1, page 809..	See Note P. 1, page 809.	

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit ; *M.*, metallic circuit ; *I.G.*, iron wire, grounded circuit ; *I.M.*, iron wire, metallic circuit ; *C.G.*, copper wire, grounded circuit ; *C.M.*, copper wire, metallic circuit ; *I.C.C.R.*, iron wire, copper common return ; *C.E.*, central energy system ; *Mag.*, magneto system ; *Auto.*, automatic system ; *L. D.*, long-distance ; *Pref.*, preferred ; *Com.*, common ; *Ex.*, exchange ; *Min.*, minutes.

Particulars.	Saugatuck and Ganges Telephone Co., Ltd., Saugatuck, Douglas, Ganges, Fennville and Gleen, Ganges, Mich.	Reed City Telephone Co., Lake, Oserola and Mecosta Counties, Mich.	The Northwest Leslie and Anondago Telephone Exchange, Leslie, Mich.	The Munroe County Telephone Co., Dundee, Mich.	Home Telephone Co., Elkhart County, Ind.
Stock issued	\$2,000 00	Private ownership	\$1,000 00	\$19,000 00	Not stated.
Bonds "	Nil	.....	Nil	Nil	"
Years in operation ..	10	7	4	2	8
Population of territory	1,500	3,500	200	1,150	8,600
Number of R. telephones.....	225	175	.....	155	3,000
" B. " 	25	81	.....	42	1,000
" F. " 	225	55	40	198	.....
Non-party lines	175	230	.....	157	3,000
Cost per telephone.....	.....	.....	.....	\$60 00	\$100.00
Class of wire and circuit.....	I. G.	I. C. C. R.	I. M.	I. M.	.....
Proportion under ground ..	Nil	Nil	Nil	Nil	Nil.
Type of system.....	Mag.	Mag.	Mag.	C. E. and Mag.	C. E. and Mag.
Annual rates, business.....	\$15 00	\$18 00	\$2 00	\$24 00	.....
Party line " .....	.....	.....	.....	\$21 00	.....

Residence	\$15 00	\$12 00	\$2 00	\$12 00	
Party line, residence.....				\$9.00	
Rural	\$15 00	\$16 00	\$2 00	\$12.00	
Dividends per annum				10 p. c.	8 p. c.
Interest on bonds.....					5 p. c.
Depreciation per annum.....		\$1 per phone.		8 p. c.	
Surplus				\$37.48	
No. of 'Bell' telephones—					
Before competition.....		50		4	600
At this date.....	3	4 (Free)		1	400
Wages paid—					
Foremer	\$3 00 per day.			\$50.00 per month..	\$75.00 per month.
Inspectors and troublemen	\$1.50 to \$2 "			\$35.00 "	\$50.00 "
Wiremen		\$1.75 to \$2 per day			\$2.50 per day.
Operators.....		\$20 to \$35 per month.....		\$15.00 per month.....	\$20.00 per month.
Cost of supplies—					
Central equipment		\$5.00 per line.....		C. E. 9.00, Mag. 4.00 line	
Wall telephones.....		\$11		\$9.00 to \$11.50..	
Poles		\$1.00 to 8.00			
Long distance pole mileage..	35			18	
" wire	35			36	
Cost per mile, including poles.	\$65 00				
" wire				\$14.00	
Long distance rates.....		½c. per mile.		10c. up	
Remarks	See note M. 1, page 808..	See Note Q. 1, page 810..	See Note R. 1, page 810..	See Note S. 1, page 810..	

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I.G.*, iron wire, ground circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, copper wire, metallic circuit; *I.C.C.R.*, iron wire, copper common return; *C.E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L.D.*, long-distance; *Pref.*, preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minute.

Particulars.	Citizens' Telephone Co., Columbus, Ind.	Decatur County Inde- pendent Telephone Co., Decatur County and Greensburg, Ind.	The Home Telephone and Telegraph Co., Fort Wayne, Ind.	The Richmond Home Telephone Co., Rich- mond, Ind.	Nappanee Telephone Co., R. Stoop, prop., Nappanee, Ind.
Stock issued	\$50,000 00	\$29,000 00	\$250,000.00	\$142,700.00	Private ownership
Bonds "	\$37,000 00	\$27,000 00	\$225,000.00	\$159,600.00	
Years in operation.....	9	4	9	6	7
Population of territory.....	24,595	20,000	70,000	23,000	5,000
Number of R. telephones	2,000	1,282	2,500	1,670	200
" B. "	456	153	1,000	455	65
" F. "	500	816	100	235	110
Non-party lines	1,800	620	3,400	1,900	255
Cost per telephone.....	\$100 00	\$62.59	.....	\$78.50	\$50.00
Class of wire and circuit	I.M.....	I.M.....	C.M.....	I.M.....	I.M.
Proportion under ground.....	Nil.....	Nil.....	10 per cent.....	Nil.....	Nil.
Type of system.....	Mag.....	C.E.....	C.E.....	Mag.....	Mag.
Annual rates, business.....	\$24 00	\$24, stockholders \$18...	\$36.00	\$30.00	\$18.00
Party line " .....	.....	.....	.....	.....	.....

Residence.....	\$18 00	\$15, stockholders \$9.60..	\$24.00	\$15.00	\$12.00
Party line, residence.....					
Rural.....	\$12 00	As above.....	\$18.00	R. \$15, B. \$30	\$12.00
Dividends per annum.....	10 per cent.....		3 per cent.....	4 per cent.....	6 per cent.
Interest on bonds.....	5 per cent.....	6 per cent.....	6 per cent.....	6 per cent.....	
Depreciation per annum.....	10 per cent.....			5 per cent.....	10 per cent.
Surplus.....			\$35,000.00		
No. of 'Bell' telephones—					
Before competition.....	150	No data.....	500	650	2
At this date.....	125	285	450	380	3
Wages paid—					
Foremen.....	\$60.00 per month.....	\$2.00 per day.....	\$100.00 per month.....	\$75 per month.....	
Inspectors and troublemen.....	\$45.00 ".....	\$45 to \$55 month.....	\$40 to \$60 per month....	\$35 to \$65 per month....	\$40 per month.
Wiremen.....		Electrician, \$85 month..	\$60 per month.....		
Operators.....	\$20 to \$25 per month....	\$3.00 to \$6.00 a week....	\$10 to \$30 per month....	\$15 to \$35 per month....	\$18 to \$20 month.
Cost of supplies—					
Central equipment.....		\$361 & \$500 per 100 lines	\$11.50 to \$12 per line ...	\$4.75 per line.....	\$1,000 for 300 lines.
Wall telephones.....	\$10.00 to \$12.00	\$9.00 to \$13.00.....	\$8.50	\$10.25 to \$12.50.....	\$9 to \$11.50.
Poles.....		90c. to \$9.05, 25 to 45 ft..	\$1.50 to \$11.50, 25 to 50 ft.	\$1 to \$20.....	
Long distance pole mileage.....	25	213		44	
" wire ".....	50	426	500	85	
Cost per mile, including poles.....			\$60.00		
" wire.....	\$6.00	\$21.80		\$22.50	
Long distance rates.....	$\frac{3}{4}$ c. per mile.....	10c.		$\frac{3}{4}$ c. per mile.....	
Remarks.....		See note T. 1, page 810..	See note U. 1, page 811..	See note V. 1, page 811..	

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I.G.*, iron wire, grounded circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, copper wire, metallic circuit; *I.C.C.R.*, iron wire, copper common return; *C.E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L.D.*, long-distance; *Pref.*, preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes.

Particulars.	Jefferson County Telephone Co., Fort Atkinson, Wis.	Consolidated Telephone Co., Marion, Taylor, Harrison, Barbour and Randolph counties, Fairmont, W. Va.	West Virginia Western Telephone Co., Wood Ritchie, Doddridge, Tyler, Pleasants, and parts of Harrison, Lewis, Gilmar and Jackson counties, Parkersburg, W. Va.	The Old Kentucky Telephone and Telegraph Co., Winchester and Mount Sterling Cities, Clark and Montgomery counties, Ky.	Louisville Home Telephone Co., Jefferson county, Ky., New Albany, Floyd, Sellersburg, and Clarke counties, Ind., Louisville, Ky.
Stock issued.	\$20,000 00	\$122,000 00	\$225,000 00	\$70,000 00	\$1,310,000 00
Bonds "	Nil	\$75,000 00	\$125,000 00	\$70,000 00	\$1,430,000 00
Years in operation.	5½	10	12	10	3
Population of territory.	4,000	150,000	85,000	30,000	300,000
Number of R. telephones.	202	1,250	2,260	1,175	4,400
" B. "	98	1,250	2,886	175	4,700
" F. "	75	110	1,246	400	200
Non-party lines.	350	2,000	2,645		7,700
Cost per telephone.			\$96.75 to \$172.00	\$75 00	\$145 00
Class of wire and circuit.	I. M.	C. M. and I. M.	C. M. and I. M.	I. G. and I. M.	C. M.
Proportion under ground.	Nil	Nil	Parkersburg Ex.	Nil	½
Type of system.	Auto.	Mag.	C. E. and Mag.	Mag.	C. E.
Annual rates, business	Not stated.	\$30 00	\$24.00 to \$36.00	\$24 00	\$48 00
Party line "					

Residence.....	Not stated.....	\$20 00	\$12.00 to \$25.00.....	\$12 00	\$24.00, \$30.00 & \$36.00.
Party line, residence.....					
Rural.....	\$18 00	\$15 00	\$18.00 to \$36.00.....	\$12.00 up.....	
Dividends per annum.....	7 per cent.....		6 per cent.....	3 per cent.....	
Interest on bonds.....		\$3,100 00	6 ".....	5 ".....	5 per cent.
Depreciation per annum.....	5 per cent.....	10 per cent.....	10 p.c., rural, 7 p.c., city.....	3 ".....	3 per cent to 5 per cent.
Surplus.....		None.....	\$81,275 00		\$34,000 00
No. of "Bell" telephones—					
Before competition.....	75	Not known.....	1,675		3,800
At this date.....	25	1,500	497	375	8,000
Wages paid—					
Foremen.....		\$50.00 per month..	\$75.00 per month..	\$2.00 per day.....	\$3.00 per day.
Inspectors and troublemen.....		\$50.00 ".....	\$55.00 to \$60.00 per month.....	\$40.00 per month.....	\$2.50 "
Wiremen.....		\$2.50 per day.....	\$2.50 per day.....		\$2.50 "
Operators.....		10c. per hr. to \$35 month.....	6c. to 10c. per hour.....	\$15.00 to \$20.00 per month.....	\$12.00 to \$30.00 month.
Cost of supplies—					
Central equipment.....	\$1,000 for 300 lines.....	\$4,000.00 for 700 lines.....		\$5.00 per line.....	\$150,000 for 7,500 lines.
Wall telephones.....	\$9 00	\$9.00 to \$10.00.....	\$6.25 to \$11.50.....	\$8 50	\$10 50
Poles.....	93c to \$1.50.....	10c. to 20c. per foot.....		\$1.25 to \$6.00, 25 to 50 ft.....	75c. to \$30.00 each.
Long distance pole mileage.....		200	931	75	
" wire ".....		1,000	5,592	150	
Cost per mile, including poles.....		\$250 00			
" wire.....			\$6.25 to \$25.54.....	\$20 00	
Long distance rates.....	15c. for 3 min.....	¾c. per mile.....		½c. to 1c. per mile.....	
Remarks.....		See Note J. 1, page 807..	See Note K. 1, page 807..	See Note L. 1, page 808..	See Letter No. 27, pages 32-34.

SUMMARY OF INFORMATION FURNISHED BY COMPANIES IN THE UNITED STATES UPON THE INVITATION OF THE COMMITTEE.

ABBREVIATIONS.—*S.*, single circuit; *M.*, metallic circuit; *I.G.*, iron wire, grounded circuit; *I.M.*, iron wire, metallic circuit; *C.G.*, copper wire, grounded circuit; *C.M.*, copper wire, metallic circuit; *I.C.C.R.*, iron wire, copper common return; *C.E.*, central energy system; *Mag.*, magneto system; *Auto.*, automatic system; *L.D.*, long-distance; *Pref.*, preferred; *Com.*, common; *Ex.*, exchange; *Min.*, minutes.

Particulars.	The Grayson County Telephone Co., Sherman and Denison, Texas.	The Roberts Telephone and Electric Co., 42 miles W. and S.W., 35 miles S., 25 miles S.E. and E., 12 miles N.E., 40 miles N.W. and N., Abilene, Texas.	Big Valley Farmers' Telephone Association, Kelseyville, Cal.	Saratoga, California, Mutual Telephone Co., Saratoga, Cal.
Stock issued.....	} \$200,000 }	\$26,000	Not stated.....	Not stated.
Bonds ".....		Nil.	".....	"
Years in operation.....	3	10	3	2½
Population of territory.....	35,000	Not stated.....	1,500	Not stated.
Number of R. telephones.....	1,000	300	} 61	70
" B. ".....	450	100		8
" F. ".....	50			
Non-party lines.....	1,250	400	50	1
Cost per telephone.....			\$23.65	
Class of wire and circuit.....	I.M.....	I. G. and I. C. C. R.....	I. G.....	I. G.
Proportion under ground.....	5 per cent.....	Nil.	Nil.	Nil.
Type of system.....	C. E.....	Mag.	Mag.	Mag.
Annual rates, business.....	\$36	\$18 and \$36.....	} Cost of switching..... }	\$14
Party line ".....				
Residence.....	\$24	\$12		\$14
Party line, residence.....				
Rural.....	\$20	\$12		\$14

Dividends per annum.....	6 per cent.....	11½ per cent.....	
Interest and bonds.....	".....		
Depreciation per annum.....			
Surplus.....			
No. of "Bell" telephones—			
Before competition.....	1,300	0	10
At this date.....	1,300	350	10
Wages paid—			
Foreman.....	\$75 per month.....	\$50 per month.....	
Inspectors and troublemen.....	\$65 ".....	\$45 ".....	\$2 to \$2.50 per day.....
Wiremen.....	\$60 ".....	\$45.....	
Operators.....	\$15 to \$30 per month.....	\$25.....	
Cost of supplies—			
Central equipment.....			
Wall telephones.....			\$16.50
Poles.....			
Long distance pole mileage.....	30	175	20
" wire ".....	70	280	20
Cost per mile, including poles.....			\$25
" wire.....			
Long distance rates.....		25 cents for 5 minutes.....	½ cent per mile.....
Remarks.....		See note W., 1, page 811.....	See note X. 1, page 811..... See note Y. 1, page 811.

No. 310a.

TELEPHONE COMPANIES IN THE UNITED STATES—*Concluded.*

NOTES

TO FOREGOING STATEMENT.

A.—*Albany and Vale's Mill Telephone Co., Ohio.*—Toll charges, 10c. for each switch station through which conversation passes.

B.—*Barlow and Watertown Telephone Co., Ohio.*—Net earnings put into betterments and extensions.

C.—*Fort Recovery Telephone Co., Ohio.*—Toll charges: 15c. for first county, 5c. for each county beyond. Local rates of \$12 per annum considered too low, should be \$18.

D.—*Cuyahoga Telephone Co. Ohio.*—See Letter No. 147 of Appendix A, for detailed information regarding rates, &c.

E.—*Hamilton Home Telephone Co., Ohio.*—Our system represents an actual outlay of about \$250,000, given for franchises, rights, bonus and property acquired. We are gaining a subscription list at the rate of two telephones per day. Our capacity is 3,000. When we reach it, we will be able to operate our plant and give satisfactory service at about 50 per cent of the receipts from rentals, which I estimate as follows:—

Receipts from rentals	\$60,000	
Toll business	5,000	
		\$65,000
Operating expenses	\$30,000	
Fixed charges	24,000	
		54,000
		<hr/>
Surplus		\$11,000

F.—*Sandusky Telephone Co., Ohio.*—Measured service rates, from 80c. to \$2.50 per month. No dividends paid for two years. The company, however, has earned 8 per cent per annum, which has been turned back into the plant for extensions. The long-distance service is furnished this company by contract with the U.S. Company of Cleveland, Ohio, on a basis of 25 per cent commission for originating business. This company connects with all states.

G.—*Chardon Telephone Co., Ohio.*—Toll charges, 10c. for 12 miles and under, plus 5c. for each additional 8 miles.

H.—*Kenton Telephone Co., Ohio.*—Surplus used in new construction. We connect with a number of short toll lines of neighbouring local companies, and with the lines of the United States Telephone Co., the latter being extensive in the State of Ohio; also via that company's line we reach the long-distance companies in neighbouring states. This gives about all the toll service we require.

I.—*Mercer County Mutual Telephone Co., Ohio.*—Co-operative company. Each subscriber furnishes his own poles (ten) and puts in half mile of line. We now have six switchboards and the total cost (cash outlay) per subscriber, has been about \$18, the running expenses averaging about \$1.50 per subscriber.

Subscribers who have put in mileage and are using 'phones of another company on our lines are subject to the annual assessment.

APPENDIX No. 1

All subscribers have communication with Celina via Stedcke, Oregon, Hinton, Durbin, Montazuma or Wabash, and Rockford via Tamah, at 10 cents per message.

Following is the tariff established by connecting lines to nearby outside points: From either Wabash, Durbin, Hinton, Montazuma, or Oregon, via Celina, to Ohio City, 25 cents; Van Wert, 30 cents; Spencerville, 30 cents; St. Marys, 20 cents; Wapakonetta, 25 cents; Lima, 30 cents; St. Henry, 20 cents; New Bremen, 30 cents; Montazuma, 15 cents; Chicasaw, 20 cents; Ft. Recovery, 20 cents. Cold Water, 15 cents; Neptune, 15 cents; Greenville, 35 cents; Portland, 35 cents; Geneva, 30 cents; Berne, 35 cents; Bryant, 35 cents; Willshire, 30 cents; Muncie, 45 cents.

From Wabash via State Line Companies' lines to Geneva, 25 cents; to Portland, 25 cents; Bryant, 25 cents; Westchester, 25 cents; Willshire, 25 cents; Berne, 25 cents. From Chattanooga to Berne, 15 cents; Geneva, 20 cents; Portland, 25 cents; Bryant, 25 cents; Muncie, 35 cents; Westchester, 25 cents; Willshire, 10 cents. From New Corydon to Geneva, 10 cents; Portland, 15 cents; Bryant, 15 cents; Berne, 20 cents; Westchester, 15 cents; Willshire, 20 cents.

This company has free exchange, exclusive of toll lines, with Mendon, Coldwater, Chattanooga and New Corydon.

Other companies may become members of this company by subscribing to the constitution, submitting to a careful inspection of their instruments and lines, and paying \$1 per subscriber into the treasury of the general organization as a supply fund.

All receipts from tolls, where we have no operators of our own, assessments, and other receipts in the hands of local treasurers, must be turned over to the treasurer of the general organization at the annual settlement the second Tuesday of March each year.

All disbursements, except in payment of operators who retain a per cent of the tolls, must be by order of the secretary on the treasurer of the general organization. Operators shall keep their toll records neat and clean, and have each month's business separately footed and balanced ready for auditing a few days prior to the March settlement.

For the convenience of subscribers, batteries and other supplies will be placed with the local linemen, and the price for which they must sell them fixed by the general manager. Linemen must keep a record of same, and make settlement at the annual meeting in March.

All new subscribers since May 1, 1905 are required to put in one-half mile of line, and maintain the same, and pay the sum of \$20 for their instruments and equipment, or, by paying \$30, if they live within one-half mile of a line that is not loaded, may become subscribers without furnishing any poles or performing any labour. Payments will be due and collected as the apparatus is installed.

Owing to unnecessary disputes and quibbling engendered thereby, statements will not be furnished locals in the future, and wholesale prices of apparatus and supplies will be the property of the officers and executive committee.

Those who now contemplate becoming members of this company can consider that they are getting a better bargain at \$20 than did our first subscribers at \$18, inasmuch as we now put you in touch telephonically free with 1,000 phoneholders, and you need not be in any suspense as to our future development, whereas the early subscribers had a very limited service and hazarded future development.

The interests of shareholders are negotiable. Certificates of membership will be issued to all shareholders, and all transfers should be noted thereon. Your certificate is also your credential granting you the free use of our system anywhere.

Shareholders who remove from one line to another are entitled to admission on the latter unless it is loaded. Thirty-five subscribers constitute a loaded line.

In making extensions, cut the poles of durable timber 22 feet long, not less than 4 inches diameter at the top end, and set them 264 feet apart, 4 feet in the ground and not more than 1 foot from land line.

Obstruct no ditches. Our company has a franchise granted by the county commissioners, but you should get the landowners' consent also.

Following is an excerpt from Ohio statutes:—

Penalty for Unlawfully Interfering with Telegraphic and Telephonic Messages, &c.

Sec. 3467a. Whosoever shall wilfully and maliciously * * * obstruct or delay by any means or contrivance whatsoever the sending, conveyance or delivering in this state of any message or communication by or through any telegraph or telephone line, cable or wire under the control of any telegraph or telephone company doing business in this state; or who shall wilfully or maliciously destroy, disconnect, displace, cut, tap, ground, or make any connection with or in any way wilfully or maliciously interfere with any of the poles, cables or wires legally erected, put up or strung, * * * shall be deemed guilty of felony, and fined or imprisoned, or both.

L. M. KRANER,
General Manager.

J.—*Home Telephone Co., Ohio.*—Surplus used in strengthening plant. We have a Globe automatic switchboard at one of our sub-exchanges which has cost us about \$25 for each subscriber's station complete with switch at central. We have only eight or ten subscribers on it, but it has been in use four years and is giving good service.

For description of our country lines, see letter No. 88, page 98.

K.—*Painsville Telephone Co., Ohio.*—We believe in getting all rural 'phones we can; in fact the rural 'phones hold the city 'phones. We require our rural subscribers to sign a contract not limiting the number of telephones on the same line. We, however, try not to exceed nine telephones per line. We build about six miles in each direction to meet rural subscribers.

L.—*Vermilion Telephone Co., Ohio.*—We consider rural service of great importance, and expect to develop our territory fully. As yet it has not been very profitable, as cost of installation, maintenance and operation per 'phone is largely in excess of that for village service.

M.—*Piqua Home Telephone Co., Ohio.*—All our local toll lines connect with the local lines owned by other independent companies. Each company takes what business they originate. We also connect with the United States Telephone Company's long distance lines, and through them with other states. For handling this business we get 25 per cent of all business sent and nothing for business received.

N.—*Bainbridge Telephone Co., Ohio.*—Our company is one of six constituent companies comprising the Geauga County, Ohio, Telephone Association, which was probably the first rural system of any magnitude in the United States, and has been patterned after extensively throughout the entire country. Subscribers in my company have the free use of entire association system, which comprises all of Geauga county and a part of Cuyahoga, Portage and Summit, about two thousand 'phones.

O.—*Greenfield Mutual Telephone Co., Ohio.*—At the expiration of six years we paid a stock dividend of 66 $\frac{2}{3}$ per cent. Expect to pay 10 per cent per annum in the future. At the expiration of six years we charged a lump sum of \$4,000 to depreciation, and have made liberal charges for repairs and maintenance. The company is organized under the laws of the state of Ohio, and its stockholders consist wholly of our own citizens. This fact conduces to better service than was furnished by the Bell Company.

P.—*Auglaize Telephone Co., Ohio.*—On rural lines we put nine subscribers on each line. Our rural lines are certainly a good proposition. We have an unlimited demand for telephones in the country, and think that any company forming now makes a great mistake if they do not make provision for taking care of the country near the central office.

APPENDIX No. 1

Q.—*Mechanicsburg Telephone Co., Ohio.*—We serve one village, Mechanicsburg, population 1,700, and two small villages of about 500 inhabitants. Main office at Mechanicsburg, and sub-exchanges at the villages seven miles distant. We tried to serve the villages with party lines to the main office, but found it better to install a sub-exchange where the farm lines could centre if the telephones served amounted to one hundred or upward. We put ten farmers on one line, using straight bridging instruments. We have about 125 miles of pole lines, carrying from twenty wires on the main leads down to two on short side lines. Our subscribers are satisfied with the service, and the business is profitable. The manager is a practical telephone man, and he and our troubleman keep the plant in good shape. Our salary account, not including new construction work for the year 1904, was \$2,688. With good instruments and good construction two men can take care of 1,000 telephones nicely.

R.—*Rural Telephone Co., Highland County, Ohio.*—Our company is a small rural and village company, covering only about four townships. We have free toll connections with the Hillsboro Co., which operates the county seat. The Bell does not operate in this territory except a few telephones in northern part of our territory from their Hillsboro exchange. We use a four party selective system on our rural lines.

S.—*Mentor Telephone Co., Ohio.*—Rural rates for full metallic line up to six miles: One subscriber, \$72; two on line, \$36; three on line, \$25; four or more, \$18, per annum. Connect with the United States long-distance companies lines. We get 25 per cent of receipts on outgoing, nothing on incoming, messages.

T.—*Ada Telephone Exchange Co., Ohio.*—Surplus used to build new lines. We own five small exchanges and 140 miles of toll circuits, and operate with the United States long-distance company. We are increasing our plant about 200 'phones per annum, and could go faster if we had the money. Every farmer almost in our territory wants a telephone, and wants to be connected with our exchanges. We charge toll between our exchanges, and keep our prices low, thus bringing the service within the reach of all.

U.—*Port Byrne Telephone Co., N.Y.*—We exchange service over the long-distance lines of the Inter-Ocean Telephone Co.

V.—*Blakesburg Telephone and Telegraph Co., Iowa.*—We used all the surplus revenue in extending plant up to this year. Paid 8 per cent dividend, and struck off \$300 for an emergency fund a few days ago. Our whole cost, including 100-line board equipped with 30 jacks, arrestors, 20 miles of B.B. iron full metallic lines, 30 'phones, 175 feet of 102 wire cable, poles 25 and 30 feet, &c., was \$2,000. Since added from profits about \$700 in lines, jacks and 'phones. Party lines owned by farmers have from six to twenty-five on each, and connect at the town limits, where we take them and put them on our switchboard at \$3 per 'phone per year.

W.—*Mutual Telephone Co., Des Moines, Iowa.*—Surplus used for construction. Total earnings about 17 per cent net.

X.—*Northern Rural Telephone Co., Iowa.*—Rate of \$14 per annum includes service to every town in county. Toll charges 20c. within county; 30c. to all other towns reached. Our system is made up entirely of rural 'phones, with some 'phones in the smaller country towns. We have, I think, the largest and most complete rural system in the northwest. Our patrons are very well satisfied, as is evidenced from the fact that we have more calls to put in telephones at our rates than we can fill, in spite of the fact that several movements have been made, and have been carried out in part, to build farmer lines independent of our system. We usually run from 12 to 20 'phones per line, and sometimes as high as 17 miles of wire on a line, and have no trouble in ringing the most distant subscriber. All 'phones have condensers in them.

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Y.—*Galesburg Union Telephone Co., Ill.*—We have connections with 325 rural telephones not owned by this company, which pays 50c. per month for connection with Galesburg. Depreciation is charged to maintenance. We connect with a number of companies. Each company retains originating charge and receives all incoming messages without charge.

Z.—*Eastern Illinois Independent Telephone Co., Ill.*—The system operates no long-distance lines, but interchanges with those of other companies on a 25 per cent commission basis.

A. 1.—*Leaf River and Egan Mutual Telephone Co., Ill.*—We are organized on the mutual plan. Each subscriber a shareholder pays \$30. We demand three subscribers to the mile for rural lines. Each subscriber pays 50c. dues per month; 40c. goes to the central office and 10c. is held as a reserve fund. We collect at the end of each quarter. This reserve nets us \$21.30 per quarter, and our tolls amount to \$30 per quarter. This gives us \$51.30 per quarter for maintenance expenses outside of the cost of switching. We are connected with the Ogle County Independent Company, and by paying 25c. more per month we have free communication with all points in Ogle county, and by paying 15c. we can talk to all of the neighbouring county.

B. 1.—*Huntingdon and Clearfield Telephone Co., Pa.*—Rural lines are built and owned by farmers themselves. We connect with other companies and pay an originating charge of 25 per cent, and air line wire mileage proportion via point of connection. Have nine different exchanges in the territory above described, divided into three districts.

C. 1.—*Keystone Telephone Co., Philadelphia, Pa.*—We do not set aside any amount for depreciation. It is not customary in telephone business. We know of no company doing it; all repairs are charged to maintenance. There is no interchange of business between our company and the Bell Company, but there is an interchange between our company and all other independent systems in this part of the country.

KEYSTONE TELEPHONE COMPANY OF PHILADELPHIA, PA.

Schedule of message rates, July 1, 1902.

No. of calls.	Business direct line.		Business 2-party line.		Residence direct line.		Residence 2-party line.	
	Rate.	Excess calls.	Rate.	Excess calls.	Rate.	Excess calls.	Rate.	Excess calls.
	\$	cts.	\$	cts.	\$	cts.	\$	cts.
400							33	5
600			48	5			42	5
800	69	5	57	5	60	5	51	5
1,000	78	5	66	5	69	5	60	5
1,200	87	5	75	5	78	5	69	5
1,400	96	5	84	5	87	5		
1,600	105	5	93	5	93	4		
1,800	114	4	102	5	99	4		
2,000	120	4			105	4		
2,200	126	4						
2,400	132	4						
2,600	138	4						
2,800	144	4						
3,000	150	4						

APPENDIX No. 1

BELL TELEPHONE COMPANY OF PHILADELPHIA, PA.

Measured Service Schedule, 1900.

Direct line.			2 Party.		3 Party.		4 Party residence only.		6 Party residence only.	
No. of calls.	Rate.	Extra calls.	Rate.	Extra calls.	Rate.	Extra calls.	Rate.	Extra calls.	Rate.	Extra calls.
	\$	cts.	\$	cts.	\$	cts.	\$	cts.	\$	cts.
400							36	6		
500					48	6	41	5	30	6
600	75	6	60	6	53	5	45	4	35	5
700			65	5	57	4	48	4	39	4
800	87		69	4	60	4	51	4	42	4
900	90	6	72	4	63	4	54	4	45	4
1,000	95	5	75	4	66	4	57	4	48	4
1,100	99	4	78	4	69	4	60	4	51	4
1,200	102	4	81	4	72	4	63	4		
1,300	105	4	84	4	75	4	66	4		
1,400	108	4	87	4	78	4				
1,500	111	4	90	4						
1,600	114	4	93	4						
1,700	117	4	96	4						
1,800	120	4	99	4						
1,900	123	4								
2,000	126	4								
2,500	141	4								
3,000	156	4								

D. 1.—*Mutual Benefit Telephone Co., Pa.*—Profits amounting to \$10,000 have been used in construction. This company was not established for the purpose of making money, but for the convenience of the incorporators.

E. 1.—*Hooper Telephone Co., Neb.*—Rates to stockholders: Business, \$9; residence, \$6 per annum. For long-distance service we trade even with adjoining companies, and for long-distance messages through three or more independent companies. Receipts are divided as follows: 40 per cent for originating company, 20 per cent to receiving company, and balance *pro rata*.

We are a mutual company with authorized capital of \$50,000. Every one takes stock, which is pro rated to cover cost of construction, and rates are very low, but we are making sufficient surplus to cover all repair work. Have ten to twelve farmers on a line and about 150 miles of country lines.

F. 1.—*Farmers' Telephone Co., Neb.*—Company has no bonds, but has indebtedness of \$3,000, on which 8 per cent is paid. Rural rates to shareholders, \$12. Connect with the Nebraska Bell Telephone Co. on equal terms.

G. 1.—*Texarkana Telephone Company, Ark.*—Regarding rural telephone service, we have the American Electric Telephone Company's apparatus in our central office, and have just completed the installation of their perfected four-party selective ringing equipment, enabling us to install four telephones per line, with an individual non-interfering ring for each subscriber on the line. This system will greatly reduce the cost of operation per telephone, and increase the income per line, even at a reduced rental. Our residence rates in the city are \$2 per month. With this system we will be able to install four stations per line in the rural districts, at a rental of \$2 per month per telephone. We are at present building for 500 rural telephones.

H. 1.—*Harding Telephone Exchange, Mo.*—The only toll line interest I have is in an incorporated company with a capital of \$25,000, viz., the Missouri Valley Long-

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distance Telephone Company of Kansas City, and building east along the Missouri river, having now completed about one hundred and seventy-five miles metallic copper. My exchange includes some rural lines and mutuals, but the number of telephones reported as in operation belong to this exchange. We have some mutual farmers in our territory who are giving us some trouble, because we have to reach them through another exchange. They should be connected direct with our board, and we hope to make terms for this in a few days. They number, with their connections, about four hundred telephones.

I. 1.—*Home Telephone Co., Joplin, Mo.*—We have an interchange between four exchanges which belong to the same company in the same county. Our several exchanges are worked as one system. Subscribers in one locality have free access to the telephones in the other. This is an error, and should be corrected, as no free exchange should be permitted between exchanges without a small fee, from the fact that the lines are kept so busy by unimportant communications. It is therefore impossible to give as high a class of service as if there was a small charge made.

J. 1.—*Consolidated Telephone Company, W. Va.*—Rates charged for farmers or rural systems owning their own plant, \$5 per annum.

ADDITIONAL STATISTICS.

	NAME OF				
	Fairmont, W. Va.	Clarksburg, W. Va.	Salem, W. Va.	Shinnston, W. Va.	Mannington, W. Va.
Population.,	12,000	12,000	2,000	1,000	2,500
Our telephones. . . .	650	600	75	80	200
Bell "	400	400	300	.....	50
Our rates, B.	\$30.00 & \$36.00	\$30.00 & \$36.00	\$25.00	.....	\$30.00 & \$36.00
" R	\$15.00 & \$20.00	\$15.00 & \$20.00	\$20.00	.....	\$15.00 & \$20.00
Bell rates, B.	\$24.00 & \$47.00	\$24.00 & \$47.00	\$25.00	.....	\$24.00 & \$47.00
" R.	\$12.00 & \$27.00	\$12.00 & \$27.00	\$20.00	.....	\$12.00 & \$27.00
Type of system. . . .	Magneto.	Magneto.	Magneto.	Magneto.	Magneto.

K. 1.—*West Virginia Western Telephone Co., W. Va.*—Country systems where not fully developed cost \$172 per telephone. On farmers' party lines have 8 to 12 telephones per line, rate based on distance from local exchange. We interchange with thirty-one (31) companies in state of West Virginia, and connect with United States Long-distance Company, of Cleveland, Ohio, giving service throughout Ohio, Indiana and all other United States territory. Operators in rural exchanges are paid \$20 to \$25 per month.

The city of Parkersburg comprises the largest exchange we have on our system, and is one of the most complete and up-to-date small telephone plants in the United States. The cable equipment being of the John A. Roebling's Sons Co., of Trenton, N.J., make. The switchboard and telephones are all of the Stromberg-Carlson Tele. Mfg. Co. make, of Rochester, N.Y. All of the wire, both interior and exterior, is of the Roebling make. We operate a number of small magneto exchanges outside of the city of Parkersburg. Our system began as a Farmers' Mutual Company, but was incorporated in 1895, and entered into the commercial field, and has been more than

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successful in its operation. The West Virginia Company owns 90 per cent of the stock of the Marietta Telephone Company, operating the city of Marietta, Ohio, and Washington county. However, this plant is not reckoned in the above statement, but is operated independent as an under-lying corporation. The company also controls directly or indirectly a number of smaller companies in the state, which when taken in conjunction with the original plant make it the largest independent company operating in this section of the Ohio valley. Since competition the Bell Company have reduced their rates, and have always given lower rates of service than we do. The fight has been aggressive, and taking the whole territory the ratio is ten (10) to one in favour of our company. We have been able to pay fixed charges, repairs, maintenance and improvements and betterments (which are always charged up to maintenance account, and not to improvements or betterments), and pay 6 per cent on our stock and bonds, and carry a large amount annually to our surplus fund. We have never earned less than 15 $\frac{1}{2}$ net on our common stock, but invariably pay but 6, carrying the residue, after depreciation charges have been deducted, to surplus account.

When we began operation in this field our competitors stated that our rates were too low, and that we could not maintain ourselves in the field at the prices we charged. However, it is true that they immediately reduced their own prices, and have been

CONSOLIDATED TELEPHONE CO. (J 1).

EXCHANGE.

Fairview, (Amos, W. Va., P.O.)	Fannington, W. Va.	Grafton, W. Va.	Philippi, W. Va.	Bellington, W. Va.	Elkins, W. Va.
1,000	750	8,000	2,000	1,000	4,000
50	40	200	200	75	200
.....	.....	400	50	15	150
.....	.....	\$25.00	\$20.00 & \$25.00	\$20.00 & \$25.00	\$20.00 & \$25.00
.....	.....	\$15.00 & \$20.00	\$15.00 & \$20.00	\$15.00 & \$20.00	\$15.00 & \$20.00
.....	.....	\$24.00 & \$41.00	\$20.00 & \$25.00	\$20.00 & \$25.00	\$20.00 & \$25.00
.....	.....	\$12.00 & \$20.00	\$15.00 & \$20.00	\$15.00 & \$20.00	\$15.00 & \$20.00
.....	.....	Magneto.	Magneto.	Magneto.	Magneto.

giving service for less money than we do. We can say that our success has been far ahead of our expectations, and our business constantly growing and increasing.

L. 1.—*Old Kentucky Telephone and Telegraph Co., Ky.*—The charges in the rural districts are on a moveable scale, as follows: A farmer having a direct metallic line for his own use, pays the local residence rate of \$12 per annum, and in addition thereto \$5 per mile, per annum, beyond the city limits. Where there are several farmers on the same line, the extra mileage charge is divided and each farmer pays in addition thereto the \$12 per annum local residence rate. The company has two central exchanges, at Winchester and Mount Sterling. Within corporated limits, each subscriber has a separate wire. In the country, party lines are used with not more than six on a line. An increase in the residence rate from \$12 to \$18 per annum is contemplated. Beyond 300 subscribers, a \$12 rate is not considered remunerative.

M. 1.—*Saugatuck and Ganges Telephone Co., Ltd., Mich.*—Ours is a co-operative company. It was started in 1895 by a number of fruit growers who desired to com-

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municate with other shipping points. It was arranged that any person desiring telephonic communication could secure the same by paying the entire expense of his telephone, and line connecting to the central nearest him, and he was entitled to talk over any of the lines by paying his proportion of the cost of operation and maintenance of the system. We find a rental of \$15 per year covers this cost and provides funds for necessary extensions of lines, &c., and the people much prefer it to going into any of the large companies, where the business would be under a cold and distant management. We sold 200 shares of stock at \$10 each to provide pole lines from one central to another, and install the switchboards. From this point the subscriber pays the cost of his connection and can sell same if he desires, and to whom he wishes.

Our plant is but a small exchange, with five switchboards, having an average of about fifty subscribers each, mostly farmers, with such small merchants and business men as would naturally be in a country district. Rates charged for long-distance service: 10c. for the first 15 miles, and 5c. extra for each additional 15 miles, or fraction thereof, for five minutes' talk. Farmers and business men charged alike. Not much difference in the benefit derived, as they are all business telephones in a way. The farmer transacts all his business on the wires, and calls the country merchant ten times where the merchant calls out once. He gets prices from all and goes where he can do best, thereby saving many miles of drive, besides having to do business at a disadvantage from not being posted. Country business men take a reverse position to that of their city brothers, for the telephone is often to their disadvantage.

We pay no dividends. Ours is a co-operative institution. The rentals are just enough to maintain and operate the plant, and make improvements. No percentage is set aside for depreciation. This is provided for in our rentals, and in the cost of extensions and improvements, the latter item being confined to surplus funds. Our surplus funds are used in reconstruction and extension of system. We have interchange of service with the Citizens' Company lines of Grand Rapids, and through them to any point our lines will carry, so far as their system and connections will lead. Terms are: We receive 'incoming' calls free, and retain 25 per cent of 'outgoing' calls. Limit of commission on 'out' calls 10 cents per call.

N. 1.—*Northern Indiana and Southern Michigan Telephone, Telegraph and Cable Co., Ind.*—We started the service at too low a rate. We should have \$1.25 for residence, \$2 for business and \$1.25 for rural or farmers' per month, as the cost of labour and material has advanced. We do not put out farmer telephones unless we can reach at least three to the mile. We use 20-foot cedar and 25-foot for county lines where we do not run more than one circuit, using the 25-foot to cross road and passing farmer homes. We use thirty poles to the mile where we do not have over four wires and thirty-three poles when over that number. Our company was made up of several local companies, and we now operate under one head. The entire business is left to a board of directors, who elect a general manager having full charge, and he makes monthly reports to the directors. The long-distance companies control the toll business, and we only build to them, connecting our exchanges with one general office and that office to the long-distance. Our long-distance rates are based on the mileage, about 1c. per mile up to 60 miles for 5 minutes' talk; over 60 miles it is from $\frac{1}{5}$ to $\frac{1}{6}$ of 1c. per mile. It takes about one operator to every 150 subscribers on the board. On one board we use three operators and one long-distance operator.

O. 1.—*Lock Mutual Telephone Co., Mich.*—Our system is a co-operative association, most of the subscribers owning a share of capital stock, each share representing one telephone. It is not a village exchange, although we are connected with all of the towns around. It is the finest farm system in the state.

P. 1.—*Missaukee Telephone Co., Mich.*—For rural service we charge \$12 per year for full exchange privileges within six miles of central. Over six and up to twelve miles, \$12 per year for one way (outgoing calls only); over twelve miles out, \$18 for one

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way. We are an exchange in a town of 1,000; balance combination toll and farmers' lines in sparsely settled territory. In the latter we build toll lines, and rent telephones to all who wish, putting these on toll circuits until we get about ten or twelve 'phones on a circuit, when we either string another circuit or install a local switching station. Our territory is large and thinly peopled, but to people so situated telephones are necessary. We find the one way service plan gives good satisfaction. The renter gets his outgoing calls for \$1 per month, and the village people pay tolls for calling him, amounting in many cases to another dollar, and they are well satisfied as well.

Q. 1.—*Reed City Telephone Co., Mich.*—No dividends to be paid; all earnings put back into the business. I had just \$50 on July 1, 1898, when I started in. October 1 I opened for business with ten telephones, and have been working it alone ever since. Consider it worth \$15,000 to-day, and I have about \$750 worth of material on hand, such as poles, arms, &c.

R. 1.—*Northwest Leslie and Anondago Telephone Exchange, Mich.*—We are one of some twelve different companies that own lines which run into a switch station at Leslie owned and operated by another company. Each of the rural companies makes arrangements, annually, with the switchboard company to do the switching. At present we pay \$2 a year for switching. There is no toll charged to subscribers. Non-subscribers pay 10c. a message, which goes to the switchboard company. This in my opinion is a very unsatisfactory system. The telephone business is growing in importance daily, and should be under a central management, either state or national. It is essential to all, and all should have an equal opportunity to use it at a uniform rate of expense.

S. 1.—*Monroe County Telephone Co., Mich.*—Toll charges: 10c. within 12 miles, 15c. within 24 miles, &c. We connect with the long-distance lines of the United States Telephone Co., and receive 25 per cent of originating business, balance on mileage basis. Rural service is necessary for the success of any system outside of cities of 5,000 inhabitants. Farm subscribers are most appreciative, and if not provided with service by local company will build their own line.

T. 1.—*Decatur County Independent Telephone Co., Ind.*—Impossible to give toll rates. Our long-distance connections run into the thousands and cover many states, and the rates vary with the distance, 10c. within the county. We are connected with the New Long Distance Telephone Company of Indianapolis, Indiana, through which we are in communication with 141 telephone companies in the State of Illinois, 1,503 telephone stations in Indiana, representing over 160,000 subscribers, 206 stations in State of Illinois, 406 stations in State of Kentucky, 247 stations in State of Missouri, 2,552 stations in State of Ohio.

We receive 25 per cent of all tolls originating at this office or its substations, and nothing on messages received. Net earnings used in extending plant.

We are a stock company—stock limited to \$30,000—divided into 1,200 shares, at \$25 each. Sale to one person limited to four shares. At the present time we have 959 stockholders. Stock all sold with the exception of 200. Each stockholder purchases his telephone from the company at actual cost of instrument and cost of installation, and in consideration thereof receives a rate of 80c. per month for residences, and \$1.50 for business houses.

Our authorized bonded indebtedness is \$30,000—\$28,000 was sold and \$2,000 reserved bonds bear 6 per cent per annum, interest payable semi-annually. They run for 15 years, \$2,000 payable annually.

Our income from all sources is about \$20,000 per annum at this time, and our running expenses at last estimate about 50 per cent of receipts.

The company was organized for the purpose of giving our people cheaper telephone service than the Bell Company, and we made preparations to accommodate 300 sub-

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scribers, believing that would be our limit, but our growth has been phenomenal and we now have over 800 telephones on farms, and over 600 in the city, and the end is not yet in sight. Where parties in the country wish a line built to them they are required to take out stock sufficient to cover cost of construction at the rate of \$100 per mile.

U. 1.—*The Home Telephone and Telegraph Co., Fort Wayne, Ind.*—This company does not own its own toll lines, but has contract relations with toll line companies.

The National Telephone and Telegraph Company, also a Fort Wayne organization, operates toll lines and exchanges, answering, therefore, query No. 12, will say that the cost per mile of single wire of toll line, No. 10 copper, approximates \$60, including the poles, cross arms, &c.

Query No. 14.—Miles of poles on toll lines, 35.

Query No. 15.—Miles of separate circuits, 500.

Query No. 21.—Rates charged for long-distance service—Within the first county, from 10 to 15 cents; to the next county, 10 cents additional; the next, 10 cents additional; after that 5c. for every additional county. Where no rates exist the rate is said not to exceed $\frac{3}{4}$ cent per mile.

V. 1.—*Richmond Home Telephone Co., Ind.*—We have connection with all of the independent long distance lines in Indiana, Ohio, Michigan, Kentucky, West Virginia, Pennsylvania, Illinois and Missouri, in fact all of the independent companies are connected together by toll lines, and divisions are made in proportion to mileage, after 25 per cent is deducted for the originating station.

We are giving good service and our patrons are well pleased with independent telephone service. This is proven by the fact that our exchange has grown from 800 subscribers to 2,125, and for the past three and a half years we have not had a solicitor in the field.

W. 1.—*Roberts Telephone and Electric Co., Texas.*—Our profits have been a little over \$3,000 per year for the last three years. No dividends prorated, as my family own all the stock. Our net profit showed on March 31, 1905, cr. \$9,592.87 for three years. We connect with a number of independent companies in all directions from us. Cannot name them all. We prorate the tolls. If over two lines only 20c. per line; if over three lines or more, usually 15c. per line.

X. 1.—*Big Valley Telephone Co., Cal.*—I started this line nearly three years since by getting sixteen persons to agree to pay their pro rata cost of switching the line, I furnishing the 'phones and materials at cost. The total cost was \$23.65 to each one. We now have 61 members and 20 miles of line. We have on a 10-mile part of this line 51 'phones and 6 extension bells. We have no trouble in ringing as we have 3,500 ohm. 'phones. I have since worked up the system till we now have lines on same co-operative plan all over our county, exchanging connections with each other without charge.

Y. 1.—*Saratoga, California, Mutual Telephone Co., Cal.*—The Sun Set (Bell) Company refused to furnish telephones to a community that wished a certain service, so twenty of us organized a company, unincorporated, intending to buy our own 'phones, but as soon as we commenced to string wires they made us such an advantageous offer that it was better to rent their 'phones, have them maintain the central office, give us free switching to the, say, 500 'phones of San Jose, than to be a local institution. We get all the advantages of the Bell telephone at about one-half the expense, because we own our lines.

SELECT COMMITTEE ON TELEPHONE SYSTEMS

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