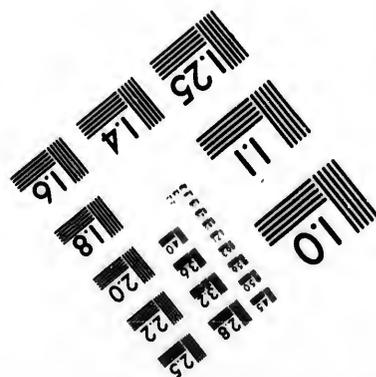
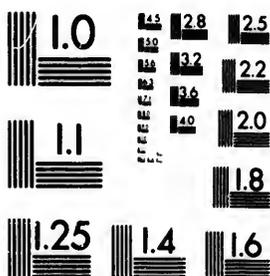


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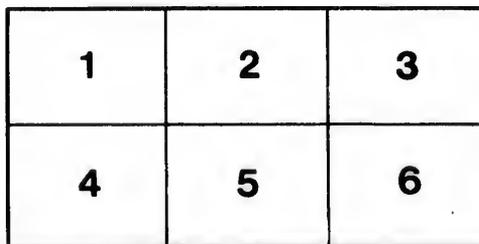
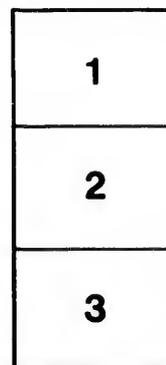
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Statement by Mr. Sandford Fleming.

The following Statement was prepared by request, with the view of submitting it to the Pacific Cable Conference when it met in London on July 8th, 1896. As the Committee adjourned until October 26th, 1896, the Canadian representatives transmitted the statement to the Chairman, the Right Honourable the Earl of Selborne, Under Secretary of State for the Colonies.

Before expressing my views generally on the Pacific cable, I am asked to relate to the Committee the circumstances which led to the proposal to span the Pacific Ocean by telegraph. I comply with the request with some hesitation as I am obliged to allude to my personal connexion with the matter. In referring to this part of the subject I shall confine my remarks to a very few brief sentences.

The projected submarine electric cable across the Pacific from the western seaboard of Canada has been before the public for many years. The proposal to extend a telegraph to Asia and Australia naturally followed the establishment of a trans-continental telegraph through the Dominion. So far back as 1863 the overland telegraph was projected in conjunction with the trans-continental railway. In that year the explorations for the eastern section of the railway, between Halifax and Quebec, were undertaken by the Imperial and Provincial Governments, and in 1871 the surveys westerly to the Pacific Ocean were commenced by the Government of the New Dominion. A few years after these dates the construction of the telegraph was proceeded with on each respective section. The Hon. Alexander Mackenzie, Premier and Minister of Public Works, was one of the first to take an active interest in the matter. Under his administration the policy was adopted of extending the telegraph from the waters of the St. Lawrence to the Pacific coast; and in 1874 the Government entered into contracts for constructing the telegraph in advance of the railway over nearly 2,000 miles of territory.

Occupying the position of engineer in chief of the whole line of railway from Halifax on the Atlantic to Vancouver on the Pacific, the establishment of the overland telegraph came under my official charge, and in connexion with my duties my attention was directed to the extension of the electric wire across the Pacific. It became plain to me that the national line of communication on which Canada was then expending so much would be incomplete without a connexion with the telegraph systems of the countries beyond the Pacific Ocean, and it became equally clear that the spanning of the Pacific by an electric cable would prove of the highest importance to the whole Empire.

In the year 1879 I was called upon to visit London on public business with the then Premier, Sir John Macdonald. I had prepared a telegraph map of the world with the projected line across the Pacific, and its various eastern and western connexions, laid down thereon. I pointed out that by spanning the Pacific it would be possible to open up a new means of communication to be employed for purposes of general commerce at much lower rates than by existing channels; that it would at once complete the electric girdle of the globe, and bring Great Britain, Canada, India, Australia, New Zealand, and South Africa into unbroken telegraphic touch of each other, entirely independent of the lines which pass through foreign European countries. Sir John Macdonald submitted the map and explained the proposal to Lord Beaconsfield, and I was led to understand that both Premier and Lord Beaconsfield were very favourably impressed with the project, and regarded it to be of great Imperial importance. I am fully warranted in saying that the Canadian Premier so regarded it until his death in 1892. Public attention was for the first time directed to a British Pacific Cable in my report as engineer in chief of the Canadian Pacific Railway, which was laid before Parliament in 1880. In this report the map referred to is reproduced on a reduced scale.

Much correspondence followed, to which it is not now necessary to allude. I will only remark that the route first projected was a northern one; this was owing to the absence of information respecting the Southern Pacific Ocean, and the impression which prevailed that physical difficulties existed which offered insuperable obstacles to the laying of a cable on a direct route between Canada to Australasia. In consequence of this impression it was designed to lay the cable from Vancouver to Japan, touching at islands in the Aleutian and Kurile groups as mid-ocean stations. From Japan the connexion with Australasia would be obtained by means of the telegraph to Singapore and the Eastern Extension Company's lines of telegraph.

Through the intervention of the Home Government, negotiations were opened with the view of securing one of the Kurile islands. Japan was asked to transfer to the British Crown one of these islands in order that the telegraph station should be under British protection. The cession of an island was not obtained, but permission to land at any suitable point in Yesso was granted, the landing to remain in charge of and under the protection of Japan. (See letter December 14th, 1880, from Sir Harry Parkes and December 23rd from Sir A. T. Galt.)

An agent was sent to Washington who, after some difficulty, obtained conditional landing privileges on one of the Aleutian islands.

On March 1st, 1881, the Government of Canada introduced certain resolutions in Parliament with the view of promoting the establishment of the cable. After discussion the resolutions were withdrawn and an Act passed incorporating a company to lay the cable. This company proved abortive, and when its charter expired, further information having meanwhile been obtained respecting the Southern Pacific, it was represented to the Canadian Government that the physical features of the Southern Ocean would admit of a cable being laid on a direct route from Canada to Australia, and that the long detour by the Aleutian Islands and Japan could be avoided. (See my letter of October 20th, 1885.)

Correspondence followed, and on June 8th, 1886, an Order in Council was passed by the Canadian Government recommending that means be taken to obtain an expression of opinion on the projected direct cable to Australia from the several Governments concerned, and to ascertain what amount of assistance each would be prepared to give, and that for this purpose a Conference of agents of the Colonies be invited to discuss the subject. The co-operation of Her Majesty's Imperial Government was likewise sought.

On November 25th, 1886, the Home Government summoned a Conference to meet in London the following to which the principal Colonial Governments were invited to send representatives. One of the questions to be specially considered was the development of telegraphic communications of utility to the Empire.

At the Colonial Conference held in 1887 the Pacific cable was specially considered, and resolutions were passed in respect thereto strongly favouring its establishment. The published proceedings of the Conference give the discussions at length.

Since the Conference of 1887 repeated efforts have been made to induce the Admiralty to make a complete survey of the bed of the ocean on the most direct route for the cable. A statement respecting the nautical survey appears in the report of the Canadian Minister of Trade and Commerce on his mission to Australia in 1893 (pages 106 to 122).

In 1888 the Canadian Government invited the Governments of Australia and New Zealand to send delegates to Canada to consider the question of telegraphic connexion and trade relations. Correspondence resulted, when it was finally agreed that delegates should be sent from Canada to Australia. In 1889 the Hon. J. J. C. Abbott (afterwards Sir John Abbott, Premier of Canada) with several other gentlemen were appointed to proceed on this mission, but the proposed federation of the Australian Colonies then actively discussed had the effect of postponing the visit. It was felt that the time was inopportune, and that it would be advisable to wait until the Colonies would be united politically.

Early in 1893 a Postal and Telegraph Conference was held at Wellington, New Zealand, at which all the Australasian Colonies were represented, and resolutions were passed urging the establishment of a Pacific cable.

In September 1893 the Canadian Minister of Trade and Commerce (the Hon. Mackenzie Bowell) was sent as a delegate to Australia to confer with the several Governments on the subject of the Pacific cable, and the development of trade. A full account of this delegation will be found in the report on the mission to Australia (see pages 66 to 106).

As an outcome of the delegation to Australia, a Conference was held in Ottawa the following year (1894). At this Conference the Imperial Government, the Canadian, the South African, and all the Australasian Governments were represented.

The published proceedings of the Conference held in Ottawa in 1894 furnish a full account of the discussions. The following resolutions were passed in respect to the establishment of the Pacific cable:—

1. *Resolved*—That in the opinion of this Conference immediate steps should be taken to provide telegraphic communication by cable, free from foreign control, between the Dominion of Canada and Australasia.
2. *Resolved*—That the Imperial Government be respectfully requested to undertake at the earliest possible moment, and to prosecute with all possible speed, a thorough survey of the proposed cable route between Canada and Australia; the expense to be borne in equal proportions by Great Britain, Canada, and Australian Colonies.
3. *Resolved*—That it is for the interest of the Empire that, in case of the construction of a cable between Canada and Australasia, such cable should be extended from Australasia to the Cape of Good Hope, and for that purpose arrangements should be made between the Imperial and South African Governments for a survey of the latter route.
4. *Resolved*—That in view of the desirability of having a choice of routes for a cable connexion between Canada and Australasia, the Home Government be requested to take immediate steps to secure neutral landing ground on some one of the Hawaiian Islands, in order that the cable may remain permanently under British control.
5. *Resolved*—That the Canadian Government be requested, after the rising of this Conference, to make all necessary inquiries, and generally to take such steps as may be expedient in order to ascertain the cost of the proposed Pacific cable, and promote the establishment of the undertaking in accordance with the views expressed in this Conference.

Acting under the instructions of the Conference of 1894, the Canadian Government invited cable manufacturing contractors and others to state the terms upon which they would be prepared to lay and maintain in efficient condition a submarine electric cable across the Pacific from Canada to the Australasian Colonies. Proposals were invited in three different forms.

I herewith submit, for the information of the Committee, the detailed general conditions under which proposals were invited (see Appendix A.); likewise the tenders subsequently received by the Canadian Government; likewise my report on the tenders, dated November 20th, 1894, made at the request of the Minister of Trade and Commerce (see Appendix B.).

Soon after the tenders were received I prepared a memorandum giving my views respecting the establishment of the cable. As these views are strengthened and confirmed by subsequent events, I beg leave to submit this memorandum to the Committee as part of the present statement.

MEMORANDUM.

Ottawa, December 1st, 1894.

The information obtained since the meeting of the Colonial Conference in July last is of a character to call for special notice.

The Conference, by the 5th resolution relating to the Pacific cable, requested the Canadian Government to take the necessary steps to urge forward the undertaking in accordance with the views expressed by the delegates and the resolutions passed by them.

On September 10th a Special Commission was appointed by the Canadian Government to proceed to Honolulu, to enter into negotiations with the Hawaiian Government for the possession of a neutral landing ground for the cable, should it be deemed expedient or desirable to touch at Honolulu or at some other island in the Hawaiian Group.

The object was to obtain a choice of routes. While it was the decided feeling of the Conference that the cable should only touch islands on the route in the possession of Great Britain, there were technical as well as commercial reasons for obtaining the use of an island within the Hawaiian archipelago.

The report on the mission submitted for the information of his Excellency the Governor-General, November 15th, points out that while there is a fair prospect of obtaining the use of an island on conditions generally acceptable, the result of the mission remains undetermined, as it awaits the action of the United States Government, owing to a treaty engagement between the two countries.

Consequently, as the matter at present stands, there is no alternative line which can be chosen. The route known as No. 1, touching at Fanning Island, is the only route open for adoption. The question of carrying the cable by way of Honolulu or some one of the Hawaiian Islands rests with the Hawaiian Government and the Government of the United States. As soon as the Hawaiian Government feels at liberty to enter into an agreement, such as that suggested during the recent mission, which would secure to them the advantages of telegraphic connexion with the markets of the world, it will probably be heard from. Any offer it may make may be considered on its merits before contracts for laying the cable be entered into.

TENDERS.

On August 6th an advertisement appeared in the London newspapers asking for tenders. Cable-manufacturing contractors and others were invited by the Canadian Government to state the terms upon which they would be prepared to lay and maintain in efficient condition a submarine electric cable across the Pacific from Canada to Australasia.

Tenders have been received from some of the best and oldest firms; they establish four important desiderata:—

1. They set at rest all questions respecting the practicability of the project.
2. They establish indisputably that Great Britain can obtain direct telegraphic communication with the British Colonies of the southern hemisphere, without having resort to any soil not British territory.
3. They clearly prove that there is no requirement for delay in order to make elaborate preliminary surveys, offers having been received from cable manufacturers of the widest experience, who, with the information and data possessed, are prepared to lay the cable and guarantee its success.
4. The tenders give definite information as to the cost of the undertaking; moreover, they furnish proof that the outlay of capital required is less than the amount which has been estimated.

The definite data thus obtained overcome all obstacles which were supposed to stand in the way of the first resolution passed by the Conference, viz., that "immediate steps should be taken to provide telegraphic communication by cable, free from foreign control, between the Dominion of Canada and Australasia." The Governments concerned are now placed in possession of information essential to the consideration of the best means necessary to the consummation of the project.

As there might be some divergence of opinion as to the best means to be taken to carry out the undertaking, the Canadian Government, in asking for proposals, intimated that offers would be received in three different forms, viz.:—

Form A.—The cable to be owned and controlled by Government, to be worked under Government authority, and to be kept in repair by the contractor for three years.

Form B.—The cable to be owned, maintained, and worked by a company under a fixed subsidy for a term of years.

Form C.—The cable to be owned, maintained, and worked by a company under a Government guarantee of traffic for a term of years.

The only actual offers received are according to Form A. That no offers were received according to Forms B, and C, may be due to the fact that it was felt desirable to predetermine the maximum charges, so as to preclude a subsidised or traffic guaranteed Pacific Cable Company amalgamating or combining with the existing company to the disadvantage of the public.

It was stipulated that under Forms B. and C. the maximum rates to be charged on messages to and from Great Britain and the Australasian Colonies shall be three shillings per

word for ordinary telegrams, two shillings per word for Government telegrams, and one shilling and sixpence for press telegrams. Trans-Pacific messages to be charged at proportionate rates. These are the rates agreed upon at the Postal and Telegraph Conference held in New Zealand in March last.

My opinion as to the best means of establishing the Pacific cable has been long given, and as early as the Colonial Conference of 1887. I submitted my views again at the recent Colonial Conference, and on occasions before and since that date I have explained the principles which in my humble judgment in view of the public interest should be followed.

I do not think it necessary to repeat the arguments I have frequently used in favour of establishing the Pacific cable as a public undertaking, so that it may remain under Government ownership and control. I beg leave to refer to my remarks which the Minister of Trade and Commerce submitted in a memorandum, dated October 11th, 1893, to the Australasian Governments, likewise to what I said at the Colonial Conference in June last (extracts are appended). On both occasions I pointed out that it would be unwise to subsidise a company, when the object could be attained more economically and far more advantageously to the public by other means. It has since been suggested as an alternative to a subsidised company (Form B.) to establish a company under a Government traffic guarantee (Form C.). That is to say, the company to be guaranteed a gross revenue from traffic for a term of years; the deficiency between actual earnings and the guaranteed earnings to be made good by the Governments each year. To my mind this plan is scarcely less objectionable than the first mentioned. Let us by way of illustration assume that a company is formed under a Government guarantee of gross traffic equal to 200,000*l.* per annum for a period of 25 years. What in this case would prevent the existing company and the new company entering into a secret pooling agreement by which it would be the policy of both to pass over the old line the great mass of the traffic, the object being to establish against the Governments each year of the 25 as large a claim as possible under the guarantee? I do not see that it would be possible to prevent the two companies amalgamating their interests in this or in some other way, and as a consequence a powerful monopoly would be built up to exact its own terms. Looking at the subject in all its bearings, the true plan, in my judgment, is to make the Pacific cable a public undertaking from its first construction. I am satisfied the more the subject is considered, it must become clear that only by the observance of the principle of State ownership will the greatest public advantage be permanently obtained. If, in establishing the Pacific cable as a public undertaking the co-operation of the Mother Country with Canada and the Australasian Colonies be secured, the most advantageous consequences will undoubtedly proceed from this arrangement. The first effect of co-operation would be in connexion with the initial cost of the work, as a joint guarantee would admit of the required capital being raised at the lowest possible rate of interest. I have only to point to the Intercolonial Railway of Canada as an illustration of the advantages attainable. In 1867 it was arranged between the Home Government and the Canadian Government to connect Quebec and Halifax by railway; for this purpose a loan of 3,000,000*l.* bearing the Imperial guarantee was effected at a low rate of interest, and by this means the Home Government rendered substantial aid in the construction of the National Railway of Canada without in any way drawing on the Imperial Exchequer. It can be clearly established that by the same principle of co-operation in the case of the Pacific cable undertaking, to which so much importance has been attached as a means of bringing in closer affinity the distant portions of the Empire with the Mother Country, it can be successfully effected without in any way taxing the people of Great Britain, of Canada, or the Australasian Colonies.

Assuming that the principle of co-operation and State ownership be assented to, the capital may be raised by one of three modes, viz. :—

1. The whole amount may be raised by the Canadian, the Australian, and New Zealand Governments, and the interest in each case guaranteed by the Imperial Government; the relative liability to be borne by the Imperial, Canadian, and Australasian Governments, to be apportioned by mutual agreement.
2. The whole capital may be raised by the Imperial Government; the payment of a sum equal to the interest on such portion of the capital as may be agreed upon, to be guaranteed by Canada and the Australasian Colonies in proportion to be determined.
3. The capital may be raised on securities issued through the medium of an Imperial Colonial Cable Commission; a joint guarantee for the payment of interest to be given by the Imperial, the Canadian, and the Australasian Governments.

It is obvious that by either of these modes, the whole of the capital may be obtained at the very lowest rate of interest. The interest would be a first charge against revenue, which it can be shown will be ample for all purposes, but as it is expedient to provide for every contingency, provision should be made for a deficit. The proportions in which any such possible deficit would be made up by each respective Government would be a matter to be determined by agreement.

As several distinct Governments will be concerned in the project, it may be advisable, in order to meet the difficulty of joint ownership, to create an organisation in which the administration would be centralised; an Imperial Colonial Cable Commission or trust, established by the authority of the several Parliaments. It might consist of three persons, representing the Imperial, the Canadian, and the Australasian Governments respectively, with authority determined by statutes, to obtain capital and to assume responsibility for establishing the work and carrying it on when completed.

Among the tenders received is an offer from an old-established and reliable firm to lay the cable on route No. 1, the British route by Fanning Island, for the sum of 1,517,000*l.* This price includes maintenance and repairs for three years after the whole line shall have been completed and put in operation; consequently there would be no disbursements for these services during this period to be met by the earnings of the telegraph. The cost of working, and interest on capital, would be the only charges against revenue during the first three years after the cable shall have been laid.

The cost of working has been estimated by Mr. Alex. Siemens at 24,000*l.* for the operating staff and office expenses at each station. If we add to this 25 per cent. for management, the whole cost of operating would be 30,000*l.* per annum.

The interest charges on the capital expended will depend upon the value the securities may obtain in the money market. These securities bearing the guarantee of the Imperial, Canadian, and Australasian Governments would certainly be rated in no way inferior to Consols. Admitting this view, the rate of interest may be estimated at 2½ per cent.

Should the most costly of the several routes which have been spoken of be adopted, that is to say, the route by Fanning Island, with branches to New Zealand as well as Australia, I am unable to see with this tender before us, offering to complete it in every respect for 1,517,000*l.*, that the capital to be raised need exceed 1,600,000*l.* This capital raised at 2½ per cent. gives 40,000*l.* as the total interest to be met yearly. As it is advisable in forming an estimate of this kind to make full and complete provision for unforeseen contingencies of whatever kind, 10 or 12 per cent. may be added. In this view, 45,000*l.* may be considered the maximum interest charge, to which, if we add 30,000*l.* for working expenses, we have the sum of 75,000*l.* as the total fixed charges to be met by revenue in each of the three years after the cable shall have been opened for business.

REVENUE.

The next question which demands an answer is: What constitutes a fair estimate of revenue?

The subject of revenue has been diligently considered in all its bearings, and I have endeavoured to arrive at fair and reasonable estimates; these estimates have been based on carefully collated information respecting the existing telegraph business which has been steadily and rapidly growing for nearly 20 years. I have submitted the views formed to men of experienced judgment in such matters, and of perfectly unbiased minds. It is with confidence, therefore, that I refer to these estimates, supported, as they are, by the opinions of gentlemen in high official stations, whose sense of responsibility necessitates the utmost care and caution in arriving at conclusions. Along with my own views on the subject of revenue I have much satisfaction in appending letters referring thereto to the following gentlemen:—

1. Mr. Geo. Johnson, Statistician to the Dominion Government, Ottawa.
2. Mr. J. M. Courtney, Deputy Finance Minister, Ottawa.
3. Mr. W. Hepworth Mercer, Colonial Office, London.

The Dominion statistician, after an examination of the official returns, gives precise information respecting the volume of telegraph business between Australasia and Europe; he likewise presents evidence of its rapid growth, of which the following is an indication:—

1875, total words transmitted	-	-	-	-	235,160
1875 to 1880, increase in words transmitted	-	-	-	-	118,188
1880 to 1885	do.	do.	-	-	184,007
1885 to 1890	do.	do.	-	-	289,923
1890 to 1893	do.	do.	-	-	574,015
1893, total number of words transmitted	-	-	-	-	1,401,293

This officer confirms my statements as to the volume of business, and more than bears out my estimate of the share of traffic which must become tributary to the Pacific cable.

It will be seen from the letters of the other gentlemen that, after a careful examination of the data, they fully substantiate, as far as it is possible to do so, the estimates of probable revenue.

In my letter on this subject addressed to the Honourable the Minister of Trade and Commerce of the 20th July 1894, I have set forth in detail the reasoning which justifies the view I take with respect to the business to be done by the Pacific cable, and I venture to think that the estimates submitted will be considerably within the actual revenue when it comes to be ascertained. According to these estimates the gross earnings in 1898, the first full year that the cable could be in operation, reckoned at the low tariff of two shillings per word, would amount to 110,000*l.*; for the year 1899, 126,500*l.*; and for the year 1900, 143,000*l.* If from these estimated yearly earnings we deduct in each case the fixed charges for interest and working expenses of 75,000*l.*, we would have a surplus in 1898 of 35,000*l.*; in 1899 of 51,500*l.*; in 1900 of 68,000*l.*, showing a total surplus of 154,500*l.* for the first three years the telegraph would be in operation. During the whole of this period the cable would be maintained by the contractor, and any expense incurred in effecting repairs would form part of the contract sum to be paid to him.

After the third year the cost of maintaining the cable would be a charge against surplus earnings, which I shall show would be ample for the purpose, and would, moreover, leave a considerable balance each year to be carried to a reserve fund.

The following table covers the remaining seven of the first 10 years after the opening of the telegraph for traffic, and is computed on the principles set forth in the appended papers. The cost of repairs and maintenance, usually estimated at 6*l.* per mile, would amount to 43,000*l.* per annum; for this service I have allowed 50,000*l.*, which, added to interest and working expenses, increases the charge against revenue to 125,000*l.* per annum.

	Gross Earnings.	Charges.	Surplus.
	£	£	£
Surplus for the three first years	—	—	154,000
1901	150,500	125,000	34,500
1902	170,000	125,000	51,000
1903	102,500	125,000	07,500
1904	209,000	125,000	84,000
1905	225,500	125,500	100,500
1906	242,000	125,000	117,000
1907	258,500	125,000	133,500
Total surplus in 10 years			£742,000

The estimate shows an increasing surplus year by year which is fully warranted by the data. That a surplus is a probable contingency is due mainly to the assumed low interest on capital; and the low rate of interest, so important a factor in the calculations, presupposes the identification of the Imperial Government with the Governments of Canada and the Australian Colonies in this Imperial-Colonial project. It is scarcely necessary to add that although there is no probability of loss, or insufficiency of revenue to meet all charges, it is indispensable that the precise responsibility attached to the several Governments which co-jointly undertake the work should be clearly defined. I do not take upon myself to suggest the proportion of liability each may bear, as this must be a matter for diplomatic arrangement hereafter.

It has been my object to show by the facts I have presented and the figures I have produced, that a mutual effort, on the part of Great Britain and the two great divisions of the Colonial Empire, can establish the Pacific cable with ease, and practically without cost to the taxpayer in either country.

That the estimates I have presented will be borne out by actual results I feel perfectly satisfied. I have based them chiefly on the business which already exists between Australasia and England, and which is year by year increasing with a very rapid growth. I have taken little or no account of the traffic which undoubtedly will spring up across the Pacific when the means of telegraphing at low rates is provided; a new traffic the whole of which will be tributary to the new line. I am satisfied that my estimates are reasonable and reliable, it has certainly been my aim to submit them in a form which time will substantiate and confirm. The first effect of the Pacific cable will be to confer a benefit on the merchants of Great Britain and Australasia, and, indeed, on the whole of that section of the community in both countries who resort to the use of the telegraph. This is obvious from the mere reduction in rates alone. The reduction from four shillings and ninepence to three shillings per word will, within the first year after the Pacific cable shall be open, effect a gross saving in Australasia and the Mother Country of 190,000*l.* This saving will be repeated annually and will continually be augmented by the growth of business.

Canada may look for gains of another kind and in another way. As Miss Flora Shaw has recently so well pointed out, Canada "commands the commercial high road of two hemispheres," and perceiving the value of the position has taken means to secure its possession. But commerce can nowhere be developed without the ordinary facilities, and the telegraph is in this age the indispensable adjunct, and in some notable instances the actual pioneer of commerce.

The mere laying of an electric cable between two opposite shores of an ocean has in our time become a comparatively commonplace affair, but to connect Canada with Australasia and New Zealand by telegraph has more than ordinary significance. The contemplated telegraph would greatly strengthen the commercial position of the lands connected by it, and would constitute a common between sister colonies now widely separated. In completing the "Electric Girdle" of the Empire the effect of the Trans-Pacific cable would be far reaching, and its influence would be incalculable. Not the least valuable consequence of the proposal submitted would be its high moral and political import. The co-operation of Great Britain, Canada, and Australasia in establishing this telegraphic connexion would present itself to the world as an ideal "co-partnership" unparalleled in history, and it would furnish a striking development of Britannic unity, perhaps foreshadowing still more important developments in coming years.

SANDFORD FLEMING.

The questions which the Committee are requested to consider and report their views upon are as follows:—

- 1 Is the laying of a cable between Canada and the Colonies of Australasia practicable from a technical point of view?
- 2 If so, what route should be selected for the cable?
- 3 What will be the cost (a) of laying, (b) of maintaining the cable, (c) of the annual working expenses?
- 4 What revenue will arise from the traffic which may be expected to pass over the cable?
- 5 Should the cable be owned and worked by Government or by a subsidized private company?
- 6 If the cable were to be national property, what would be the proper method of management and administration?
7. What should be the form of contract offered to a contractor for its construction?

I beg leave respectfully to submit the following remarks, having reference to the first four questions. I have already expressed my views on question No. 5 decidedly in favour of Government ownership. I do not presume to offer any opinion on the financial question or the method of administration.

1. Doubts have been raised as to the possibility of passing messages through the section between Vancouver and Fanning Island on account of its unprecedented length, the distance being 3,240 miles, to which, if sufficient allowance for slack be added, the length of cable required will be about 3,600 miles, a length considerably exceeding that of any cable yet laid. Through the courtesy of Mr. Frederick Ward, manager in England of the Commercial Cable Company, I have had the question tested practically within the past few days. At my request Mr. Ward caused experiments to be tried through two of the main cables of his Company. They were looped at Canso (Nova Scotia) so as to form a continuous cable line from Waterlille (Ireland) to Canso and back. The experiments were perfectly successful, messages were passed through the whole length of cable measuring 4,733 nautical miles, fully 1,100 miles greater than the Vancouver-Fanning cable; the result of this trial proves conclusively that there will be no difficulty in connexion with the Pacific cable which cannot be overcome. The best possible evidence that the Pacific cable is practicable from a technical point of view is the fact that several of the most eminent cable manufacturing contractors in the world have offered to furnish the cable, of a given capacity for conveying messages, to lay it on the bed of the ocean, and maintain it in efficient working condition for three years for a specific sum.
2. There is only one route open for adoption, viz, that known as the Fanning Island route. There is no immediate prospect of any other route being available.
3. The lowest tender for manufacturing and laying the cable, on the Fanning Island route, and maintaining it in perfect working condition for three years, is that of the India-Rubber, Gutta-Percha, and Telegraph Works Company. This firm asks 1,517,000*l.* for a 12-word per minute cable, 1,672,000*l.* for a 15-word per minute cable, and 1,880,000*l.* for an 18-word per minute cable, maintenance for three years being included in each case (see Appendix B).
4. The revenue to arise from the traffic which may be expected to pass over the cable would, I firmly believe, exceed the estimates submitted by me. I have estimated that there will be a surplus of 742,000*l.* in the first 10 years over and above interest on capital, working expenses, repairs and maintenance. The surplus would augment year by year in an increasing ratio, and would be placed in reserve for renewals at some remote period, or would otherwise be dealt with as the Governments may determine.

I have the greatest confidence in the estimates submitted by me, because I believe them to be based on correct data and calculated on sound principles. I have certainly striven to make them moderate, reasonable, and reliable. That the estimates are all that I claim for them, I beg leave to point out that they have been so far confirmed in a most striking manner.

First, with respect to cost. In my letter written at Sydney, New South Wales, October 11th, 1893, and transmitted for the information of each of the Australasian Governments (see Mission to Australia, page 69), I placed the cost of the Fanning Island route at 1,978,000*l.* Tenders for laying the cable on that route were received at Ottawa in November 1894, and the highest prices in the tender I have mentioned, range from 1,517,003*l.* to 1,880,000*l.*, and those prices include the cost of maintaining the cable for three years.

Second, with respect to traffic. In the same letter of October 11th, 1893, I estimated that the total number of words which may be expected to be telegraphed between Australasia and Europe would be, in 1894 and 1895, 1,275,191 and 1,453,716 respectively (see page 71). Through the courtesy of the Postmaster-General of New South Wales, I have been placed in possession of the actual number of words transmitted in each of these years, viz, 1,323,241 in 1894, and 1,948,369 in 1895. These authentic returns establish conclusively that the actual business done has exceeded my estimate; that there has been an excess of traffic equal to 4 per cent. in 1894 and no less than 34 per cent. in 1895.

With respect to the proportion of the traffic which would fall to the share of the Pacific cable, I beg leave to submit a letter addressed to the Minister of Trade and Commerce, Ottawa 18 months ago, and I ask that it may be held as part of the statement which I now make.

DEAR SIR,

Ottawa, December 28, 1894.

REFERRING to our conversation this morning on the subject of the Pacific cable, and more especially on the question of probable revenue.

The point which you rightly considered of importance relates to the sources of revenue, and you asked, upon what grounds I assumed in my estimates that the Pacific cable would obtain one half the telegraph business between Australasia and Europe? You suggested as a possibility, from the fact that the existing lines of telegraph had been long established, that there would be business relations between the Eastern Extension Telegraph Company and the owners of the Australasian land lines, perhaps an understanding or agreement, of such a character as would give the existing cable company exclusive control of European traffic collected throughout the Colonies.

In answer to this I have only to say that the land telegraphs in each one of the seven Australasian Colonies are owned and operated by the Governments under the Departments of Posts and Telegraphs. There cannot be any agreement of the kind referred to at present existing, and there is no probability of one being entered into. On the contrary, if the Pacific cable be established as proposed, through the co-operation of the Australasian Governments with Canada and Great Britain, the Colonies would have a direct interest in the success of the new line, and every telegraph and post office throughout Australia and New Zealand would practically become offices or agencies of the Pacific cable. It is easy to be seen, therefore, that there would be a tendency to send European telegraph traffic collected at these offices (unless specially directed otherwise) by way of the Pacific cable in preference to the old route. There can be no doubt whatever that with the Pacific cable established as proposed on the principle of State ownership, the several Governments at the sources of traffic would have it in their power to direct telegraph business over the new line as they may desire. It does not follow that the power in the hands of the Governments would be unduly exercised to the injury of the Eastern Extension Company. No doubt a division of the traffic would for a time diminish the profits of that company, but the establishment of the new route would stimulate telegraphy above its normal growth, and in a very few years the volume of business would be doubled, so that an equal division would restore to that company as much business as it now controls.

For these reasons, and the additional reason that the Pacific cable will unquestionably command all the telegraph traffic between North America and Australasia, I feel more than warranted in basing the estimates of revenue on half the European-Australian traffic. I feel quite satisfied that the more the question is looked into my estimates will be found moderate, and considerably on the safe side. For my own part I feel perfectly assured that, if the cable be laid as a Government work, the estimates of revenue will be borne out by actual results, as fully as estimates of cost have been verified by the tenders received.

Hon. W. B. Ives,
Minister of Trade and Commerce.

Yours, &c.
SANDFORD FLEMING.

In the foregoing letter I have referred to the Eastern Extension Telegraph Company, and pointed out that its business would be diminished by the successful operation of the Pacific cable. The latter, however, would so stimulate telegraphy that in a few years the proportion of traffic which would fall to the share of the existing line would, I have reason to think, equal the volume of business which at present it commands. It is a question for the Governments to consider how far the company may be entitled to claim that its reasonable profits should be made good meanwhile. I have on all occasions recognised that every consideration should be extended to the company whose enterprise established the pioneer cable to Australasia and first brought the Colonies into telegraphic connexion with the Mother Country.

It is on higher than competitive grounds that a Pacific cable is advocated, and it is impossible to admit that the existence of the Eastern Extension Telegraph must for ever prevent the establishment of a national line across the Pacific. The discussions at the Colonial Conferences of 1887 and 1894 go to show that the Pacific cable is demanded not only by the growing requirements of trade and commerce, but as an essential feature in the development of the telegraphic system of the Empire.

DOCUMENTS submitted for the INFORMATION of the COMMITTEE by MR. SANDFORD FLEMING,
July 8th, 1896.

- | | |
|--|---------------------|
| 1. General conditions under which tenders for laying the Pacific cable were invited.—App. A. | |
| 2. The tenders received by the Canadian Government and letters connected therewith:— | |
| (a.) Letter from Sir John Pender - - - - | October 19th, 1894. |
| (b.) " Mr. W. Sharpley Seaton - - - - | October 19th, 1894. |
| (c.) " the Chairman, Telegraph Construction and
Maintenance Company - - - - | October 19th, 1894. |
| (d.) Letter and tender of Mr. Francis A. Bowen - - - - | October 20th, 1894. |

Not printed.

* NOTE.—The tenders and letters under this heading are placed in the custody of the Colonial Office for reference and not for publication. As they were received by the Canadian Government in the first place, they are to be returned when required.

(e.) Tender of Siemens Bros. & Co.	-	-	-	October 20th, 1894.	} Not printed.
(f.) " Fowler-Waring Cable Company	-	-	-	October 19th, 1894.	
(g.) " W. T. Henley Telegraph Works Company	-	-	-	October 19th, 1894.	
(h.) " India-Rubber, Gutta-Percha, and Telegraph Works Company	-	-	-	October 19th, 1894.	
" India-Rubber, Gutta-Percha, and Telegraph Works Company	-	-	-	November 22nd, 1894.	
3. Report on tenders by Sandford Fleming	-	-	-	December 24th, 1895.	} App. B.
Additional report on tenders by Sandford Fleming	-	-	-	December 11th, 1894.	
4. State ownership and revenue:—					} App. C.
(a.) Extracts from Mr. Fleming's address	-	-	-	July 2nd, 1894.	
(b.) " " memorandum	-	-	-	October 11th, 1893.	
(c.) " " letter	-	-	-	July 20th, 1894.	
(d.) Letter of George Johnson, Dominion Statistician, Ottawa	-	-	-	November 29th, 1894.	
(e.) " J. M. Courtney, Deputy Minister of Finance, Ottawa	-	-	-	December 1st, 1894.	
(f.) " W. Hepworth Mercer, Colonial Office, London	-	-	-	October 11th, 1894.	

APPENDIX A.

(Advertisement.)

THE PACIFIC CABLE.

The Government of Canada invites cable manufacturing contracting and others to state the terms upon which they will be prepared to lay, and maintain in efficient condition, a submarine electric cable across the Pacific from Canada to the Australasian Colonies.

General conditions under which the offers are to be made may be ascertained on application at the Department of Trade and Commerce, in Ottawa, or at the office of the High Commissioner for Canada in London.

Offers addressed to the undersigned will be received by him until November 1st, 1894.

MACKENZIE BOWELL,

Minister of Trade and Commerce.

Ottawa, August 6th, 1894.

GENERAL CONDITIONS.

1. At the Colonial Conference, held in Ottawa between June 28th and July 8th (inclusive), a series of resolutions were passed relating to the Pacific cable (copies appended). It was resolved, among other things, that immediate steps should be taken to provide direct telegraphic communication between the Dominion of Canada and the Australasian Colonies. At the unanimous request of the delegates present at the Conference, the duty of giving effect to the resolutions passed, and the views expressed, devolved upon the Canadian Government.

2. In order to obtain definite data to enable all the Governments concerned to consider and adopt the best means of carrying out the undertaking, the Canadian Government deems it expedient to invite proposals for establishing the cable, in three different forms, viz.:

FORM A.—*The cable to be owned and controlled by Government; to be worked under Government authority, and to be kept in repair by the contractor for three years.*

Cable manufacturing contractors to state the lowest cash price for which they will be prepared to supply and lay the cable, the terms and conditions upon which they will guarantee its permanency, and the annual payment for which they will maintain it in efficient condition for three years after the whole line shall have been completed and put in operation.

FORM B.—*The cable to be owned, maintained, and worked by a subsidised Company.*

The contracting parties to find the capital, establish, work, and maintain the cable in efficient condition, for a subsidy to be paid to them annually for a term of years, by the contributing Governments. The offers to state the amount of subsidy to be paid yearly, and the number of years it is to be paid. The maximum rates to be charged on messages to and from Great Britain and the Australasian Colonies shall be as follows:—Three shillings per word for ordinary telegrams; two shillings per word for Government telegrams; and one shilling and sixpence for press telegrams. The charges on messages between Canada and the Colonies to be proportionate.

FORM C.—*The cable to be owned, maintained, and worked by a company under a Government guarantee.*

The contracting parties to find the capital, establish, work, and maintain the cable in efficient condition. The offers to state what guarantee of gross revenue will be required; the difference between gross earnings and the amount guaranteed to be made good each year to the Company by the contributing Governments. The rates to be charged for the transmission of messages to and

from Great Britain and the Australasian Colonies shall be as follows:—Three shillings per word for ordinary telegrams; two shillings per word for Government telegrams; and one shilling and sixpence per word for press messages. Trans-Pacific messages to be charged at proportionate rates. The tariff of charges to be approved and not changed unless by governmental sanction.

ROUTE OF CABLE.

Offers will be received for laying the cable on each of the routes described as follows:—

Route No. 1.

Commencing at Vancouver Island the cable to extend to Fanning Island, thence to a suitable island in the Fiji Group. From Fiji to Norfolk Island, and at that point the route will bifurcate to the northern part of New Zealand, and to a convenient point near the boundary between New South Wales and Queensland.

	Knots.
Vancouver Island to Fanning Island - - - - -	3,232
Fanning Island to Fiji - - - - -	1,715
Fiji to Norfolk Island - - - - -	1,022
Norfolk Island to New Zealand - - - - -	415
Norfolk Island to Tweed Mouth, near boundary New South Wales and Queensland - - - - -	761
Total - - - - -	<u>7,145</u>

Route No. 2.

From Vancouver Island the cable to be laid to a small unoccupied island indicated on the charts as Necker Island, situated about 240 miles westward from the most western island of the Hawaiian Group and about 400 nautical miles from Honolulu. From Necker Island the cable to extend to Fiji, and thence, as in route No. 1, to New Zealand and Australia. On the section between Necker and Fiji possibly Howland Island or Baker Island may be available for a mid-station, but the exact position has not been ascertained.

	Knots.
Vancouver Island to Necker Island - - - - -	2,431
Necker Island to Fiji - - - - -	2,546
Fiji to Norfolk Island - - - - -	1,022
Norfolk Island to New Zealand - - - - -	415
Norfolk to Tweed Mouth - - - - -	761
Total - - - - -	<u>7,175</u>

Route No. 3.

As in route No. 2 the cable to extend from Vancouver Island to Necker Island, thence to Onoatua or some one of the eastern islands of the Gilbert Group. From this station in the Gilbert Group two branches to extend, one to Queensland and the other to New Zealand. The Queensland branch to touch at San Christoval Island in the Solomon Group and terminate at Bowen, connecting at that point with the land lines, easterly to Brisbane and Sydney, westerly to the Gulf of Carpentaria.

	Knots.
Vancouver Island to Necker Island - - - - -	2,431
Necker Island to Onoatua (in Gilbert Group) - - - - -	1,917
Onoatua to Fiji - - - - -	980
Viti Levu to New Zealand - - - - -	1,004
Onoatua to San Christoval (Solomon Group) - - - - -	953
San Christoval to Bowen, Queensland - - - - -	980
Total - - - - -	<u>8,265</u>

Route No. 4.

As in routes Nos. 2 and 3 the cable to be laid from the northern terminal point to Necker Island. From Necker Island to extend in a direct course to Bowen, touching at Apamana, a central island in the Gilbert Group, and at San Christoval, of the Solomon Group.

	Knots.
Vancouver Island to Necker Island - - - - -	2,431
Necker Island to Apamana (Gilbert Group) - - - - -	1,865
Apamana to San Christoval (Solomon Group) - - - - -	970
San Christoval to Bowen, Queensland - - - - -	980
Total - - - - -	<u>6,246</u>

Route No. 5.

As in routes Nos. 2, 3, and 4, the cable to run from Vancouver Island to Necker Island; from Necker Island to Fiji, thence to Jersey, thence direct to New Zealand.

	Knots.
Vancouver Island to Necker Island - - - - -	2,431
Necker Island to Fiji - - - - -	2,546
Fiji to New Zealand - - - - -	1,150
Total - - - - -	6,127

Route No. 6.

From Vancouver Island the cable to extend to Honolulu; from Honolulu to Fiji, and from Fiji to follow route No. 1 to New Zealand and Australia. On the section between Honolulu and Fiji one of the Phoenix Islands may possibly be found available for a mid-station.

	Knots.
Vancouver Island to Honolulu - - - - -	2,280
Honolulu to Fiji - - - - -	2,600
Fiji to Norfolk Island - - - - -	1,022
Norfolk Island to New Zealand - - - - -	415
Norfolk Island to Tweed Mouth - - - - -	761
Total - - - - -	7,078

Route No. 7.

From Vancouver Island the cable to extend to Honolulu; from Honolulu to Onoatua of the Gilbert Group; from Onoatua to San Christoval of the Solomon Group; from San Christoval to Bowen.

	Knots.
Vancouver Island to Honolulu - - - - -	2,280
Honolulu to Onoatua - - - - -	2,080
Onoatua to San Christoval - - - - -	953
San Christoval to Bowen - - - - -	980
Total - - - - -	6,293

Route No. 8.

From Vancouver Island the cable to extend to Honolulu; from Honolulu to Fiji, possibly with a mid station on this section if a suitable island be available. From Fiji the cable to run direct to New Zealand.

	Knots.
Vancouver Island to Honolulu - - - - -	2,280
Honolulu to Fiji - - - - -	2,600
Fiji to New Zealand - - - - -	1,150
Total - - - - -	6,030

The northern terminus of each route is on Vancouver Island. The cable will land at some suitable point to be determined, probably at Port San Juan, near the entrance of the strait of San Juan, or at Barclay Sound.

The several routes above described are shown generally on the accompanying map of the world. The distances given in each case are believed to be approximately correct, but are not guaranteed. Parties offering to provide and lay the cable must make their own calculations of distances and satisfy themselves.

Character of Cables.—Proposals will describe the type of cables intended to be used on each section, and state the weight of conductors and insulators per knot in each case.

Shore Ends.—The best description of landing cables must be employed at terminal points and all mid-stations. The proposals will describe the character, weight, and length of shore-end cables to be used in each case.

Speeds.—The calculated speeds for each section of the cable shall in no case be less than 12 words per minute.

Stations and Equipments.—Each offer will describe the character and approximate cost of buildings, instruments, &c., to be furnished for each terminal and mid-ocean station.

Repairs and Maintenance.—Proposals will state the provision intended to be made for repairs and maintenance, the number, tonnage, and value of repair steamers. In the case of offers made under Form A., the steamers and stores will be found by, and remain the property of the contractor, until the end of three years from the completion of the cable, to be then taken over at a valuation as may be stipulated and agreed.

Surveys.—Charts may be seen at the Department of Trade and Commerce, Ottawa, and at the office of the High Commissioner for Canada in London, showing the soundings which have been made from time to time in the Pacific as far as recorded. It is expected that additional soundings will shortly be made, but parties making proposals must assume all risks, and in the event of a contract being entered into for establishing the cable, the contractors must themselves take means to find the most suitable points for landing the cable at all terminal and mid-ocean stations. It will be understood that in each instance the landing privileges are to be secured by the contributing Governments.

Time of Completion.—The time limited for the completion of the cable is three years, from the date of the contract; but as it is desirable to have telegraphic communication established as soon as practicable, proposals may state a shorter period; or the same parties may make two offers, one on the basis of three years, the other on the shortest period within which the undertaking may be accomplished.

PROPOSALS.

Proposals based on the above general conditions, and in either of the three forms set forth, to be addressed to the Minister of Trade and Commerce, and delivered at his department in Ottawa, on or before the first day of November 1894.

Department of Trade and Commerce,
Ottawa, August 6th, 1894.

4. *Resolved.*—That in view of the desirability of having a choice of routes for a cable connexion between Canada and Australasia, the Home Government be requested to take immediate steps to secure neutral landing ground on some one of the Hawaiian Islands, in order that the cable may remain permanently under British control.

5. *Resolved.*—That the Canadian Government be requested, after the rising of this Conference to make all necessary inquiries, and generally to take such steps as may be expedient in order to ascertain the cost of the proposed Pacific Cable, and promote the establishment of the undertaking in accordance with the views expressed in this Conference.

APPENDIX B.

REPORT ON TENDERS.

SIR,

Ottawa, 20th November 1894.

I HAVE the honour to report on the replies received by you on the 1st inst., in response to the public advertisement of the Government of Canada, inviting cable manufacturing contractors and others to state the terms upon which they would be prepared to lay and maintain in an efficient condition a submarine electric cable across the Pacific from Canada to the Australasian Colonies.

1st. Sir John Pender, Chairman of the Eastern Extension Telegraph Company, 50, Old Broad Street, London, addressed a letter to you, dated 19th October 1894, in which he represented (1) that full information respecting the depth and nature of the sea bed has not been obtained, and in consequence reliable opinions cannot be formed; (2) that Mr. Alex. Siemens' estimates of revenue are fallacious and that my own estimates are not much more reliable; (3), that a cable laid as intended would be quite useless and would prove a commercial failure; (4) that a telegraph established across the Pacific as proposed would result in a loss of at least 90,000*l.* a year to the company he represents. Sir John Pender, in short, discourages in every possible way the attempt to span the Pacific by a Canada-Australian telegraph, he states, however, that he will be most happy to enter into negotiations for accomplishing the work if sufficient inducements be offered him, and he pleads that his company "will be able to undertake the work on better terms than could be offered by any other company."

2nd. Mr. W. Sharpley Seaton, 57½, Old Broad Street, London, likewise addresses you 19th October 1894. This gentleman sets forth at some length the great necessity which exists for a detailed survey. He considers this to be of primary importance and counsels delay until such a survey be made.

3rd. The Chairman of the Telegraph Construction and Maintenance Company, 38, Old Broad Street, London, writes 19th October 1894. He criticises generally the proposals which have been published by the Canadian Government, and raises objections to the conditions laid down for intending contractors. He objects to each one of the eight routes specified, and proposes a new route, taking in Honolulu and Samoa. On this route the firm he represents would lay a cable of a good type and weight between Vancouver and New Zealand (only) for 1,870,000*l.* This amount, however, does not include maintenance for three years or for any period. Nor does it include a branch cable to Australia. He urges as a first step that the line should be sounded over its entire length on the exact route chosen, and he states that his firm cannot undertake to guarantee the repair of the cable until a further investigation has been made of the sea bottom over which the cable is to be laid.

The writer of this communication estimates that a cable could be laid on route No. 8 for about 1,300,000*l.*, but this, he states, would depend upon its proving possible to find an available and safe mid-station between Honolulu and Fiji. He further states that maintenance on this or any route cannot under present conditions be guaranteed by this firm.

4th. Mr. Francis A. Bowen, 3, Tokenham Buildings, King's Arms Yard, London, sends a proposal dated 20th October 1894. This gentleman for himself and his associates offers to construct and submerge a cable on any route which may be selected for 20*l.* per knot of 6082*ft.* 6*in.* The offer presents itself to me as being in an exceedingly ambiguous form, as there is nothing to show what the total cost may be on any route, and there is no explanation as to how the total cost is to be ascertained, whether the number of knots shall be reckoned on the actual distance between stations, or on the length of cable payed out; nor is it clear that the price stated includes the cost of buildings, instruments, &c., more-over, and to mention the most serious objection to this offer is the specification of the core to be used; the weight of copper and gutta-percha appears to be designed to be the same throughout without reference to the length of sections to be spanned. As specified the core would be too light for the long section and unnecessarily heavy for the shorter sections. Mr. Bowen places the additional charge for maintenance at 237,000*l.* for the three years.

5th. The India-rubber, Gutta-percha, and Telegraph Works Company refer to the invitation for proposals under Form "C," that is, on the basis of a traffic guarantee. This company is unable to make a firm offer under this form; they, however, submit an estimate in the following words:— "For your guidance, we may state that in our opinion a 25 years' annual guarantee, payable quarterly of the following amounts, as placed against the respective routes should suffice for the effective establishment and maintenance of the cable."

	£
Route No. 1 - - - - -	226,000
Route No. 2 - - - - -	217,000
Route No. 3 - - - - -	215,000
Route No. 4 - - - - -	153,000
Route No. 5 - - - - -	202,000
Route No. 6 - - - - -	199,000
Route No. 7 - - - - -	184,000
Route No. 8 - - - - -	197,000

There is no other reference in any of the replies received to the establishment of the trans-Pacific telegraph under a Government traffic guarantee (Form C.) and none whatever to the formation of a company to carry out the undertaking under a Government subsidy (Form B).

With respect to the matter of soundings referred to in the first, second, and third communications above noticed, I would only remark that it would require soundings to be taken in a very comprehensive manner to give even an approach to a full knowledge of the sea-bed, and that it would involve much cost and prolonged delay. However valuable such a survey would undoubtedly prove in a scientific point of view, it is by no means indispensable to the laying of a cable or to its effectual maintenance. Cables have been laid and successfully laid when no such comprehensive surveys have been effected; indeed, the best information goes to show that a large proportion of cables at present submerged have been laid without any precise and detailed knowledge of the sea-floor. The majority of such cables are, I believe, in good working order, and few of them have ever required any great expenditure for repairs. Be it that as it may, the Government is now in possession of definite offers from firms of the highest standing and widest experience to lay the Pacific cable on any one of the eight routes specified. All the soundings required for securely and successfully laying the cable are to be made by the contractors themselves during the time occupied in manufacturing it, and so satisfied are they on this and all other points that they are quite ready to enter into contract to complete the undertaking and guarantee its maintenance for three years for a definite sum.

There are four regular tenders according to Form "A," accompanied by ample details and full information on all essential points. After carefully and critically examining and comparing them, I beg leave to submit the following abstract:—

Regular Tenders.

Form A. The cable to be owned and controlled by Government; to be worked under Government authority; and to be kept in repair by the contractor for three years.

No. 1. From Siemens Bros. & Co., 12, Queen Ann's Gate, Westminster, London.

No. 2. From the Fowler-Waring Cable Co., North Woolwich, London.

No. 3. From the W. T. Henley Telegraph Works Co., 27, Martin's Lane, Cannon Street, London, and North Woolwich.

No. 4. From the India-rubber, Gutta-percha, and Telegraph Works Co., 106, Cannon Street, London, and Silvertown.

These tenders are based on the general conditions prescribed; they include in each case the manufacture and laying of the cable; the providing of station buildings and instruments for the use of the operating staff; likewise the maintenance and repair of the entire length of the cable for a period of three years after the whole line shall have been completed and put in operation.

The parties tendering are prepared to enter into contract for the sums placed opposite the name of the firms, in each case as follows:—

Route No. 1.

Commencing at Vancouver Island with mid-stations at Fanning Island, Fiji, and Norfolk Island, and with branches from Norfolk Island to New Zealand and New South Wales—complete, including maintenance for three years in each case.

	£
No. 4. The India-rubber, Gutta-percha, and Telegraph Works Co.	1,517,000
No. 3. W. T. Henley's Telegraph Works Co.	1,826,000
No. 1. Siemens Bros. & Co.	2,170,000
No. 2. Fowler-Waring Cable Co.	2,360,000

Route No. 2.

Commencing at Vancouver Island with mid-stations at Necker Island, Fiji and Norfolk Island, and with branches to New Zealand and New South Wales—complete, including maintenance for three years in each case.

	£
No. 4. The India-rubber, Gutta-percha, and Telegraph Works Co.	1,316,000
No. 3. W. T. Henley's Telegraph Works Co.	1,743,000
No. 1. Siemens Bros. & Co.	2,140,000
No. 2. Fowler-Waring Cable Co.	2,210,000

Route No. 3.

From Vancouver to Bowen (Queensland), with mid-stations at Necker Island and Oncoatoa (Gilbert Group), branching at Oncoatoa, *via* Fiji to New Zealand and *via* San Christoval (Solomon Group) to Bowen—complete in each case, including maintenance for three years.

	£
No. 4. The India-rubber, Gutta-percha, and Telegraph Works Co.	1,403,000
No. 3. W. T. Henley's Telegraph Works Co.	1,723,000
No. 1. Siemens Bros. & Co.	2,240,000
No. 2. The Fowler-Waring Cable Co.	2,341,000

Route No. 4.

From Vancouver Island to Bowen (Queensland) direct, with mid-stations at Necker Island, Apamama (Gilbert Group), and San Christoval (Solomon Group)—complete, including maintenance for three years, in each case.

	£
No. 4. The India-rubber, Gutta-percha, and Telegraph Works Co.	1,068,000
No. 3. The W. T. Henley's Telegraph Works Co.	1,554,000
No. 1. Siemens Bros. & Co.	1,710,000
No. 2. The Fowler-Waring Cable Co.	2,125,000

Route No. 5.

Vancouver Island direct to New Zealand *via* Necker Island and the Fiji Group—complete, including maintenance for three years, in each case.

	£
No. 4. The India-rubber, Gutta-percha, and Telegraph Works Co.	1,291,000
No. 3. W. T. Henley's Telegraph Works Co.	1,658,000
No. 2. The Fowler-Waring Cable Co.	2,010,000
No. 1. Siemens Bros. & Co.	2,050,000

Route No. 6.

Vancouver Island to Norfolk Island with mid-stations at Honolulu and Fiji. At Norfolk Island, branches to extend to New Zealand and Australia proper—complete and including maintenance for three years in each case.

	£
No. 4. The India-rubber, Gutta-percha, and Telegraph Works Co.	1,391,000
No. 3. The W. T. Henley's Telegraph Works Co.	1,740,000
No. 1. Siemens Bros. & Co.	2,120,000
No. 2. The Fowler-Waring Cable Co.	2,130,000

Route No. 7.

From Vancouver Island to Bowen (Queensland), with mid-stations at Honolulu, Oncoatoa (Gilbert Group), and San Christoval (Solomon Group)—complete, including maintenance for three years, in each case.

	£
No. 4. The India-rubber, Gutta-percha, and Telegraph Works Co. -	1,081,000
No. 3. The W. T. Henley's Telegraph Works Co. -	1,589,000
No. 2. The Fowler-Waring Cable Co. -	1,880,000
No. 1. The Siemens Bros. Co. -	1,900,000

Route No. 8.

From Vancouver Island direct to New Zealand, with mid-stations at Honolulu and Fiji—complete, including maintenance for three years, in each case.

	£
No. 4. The India-rubber, Gutta-percha, and Telegraph Works Co. -	1,243,000
No. 3. The W. T. Henley's Telegraph Works Co. -	1,655,000
No. 2. The Fowler-Waring Cable Co. -	1,910,000
No. 1. The Siemens Bros. Co. -	1,970,000

The cost of maintenance is variously estimated by the several firms, the highest being that of the W. T. Henley Telegraph Works Co., who place the cost at 115,000*l.* per annum or 345,000*l.* for the three years. This is subject to a reduction if the spare cable provided for the purpose be not used. The Siemens Bros. Co. include in their offer for the purpose of maintenance 270,000*l.*, being at the rate of 90,000*l.* per year, this also is subject to a reduction if the actual repairs cost less than the sum named. This mode of charging for the maintenance and repair of the cable has an obvious advantage. The Fowler-Waring Co. stipulate that a fixed sum, 300,000*l.*, be allowed to guarantee maintenance and repair for the three years. The India-rubber, Gutta-percha, and Telegraph Works Co. make no special charge for guaranteeing the maintenance and repairs, and as their offer for laying the cable on each one of the eight routes is the lowest, it is well to make this point perfectly clear by quoting from their proposal as follows:—

"The contract prices given hereunder for the different routes include the erection at each cable-landing place of a suitable dwelling-house and operating room for the working staff, with duplicate sets of all proper instruments at each station; also the use of two steamships fitted with cable tanks and all necessary machinery for repairing the cable, and the cost of maintaining these ships, as well as the cables themselves, for three years." The contract prices for which this firm is prepared to manufacture, lay and maintain the cable for three years on any one of the eight routes are as follows:—

	£
Route No. 1 - - - - -	1,517,000
Route No. 2 - - - - -	1,416,000
Route No. 3 - - - - -	1,303,000
Route No. 4 - - - - -	1,068,000
Route No. 5 - - - - -	1,291,000
Route No. 6 - - - - -	1,391,000
Route No. 7 - - - - -	1,081,000
Route No. 8 - - - - -	1,243,000

This Company states that if entrusted with the contract they will undertake to manufacture the cable at the rate of 20 miles a day, and will proceed to ship and lay it with the least possible delay.

An examination of this tender and accompanying documents shows that this Company propose to use an approved type of cable; the core on the long section (Route No. 1) is to have a copper conductor weighing 533 lbs. per knot, insulated with gutta-percha weighing 365 lbs. per knot, the sheathing to be the same as the deep-sea type of cable adopted by the Anglo-American Telegraph Co. in the newest Trans-Atlantic cable laid this year. The shore ends and intermediate cables to be similar in character and weight to those generally adopted under like circumstances.

There is one apparent omission in this tender in connexion with shore end and shallow water cables. I can find no special mention of a metallic protection against "teredos." In the opinion of the undersigned, the core of the cable should be enveloped in a brass tape. The additional cost is not great, and before any contract is entered into with this or any company it should be clearly stipulated that this effective means of protection against the ravages of marine life should be provided.

I have, &c.

SANDFORD FLEMING.

The Honourable Mackenzie Bowell,
Minister of Trade and Commerce, Ottawa.

 ADDITIONAL REPORT ON TENDERS.

SIR,

Ottawa, December 11th 1894.

I HAVE the honour to report on the letter addressed to you by the India-rubber, Gutta-percha, and Telegraph Works Company, of date the 22nd November 1894, on the subject of the tender of that firm for manufacturing, laying, and maintaining the Pacific cable.

In my report on the tenders of date November 20th, 1894, I mentioned in the last paragraph that in my opinion it was expedient to make provision for protecting the core of the cable, under certain conditions, from the ravages of marine life. The letter of the above-named copy which you have referred to me gives the assurance that all types of cable proposed to be laid by that firm will be provided with proper protection, that in fact all cables laid in less than one hundred fathoms are to have the core sheathed with metallic taping as a protection against the teredo. This assurance removes the objection which I raised.

In my report of November 20th all the tenders referred to were for the supply of cables having a speed capacity of 12 words per minute. For route No. 1 the price of the India-rubber, Gutta-percha, and Telegraph Works Company is, including maintenance for three years, 1,517,000*l.* In the letter of this company of the 22nd November it is stated that higher speed cables will be furnished for this route at the following prices, viz. :—

A 15 word per minute cable for 1,672,000*l.*

An 18 word per minute cable for 1,880,000*l.*

Compared with estimates previously made these prices must be held to be moderate. My own estimate for a cable on this route (No. 1) as given in your report on the mission to Australia (page 69) is 1,978,000*l.*; and the estimate furnished the Colonial Office, London, by the General Post Office authorities (see Appendix to the same report, page 79) is 2,924,000*l.* Neither of these estimates include maintenance for three years; moreover, the estimate from the General Post Office does not include a connexion with the mainland of Australia which would probably be estimated at 200,000*l.* additional.

We thus have in the tender of the India-rubber, Gutta-percha, and Telegraph Works Company a definite offer to lay and maintain for three years a cable from Vancouver to Australia and New Zealand with a speed capacity 50 per cent. higher than the cable referred to by the General Post Office authorities, and for a sum 1,244,000*l.* less than their estimate without any allowance for maintenance.

I have, &c.

SANDFORD FLEMING.

Hon. Mackenzie Bowell,
Minister of Trade and Commerce.

APPENDIX C.

THE PACIFIC CABLE AS A PUBLIC UNDERTAKING OWNED BY GOVERNMENT.

(a.)

Extracts from Mr. Fleming's Address at the Colonial Conference, 1894.

"There are two distinct methods by which the Pacific cable may be established, viz. :—

"1. Through the agency of a subsidised company.

"2. Directly by Government as a public work.

"I have given this branch of the subject long and earnest attention, and I have arrived at conclusions which to my mind are confirmed by every day's experience.

"At one time I favoured the first method. It has been customary to have enterprises of this character carried out by companies, and it seemed to have been assumed that there was no other way by which the work could be accomplished. However, when it is considered that in the United Kingdom in India, in the Australian Colonies, and in a great many foreign countries the telegraphs are owned and worked by Governments, there appears no good reason why Government ownership should be confined to land telegraph. No doubt it would give least initial trouble to Governments to offer liberal subsidies in order to have the telegraph across the Pacific laid and owned by a company, but I am perfectly satisfied that in the long run the second method will be found in every respect more advantageous. The interests of a company and the public interests are not identical; they are in some respects the very opposite. While the primary object of a company is to exact from the public as much profit as possible, the interests of the public, on the other hand, are to secure cheap telegraphy, and to have it as free and untrammelled as possible. Suppose, for example, that a large subsidy be granted, such a subsidy as Sir John Pender has declared to be necessary, and that the whole undertaking passed over to the Eastern Extension Company to carry out, would not the effect be to confirm and perpetuate the telegraphic monopoly which at present exists between Australia and the outer world? Would it not simply shut out all prospect of obtaining the reduced charges to which we may confidently look forward to; would it not contract intercourse, instead of providing the fullest opportunity for its free and full expansion, so much to be desired? I look forward to the time, and I do not think it is far distant, when, if a wise and prudent course be followed, the telegraph will ramify in many directions

under the ocean to all the principal colonial possessions, and that, in the not distant future, there will be a greater reduction in charges on messages than has taken place in letter postage during the past fifty years.

"Speaking for myself, I have arrived at the conclusion that the true principle to follow, looking solely at the public interests, present and prospective, is to establish the Pacific cable as a Government work. In my judgment it would be a grave and irremediable mistake to give it to the existing company on their own terms, or perhaps on any terms. Even to hand the work over to a new company entirely distinct from the Eastern Extension Company would scarcely mend matters. It would be impossible to prevent the two companies combining in some form to advance their common advantage to the detriment of the public interests.

"I have elsewhere endeavoured to show the advantages derivable from the establishment of the Pacific cable as a public work directly under Government control. It is a matter of constant experience that the promoters of companies, as a rule, set out with the determination to make large sums of money, that investors are promised large returns, and they are not satisfied unless they are forthcoming. In consequence 9 per cent., and in some cases much more than 9 per cent., is paid for money raised for private companies, while on the other hand Governments can borrow capital at 3 per cent. Hence it is possible under Government ownership to reduce charges on telegraphy much below the rates charged by private companies.

"With the proposed cable under Government control, it is not easy to assign a limit to the reduction in charges for transmitting messages, and with low charges there will arise, without any appreciable extra cost in working, a great expansion in the business of the telegraph. Thus the public will be benefited to an extent which would not be possible if the cable became the property or passed under the control of a private company.

"I had hoped to have seen present at this Conference his Excellency Sir Ambrose Shea, Governor of the Bahamas. He would, I am sure, have given the best testimony in favour of the plan of Government ownership. Less than two months ago I had a letter from him in which he furnished indisputable evidence as to the superiority of the principle of Government control. The Bahamas are connected with the mainland by a cable owned by Government. The first idea was to have it carried out by a company under a subsidy of 3,000*l.* a year for 25 years. Fortunately, it was decided to make it a Government work; the cable is entirely so established, and the policy of its operation is dictated primarily by the commercial requirements of the Colonies. Profits are of course desired, but these are held to be a subordinate consideration. This policy would have been reversed had the cable been controlled by a company, the interests of the company *per se* would have remained paramount. Sir Ambrose Shea informs me that even in a financial aspect it has proved fortunate that they kept the cable under Government control. Instead of paying 3,000*l.* a year in the form of a subsidy, the charge on the Colony is already reduced to 1,800*l.* after fully providing for a sinking fund to cover renewals as well as interest on the cost and all other charges. Beyond the question of money, the Governor attaches much importance to the power held by the executive for adapting the policy of the cable management to the growing and varying wants and conditions of the Colony.

"It appears to me that in bringing two of the leading divisions of the Colonial Empire into telegraphic connexion, we cannot do better than place before us the experiment to which I have referred as having been so successfully tried. Great importance must be attached to the views and ripe judgment of Sir Ambrose Shea, strengthened in a matter of this kind by the experience of the Bahama cables. Every commercial object points to the expediency of retaining the Canada-Australian cable under Government ownership; and, apart altogether from commercial considerations, there is no reason to warrant that so important a work, undertaken for national purposes, should be removed from the effective control of the Governments, by whose authority alone the great principles of its establishment would be fully observed."

(b.)

ESTIMATES OF REVENUE.

Extract from Mr. Fleming's Memorandum, Sydney, October 11, 1893.

"In many cases it is difficult, owing to the lack of information, to form estimates of the probable revenue of a projected undertaking. In this instance, however, the best data is available for our guidance. We have the published statistics of telegraph business by the existing line between Australia and Europe for a number of years, and it is fair to assume that on the establishment of the Pacific cable, rates and all other things being equal, the business will be equally divided between the two lines.

"I am unable to ascertain the business for the past year, but I gather from the published returns that the number of words transmitted in the year ending May 1st, 1892, was 1,275,191. If we divide this into equal parts we have 637,595 words as a basis for estimating the revenue of the Pacific cable.

"In examining the returns for previous years some striking peculiarities are apparent. During the eight years from 1882 to 1890 the telegraph business between the Australian Colonies and

Great Britain increased on an average 54,441 words each year, equal to 14 per cent. per annum. This may be viewed as the normal increase under a high tariff, inasmuch as throughout these eight years the charges on ordinary messages were never less than 9s. 4d. per word. On May 1st, 1891, the rate was reduced from 9s. 4d. to 4s. per word, and within the 12 following months the business increased by 448,913 words—an increase of 54 per cent. on the business of the previous year, and 831 per cent. over the normal annual increase during the preceding eight years. The further expansion of business will no doubt for the present be disturbed and retarded by an increase in the charges on messages on the 1st January last, but there remains the experience of the year 1891-92 to establish the remarkable effect of a low tariff in stimulating telegraphy. In that single year the increase in the number of words transmitted under a 4s. rate was greater than the growth of the business during the whole of the preceding eight years under a 9s. 4d. rate.

"One of the direct benefits to the public from the Government ownership of the Pacific cable will be the reduction in charges for transmitting messages. I have already mentioned that with a full and efficient staff, such as the estimate for working expenses provides for, it will cost no more to do a large business than a small. There will, therefore, be no reason for preventing the freest expansion of telegraphy by the new line, by lowering the charges. In my humble opinion, the rates across the Pacific should be lowered to 2s. per word immediately on the cable being laid, in order that the public may have the advantage of cheaper communication at the earliest moment.

"The proposed rate of 2s. per word for transmitting messages across the Pacific would reduce charges between Australia and England to 3s. 3d. in place of 4s. 9d. as at present. Moreover, messages from Australia received at Vancouver would be forwarded to all parts of Canada and the United States for an average charge not exceeding 2s. 9d. per word in place of 6s.—the present charge.

"I wish to avoid extravagant statements and too sanguine estimates. I would, in submitting my ideas, particularly desire to keep strictly within reasonable probabilities. If we base estimates on the existing volume of business merely, we must anticipate that there will be no great advance over the business of 1891-92 for a few years if the charges on messages are again raised as they already have been to some extent. In the calculations which follow, I shall, therefore, assume the business to be at a standstill for three years; that is to say, I shall assume that the business in 1894 will not be greater in volume than it was in 1891-92, and that thenceforth the normal increase of not more than 14 per cent. per annum shall apply. The number of words transmitted in 1891-92 was 1,275,191. It is assumed that the Pacific cable would, if in operation in 1894, obtain one-half of this business.*

Year.	Number of Words per Annum.	Earnings of the Cable at 2s. per Word.	Year.	Number of Words per Annum.	Earnings of the Cable at 2s. per Word.
		£			£
1894	637,595	63,759	1900	1,173,176	117,318
1895	726,858	72,686	1901	1,262,439	126,244
1896	816,122	81,612	1902	1,351,703	135,170
1897	905,386	90,539	1903	1,440,967	144,097
1898	994,649	99,465	1904	1,530,230	153,023
1899	1,084,913	108,391			

"In connexion with the estimates of revenue I have pointed out from statistical returns two elements of increase of business—(1) a normal increase under an exceedingly high tariff; (2) a very much greater increase under a lower tariff. There will be a third increase which will be due to the development of traffic with Canada and in bringing the Australian Colonies into direct telegraphic touch with the whole telegraph system of North America. At present telegraphic intercourse is insignificant, but with a 2s. or 2s. 6d. rate across the Pacific in place of a 6s. rate by a circuitous route, the circumstances will be favourable to the growth of telegraph business between the two continents, and in consequence the revenue to the Pacific cable from this source will rapidly develop to large proportions.

"In the foregoing estimates of revenue I have reckoned only the normal increase under a high tariff and take no account of the greater increase which certainly will result from the charges being lowered, as proposed. I have likewise added nothing from the Australasia-North American business, the whole of which would flow to the Pacific cable. I am quite warranted, therefore, in expressing the opinion that the estimates of revenue I have presented are not exaggerated or unreasonable, and that the Pacific cable established by Government in the manner proposed would affect very important results. It would practically extinguish all subsidies now paid and render guarantees unnecessary. It would permanently establish low rates for ocean telegraphy. It would yield a revenue which, after paying working expenses, and providing for maintenance and renewals, would make good, all interest charges on the whole cost of the undertaking from the beginning, and in a very few years would furnish large surplus earnings. I venture to think, then, that if the

* At the date of going to press (May 1894) it has been ascertained that the traffic for 1893 between Europe and Australia consisted of 1,306,716 words, showing that Mr. Fleming's estimate is considerably within actual results. If merely the normal increase of 14 per cent. under a high tariff be added to existing business the number of words for 1894 in the table of estimated earnings which follows should be 744,828 in place of 637,599, and the earnings for the same year 74,489f. in place of 63,759f. Thus establishing that the estimates of revenue presented in this memorandum are in no way exaggerated.

resolution passed by the Postal and Telegraph Conference in March last* be generally assented to in these Colonies, the Governments need not hesitate in incurring the comparatively small, almost nominal liability, necessary to secure a telegraph connexion across the Pacific, which every British subject will recognise to be of the greatest national and commercial value."

(c.)

Extract from Mr. Fleming's Letter to the Hon. Mackenzie Bowell, July 20th, 1894.

"With respect to the revenue. If it will take three years to establish the cable, 1898 will be the first year of its full operation. On pages 70 and 71 of the report on the mission to Australia will be found an estimate of the proportion of business which would fall to the share of the Pacific cable for that year, 1898. The estimate was made a year ago and based on the assumed telegraphic business for 1893 between Australia and Europe, which has been exceeded by actual results. See footnote, p. 71. Correcting the estimate in this respect, the business for 1898 may be set down at 1,105,000 words, which reckoned at 2s. a word would yield a gross revenue for the first year's operation of the Pacific cable of 110,000*l.* It will be borne in mind, moreover, that this estimate is for European business, and includes nothing for the business between Canada, the United States, and Australia, at present significant, but which, in a few years, with greatly improved facilities, will undoubtedly develop to considerable proportions. For these reasons I am satisfied that the estimates submitted will be fully realised and more than confirmed by actual results.

"Bearing on these estimates, a friend wrote me from London a few weeks back, as follows:—'I have been looking over the proceedings of the Colonial Conference of 1887, where a memorandum of yours is given, dated April 1886 (page 101). In it you show a probable traffic for the year 1893 of 133,000 messages, equal to 1,330,000 words. The actual business for the past year, according to Sir John Pender, was 1,306,716 words, and according to Australian returns, 1,401,292 words. In either case the prediction made eight years ago is approximately correct.' I mention this merely to bring out the fact that the principles on which the estimates are formed are sound, and that the estimate themselves may generally be considered safe.

"With respect to the charges on revenue, viz. :—

1. Interest on capital.
2. Working staff and management.
3. Repairs and maintenance.

"The first and second are constant, the third is variable. Experience goes to show that failure and interruptions in cables, due to defects in manufacture or causes connected with laying, generally take place within the first year or two. For this and other reasons I propose that the manufacturers should be asked to undertake to keep the cable in efficient working order for three years; we may thus eliminate from revenue account for that period all charges for repairs and maintenance.

"Assuming that the cost of the cable and its maintenance for three years will be, in round figures, 2,000,000*l.*, the revenue account for the year 1898 would stand as follows :—

	£	£
Earnings as estimated	-	110,000
Interest on 2,000,000 <i>l.</i> at 3 per cent.	-	60,000
Staff and management	-	30,000
		90,000
Surplus revenue	-	£20,000

"In the above I have taken Mr. Siemens's estimate of the cost of staff required for stations, and office expenses at each point, viz., 24,000*l.* I have increased Mr. Siemens's allowance for general management to 6,000*l.*, the two making in all 30,000*l.* per annum. This charge will be constant, and will suffice, as pointed out by Mr. Siemens, for a business more than six times greater than that estimated for the year 1898, and by introducing duplex working, for a traffic 10 or 12 times greater.

"I have pointed out elsewhere that the average normal increase of telegraph business between the Australasian Colonies and Europe was 14 per cent. per annum, during the period when the high rates charged for a period of eight years were in force, that is to say, under a tariff rate of 9s. 4*d.* per word from 1882 to 1890. Manifestly under the low rates proposed to be charged by the Pacific cable, the normal increase will be greater than 14 per cent. per annum; more especially as the whole North American business will receive a great incentive from direct communication, and all this additional and constantly growing traffic must find its way by the Pacific cable to and from Australia. I venture to think that it would not be too sanguine an estimate to place the annual increase of business at 18 or 20 per cent., but to be perfectly safe I shall limit it to 15 per cent. in the calculations which follow, that is to say, only 1 per cent. more than the average annual increase realised under the high tariff for the eight years previous to 1890.

" ESTIMATE

" of the business of the Pacific cable for 10 years after its completion, calculated on the basis of 1,100,000 words, for the year 1898, an average normal increase of 15 per cent. per annum thereafter :—

	Gross Earnings.	Interest and Working Expenses.	Surplus.
	£	£	£
1898 - - - - -	110,000	90,000	20,000
1899 - - - - -	120,500	90,000	30,500
1900 - - - - -	131,000	90,000	41,000
1901 - - - - -	142,500	90,000	52,500
1902 - - - - -	155,000	90,000	65,000
1903 - - - - -	168,500	90,000	78,500
1904 - - - - -	183,000	90,000	93,000
1905 - - - - -	198,500	90,000	108,500
1906 - - - - -	215,000	90,000	125,000
1907 - - - - -	233,500	90,000	143,500

" As we have eliminated all but the fixed charges on revenue for the first three years, an examination of the above table will show that the surplus up to the fourth year will have accumulated to 109,500£, which sum, together with the annually increasing surplus thereafter accruing, would be sufficient to meet all charges for repairs and maintenance and leave a balance to be carried to a cumulative reserve, for renewals at some future day.

" I may mention that I have submitted in outline this financial scheme to the delegates from New South Wales, Victoria, Queensland, and New Zealand, with whom I have had the advantage of frequent consultations since the Conference rose, and I have the satisfaction to state that it finds favour with each of them. That feature of the scheme by which all the uncertain charges for repairs and maintenance would be embraced in the contract with the manufacturers of the cable, would not only have a tendency to secure a cable of the very best make and character, but it would defer all charges against revenue, which revenue could not fully meet, until a date later than the payment of the last annual subsidy to the Eastern Extension Company. The Australian Governments now contributing to that subsidy could then with greater ease make up any possible shortage which may arise in connexion with the new cable. The estimate, however, shows clearly that under this scheme there is every prospect of the Pacific cable being self-sustaining from the first."

(d.)

Letter from George Johnson, Esq., Dominion Statistician.

Office of the Statistician,

Ottawa, November 29, 1894.

DEAR SIR,

I HAVE examined your statement before the Intercolonial Conference in *re* the Pacific cable, and have the following remarks to make:—First, respecting the growth of business; and, second, respecting the proportion the new route could hope to secure.

I.

Taking the statistics of growth I find the following :—

Year.	No. of Words transmitted.	Increase.			Tariff per Word.
		Actual.	Per Cent. for Period.	Per Cent. Yearly.	
1875 - - -	235 160	—	—	—	—
1880 - - -	353,348	118,188	50	10·0	9s. 4d.
1885 - - -	537,355	184,007	55	11·0	9s. 4d.
1890 - - -	827,278	289,923	54	10·8	9s. 4d.
1891 - - -	1,275,191	—	—	54·0	9s. 4d. and 4s.
1892 - - -	1,321,412	—	—	3·6	4s.
1893 - - -	1,401,293	—	—	6·0	4s. 9d.

The actual increase in the three years 1891–93 over 1890 was 574,015.

The number of words transmitted is taken from returns submitted to the Postal and Telegraph Conferences held in Adelaide in May 1890, in Queensland in March 1893, and in New Zealand in March 1894.

They show that during 15 years (1875-90) of high tariff (9s. 4d. per word) the increase in the number of words was 251.8 per cent., and that during the three years 1891-92-93, in which period the rates were reduced to 4s. and 4s. 9d., the increase over 1890 was 69.2.

For the whole period covered by these statistics the increase is 496 per cent.

From these figures of per-centage it appears: 1st, that during the period 1875-90 the growth of business under a 9s. 4d. tariff was equal to an annual average of 16.8 per cent.; 2nd, that under a 4s. and 4s. 9d. tariff the average annual growth from 1890 to 1893 (three years) was 23 per cent.

Your estimate of 14 per cent. increase appears, in the light of these facts, to be a very conservative one.

II.

How much of the business could a cable competing with the existing one hope to secure?

(a.) A telegram from Melbourne to London by the existing line has to travel 13,695 miles of wire, of which 2,704 miles is in Australia, and is, therefore, land wire. The land wire in Asia is, I judge, about 1,000 miles more of wire.

A telegram from Melbourne to London *via* Canada would travel 14,414 miles, of which 3,764 would be land wire.

In respect to the greater danger of stoppage and delay from land wire, the two lines would be, practically, on an equality.

(b.) Your estimate is that one half of the words sent by cable between Australia and the rest of the world would be sent *via* the line across Canada.

According to the return of 1892 there would be, on this estimate, 660,706. But some portion of the total of 1,321,412 words must be Asiatic business, since Australia imports of tea alone 33,000,000 lbs. a year, direct from Asia. From various data I estimate the Asiatic business at one-eleventh of the whole. Deducting this, we have 1,191,000 words to represent European business, of which the new proposed route would stand a fair chance to secure one-half. I would, therefore, place the estimate at 595,000 (or 600,000) words instead of 637,595.

Taking this estimate and applying to it the 16.8 per cent. increase, the estimate for 1895 would be 695,000 words, or 31,860 less than your estimate. For 1896 it would be 811,760 words, or 4,362 less. In 1897 it would be 948,000 words, or 42,000 more than your estimate. My calculation would give fewer words for 1895 and 1896 and more words for 1897, and still more in succeeding years.

I have taken the per-centage of the period when the tariff was 9s. 4d. per word. If the per-centage under a 4s. tariff were taken, the growth would be much greater, and undoubtedly the result of a reduction in the rates would be an increase in messages, as the table above given shows.

I have not dealt with the development of business between North America and Australia, which must in the nature of things be very great when facilities are provided, and will also be tributary to the Pacific cable.

Yours, &c.
GEORGE JOHNSON,
Statistician.

Samuel Fleming, Esq., C.M.G., C.E.,
Ottawa, Ontario.

(c.)

Letter from J. M. Courtney, Esq., Deputy Minister of Finance.

Department of Finance, Ottawa,
1st December 1894.

DEAR MR. FLEMING,

I HAVE read over very carefully and, I may say, with a great deal of pleasure the blue books and documents you left with me for perusal in connexion with the scheme for laying a Pacific cable to connect this country and Australasia. Both from the fact that it is the pioneer Pacific cable scheme and also from the magnitude of the work itself, the consideration of the subject is to me exceedingly interesting, especially as it has such an intimate bearing on the expansion of the Empire.

In writing to you now, however, I wish to be very careful and to guard the position I take from misconception. I can, of course, have nothing to do with the policy of the Canadian Government, and in the present financial condition of the Continent I could not, if the matter were referred to me, on general principles, recommend any scheme that would increase the liabilities of the Dominion either directly or indirectly. From the examination of the facts and figures, however, submitted by you I may say I have arrived at the same conclusion as yourself as to the cost of laying down the cable, and, in my judgment, the conclusion arrived at cannot be regarded as over-anguine or forced in any way.

As to the calculations of revenue, I have, of course, taken your own method, and have divided by two the number of words sent in 1892, taking one half to come over the new cable. But, as it appears from the documents submitted, the cable could not be in operation for three years yet, or until 1898, even if commenced at once, and taking the average annual increase in the messages at 15 per cent. the estimate of the work to be done is, to my mind, very low.

It would follow, therefore, judging by the expenditure and by the revenue that, as far as I can see, with the limited knowledge at my disposal in the matter, and under the conditions named the cable line could be laid down and a revenue derived which would meet all the charges.

Of course, in all this it must be understood that I am looking at the financial features of the scheme from the documents before me, and that I have no personal or direct knowledge of the laying or working of cable lines. I do not know that a separate line may not be necessary or that other contingencies may not arise which I have no means of anticipating or foreseeing.

Yours, &c.
(Signed) J. M. COURTNEY.

Sandford Fleming, Esq.,
Ottawa.

(f.)

Letter from W. Hepworth Mercer, Esq., Colonial Office, London.

Rideau Club, Ottawa,
Oct. 11th, 1894.

DEAR MR. SANDFORD FLEMING, c

BEFORE leaving Ottawa I desire to congratulate you on the evidence which is now in the possession of the Canadian Government that your views as to the cost of laying the proposed Pacific cable were moderate and reasonable. It must be a matter of great gratification to you to find after so many years of controversy and opposition that your estimates are more than borne out by the practical offers now received.

With regard to the question of the prospective revenue of the cable, I have carefully examined the data and studied the principles upon which you have formulated the estimates contained in your memorandum dated Sydney, 11th October 1893, and your letter to Mr. Bowell of 20th July 1894, and I have satisfied myself that your conclusions are thoroughly sound. Assuming that the cable is to be a Government enterprise, participated in by Great Britain, Canada, and Australasia, I think that the estimates of revenue would at least be fully borne out by actual results.

It seems to me that there is now an excellent case for presentation to the various parties interested, and the Australasian Colonies in particular will no doubt look forward to the accomplishment of an enterprise which will, we may fairly hope, give them an unprecedentedly low telegraphic tariff in return for a smaller expenditure than they have been paying for a comparatively high one.

I hope, speaking for myself, that in a matter of such wide concern, and involving, besides the direct commercial benefits, results the importance of which cannot be estimated in figures or weighed in a balance sheet, the Australasian, the Dominion, and the Imperial Governments will all be able to join in the project.

I am, yours very sincerely,
(Signed) W. HEPWORTH MERCER.

