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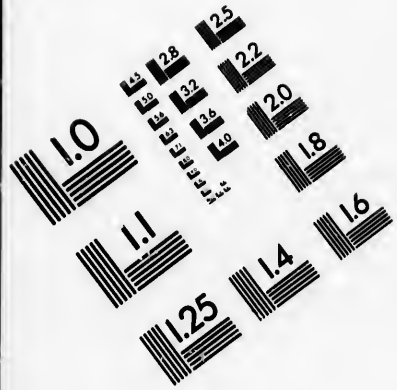

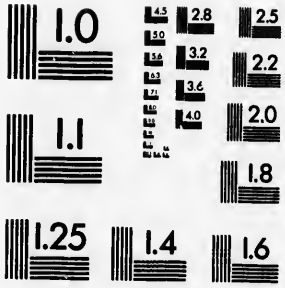

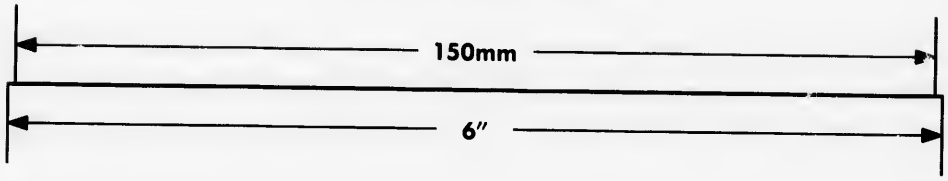

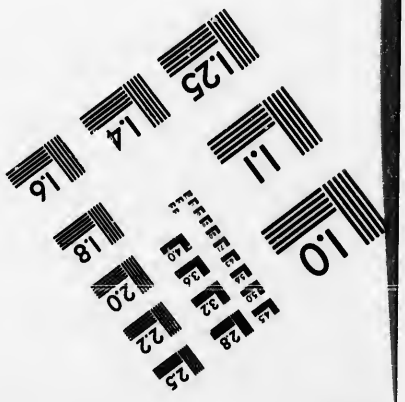

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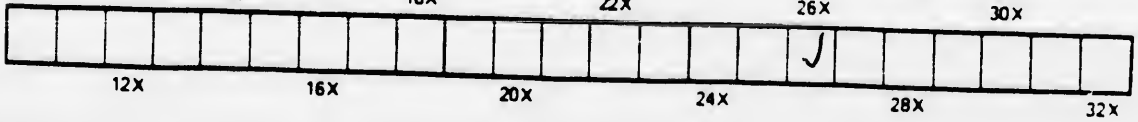

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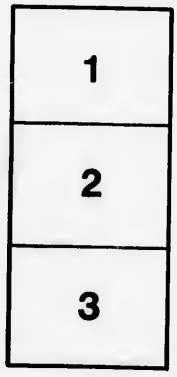

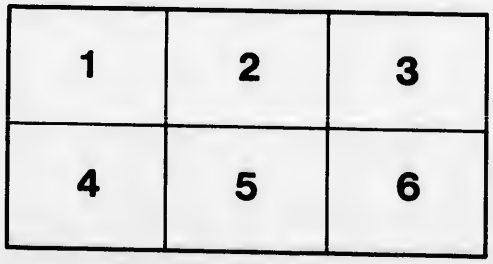

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11.

TO HIS HONOR

THE HON. THEODORE ROBITAILLE

LIEUTENANT GOVERNOR

OF THE

PROVINCE OF QUEBEC.

REPORT

CONCERNING THE

Quebec, Montreal, Ottawa & Occidental Railway

1881

PRINTED BY ORDER OF THE LEGISLATURE.

QUEBEC
CHARLES FRANÇOIS LANGLOIS.
PRINTER TO HER MOST EXCELLENT MAJESTY THE QUEEN.
1881

QUEBEC, MONTREAL, OTTAWA & OCCIDENTAL RAILWAY.

To His Honor,

The Hon. THEODORE ROBITAILLE,

Lieutenant-Governor of the Province of Quebec.

I have the honor, in my capacity of head of the Department of Public Works and Commissioner of Railways, to submit the annual report on the condition and working of the "Quebec, Montreal, Ottawa and Occidental Railway."

The railway, as a whole, came finally into possession of the Government in January, 1880, at which time the Eastern Division (Quebec to St. Martin Junction), was taken off the contractors' hands, but it was not until late in March following that the traffic of this part of the line began to be worked in the interests of the Government.

The organizing of the working staff, for upwards of 300 miles of railway, of course imposed large additional and an entirely new class of duties and responsibilities on the Department of Public Works and, necessarily, much time was required to systematize the several sub-departments of management and bring all into harmony and smooth working order.

Shortly after the entire line came under the control of the department, Mr. L. A. Senécal was appointed General Superintendent with Mr. C. A.

Scott for his assistant. Mr. Scott had previously been Superintendent of the Western Division (Montreal to Aylmer), which had been in the control of the Government since September, 1879.

The length of line, including the Piles and St. Jerome branches, brought under the jurisdiction of the Department in January, 1880, was 325 miles; which, by the construction of the extension of the line from Hull into Ottawa, has since been increased to 327 miles.

Herewith is submitted (Appendix 1) the Report of the General Superintendent, giving full information on all points touching the General Administration of the Railway, with statement of receipts and expenditure for the six months ending 31st December, 1880.

Total receipts as follows:

Passenger traffic.....	$219,672 29
Freight traffic.....	146,132 15
Mails, express, &c.....	16,521 91
	$382,326 35

Of this amount 73.58 per cent. was absorbed in working expenses, leaving 26.42 per cent. to be carried to credit of nett revenue account.

This financial statement, or balance sheet, accompanying Appendix 1, is brought up to 31 December only, because the system of accounts adopted closes the books at the end of each regular half year, 30th June and 31st December. The broken period of the first half of the year (1880) is not taken into account in the statement, because of the organization having been then crude and incomplete, and the results of working consequently not exhibiting the real earning capacity of the line.

ROLLING STOCK.

The general superintendent's report refers fully to this important subject, stating the number of engines and cars now on the line and showing clearly that further provision will have to be made to meet the increasing demand of traffic. In connection with the rolling stock question he points out the need for more workshop and engine shed accommodation.

GENERAL CONDITION OF THE LINE AND WORKS UNDER CONSTRUCTION.

The outlay for improvements and new works has been and continues to be large. I have had the engineers' reports brought up to the 31st March, 1881, (appendices 2 and 3 therewith) so as to include all that has been done under their branch of the service, during the twelve months ending with that date.

The expenditure in construction account has been :—

Eastern Division	$216,406.00
Western "	352,829.05
	$569,235.05

And the estimated expenditure for the completion of improvements and new works now in progress, is as follows :—

Eastern Division	$140,800.00
Western "	678,040.00
	$818,840.00

Details of both those classes of expenditure, past and contemplated, are given in the appendices above referred to as Nos. 2 and 3 respectively.

The eastern division comprises the main line and branches, Quebec to St. Martin Junction, 189 miles.

The western division Hochelaga to Ottawa and Aylmer, with St. Jerome branch, 139½ miles.

And to the latter has to be added the extension from Hochelaga to Quebec Gate Barracks, within the city of Montreal, now under construction, about, 2½ miles.

CHAUDIERE BRIDGE AND STATION.

The bridge was opened for traffic in December of last year, since when passenger trains previously receiving and delivering passengers at Hull, have been regularly run to and from Ottawa. Accommodation for Ottawa freight traffic is also being provided for at Chaudière Station.

For station purposes in Ottawa, a joint and undivided interest has been purchased from the Canada Central Railway Company in their grounds at the Chaudière. The erection of a passenger station-house on joint account has also been agreed upon, and is now complete.

The cost of the bridge has been, up to the 31st March last, at which time there remained a small outlay ($1500) to be made, in order to complete some (then) still incomplete work, $313,075.61.

EXTENSION TO QUEBEC GATE BARRACKS, MONTREAL.

The contract for this work was let on the 20th January last, to H. J. Beemer & Co. The estimated cost is about $425.000, of which previous to 31st March only $7,310 had been expended.

JOLIETTE RAILWAY.

The scarcity, almost absolute want indeed, of proper ballasting material on, or in convenient proximity to the main line (Eastern Division) rendered it necessary to explore for it at a distance, and the nearest point at which suitable gravel was discovered, proved to be some 8 miles north from the

town of Joliette. Here the material was found to be of excellent quality and in quantity unlimited, but in order to reach it, the Joliette railway would have to be used between Lanoraie Junction and Joliette (6 miles) and the line extended 8 miles beyond the latter point. The general superintendent's report, (appendix 1,) goes fully into this matter, and pending a more permanent form of arrangement with the proprietors of the above named railway, (the extension having been constructed at the cost of the government in the meantime) it has been used as a ballast road under the temporary agreement referred to by Mr. Sénécal.

I would specially direct attention to that portion of Mr. Sénécal's report, which discusses the future of the railway, both as to connections to be made for the successful development of its traffic and as to the dangers it may have to encounter from competition.

Appendix 4, contains the rules and regulations that have been adopted for the management and working of the railway in all branches of its service.

These general orders include, in a concise form, the regulations which are indispensable in the exercise of real superintendence and control, as applied to the various branches of railway management.

It was on the 15th January, 1880, that the government took possession of the Eastern Section of the Q., M., O. & O. Railway.

On that date I gave orders to the superintendent to take over the management of the line and to apply, temporarily, to its working the same system of superintendence, police and management which was already followed on the Western section. After having discussed and acknowledged, with the Commissioner and General Superintendent, the necessity of a uniform system of management, I caused a draft of a memorandum to that effect to be prepared, recommending that the general orders, rules and regulations in force on the various railways in Canada and in the United States should be attentively studied.

Of this compilation I thought proper to adopt what appeared to me to be the best adapted to the country through which our line runs, to the geographical position of its terminus and of its principal stations, as well as to everything which may further the interests of commerce and industry and finally increase the traffic of the road and of its branches.

In preparing this work, I have strictly confined myself to the clauses in the general law respecting railways, and I have endeavored to protect, at the same time, the interests of the public and of the management.

Far from claiming to give you here a perfect plan of organization, I am convinced, on the contrary, that I will continually have to investigate and benefit by the improvements and amendments which experience daily introduces in the various branches of railway management.

I have the honor to be,

Sir,

Your obedient servant,

J. A. CHAPLEAU.
Commissioner of Agriculture and Public Works.

APPENDIX 1.

QUEBEC, MONTREAL, OTTAWA & OCCIDENTAL RAILWAY.

REPORT OF MR. L. A. SENECAL,

GENERAL SUPERINTENDENT.

Quebec, 1st June, 1881.

To Hon. Mr. J. A. Chapleau,

Prime Minister of the Province of Quebec.

Sir,

I have the honor to forward you my first report upon the management of the provincial railway, the "Quebec, Montreal, Ottawa & Occidental."

It was on the 1st of March, 1880, that I was officially informed of my appointment to the position of general superintendent of the Quebec, Montreal, Ottawa & Occidental Railway. I was informed, at the same time, that, whenever there was any need for it, I was to see and consult Mr. Walter Shanly, civil engineer, who was appointed adviser for the general management of the railway.

I took charge on March 1st, 1880. In order to post myself as to the state of the road and as to what immediate measures were required to be taken, I began a general inspection of the whole line.

The management of the road was at that time divided into two sections, the Eastern and Western divisions; the former managed by Mr. C. A. Scott and the latter by Mr. J. T. Prince, each having a distinct staff under him. The Western division, which had been running for more than a year, had almost a regular organization. The Eastern division had, on the other hand, still kept the management that had existed under the contractor.

In order to have a uniform system and a profitable working of the road, it became necessary to unite the two managements, until then distinct. In doing this I was carrying out the wish expressed in the instructions which accompanied my appointment.

My attention was directed first to the carrying out of the works which appeared to me to be pressing and which will be found stated in the Engineer's report. It will be sufficient to remind you that the eastern portion of the road was ballasted with sand on account of the scarcity of gravel in that part of the country. This kind of ballast was so unsuitable that I considered it had, at any cost, to be changed, so I had the whole country round about explored to try and find some gravel pit. I am happy to say that, after several searches were made in vain, we found the necessary material to complete this portion of this important road. We found a large gravel pit in the parish of St. Elizabeth, about eight miles from Joliette.

Another gravel pit has been discovered on the Piles branch, at about 27 miles from the main line. This pit cannot be worked because the road is not capable of bearing heavy trains.

I should here remark, in passing, that the rails on the Piles branch are iron, and do not weigh more than 42 pounds per yard.

Another pit has been found at Deschambault about half a mile from the main road. I bought the right of working this pit for two years from Mr. Hamelin. The pressing need of gravel was so great that we exhausted this pit during the first summer.

I at last found a fine gravel pit on the Western division of the road at St. Eustache. This pit is situated at about four and a half miles from the village of St. Eustache, at a place called St. Joseph, and is about ten miles distant from the main line, but, as the country which we should have to traverse is very flat, the cost of constr...ng a line there would not be very heavy. The pit at St. Therese has been exhausted since last year and has been abandoned. I may add the same for the Gatineau one, so that we have now only the one at Lachute, which is not very profitable.

The advantage in favor of the St. Eustache pit is the importance of the traffic we should obtain from the country which this line would open up. St. Eustache is a large centre, and the principal trade there, especially the grain trade, is all exported by navigation or by wheeled vehicles, for the same conveyance that takes the agricultural products to town comes back loaded with the necessary merchandise for local consumption. There are also at St. Eustache strong water-powers, which can be utilized with profit, when this locality obtains an easy means of communication with the large centres.

The result of all my searches has been the adoption of ballast from St. Elizabeth.

You mentioned to me, at the time, the great inconvenience of having to run our ballast trains on an independent road not subject to our control, and of building a branch line of seven or eight miles without authority. I understood these difficulties, but, in accepting the superintendence of your road, I did not think of the peculiar condition of a public enterprise subject to the will of the Legislature, and it was from your remarks that I was enabled to understand the inferior position in which a government

road is necessarily placed. I do not think there is a single railway man who understands his duties and is determined to perform them, who would agree to have his hands tied in an undertaking that requires so much activity, capacity and decision. If his duties consisted in having the supervision of the employees and seeing that the trains were run on time, he probably would turn his experience to advantage in another direction, leaving this duty to an accountant or station-master. But, in these days, the management of a railway is quite another thing, and though there are omissions in the statutes upon this point, it is to be presumed that if the Province of Quebec wishes to run a railway, it wishes to run it successfully, and therefore will allow of all that is necessary being done. Well, in the running of a railway, nothing should be lost, and all the expenses rendered necessary for competition should not be looked at. Nothing could be done with a road ballasted with sand. The road bed was wanting in solidity, the slope was falling into the side ditches, the sand which got into the joints of the cars and the engines wore out the rolling stock, and, what was more important, tourists fled from our road as from a scourge. I was brought face to face with a threatened failure which was all the more certain that by the statement of receipts due the contractor during the previous six months, I saw that the cost of running had exceeded the receipts upon this division.

I first endeavored to place the Joliette road under the control of the government either by purchase or lease. You are in possession of all the correspondence upon this subject. It was not of a very satisfactory nature. The price asked for the said road was $60,000, which, though it might have been reasonable, I was anxious to get reduced. When I saw that there were no other means, after some hesitation, I decided to obtain, myself, or through my friends, the necessary weight of influence in the said company. Once master of the road, I feared no complications, and I pressed you to allow us to extend the line which was to secure the success of our road. There was always the alternative of having the road built by individuals which made it easier for you to decide, for you could then have authorized me to build the said line without binding yourself to keep it for the pro-

vince. It was, in fact, upon such orders that I began and completed this work, and you are still at liberty to say whether the province will keep the road or merely lease it from the company, which is ready to settle all claims that remain to be settled. I have had the honor of already making you a special report upon this subject.

While awaiting your answer I have made arrangements for traffic with the Joliette company. We pay the running expenses, that is to say the rolling stock, station and train employees, but the company keeps the road and stations in repair at its own cost and we pay them one-third of the gross receipts of the road between Joliette, Montreal and intermediate stations. These arrangements have produced a wonderful result for the Q., M., O. & O. Railway, as will be seen by comparing the receipts of the four months previous to the arrangement and the four months after, which are shown in the following statement :

Receipts at the station or for the station of Lanoraie from July 1st to November 1st, 1881.....	$4,108.50
Receipts at the station or for the station of Lanoraie and from Joliette or for Joliette from December 1st, 1880, to April 1st, 1881 (share of Q. M. O. & O).....	7,450.51
Increase during four months.....	$3,341.95
To be deducted running expenses incurred by Q., M., O. & O. during the four months on account of the Joliette line.....	$1,616.00
Actual increase.....	$1,725.95
Say, for the twelve months, nearly.....	$5,177.85

It is true that the traffic at all the stations has increased, but by comparing them, you will find that the increase in Joliette and Lanoraie is out of proportion with the increase at the other stations of the same kind on the line.

It may also be said that these four months were winter months, but the result will not be altered in summer, as by means of the control of the road that I have obtained, the trains from Joliette no longer connect with the steamers, consequently all the traffic of that region goes over our line.

I have written at length on the point, for reasons that you will understand and now I have only to repeat what I have already told you verbally, namely: that it was not through speculation that I acquired an interest in the Joliette road, and the government is at liberty at any day to take possession of it, at cost price. It will gain $12,250, as the old company asked $60,000, and by means of the control obtained by the purchase of the shares held by the most exacting of the shareholders, the new board of directors only ask $47.500. There is, it is true, besides this, an amount of $18,000 to pay for improvements since made, that is the replacing of the small iron rails, by steel rails, widening the gauge, replacing sleepers and different works which the engineers will estimate, but the expense would have been exactly the same if the government had purchased the road as it then was, for $60,000.

I have another reason for entering into all these details; it is my intention to apply the fruits of these experiences in other places. I have already had the honor to make a report upon the St. Eustache branch, of which I have spoken above and which leads to another gravel pit, which is not indispensable but certainly necessary. The government would not have to disburse one cent if it would grant to some local company, for a certain number of years, some such arrangement as that which I have spoken of with regard to Joliette. The share of the Q. M. O. & O. railway would evidently be increased by the general revenue of which it is now deprived and which it could not obtain in any other way. This policy would, in my opinion, be one means of stimulating the building of railways without having to grant any subsidy, by inviting these companies to assist in increasing the receipts of the Q. M. O. & O.

The same applies to the extension of the line from Lachute to St. André. This branch would traverse a rich country and by connecting the Q. M. O. & O. with the Ottawa, it would bring in all the traffic from Rigaud and several other parishes on the other side of that river. There again, in receiving a good percentage of the gross receipts and with insignificant expenses, the Q. M. O. & O. would have nothing to lose, and everything to gain. In this arrangement, the government for further satisfaction, could reserve the right of buying these branches at a certain figure, agreed upon after some experience, if it were proved that they would yield more than the interest upon the purchase money.

I am convinced that without subsidies you could just as well push on the prolongation by the same means over 12 or 15 miles of the Laurentian Railway, which several of the parishes of the county Montcalm are persistently asking for. The government must have disbursed $60,000 in subsidies for the building of the first fifteen miles from St. Therèse to St. Lin. It would be very remarkable if it could build fifteen other miles without further aid than a reasonable tariff. I may remark that it would not be a bad thing, since even now the Laurentian Railway, gives the Q. M. O. & O. over $10,000 nett, which represents an interest of about 16 per cent. upon the subsidies granted to it.

In order to establish this very clearly, I may cite a recent example that cannot be denied: the building of the Berthier branch. On several occasions I had had the honor of calling your attention to the necessity of connecting the Berthier station with the town of Berthier, by a branch of about two miles. I had even obtained, beforehand, the promise from the South Eastern, that they would pay you 8 per cent interest on the cost of this road, apart from the advantages that the Q. M. O. & O. would derive therefrom; but for the same reasons as I stated above, your government did not consider that they were authorized to make such disbursements. I considered that this branch was absolutely necessary to secure the Sorel traffic and part of the traffic of the South Eastern, and this is why I appealed to private capitalists who built this line. I will content myself, as in the case

of Joliette, with giving a comparison of the receipts, before and after the opening of these two miles.

Receipts at the station, or for the station of Berthier, from 1st October, 1880 to 1st January, 1881	$4,476
Receipts at the station and town, or for the station and town of Berthier, from 1st January to 1st April, 1881	8,859 35
Increase in three months	$4,383 06
To be deducted running expenses incurred by the Q. M. O. & O. in four months for the branch	1,399 50
Actual increase	2,983 56
Say for twelve months, nearly	$11,934 24

I need not add that this enormous addition cannot be attributed to the gradual increase that is taking place at all the stations. The building of this branch has helped the immediate establishment of a large sugar manufactury in the town of Berthier, which will, next year, largely increase the amount of freight on the Q. M. O. & O.

I have already had occasion to tell you that the government can still take over this branch at its cost price $29,000, if it considers that three months experience is sufficient to assure a large profit in the future.

I had the honor of stating to you, when I began these works with private means, that it was not with a view to speculation that I did so, although we were certain that it would pay.

In order to prove what I advance, permit me to remind you, amongst other transactions of the same nature, of that relating to the Dagenais curve.

This curve, which is in the parish of St. Martin, was really a source of danger to traffic, which it was absolutely necessary to remove. In order to straighten the line a new right of way had to be bought. As the government, in this case, as in many others, did not consider itself authorized to take the responsibility of the expenditure, I was compelled, in order to alter the line, to become personally responsible for the sum of $1000, the amount necessary to carry out the work undertaken for that purpose, in the month of May of last year.

GENERAL MANAGEMENT.

The offices of the divisional superintendents, of traffic managers, of auditor, of cashier, the freight and passenger offices and those of the inspector of agencies were all duplicated. There was one set for the Eastern section, and one set for the Western section: I thought it better to unite them all at the central office in Montreal. This allowed me to reduce the staff and the cost of management, at the same time to have a more effective service.

The government which was in possession of the Western division for 18 months, had established a general office in Montreal, and as the Eastern division was amalgamated with the Western only on the 16th January, the general offices of the former as organized by the contractor, before the taking over by the government of this division, remained as they were.

The office of auditor was filled by Mr. Shackell and I kept him on. I regret to say that there was no chief accountant in the offices of the railway, until the 1st September last; the auditor had a great deal too much to do, to have a perfect control of the expenses. As I had the honor of saying in my report, which I forwarded you on the 7th June, 1880, I considered it of the greatest importance that there should be a chief accountant as soon as possible. This is the reason why Mr. A. Louthood was appointed to fill this position by an order in council.

By an order in council of the 28th February, 1880, Messrs. C. A. Scott

and J. T. Prince were appointed assistant-superintendents of the railway, the former to act in Montreal, the latter in Quebec. This appointment kept the road the same as it was before the two divisions were amalgamated. As these two divisions form but one road, which has to be managed over the whole length, in the same way and by the same officers, I thought that practically it was better to have but one assistant-superintendent, and upon the advice of Mr Shanly I made Mr. C. A. Scott assistant-superintendent of the whole road, and I appointed Mr. J. T. Prince business agent of the road, and then I made him general freight agent in the place of Mr. C. A. Starke, who was dismissed.

I transferred Mr. W. C. Hall, who was employed upon the road at Three Rivers, to the station at Quebec as local agent, with power to transact all business that might arise there, then as local agent in Montreal to replace Mr. McFarlane, whom. I had placed as assistant in Mr. C. A. Scott's department. Mr. Vallee took Mr. Hall's place as local agent at Quebec.

Mr. J. B. Labelle had been appointed general passenger agent by the above-mentioned order in council of the 28th February, 1880. It was impossible to do without the services of this officer, whose duties are most complicated, and which the traffic agent could not discharge without neglecting his own department. This office exists in all companies that have to compete with rival lines.

Another order in council of the 1st April last appointed Mr. W. E. Blumhart general store keeper of the road. This gentleman entered upon his duties the 14th April, 1880. We dispensed with Mr. Wason's services at Quebec and Mr. Macpherson in Montreal, who fulfilled the duties of this office.

Mr. L. A. Robitaille, who was paymaster upon the Eastern division, was kept in the same position for the whole road.

When our trains ran into the city of Ottawa I transferred Mr. Gouin from Hull station to the terminus.

The Piles branch, which traverses the country extending between Three Rivers and Grand Piles, a country sparsely inhabited, but possessing great richness and the elements of a great deal of traffic, required a special and permanent service, and which could not be fulfilled by the officers occupying the ordinary positions on the remainder of the road. Upon this subject, I have the honor to refer you to the special report I made you when I recommended the appointment of Mr. G. A. Gouin. Having obtained your consent, I appointed this gentleman local manager of the branch which ought, besides the local traffic of different manufacturing or lumbering establishments, to furnish us with 2,500 carloads of freight per annum.

Up to the 1st June, 1880, the engineers, Messrs. Light and Peterson, have had control of the maintenance of the road; but now that the road is in a running condition, I have assumed the general management, and this upon Mr. Shanly's advice and your orders. The works that remain to complete the road are subject to my orders, upon the report of the engineers. One of the reasons that gave rise to the decision, was the importance of leaving the responsibility and management in the hands of one and the same officer, and thereby prevent accidents and damages which might arise, and which a single management alone would avoid.

I refer you for further details to the general orders which comprise all our rules of management.

TRAFFIC.

The road still continues to yield satisfactory returns. If one considers that the receipts are purely of a local nature, that our rolling stock is still insufficient, and that we have not sufficient connections with the net-work of the Western railways, we may well be astonished that a road which is scarcely completed should give such good returns, with only the passenger and freight traffic of the line itself. I hope it will be possible soon to establish useful connections that will also afford an outlet for our produce and supply traffic for our line

I wish you to observe that the traffic of the road tends more and more to become established under normal conditions as to the proportion of conveyance of passengers and freight. The average of passenger travel upon the best lines is 32 per cent., that of freight is 68 per cent., and that of sundry receipts 5 per cent.

In 1878 Mr. Scott gave the following statistics in his report:—

Conveyance of passengers	57	per cent.
" freight	38	"
Sundry receipts	5	"

This year we have

Passengers	53⅓	"
Freight	38⅓	"
Sundries	8⅓	"

I was all the more struck by the anomaly this table affords us, since the Eastern section, which was the only one then running, goes through the most fertile country, the best cultivated one, and that in which the principal raw material of our industrial and manufacturing establishments are found in greater abundance than in any other part of the Dominion. One would expect that the traffic of conveying freight would hold the same proportion as on other roads. This state of things arises from the fact that this road had not enough rolling stock to supply the wants of the traffic in transporting freight.

Another fact which explains the freight traffic being out of proportion, is our having to take reduced rates in order to establish a business. This state of things, imposed upon us by necessity, has also the effect of increasing the proportion between the receipts and expenditure. Nevertheless we have 73½ per cent. of the expenses, which is within the average; but I

have no doubt that next year we shall arrive at 70 per cent., which is the normal state. I may say here that the statement shown by the contractor, Mr. McGreevy, of the last six months of the running of the road while he had it, proves that the expenses exceeded the receipts. I am happy, after the amalgamation of the two divisions, to be able to show quite a different result. I have done my best to place our road in a condition to be able to supply the wants of trade in our neighborhood; and for this purpose I have had several sidings laid down at the principal manufactories, etc., etc., and I have increased the facilities they had to make use of our road for the ends of their trade.

The Laurentian Railway belongs to a private company, and connects with our line at St. Therese. The receipts from the traffic which is brought to our line from this one are always on the increase, since it began to run. The traffic on the road is composed principally of lumber, firewood, live stock, grain and agricultural produce in general.

The traffic on the St. Jérome branch has quite equalled the hopes of the promoters of this line. Beside the annual revenue derived from this line, colonization is greatly assisted by its powerful concurrence. The new settlements upon the Upper Ottawa and upon the Red River which under the impetus given by the Reverend Mr. Labelle, have given great hopes and results which are already appreciable, will furnish us with a remunerative traffic before very long.

I should mention here an industry which the building of the railway has greatly stimulated and which is now being worked with as much intelligence as profit; I mean the quarries of building stone which are situated at St. Vincent de Paul and Deschambault. This industry has taken rapid strides. The harbour works at Quebec and the graving dock are being built of this stone. I have thought it right to establish a minimum price for the carriage of this merchandise which I hope will furnish us with a continual traffic. The facilities our road affords to the shipping trade for the carrying of its merchandise and the delivery of the same up-

on the principal deep water wharves should, when all our connections are regularly established, give a considerable increase to our traffic. Already the ship-owners find it more expeditious and advantageous to have transported by rail that class of goods which, up to now, have always been transported by other means.

ROLLING-STOCK.

On entering into office I carefully examined the whole equipment of the road and the state in which it was. This department, like the others, was divided into two sections, the Eastern and Western.

The rolling stock of this latter section consisted of 14 locomotive engines, all in good working order, with the exception of two which I had repaired, 2 drawing-room cars, 6 first class passenger cars, 6 second class cars, 4 baggage cars, 2 mixed cars, 7 cattle cars, 4 hay cars, 78 freight cars, 51 platform cars, 1 official car, 4 snow plows, 4 scrapers, one tank for water in case of fire, 1 tool car, fully provided with all necessary tools in case of accident, and which are always ready for use. This rolling stock, which was in the possession of the government since 18 months and which performed the regular service between Hochelaga and Hull was in a good state of preservation and could still continue to do this work on that section.

On the Eastern division the rolling stock which had just been handed over by the contractor to the government, consisted of 19 locomotive engines, 1 pilot engine, 8 first class passenger cars, 8 second class passenger cars, 13 cattle cars, 10 hay cars, 93 box cars and 164 platform cars, besides 10 old platform cars, which were useless and had to be condemned immediately.

This makes a total of:

34 locomotive engines;
14 first class cars;
2 drawing room cars;
14 second class "
4 baggage "
2 mixed "
1 official "
171 box "
14 hay "
20 cattle "
215 platform "
1 water tank;
1 tool car;
4 snow ploughs;
4 scrapers.

It was absolutely necessary to organize some workshops at Quebec, and thus to have some suitable place to keep the supplies and material of all kinds and to centralize the works and the management. This workshop is now in good working order, forges are established therein, as well as a workshop for the tinsmiths and finishers. We have on the second story the blacksmiths' shop and painters' shop where all the necessary work for the line can be done on favorable terms. I mean to have the greater portion of the first class cars made at Quebec which can only be made under the immediate and personal supervision of the mechanical superintendent, and the repairs to the cars will in the future be done also at Quebec. The new workshops now completed and in good repair, as well as the building now occupied as the workshops, will give us ample space for these works.

In Montreal we have, as yet, but temporary workshops, under the management of the mechanical superintendent, but they contain a splendid set of tools.

At the beginning of my management, I aimed at giving the passengers every comfort and all the necessary facilities to be able to compete successfully with rival roads. With this object in view I put myself in communication with the different car manufacturers in order to procure drawing-room and sleeping cars, but I was unable to buy any; the Pullman company offered to lease me some for ten years at $4,000 per annum; the Wagner company for the same length of time at $3,000 per annum. Finding these prices exhorbitant, I decided to have four first class cars turned into two drawing-room cars for day trains and two sleeping cars for the night trains.

As these transformations were merely an experiment, I thought I would do them at the least possible cost. Had the experiment not proved favorable, the interior divisions of these cars were such that, at a slight cost, they could have been replaced in their former condition of first class passenger cars. The cost of these changes including the furniture, carpets, bedding, &c., amounted to the sum of $8,034, from which we must deduct the seats and furniture of the first class cars, that were taken out and which we have utilized in turning two second class cars into first class cars, and five third class cars into mixed cars with two compartments. These cars are used on the branches. I estimate the value of these seats at $1,400. The actual cost therefore of these four cars would be only $6,634.

It was in consequence of this result that I undertook to have two other drawing-room and sleeping cars built upon a new plan which is very much liked. The fitting up of these cars is very ingenious and is different from any patented car; they cost $12,000 each..

The receipts of the road have been much affected by the want of sufficient rolling stock, and government cannot expect as large profits from

this line as it is capable of yielding, until it is equipped upon the same footing as other railways in Canada.

The last statistics published by the Dominion government give the average rolling stock of all the railways of Canada together. By taking the proportion of the number of miles of road in operation and comparing this proportion with the average of all the railways in the Dominion, these statistics show that we ought to have 51 locomotive engines, 25 first class cars, 15 second class cars, 13 baggage, mail and express cars, 691 box cars, 305 platform cars. We have only 33 engines, 20 first class cars, 14 second class cars, 14 baggage cars, 441 box and cattle cars and 206 platform cars, which makes a deficit on our part, of 18 engines, 5 first class cars, 1 second class car, 254 closed cars. We might add 242 hay cars, but these are only for special service which lasts only for a season, and should be much more numerous to supply the actual requirements.

A shed for the engines was indispensable at Hochelaga. The only shelter we had for our engines was a square covering placed across the track which held four engines, opposite to the turn-table. The peculiar position of this shed was dangerous and also an obstruction. The value of the fuel alone for the engines remaining exposed during the winter, amounted to the sum of $3,300 per annum. This shed cost $2,650, and is built in such a way that, should it become necessary to build one of more durable material, part of the wood of which it is built could be utilized elsewhere.

We have also built a store for small supplies for the cars and engines, and offices for the mechanical superintendent and general storekeeper. These buildings could be used as sheds for engines should they cease to have their present use.

At several places the water was supplied by aqueducts, the price of which came very high. I have had built by our workmen, tanks supplied by gravitation or by machinery, especially at Quebec, Hochelaga and Three Rivers. In this branch I have effected an economy of several thousand dollars per annum.

Experience has proved to us that coal is less expensive than wood as fuel. You will see by the monthly return what the proportion of expense is between wood and coal. Though coal necessitates a larger cost for repairs in engines, nevertheless, at the present price, it is more economical. Our rolling stock is now in very good working order.

Connections.

The connections of a railway are of such importance that I may safely say that the performance of this portion of my duties takes up more than one-half of the labor I have given to the Q., M., O. & O. Railway. It is the part which requires the greatest perseverance and watchfulness, and it is there I have the most frequently to tax my resources or take the initiative personally, because a Government has not the liberty enjoyed by an individual or a company. Conflicts between railways are amongst the most dangerous of conflicts. At a given moment, powerful organizations may unite to ruin a line. This danger exists for the Q., M., O. & O. as for any other railway, and, being well aware of it, I have endeavored to do my best, within the limited scope allowed me. I do not consider that I am at liberty to allow the success of the Q., M., O. & O. to be endangered, and to expose the province to sustain such a shock, which would threaten it with direct taxation ; for all its hopes are founded on the value of the road, since in the road it has invested almost all it possesses.

Governments, with respect to such conflicts, are not in the same position as companies. The latter are masters of their movements and their actions, while the hands of a Government are tied. A Government might miss the best of combinations, because it would not be prepared to carry it out. Uncertainties, such as a general election, or a special session, with all the delays consequent thereon, would suffice to destroy the good-will of business men, who are pressed by circumstances to conclude a transaction promptly, and experience proves that all railway arrangements are made abruptly, by a *coup d'état*, or at least under the influence of so imperative a necessity that capitalists do not hesitate to pay the price demanded. It

is only competition which can give value to a road, and competition always implies exigencies which must at once be met. And when we think of the important interests of the railways whose termini are in the Province of Quebec; when we recollect that the Grand Trunk and the Pacific, represent each hundreds of millions of dollars, and are fighting equally powerful companies, which will endeavor to protect themselves, we must expect a supreme effort to be made by all these rival companies, for an issue must be found, at any price, for all the new traffic which is preparing to come. Over the whole American Continent everything has a tendency towards monopolies and combinations of various lines in order to form powerful net-works. For instance, the trade of the West is now exclusively in the hands of five great railway companies:—1. The Pennsylvania Railroad, nearly 6,000 miles long; 2. The Grand Trunk, which now controls nearly 2,000 miles; 3. The New York Central and its connections; 4. The Erie and its connections; 5. The Baltimore & Ohio.

In the West our railway might effect connections: 1. With the Pacific, for the Pacific trade; 2. With the Ontario and Quebec and Great Western and Credit Valley, for the Chicago trade and also create a new western line; 3. With the Ontario and Pacific Junction or the Western and North-Western, for the St. Paul's trade, via Sault Ste. Marie. These three roads give three directions entirely different, and I will take the liberty of shewing you, in a few words, what I deemed it my duty to do, in order to keep these three avenues open, notwithstanding the most powerful interests contending against us.

When the conditions, on which the Syndicate obtained from the Federal Government the concession of the Canada Pacific, were first published, you were the first, Sir, to draw my attention to the entire omission of the Q., M., O. & O. Railway in the contract, although two private companies (the Canada Central and the Ontario Pacific Junction) were endowed by it with considerable advantages.

In examining clause 25 of the appendix to the contract, I find, in effect, that not only the railway of the Province of Quebec is excluded from par-

ticipating in any favors, but that power is given to the Syndicate to create a rival line for the Q., M., O. & O. from Ottawa to the Atlantic.

It is well known that we are not without competing lines. They are as follows :—

The Canada Central from Renfrew to Brockville on the Grand Trunk, connecting the Pacific with the American railways ;

The proposed line from Pembroke or some other and nearer point, on the Canada Central to Kingston ;

The St. Lawrence & Ottawa Railway, which takes the traffic to Prescott, thence to Ogdensburgh or to the Grand Trunk ;

The *Coteau* line, now called the *Atlantic*, which takes the Pacific trade direct to the American lines, viâ the Coteau Bridge ;

The Atlantic & Western Railway, running from Ottawa in a direct line, crossing the St. Lawrence at Lachine and leading by any line one may wish, either to Portland or Bangor or St. John, N.B., or by any of the existing roads.

After the conditions contained in the Pacific contract were published, it became necessary for your road to obtain the assurance that the Pacific would not give the preference, for its traffic, to any of these various lines, to the detriment of the Quebec Railway. In other words, we wished to be certain that when the Pacific would receive our freight at Lake Nipissing, it would not charge us more to carry it from that point to its destination on its line, either in Manitoba or British Columbia, than it would charge, for instance, to the Coteau Railway, and *vice versa ;* that if our agents worked up freight in the North-West, and put it on the Pacific with instructions to send it to Quebec by the North Shore Railway, the Pacific would not levy higher rates on goods consigned to the Q., M., O. & O. than on those sent by any other line. We paid no heed to the war of tariffs which the various

lines above-mentioned might oppose to us for running over their respective roads. We had to expect competition; we were in a position to meet it; we did not ask to be treated better than any of these roads, although as a national enterprise, built not as a speculation, but with the people's money, our road was entitled to favors from the public government.

We could not get a guarantee of this kind inserted in the bill passed by the Parliament at Ottawa, because a contract, binding the good faith of the parties, was in question, and nothing could be altered in it; but I had the honor of accompanying you in various interviews with the members of the Syndicate, and I understood that you had obtained from the parties interested, a clear and formal expression of their good-will.

The Federal Act, 43 Vict., chapter 52, gives to the Q., M., O. & O. considerable advantages over a portion of the Pacific. It secures to us full running powers to Calender Station, that is to say, we have the right to run our full trains over the entire length of the Canada Central at rates to be determined between the Q., M., O. & O. and the Canada Central. It was the only compensation which the Province of Quebec could expect as compensation for the $12,000 per mile which the Ottawa Government paid to the Canada Central. This compensation has been rather spoiled by the onerous condition we were obliged to undertake, although we received nothing from the Federal Government, that of granting the same privileges on our line to the Canada Central; but it is none the less true that at the proper time and place we may benefit by these provisions of the law.

The Ottawa Parliament, as you are aware, cancelled that portion of the Pacific which extends from Lake Nipissing to Sault St. Marie, and, in obedience to your instructions, I took care that there was introduced into the charters of the Ontario & Pacific Junction and the Northern & North Western, a clause which places us on the same footing as these lines, with respect to the Sault St. Marie trade.

As to the Chicago trade we can establish a line from Ottawa to Toronto to connect with the Great Western and the Western lines. Experience has

shown us that this is a difficult matter. A bill to this effect had failed to become law the previous year, in a manner which showed that the Q., M., O. & O. had powerful adversaries. It was only with the greatest efforts and by the united vote of the members of the Province of Quebec, that we were enabled to carry this year a measure so important for our road.

But, I do not mean to say that all the danger is over. I take the liberty of pointing out to you all that is possible, without in any way pretending that there are any hostile intentions.

1. It is none the less true that the Pacific now goes as far as Brockville by connecting with the Grand Trunk, and can send as much of the trade as it pleases by the St. Lawrence or, on the other side, by the American lines.

2. The Ontario & Pacific Junction has already 115 miles completed, with a grant of $8,000 per mile for the 120 miles from Calender Station to Toronto, where trade can also be brought.

3. The railway between Kingston and Pembroke has already 70 miles built, thus adding a new rival line from the Pacific to the River St. Lawrence or to the Grand Trunk at Kingston.

4. The St. Lawrence & Ottawa is a well known road which has been running for a long time between the terminus of the Canada Central at Ottawa to the Rive. St. Lawrence at Prescott and on the other side of the American lines.

The Vermont Central now has a direct line from Argenteuil to Boston.

5. The Atlantic and North Western which starts from Ottawa and goes in a straight line to Lachute, has a charter which is one of the most dangerous for us, for it can cross the St. Lawrence and continue its diagonal line to Sherbrooke, Portland or any point on the Atlantic and pass into the hands of the Pacific Company.

6. The Vaudreuil, and Coteau lines, amalgamated under the name of the Canadian Atlantic, are in full operation, and will soon have a second line between Montreal and Ottawa of the same length as the Q., M., O. & O.

7. Upon the amendments obtained at the last session of the Federal Parliament, the International Railway, which has formed connections with the net-work of roads starting from St. Johns, P.Q., via Sherbrooke, Lennoxville and Megantic, is building its line towards Maine and New Brunswick.

I may add to the list of existing charters ;

8. That the Grand Trunk, with a view of preventing the building of the Ontario & Quebec, has just purchased for the sum of $900,000, 70 miles of the Grand Junction Road which was intended to serve as part of the Ontario and Quebec.

9. That the Pacific is making desperate efforts to control the Ontario & Quebec charter.

10. That it was announced about two months ago, that the Canada Central had, by agreement, connected with the Canadian Atlantic near Ottawa where the two lines converge.

11. That the supposed and declared intention, I believe, of the Federal Government is to get rid of the Intercolonial to any corporation that will give sufficient guarantees.

12. That the proprietors of the St. Paul, Minneapolis and Manitoba, who are also proprietors of the Canadian Pacific, have purchased the St. Cloud and Minneapolis Railway, which has a grant of land, with a view, to make certain of a more direct line towards Sault St. Marie, a line which they wish to control upon American soil ; and that even if we had running powers

upon the Pacific as far as Sault St. Marie, our operations might still be impeded by arrangements outside of our control upon American soil.

The result therefore is that no end of combinations, can be made against the Q. M. O. & O. Railway. No one for example could find fault with the Grand Trunk, for diverting the western trade by the Ontario and Pacific Junction at Toronto, by the Pembroke and Kingston, at Kingston, by the Canada Central at Brockville, by the St. Lawrence and Ottawa at Prescott, by the Canadian Atlantic at Côteau, by the Atlantic and North Western at Lachine or find fault with the Pacific for allying itself with the Canadian Atlantic, or with the Atlantic and North Western, in taking over the Ontario and Quebec, and in securing the Intercolonial, which would reduce the Q. M. O. & O. to the modest position of a purely local road.

I do not wish you to believe that any of these threats have actually been made against the Province of Quebec. But these events are possible and I wish to make it clearly understood why I have endeavored to make sure of some connections for the Q. M. O. & O. It is with this object in view that I have tried to gain, for the Province of Quebec, a large share of influence in the Ontario and Quebec Railway. It is with this object that I have endeavored to enter into friendly relations with the South Eastern, while awaiting a traffic tarif, which would open New York and Boston to us. It is with this object that I started and supported the project of a tunnel and of the South Shore Railway, which at a given moment would not only allow of our sending our agricultural produce and passengers to New England, but allow of our carrying the Chicago trade by means of the American lines, running along the South Shore of the St. Lawrence from Niagara, by a line just as short as the Grand Trunk. And it is with this object that I thought of the bridge over the ice, which had for effect the lowering of the Grand Trunk rates for crossing the Victoria Bridge, from $16 to $7 per car.

Our interest is to ally our destiny with that of the Ontario and Quebec, but in case the alliance should not come to pass or that that road should not be built, we could still count upon the tunnel and the South Shore

Railway to establish a new line from the west by means of the American roads.

If a little surprise was exhibited in some quarters at our having signed a contract with the South Eastern for ten years, to allow of our cars passing on their line, people must now be convinced of the prudence of such a step. The Southern lines have since pooled their receipts and, without a contract, the lines on the North Shore would have been at the mercy of this powerful organization which might have raised tariffs as it pleased. This contract assures us connections with New York and Boston, and our railway has already derived a benefit therefrom.

In conclusion, I am of opinion that to guard against what may happen, it is very important to effect a connection between the Intercolonial at Levis, and the Q. M. O. & O. at Pointe à Carcy.

I had an interview with the general superintendent, Mr. D. Pottinger during the month of June 1880; we visited Hadlow Cove together and another suitable place at St. Joseph de Levis. Without going into details I may say here that a connection is practicable at either place and that the loaded cars could be crossed in steamers at all seasons as they do between Sarnia and Detroit.

We likewise agreed as to the importance of this connection, if the tunnel under the St. Lawrence between Hochelaga and Longueuil, and a Railway, on the South Shore, to connect the network on the North side with the great American lines, were built. The carrying out of this plan, would give our connection with the Intercolonial a greater importance and an addition to the traffic on our road which would be difficult to estimate, but which would certainly greatly increase the receipts.

We could carry upon the best possible terms the passengers and goods coming from the West and going in the direction of the Intercolonial and

we would have every facility to tranship them by the outlet of our network.

In the event of concluding some arrangement with the new Tunnel and South Shore Company, it would be possible to establish uninterrupted communication between Chicago and Halifax by the 1st January next, or at the latest by the 1st July of next year, and this even though the tunnel should not be completed for three years.

This communication would be established by placing two tracks upon the ice, the one between Berthier and Sorel and the other between Hochelaga and Longueuil. The advantage of these two roads consists in the fact that the ice always takes between Berthier and Sorel, so as to be able to bear a loaded train, before the ferry boats have ceased to run between Hochelnga and Longueuil, and thus when the ferry boats cease to run, we would have to send our train coming from the West as far as Sutton Junction, and from thence to Sorel, to join our road. This would cause us to go over 100 miles more, but this would be nothing compared with the advantage to be derived from the fact of keeping the communication uninterrupted.

As soon as the ice takes between Hochelaga and Longueuil, we can lay a track in two days, and then take our regular course.

Besides the advantages we would derive from our connection with railways going to the West, there is another, which would contribute largely to the prosperity of the country to the North of us, and to the improvement and development of our agriculture; it is the facility of communication with the New England States. Taking it as a whole, the country between Quebec & Ottawa, on the North Shore of the St. Lawrence, is one of the richest and most productive in the whole province; the want of rapid, easy and cheap communication, up to now, was the only reason of its inferiority in productiveness. The agriculturalist and manufacturer found that the expense of forwarding their goods to market was so great

that they ceased to produce more than what was necessary for their own consumption.

In order to benefit by these advantages and to enable our population to benefit thereby we most open up numerous outlets and make our means of transport equal our production; for this purpose it is necessary to obtain access to the New England markets. We have at our doors twelve or fifteen towns where a ready market is found for all the produce of our mines, forests fields, &c.

Let me here give some examples which will demonstrate the practical result much better than the most elaborate theories.

Last year the district between Three Rivers and Terrebonne, had a surplus of hay. Pressed hay was selling cheap on the North Shore, whereas it was quoted in Boston at $27 per ton. Therefore our producers were losing a large profit which they could have realized, or at least did in part last winter and which they will realize in full when we have the necessary cars. Our contract with the South Eastern and its connections provides for this pressing need; for they are obliged between them, to furnish us seven hundred hay cars. Last winter prevented the execution of the whole of this part of the agreement, because it was impossible in the whole of the United States to get the number of cars. But these lines have now their contingent for next winter.

The lumber merchants of the Ottawa valley have no other market for their inferior quality of deals and boards than the New England States; they can ship their merchandise only during summer by water to Whitehall and Burlington and thence by rail to its destination. The cost of transport by water between Ottawa and Burlington or Whitehall is $2.50 per thousand feet. The transhipment from barges to cars costs 50 cents per thousand feet, and the loss that is sustained upon the transhipment of goods is about 50 cents per thousand feet. Then it has to travel 272 miles to reach Boston and by the lowest tariff this would cost 1 cent per mile per thou-

sand feet, and by summer navigation tariff the total cost therefor would be $6.22.

Now, we could carry the same wood without transhipment at all seasons of the year and land it at its destination in three days, for the sum of $6.00 per thousand feet.

The same applies to minerals, hemlock-bark, manufactured products, grain, live-stock, &c., &c. These different considerations, and the time and labor I propose to continue to devote to the development of traffic of the Q. M. O. & O., allow us to expect as an approximate estimate of the operations of next year, a receipt of about one million dollars.

I remain,

Sir,

Your obedient servant,

L. A. SENECAL,
General Superintendent.

QUEBEC, MONTREAL, OTTAWA

Statement of Traffic Earnings, Operating Expenses

	$ cts.	$ cts.
Total Passenger Traffic		
Extra Baggage	190,764 31	
Conductors Collections	451 94	
Palace Day Car	5,297 26	
Palace Sleeping Car	5,306 26	
	2,786 50	
		204,606 21
Total Freight Traffic		146,132 15
SUNDRIES :—		
Miscellaneous and Special Train Service	15,066 18	
Mail Service	7,627 95	
Express	2,381 36	
Telegraph	403 87	
Rentals	463 15	
Car service	5,645 58	
		31,588 09
		$382,326 45

NOTE.—Excess of Traffic Earning, over amount shown in Auditors Statement is due to the fact, that in this Statement, Railway Freight Service is included and charged in the Operating Expenses.

M. H. SEYMOUR, JR.,
Bookkeeper.

Montreal, 31st May, 1881.

& OCCIDENTAL RAILWAY.

for the six months ending 31st December, 1880.

	$ cts.	$ cts.
MECHANICAL DEPARTMENT:—		
Wages of Enginemen, Firemen and Cleaners	22,110 00	
Fuel for Locomotives	41,594 50	
Oil, Tallow, Waste, &c., for Engines	4,055 45	
Repairs of Engines and Tenders	6,402 52	
Repairs and Renewals of Passenger Cars	9,061 61	
Repairs and Renewals of Freight Cars	9,205 63	
Sundries—Pumping Engines, Water Supply, Lighting Shops, maintenance of Turntables, Pumps, Tanks	5,981 03	
Superintendence—Salaries of Mechanical Superintendent, Foreman and Clerks	4,145 00	
		102,559 70
ENGINEERING DEPARTMENT:—		
Wages of Laborers employed on track, including sidings	44,189 20	
Repairs of Bridges and Culverts	2,688 68	
Repairs and Renewals of Buildings	3,469 20	
Repairs of Fencing	1,396 64	
Clearing snow	325 85	
Engineering Superintendence	750 00	
Sundry Stores, Materials, &c.	5,373 80	
		58,193 37
TRAFFIC DEPARTMENT:—		
General Offices—Salaries of Management, including Travelling Expenses, Store supplies, Rentals, Legal Expenses, &c	20,462 09	
Station Agents, Clerks, Porters, &c	45,824 99	
Conductors, Bagagemen and Brakesmen	18,661 10	
Compensation Expenses arising from injury to individuals	683 77	
Claims for loss and damage to Freight	20 04	
Claims for loss and damage to Property	37 00	
Loss from Stock killed	50 00	
Insurance Premiums	3,417 15	
General Stores, Stationery and Fuel supplies to Stations, including Expenses of Telegraph and Telephone Service	29,961 84	
Advertising	2,456 81	
		120,574 79
Total Operating Expenses		281,327 86
Net Earnings		100,998 50
		382,326 45

Expenditure ..... $73 58 per cent.
Revenue ..... 26 42 " }

A. LOUTHOOD,
Accountant.

APPENDIX 2.

QUEBEC, MONTREAL, OTTAWA & OCCIDENTAL RAILWAY.

REPORT OF Mr. A. L. LIGHT.

CHIEF ENGINEER OF THE EASTERN EIVISION.

QUEBEC, 15th June, 1881.

Honorable J. A. CHAPLEAU,
Premier of the Province of Quebec.

SIR,

In compliance with your instructions, I have the honor to report as follows (for the year ending March 1st 1881), upon that portion of the "Quebec, Montreal, Ottawa and Occidental railway," between Quebec and St. Martin's junction, including the Piles branch.

The permanent way and bridges are in excellent condition, and have been maintained at a reasonable cost. The steel rails, iron bridges, foundations and masonry, in particular, have proved their first class qualities.

The working of the road last winter was very satisfactory, no detention of trains from snow obstructions having taken place (although this is a common occurrence to railways in this section of the country), and the value of an elevated road-bed has thereby been fully established. The cost of keeping the track clear of snow,—a very serious item,—has also thus been reduced to a minimum.

As no suitable ballast could be found in the neighbourhood, heavier material had to be brought from places (specially selected) at some considerable distance from the main line, and the embankments had to be widened, in order to receive a "lift" or covering of the same, with a view to preserve the original road bed, which was, in many places, literally drifting away, the side ditches being almost filled up by the loose sand disturbed by passing trains, and this, particularly near bridge approaches, and at high embankments. The covering of heavier ballast was also needed for the preservation of the rolling stock, as well as for the comfort of the travelling public, which would have been otherwise seriously affected.

Widening and ballasting are now going on; 95 miles of the first, and 50 miles of the last were completed last year; and the balance can be finished this season.

Ten (10) additional culverts, some dry masonry walls, and crib protection in exposed places are in course of construction on account of damages caused by floods, and with a view to preserve embankments exposed to "freshets." "Out-let" and "off-take," drains have also been made in several places to carry off, and distribute the flood water which caused much damage to farms in the vicinity of the railway, and to strengthen the condition of the railway itself. All this work is being done at a reasonable cost and can be completed this year.

During the past year, traffic has greatly increased, and the traffic department having demanded enlarged accommodation, the expenditure on buildings has been greater than was at first anticipated; notably, way

stations, dwellings for agents, office-fittings, &c., also cattle yards and hay platforms, which have been erected to give loading accommodation for the largely increased hay traffic.

This class of work could not be well dispensed with, and has formed a considerable item in the past year's expenditure. The greater portion of it is now finished.

I have also been called upon by the traffic department to provide "semaphores" for the protection of several stations and junctions. This item is included in that for station buildings and accommodation.

A most efficient water service, which formed one of the principal items of last year's expenditure, was completed last year, and is now giving every satisfaction.

The workshops at Quebec were finished last year, and are now in working order; they are a fine set of buildings.

Special attention has been given to wooden bridges, which have been examined and strengthened, in order to preserve them as long as is possible in the case of such structures.

The Batiscan draw-bridge, which must always to a certain extent remain a source of anxiety, has been especially protected by the erection of signals on the draw-span.

In conclusion, the principal classes of work done last year (1880) and chargeable to construction are as follows:

Widening embankments, new sidings, straightening Dagenais curve and ballasting	$ 83,767.00
Culverts and protection work	46,375.00
Farm crossings	5,973.00
Off-take drains	9,000.00
Water stations, cranes, reservoirs	21,291.00
Stations, dwellings, hay platforms, cattle yards, semaphores, etc.	36,000.00
Sundry charges against construction	4,000.00
Work-shops at Quebec, exclusive of machinery	10,000.00
	$216,406.00

Approximate estimate to complete works in progress on main line between Quebec and St. Martin Junction, also Piles branch.

Drainage	$ 5,000.00
Widening embankments	29,000.00
Ballasting	46,200.00
Stations	12,000.00
Masonry and protection work	18,600.00
Contingencies to cover work on Piles Branch, completion of wharves at Quebec, etc.	30,000.00
	$140,800.00

N.B.—This estimate does not cover anything connected with the Joliette extension, Three Rivers Loop Line, the Berthier Branch or the connection with the Grand Trunk, or any other extension or long sidings in the city of Quebec or elsewhere, or land purchases, but simply covers the completion of the main line and Piles Branch

I have the honor to be,

Sir,

Your obedient servant,

A. L. LIGHT.

APPENDIX 3.

QUEBEC, MONTREAL, OTTAWA & OCCIDENTAL RAILWAY.

REPORT OF Mr. P. ALEX. PETERSON,

CHIEF ENGINEER OF THE WESTERN DIVISION.

MONTREAL, 28th May 1881.

HONORABLE J. A. CHAPLEAU,
Premier, &c.,
Quebec.

SIR,

I have the honor to acknowledge the receipt of your request of the 2nd inst., in which I am asked to prepare, in the shortest time possible, a report, with full details, of the works on the Western Division (the Chaudière Bridge and Montreal extension included) from the 1st April 1880, to the 31st March 1881, together with an approximate estimate of the works still required to complete the line between Montreal and Ottawa, adding thereto all such further details and information, as I may think advantageous to furnish.

During the year ending 31st March 1881, the total expenditure under this department, has been $352,829.57 for works of construction, and $59,142.72 for maintenance and renewals of permanent way and buildings. This sum of $352,829.57, spent upon works of construction is to be divided under two heads, viz.: 1. works required under the original contract, and, 2. additional works not required under the original contract, such as the Chaudière Bridge, extension to Quebec Gate Barracks, Union Station at Ottawa, Phosphate-platforms and others works required in connection with the requirements of the traffic.

There has been expended under the first of these heads, the sum of $26,102.99, made up as follows: Land purchase, $13,706.74, earth-work and ballast $10,272.23, station buildings at North Nation Mills, $1,129.96, Drainage $696.69, Farm crossings $297.40.

Under the second head the expenditure has been $326,726.60 of which $228,109.05 has been expended on the Chaudière Bridge, $7,310.35 on the Quebec Gate Barracks extension; $9,242.13, on the station buildings at the Union Station Ottawa, and the remainder has been expended on various items, the details of which are shewn on schedule No. 1.

On schedule No. 3, will be found an approximate estimate required to complete the line between Montreal and Ottawa, amounting to $678,040.10: of this sum $89,761.22 is required to complete the old contract, and the balance is for additional works; such as the extension to the Quebec Gate Barracks, new station at Ottawa, workshops, Hochelaga station yard, ballasting line where contract quantity is not sufficient to keep the ties out of the clay, branches and sidings into lumber yards and other works required to meet the present requirements of the traffic, and to aid in its future development.

MAINTENANCE AND RENEWAL OF PERMANENT WAY.

The amount expended under this head, $59,142.72, covers the wages and the materials employed in keeping the track in good order, and also repairs on bridges, buildings, turn-tables, &c.

The maintenance of the track has cost $48,352.79, or $28.28. per mile, per month, which is a low rate, considering that it includes all shovelling of snow, running snow-ploughs, flangers, &c., and that the small amount of ballast on the line causes the track to heave very much, requiring a great amount of labour, during the season of frost, to keep the track in fair condition.

The track is in as good condition as possible, considering the limited amount of ballast under the ties, and the bad condition of many of the ties. The ties are in many places very much decayed and require renewing during the present season. I estimate that at least 135,000, will be required to replace those that are decayed.

The ties should be put in ahead of the ballasting, so as to permit the track to be readily lifted and to save disturbing it after it has been ballasted and surfaced.

There is included in the charges for maintenance of way $6,350.00 on account of a renewing of the floor system of the St. Rose and Back River Bridges. These bridges originally had a wooden floor system, which having been decayed, required renewing; this has been done in iron with four longitudinal iron floor stringers. The entire cost of this work has been $19,144.11, the cost of renewing in wood would have been $6,350 00, so this sum has been charged to maintenance of way renewals, and the difference $12,794.11 to construction.

During the year, the stations have all been repainted and repaired and are now all in good order.

WORKS OF CONSTRUCTION.

Of the $352,829.59 spent upon works of construction during the year ending 31st March 1881, the sum of $26,102.97 has been spent as stated upon works required for completing the old contract, leaving a balance of $326,726.60 as the amount expended upon additional works; of this sum $228,109.65 has been expended on the Chaudiere bridge, making the total expenditure to 31st March 1881 $318,135.02, which represents the entire cost of this structure and approaches up to this date; of this amount $110,552.92 has been paid to Mr. H. J. Beemer, $193,078.00 to Messrs. Clark, Reeves & Co. for the bridge proper; the floor system has cost $6,271.96 charges of mechanical department for engine and car service, $1,170.00, sundry accounts, frames for name, painting, &c. $678.82, superintendent's office expenses, &c. $6,383.32. The character of some portions of the work on this bridge has been improved and its cost consequently increased, yet by the reduction of the quantities for the masonry, earth work, &c., the cost has been less than the original contract price, which was $112,875.10.

The iron work was all completed and the final estimate for the contract amount $193,078.00 was given on the 28th February 1881.

The work of putting on the timber floor system, which was not a part of the original contract, was done by Clarke, Reeves & Co., at a cost of $2,739.22, as shewn by final estimate appended.

Before the bridge was accepted and the final estimate given, it was carefully tested on the 13th December 1880, each span being covered from end to end with locomotives. With this load the deflection was taken with the following results.

135 feet span deflected 4/10 of an inch.
150 " " 5/10 of "
160 " " 6/10 of "
255 " " one inch.

There was no permanent set, each span returned to its original height after the load was removed, and in no case, as will be seen, did the deflection exceed or even reach the greatest amount allowed by the specification, viz: 1/1500 of the span.

The contract for the extension to the Quebec Gate Barracks was signed on the 20th day of January 1880, and work was commenced on the cribs and has been carried on as rapidly as possible.

Little or nothing has been done upon the masonry, and I am afraid this work will not be completed in the time specified.

THE UNION STATION AT OTTAWA.

By the arrangement made with the Canada Central Railway, the passenger station was to be built, for the joint use of the two companies, and each company was to build its own freight station. The passenger station which is 74'6" x 38' is nearly completed, it has three covered ways, with a track for each line, between them 350 feet in length, each of which will hold seven cars; separate baggage rooms are being built on each side of the outer covered ways. The building is heated by steam and has gas and water pipes laid in. It has twelve large rooms and will furnish ample accommodation for the two companies. The work has been done by the government by days work; it has cost to the 31st March $6,812.26, half of which is charged to the government.

The freight shed has been built under contract by Mr. H. J. Beemer, it is 286' x 30', it has stone foundation walls and is a very substantial building, it has cost $5,836.00 and requires one hundred dollars to complete it.

A stone arch has been built over the Ottawa water works aqueduct, so as to allow the tracks to be run into the Union Station, at a cost of

$4,212.25. The yard outside of the aqueduct has also been widened. This work has cost $2,175.98.

A great variety of other work has been done, as will be seen by reference to schedule No. 1, where the amount expended on each kind of work is set forth. These works have been rendered necessary to enable the line to be properly worked and to provide for the extension of the traffic.

WORK TO BE DONE.

The value of the work yet to be done, to complete the line according to the requirements of the original contract, is $89,761.22 and the additional works now under contract, or in contemplation, will require the sum of $583,978.88, making a total of $673,740.00, as shewn by schedule No. 3.

GENERAL WORKS TO BE DONE.

Under this head, as will be seen by schedule No. 3, the expenditure is estimated at $233,678.42; this is in excess of the amount placed under this head last year, as there are several branch lines to saw mills included, which were not contemplated at that time. The estimate for ballasting is increased, as the contract rates are now 50 p. c. higher than they were at that date. The workshops have been designed upon so much larger a scale than was originally intended or than I considered necessary that even without tools, they will cost far more than I estimated last year for shops and tools complete.

Among the most pressing works required, I would mention that in the Hochelaga station yard, for which I have allowed the following sums: grading $11,000.00, three miles of sidings $13,140.00, new engine house $16,000.00. The condition and arrangement of this yard are as bad as they can be, and this certainly doubles the amount of shunting that would be necessary in a yard properly laid out.

Before any thing can be done to put it in a proper condition, it will be necessary to remove the temporary engine shed and turn-table from the position in which they are now, as they completely block the entrance to the yard and render any attempt to improve it unavailing.

The several branch lines that are proposed and included in the estimate will, I believe, yield a large revenue and some of them will nearly pay for themselves the first year they are brought into use.

EXTENSION TO QUEBEC GATE BARRACKS.

This work as originally designed, was estimated to cost $361,492.16, as will be seen in my estimate of last year. Various additions and changes have since been made, which will have the effect of increasing the cost to about $418,311.68. The increases are principally due to the following:

1. Putting all the cribs down to the level of the wharf, as required by the Harbour Commissioners, so that the earth in front can be excavated and additional ground obtained for wharfage.—Of course, the cost of this will be taken into account when the terms of settlement for right of way and use of wharf are considered.

2. Filling the cribs with stone, instead of earth, as originally proposed.

3. Bonus to be paid contractors, for early completion.

4. Additional ramps for leading to Ferry.

5. Additional bridges required by Harbour Commissioners :—One at Harbour street, and one at the tobacco factory.

The amount allowed for the station buildings at the Barracks is only $40,000.00, the same amount that was put in the estimate of last year; whether this will be enough, or not, will of course depend upon the character of the structures that are adopted. I think that as cheap a station

should be put up as, will meet the present requirements of the traffic, and present a neat and fitting appearance, for I believe that before long the station ground will be extended to Jacques Cartier Square, and that new arrangements will then be required both for freight and passenger stations

Trusting the above, with the schedules appended, will furnish all information required,

I have the honor to be,

Sir,

Your obedient servant,

P. ALEX. PETERSON,
Chief Engineer.

STATEMENT of Expenditure on construction account, from 1st April 1880, to the 31st March 1881.

Land purchase	$13706 74
Fencing	1921 29
Earth excavation	10033 27
Rails and fastenings	13433 98
Ties	640 90
Ballasting	13152 93
Tracklaying	6937 45
Farm crossings	297 40
Culverts and cattle guards	528 01
Station buildings, repair shops, Engine houses, Turntables, wood sheds Tanks, &c., including Ottawa station buildings	28667 95
Engineering	4750 89
Steel Frogs	464 50
Switch stands	719 44
Hand Cars	91 27
Putting on nut locks	45 60
Chaudière Bridge	228109 05
Extension to Quebec Gate-Barracks	7310 35
Draining	696 67
Signals and Semaphores	1030 58
Lifting track	3241 80
Renewal of superstructure of Back River and St. Rose Bridges, proportion of cost	12794 11
Water supply	1279 34
Mile posts	12 93
Equipment	270 87
Masonry in culverts	4192 25
Rip Rap	500 00
Total	$352829 57

P. A. PETERSON,
Chief Engineer.

Montreal, 28th May 1881.

SCHEDULE No. 2.

STATEMENT shewing the amount remaining unexpended of the works required under the old contract, at the 31st March, 1881.

ITEMS.	Required to complete at the 31st March, 1880.	Amount expended from 1st April, 1880, to 31st March, 1881.	Amount remaining to complete works at the 31st March, 1881.
	$ cts.	$ cts.	$ cts.
Land purchase	15806 12	13706 74	2099 38
Earth excavation and ballast	10800 00	10272 20	527 80
Dry masonry	102 47	"	102 47
Farm crossings	1214 43	297 40	917 03
Snow fences	1149 52	"	1149 52
Under drains	5143 83	696 67	4447 16
Station buildings, work shops, Engine houses, Turntables, Tanks, &c	81647 82	1129 96	80517 86
Total	$115864 19	$26102 97	$89761 22

P. A. PETERSON,
Chief Engineer.

Montreal, 28th May, 1881.

SCHEDULE No 3.—SHEET No. 1.

ESTIMATE of total expenditure required to complete original contract, and additional works now under contract and in contemplation, on line, between Montreal, Aylmer and St. Jérome, including right of way, extra sidings, stations, ballasting, &c., necessary to place the line in complete working order, from April 1st, 1881.

GENERAL WORK.

Right of way	$7000 00
Ballast on main line and branches 120,000 c. y., at 7 cts	32400 00
Drainage	4303 43
Masonry copings to culverts	300 00
Hochelaga station ground—grading	11000 00
" sidings in yard, 3 miles at $4,350.00	13140 00
" new engine house	16000 00
Filling in Smiths quarry bridge	8000 00
Mile-End, new land for station ground, 78,015 at 10 cts	7801 50
" grading station ground	1200 00
" one mile of sidings	4350 00
Back River—New siding for Bectroot Sugar Co	650 00
St. Martins junction—New station ground 1¼ acre	100 00
" " New station building	1200 00
" " ¼ mile of siding	1100 00
" " Y curve to connect with eastern division, including land	4250 00
Buckingham—Siding to Ross Bros., including land	5000 00
Branch line to Ironsides and Gilmour's mills, including land	14000 00
" " to Conroy's Mills at Deschenes	5150 00
" Y curve from Aylmer Branch to Chaudiere bridge	6200 00
Putting in mile posts	60 00
Machine shops (without tools) in Montreal, according to plans proposed by mechanical superintendent	70000 00
	213234 93
Add for contingencies, superintendence, &c., &c., 10 p. c	21323 49
	$234558 42

SCHEDULE No. 3.—SHEET No. 2.

ESTIMATE of work required to complete Chaudiere bridge.

Painting floor system of bridge	$500 00
Right of way over Mr. Reynolds land	1000 00
	$1500 00

ESTIMATE of work to complete Ottawa station ground.

New engine house at Ottawa, including land	$7000 00
To complete station building, covered ways, baggage shed and W. C. Ice house, &c., &c., (half cost)	3850 00
To complete freight shed	100 00
New tracks, say half of 3 miles at $4,380.00	6520 00
Grading yard (half cost), say 6,000 c. yds. at 20 cts	1200 00
	$19,670 00

ESTIMATE of work to complete Quebec Gate Barracks extension.

Land purchase	$132990 00
Cribwork, masonry, &c., including contingencies, extras, &c	221321 68
New station buildings at Quebec Gate Barracks	40000 00
New tracks, including sidings, ballast, &c	24000 00
	$418311 68

SCHEDULE No. 3.—SHEET No. 3.

SUMMARY of work, required to be done to complete original contract, and additional works now under contract, and in contemplation, on Main Line and Branches, Chaudière Bridge, Ottawa Station, Ground and Buildings, and Quebec Gate Barracks Extension, from the first day of April, 1881.

On Main Line and Branches	$234558 42
" Chaudière Bridge	1500 00
" Ottawa Station, Ground and Buildings	19670 00
" Quebec Gate Barracks Extension	418311 68
Total	$678040 10

P. A. PETERSON,
Chief Engineer.

Montreal, 28th May, 1881.

SCHEDULE No. 4.

STATEMENT of Expenditure on Revenue, account from 1st April, 1880, to 31st March, 1881.

Repairs and Renewals of	Bridges and Culverts		$8679 90
"	"	Sidings	525 78
"	"	Fences	2253 01
"	"	Buildings	4439 03
"	"	Signals	203 47
"	"	Approaches	568 06
"	"	Turntables	360 90
"	"	Roadway	40605 67
Engineering and Superintendence			1500 00
		Total	$59142 72

P. A. PETERSON,
Chief Engineer.

Montreal, 28th May, 1881.

SCHEDULE No. 5.

STATEMENT of Buildings erected and the cost of same from 1st April, 1880, to 31st March, 1881.

Freight shed at Ottawa	$5836 00
Passenger Station do (one half cost)	3406 13
Dwelling house at Calument	1310 73
Combined Engine shed and dwelling, Calumet	1055 67
Dwelling house, St. Rose	323 58
Station building, St. Phillippe	1172 01
" North Nation Mills	1129 96
Wharf at Calumet	2785 62
Phosphate Bins Buckingham	1840 52
Water closets at Stations	909 59
Building platforms, Raggage sheds, Cattle yards, completing unfinished, offices and buildings at various stations, Fitting up store building at Hochelaga, &c., &c.	6898 14
Total	$20677 95

P. A. PETERSON,
Chief Engineer,

Montreal, 28th May, 1881.

SCHEDULE No. 6.

28th January, 1881.

H. J. BEEMER.

FINAL estimate, Chaudière Bridge.

		$ cts.	$ cts.
Clearing ..... acres..	2.75	50 00	137 50
Fencing ..... rods..	204½	3 00	613 50
Earth Excavation ..... c. yds..	78555	0 20	15711 00
Rock " ..... " ..	2746	0 80	2196 80
Earth " in foundations ..... " ..	548	0 40	219 20
Rock " " ..... " ..	410	1 00	410 00
1st Class masonry in Cement ..... " ..	5125	11 00	58278 00
Cement substituted for masonry in bottom of Piers 5 6 and 8.. " ..	173		
Concrete around Piers ..... " ..	42	10 00	420 00
Iron in clamps and bolts ..... lbs..	3745	0 08	299 60
Hand laid Rip Rap ..... c. yds..	8349	*2 50	20872 50
" " around piers ..... " ..	094	1 20	1192 80
Dry masonry culvert ..... " ..	20½	3 00	61 50
Filling piers extra price allowed ..... " ..	81	10 00	810 00
Assumed profits on diminished quantities authorized by secretary's, * letter of 6th February, 1880	.....	.....	8830 52
Allowance for hauling stone to piers during the High water	.....	.....	500 00
			$100552 92

* Increased price authorized by secretary's letter of 13th February, 1880.

P. A. PETERSON,
Chief Engineer.

SCHEDULE No. 7.

CLARKE, REEVES & CO.

1881, CHAUDIERE BRIDGE.

Final estimate for iron superstructure.

Feb. 28.	To one span 135 feet		$12167 00
	To ten spans 150 feet each		131090 00
	To one span 160 feet		13874 00
	To one span 255		35947 00
			193078 00

Amount of contract.

Loading timber		1 63	
Removing bolts to grade		2 65	
Dressing abutments for end of ties		46 88	
Framing cedar timber on abutments		80 36	
Hoisting " "		6 45	
2281 linl. feet floor timbers laid at $1.25 per contract		2851 25	
		2989 22	
Less cost of painting floor		250 00	
			2739 22
			$195817 22

P. A. PETERSON,
Chief Engineer.

SCHEDULE No. 8.

SUMMARY total amounts expended on Chaudiere bridge, to date.

H. J. Beemer contract (schedule No. 6)		$110552 92
Clarke, Reeves and Co's. contract (schedule No 7)		193078 00
Floor system, labor	2739 22	
Paid for timber	2598 91	
Bolts and nuts	886 26	
Screws	47 57	
	6271 96	
		6271 96
Prince of Wales sign on bridge		343 60
Printing and advertising		335 22
Mechanical charges		1170 00
Add for contingencies, superintendence, &c., &c		6383 32
Total amount expended		$318135 02

P. A. PETERSON,
Chief Engineer.

Montreal, 28th May, 1881.

APPENDIX 4.

QUEBEC, MONTREAL, OTTAWA & OCCIDENTAL RAILWAY.

GENERAL RULES AND REGULATIONS.

I

GENERAL MANAGEMENT.

The Quebec, Montreal, Ottawa and Occidental Railway, which is the property of the Government of the Province of Quebec, is managed by the Minister of Agriculture and Public Works who, when necessary, secures the assistance of an officer appointed provisionally by order in Council and whose duties are :

1. To decide upon the new work and heavy repairs to be performed, either to the road-bed or the rolling-stock ;

2. To superintend and see to the carrying out of the general orders relating to the traffic, the working and maintenance of the road and rolling-stock ;

3. To report upon contracts for the purchase of rolling-stock, supplies of fuel, etc.;

4. To study the traffic returns and agreements for connections with other companies as well as the time-tables.

II

WORKING BRANCH.

The general superintendent.

The working branch is managed, under the immediate orders of the "Minister," by an officer, who is known as the "General Superintendent."

The general superintendent is the first executive officer; he is responsible to the government for the working of the road, the good behaviour of the staff and the regularity of the service; he has the entire and absolute management of the employees of all the departments.

The general superintendent has control over the supplies. The orders of the general storekeeper must be approved by him before they are carried out; he has to decide upon the necessity of the purchases to be made, as well as the compliance with the requisitions of the heads of departments.

The general superintendent also has control over the payment of all the working expenses of whatsoever nature they may be; not an invoice nor a pay-sheet can be paid, unless they have been previously verified and signed by him.

The general superintendent gives tickets at reduced rates, and passes.

The general superintendent is aided by an assistant who is known as the "Assistant-Superintendent" and who replaces him when he is absent or unable to act.

III

The assistant-superintendent.

Subject to the orders of the general superintendent, the assistant-superintendent sees to the proper working of the line. He performs the duties of traffic manager and general inspector.

Under him are the requisite number of assistants, train-despatchers and telegraph-operators necessary to assure the proper working of his department.

He corresponds with the general superintendent, to whom he reports everything that he does and he submits to him all measures relating to the working of his department.

His special duties are :

To take all necessary steps for the security and the running of trains ;

To see that trains are properly made up and run on time ;

To see to the proper distribution and employment of the rolling stock ;

To superintend and make sure that station-masters, engine-drivers and way-officers strictly carry out all general orders concerning the traffic ;

To secure the proper handling of goods in the stations ;

To control the cartage and porterage ;

To see to the transfer of passengers and freight to connecting lines ;

To secure obedience to signals, the keeping in order and proper working of semaphores and signa. posts.

To see to the proper use and the prompt loading and unloading of rolling stock of all kinds.

To see that stations are properly kept, both inside and out, to the discipline of the employees, the keeping in order of the furniture, the supplying of articles and stores applied for from the store-keeper.

To point out the cars which are not in good order or are not clean.

To see that the restaurants are in good order, and that the tariff of articles approved by the general superintendent is observed, and that the conditions imposed upon the lessees of such restaurants with respect to order, cleanliness and comfort, are fulfilled.

To see to the proper distribution of work amongst the employees, to ascertain how the extra men are employed and to make himself acquainted with the duties and the work of each employee.

The assistant-superintendent is responsible for the behaviour and conduct of his staff; he must make this the object of the strictest and most continued superintendence and require, from all his subordinates, the greatest politeness towards the public and travelers.

The assistant-superintendent, when circumstances require, and by virtue of his office, takes all the steps necessary for the proper working of the line. His authority extends to all the employees in his department.

IV

Head office.

At the head office, the work is divided amongst eight departments, whose duties may be defined as follows :

V

Chief accountant's department.

The chief accountant has sole charge of the book-keeping in connection with the receipts and expenditure of the whole service.

He is responsible for the accuracy with which are kept the books and documents of all the other offices, in connection with the book-keeping of the undertaking, and in which are entered all transactions between the general management and the public.

For that purpose he has exclusive control over the staff and the working of the offices of the auditor, the cashier and the pay-master.

The chief accountant keeps the journal and ledger, in which is entered a summary of the operations of the other offices.

The chief accountant makes out, every month, a statement of the financial position, of the receipts and expenditure, as well as a summary of the transactions of the undertaking generally.

Receipts.

The statement shewing the receipts is supplied to the head accountant by the cashier, the auditor and general store-keeper; it is composed of the following accounts:

Proceeds of passenger traffic.
" freight "
" mail service.
" express service.
" mileage of other cars over the line.
" demurrage.
" sale of old materials.

The receipts being established, they are compared with the mileage of the engines and the length of the road; we thus get the proportion of the receipts to every mile run and to every mile of road in operation.

A comparative statement for the corresponding month of the previous year is given opposite these figures.

Expenditure.

The statement of expenditure is supplied to the chief accountant in the following manner:

Every month, the heads of the various departments prepare a statement shewing the expenditure incurred for each branch; special mention is made of the amount payable for wages and of the amount payable for matters relating to construction and working.

Control exercised by the chief accountant over the finances of the undertaking.

The chief accountant having the control and responsibility of the finances of the undertaking, has, under his immediate orders, the offices of the auditor, the cashier and the paymaster.

The receipts are collected in the following manner:

Every day the station-masters remit their receipts to the cashier; this remittance is accompanied by a voucher in duplicate; one goes to the cashier with the receipts and the second to the auditor.

The cashier makes out a statement of the receipts from all the stations, deposits the amount in the bank and gets a receipt therefor written at the foot of the statement; on the other hand, the auditor carefully examines whether the charges have been collected on all the goods carried; whether

the tickets sold, which have been delivered to the auditor by the train conductors, follow the regular numerical order; and finally whether the remittance to the cashier tallies with the auditor's vouchers.

The cashier's daily returns are checked and certified by the auditor and handed to the chief accountant.

The receipts, when accounted for and deposited in the bank, become the property of the government and form part of the "consolidated revenue fund of the Province."

Working expenses.

The working expenses are covered by a cheque which the Provincial Treasurer places, every month, at the disposal of the general superintendent.

These cheques, made payable to the order of the general superintendent, are deposited in the bank and the amount which they represent can only be withdrawn by a cheque from the chief accountant, countersigned by the general superintendent.

The staff, the employees of the head office, the station-masters and their staff, the track inspectors and their workmen, the section-men, the engine-drivers, firemen, oilers, cleaners, conductors, brakesmen, baggage-masters, fuel-yard keepers, the workmen in the forges, work-shops and round-houses, etc., are personally paid by the paymaster on a pay-sheet prepared in the department in which they are employed; this pay-sheet is certified by the head of the office and forwarded to the chief accountant, who cheques it over, debits the amount of it to the office from which it was issued, makes out a cheque to cover it, gets the general superintendent to countersign it and hands over the whole to the paymaster.

The invoices are handed to the chief accountant by the general store keeper, with his certificate authorizing them to be paid; they go through the same formalities as the pay-sheets and are paid by the chief accountant.

Each invoice must be paid by a separate cheque; grouping several small invoices together and paying them by a single cheque is not allowed

The control over the paying out of monies may be resumed as follows: the chief accountant cannot draw a cheque on the bank without producing the vouchers, establishing that the expenditure was incurred for working or construction expenses by an officer authorized to that effect; that the articles so ordered were delivered, that the quantities and prices have been checked over; and as final security the cheque has no value unless countersigned by the general superintendent.

VI

Control exercised by the Minister of Agriculture and Public Works over the general management.

The Minister of Agriculture and Public Works controls the management as follows:

The receipts are deposited in the bank, day by day, to the credit of the Provincial-Treasurer and form part of the Consolidated Revenue Fund of the Province, as already stated.

The chief accountant, in a monthly report which is a synopsis of the statements from the various heads of offices above mentioned, gives the probable amount of the expenditure for each branch and specially mentions the expenditure for new work, renewal of rolling stock, repairs to the track and all expenses outside of the ordinary expenditure.

The statement of the financial position, the summary of the operations of all the offices, the synopsis of the pay-sheets, the list of invoices paid and cheques issued are sent monthly to the Minister.

A certificate of the deposits made is sent every ten days to the Minister of Agriculture and Public Works, by the chief accountant.

All new work, all important orders, such as those for engines, cars, supplies of fuel etc., cannot be made or given without the approval of the Minister.

An employee of the department goes, at undetermined periods, to inspect the books and vouchers of the undertaking.

VII

Cashier's office.

The cashier takes the receipts from the stations and also the receipts of all kinds; every day the station masters, city ticket-agents, &c., forward their remittances with a memorandum. The cashier verifies the amount, enters it in the cash book and signs a receipt, which he forwards to the station-master or agent, as their voucher.

This done, he prepares a memorandum of deposit for all the receipts of the day, mentioning specially the receipts other than those from the stations, such as those arising from the sale of tickets in the city offices, the mail service, demurrage, mileage of other cars over the line and the sale of old material, deposits the amount in the bank and gets a receipt at the foot of the memorandum.

On the other hand the auditor's office examines the vouchers, and the auditor and cashier compare them with the receipts.

This done, the auditor reports to the chief accountant.

VIII

Paymaster's office.

The duties of the paymaster are to pay the salaries of all the employees. All those whose names appear on the pay-sheets are personally paid by the paymaster.

A pay-sheet is prepared by the head of the department under whose control the various employees have worked; it mentions the name of the employee, his duties, his wages, the number of days or hours he has worked, the stoppages for insurance or for other reasons, and finally the amount due him.

These sheets are forwarded to the chief accountant, who places the necessary amount at the disposal of the paymaster, as explained above.

The employees are paid monthly by the paymaster; he goes to each station, notifies the staff, the trackmen and section men and all the workmen employed about the station; there, he hands to each person the amount which is due him, gets, as his voucher, their signatures in the margin, or in the case of absentees, an order to pay to some third party.

IX.

Auditor's office.

Subject to the orders of the chief accountant, the auditor has to see that all the books and documents relating to the receipts are correctly kept. He exercises the functions of general controller over the receipts.

His special duties are:

To exercise a strict and unceasing control over the financial position of all the stations;

To see that the amounts debited to all the agents are duly represented by money or vouchers;

To see that the way-bills from the despatching station correspond perfectly with the quantities which reach the receiving station;

To see that the tariff has been strictly followed;

To keep the running accounts with other companies; to settle transactions respecting through tickets, direct transit, mileage, demurrage, repairs to rolling stock of other companies, etc.

Every month the auditors make up their accounts and the balance is paid over to the party entitled to it.

The auditor is kept informed by the general traffic agent and the general passenger agent of all through ticket arrangements made by them.

The accounts in connection with the mileage of cars belonging to other companies over the Quebec, Montreal, Ottawa and Occidental Railway and the cars of the latter over other lines, shewing the amount due or to be collected, are also kept by the auditor and balanced every month.

He also has to keep the account current for the mail service;

To see to the supplying of tickets to the stations and city offices and the keeping of the accounts in connection therewith;

To check the remittances to the cashier by comparing them with the station masters' returns;

To check the station masters' returns by comparing them with the way bills for goods and the tickets handed over by the conductors, for passengers;

To see that the express companies pay the proportion of their receipts agreed upon;

To regulate the accounts respecting rebates, deficiencies and reimbursements and to report them to the chief accountant.

An employee of the auditors' office known as the "Travelling Auditor," is appointed to inspect, at uncertain dates, the stations and agencies.

His duties are:

To personally examine, on the spot, the business of the stations;

To see that the number of tickets on hand and the number sold correspond with the total supplied;

To see that the ticket-cases, and the dating-stamps are in good order, and that the tickets are sold according to their numbers;

To see that the station masters' books are well kept; and that the documents, by means of which the station masters establish their charges, correspond with those which guide the auditor's office;

To take steps to reduce the amounts debited to the stations by prompt remittance and by regularly forwarding all documents connected with matters in dispute;

To assist the station masters in settling all matters in abeyance and prepare all transactions towards attaining that object;

To establish, with the station masters, who is responsible for the differences which may exist between the entries at the despatching station and the amounts collected at the receiving station;

To check the cash accounts and see that the agents only enter sums received and to note carefully whether goods not delivered and mentioned in the station master's return are still in his possession ;

To establish and regulate the position of responsible agents by getting paid in, without delay, the deficits which they may find ;

To furnish notes as to the capacity and knowledge of each responsible employee and as to the regularity of his transactions. The travelling auditor reports, at once, to the auditor, the result of his inspection, followed by his remarks on the service, the steps he has thought proper to take on his own responsibility and the suggestions he has to make.

X

General storekeeper's office.

Organization of the Branch.

The branch, under the direction of the general superintendent, is managed, under his direct responsibility, by the general storekeeper, who is assisted by the storekeepers, the employees in the office, the distributors and storemen whose number varies with the requirements ;

The purchases or sales must be authorized by the general superintendent ;

The purchase of locomotives and cars do not come within the province of the general storekeeper ; these orders must be authorized by the minister and the purchase is made by the general superintendent.

The general storekeeper's duties are :

To purchase the supplies, furniture, materials and stores required by the various departments of the undertaking ;

To see to their being kept in the storehouses until they are delivered;

To see to their distribution:

To supervise the keeping of the storehouses and control the issues;

To condemn and sell all unnecessary or unserviceable articles.

Any purchase or sale effected by any one but the general storekeeper will not be recognized by the management.

The general storekeeper must always be in a position to deliver, within a reasonable delay, to the various branches of the undertaking, such stores, as they may require. He must always keep a sufficient stock on hand for this purpose without, however, increasing it beyond the requirements of the service;

Stationery, registers, and forms of account are kept in a distinct branch;

When the head of a department, station, office, workshop, &c. requires stores, he sends to the head of his department a requisition, taken from a book with counterfoil, shewing what he requires. This requisition, when checked and examined by the head of the department, is sent to the storehouse, where it is complied with;

The general storekeeper is not called upon to decide as to the advisability of the requisitions sent him; the signature of the head of the department relieves him of any responsibility;

Nevertheless, if the requisition appears extraordinary he must submit it to the general superintendent, before complying with it;

The articles are delivered to those who have made the requisition by the storekeeper or are sent them by train;

These articles are placed in charge of the baggage-master, who delivers them to the master of the receiving station, and they are shown on a bill of lading in triplicate ;

In order to facilitate the distribution, requisitions should be sent in, as much as possible, by the first of each month ;

Orders on merchants, manufacturers or purveyors are given by the general storekeeper, in accordance with the information given him by the storekeepers or the heads of the various departments. The extent, the details and conditions of each order are entered on the order sent to the purveyors.

The goods are received by the storekeeper to whom they are addressed ; any goods which are not of good quality, which do not fulfil the conditions mentioned in the order, or which are not accompanied by an invoice, must be refused ;

The storekeeper gives receipts for the goods delivered by the purveyor as soon as the quantities are ascertained and debits them to himself in his entry book ;

At the end of each month, the merchants, manufacturers and purveyors, send to the general storekeeper a detailed account in triplicate of all deliveries during the month, annexing thereto the orders and receipts from the storekeepers ; the accounts, after they are verified, are covered by a cheque made out by the general storekeeper in favor of the purveyors and addressed to the chief accountant ;

In each store is kept a special entry and delivery book. The store is debited with the amount of the invoices of the goods received and credited with the value of the goods delivered ; the balance in store is shewn opposite each entry ;

The general storekeeper delivers to the storekeepers a printed list of the

goods contained in the store. At the end of every month, the storekeeper writes opposite the name of each article, the quantity he has in hand as shewn by the entry and delivery book, with the price; the value of the stock and the amount of the goods delivered should correspond with the total of the "supplies" account;

Every month the general storekeeper makes a selection, in each branch, of the receipts for goods delivered and sends them to the heads of departments with the corresponding invoices. The latter, after checking them, charges the expenditure under the head to which each belongs, and makes out cheques of repayment in favor of the general storekeeper.

The general storekeeper makes a report, every month, of his transactions to the chief accountant; the amount of goods in store, as shewn by the previous report, to which are added the purchases made during the month, the charges for freight and handling forms the debit side of the account, which is balanced by the amount of goods delivered and the stock on hand.

At the end of the year, the general storekeeper makes an inventory of the contents of each storehouse, and a synopsis of all transactions. The amount of the previous year's stock, to which are added the purchases made during the year, must be balanced by the amount of goods delivered, and the stock on hand as per inventory.

The distribution of stores is suspended during the taking of the inventory.

XI.

The mechanical superintendent's office.

The Mechanical Department is managed, under the immediate control of the general superintendent, by an officer known as the mechanical superintendent.

His duties are :

To study the various projects for constructing, repairing or improving the rolling stock and to make suggestions to the general superintendent in connection therewith ;

To prepare plans and specifications of such work as is to be done by contractors and to inspect the orders to be filled in the workshops ;

To supervise the execution of all the various works and to test them as they are manufactured ;

To receive the new rolling stock, to debit the expenses under the proper headings, to establish the cost price and the value of the rolling stock ;

To control the work, expenses and the expenditure of stores by the engine drivers, firemen, and cleaners, the workmen in the workshops, round-houses and small repairs shops ;

To distribute between the workshops of Montreal and Quebec, the engines, tenders and cars which require repairs, to make out detailed returns of such works, both from a technical and from an economical point of view.

To see to the keeping of the books relating to the mileage of axles

and the records of all engines and tenders, from the time they have been first used until they are rejected as used up ;

To prepare and study all technical matters and measures relating to the running of the engines, to the rolling stock and to the plant in the workshops, round houses, small repairs shops and their staffs ; engine drivers, firemen, cleaners, mechanics, finishers, blacksmiths, engine fitters, &c. ; to take communication, day by day, of their reports and to make such decisions as circumstances in the locomotive department may require.

To study and prepare all technical matters and measures in connection with the car service ; to see that the cars are kept in good order ; to take communication, day by day, of the reports of the foremen of the workshops relating thereto and to give such decisions as circumstances may require.

Workshops at Montreal and Quebec.

The workshops at Montreal and Quebec for construction and repairs are managed by a foreman, under whose orders are the whole staff and whose duties are :

To procure workmen, to make himself acquainted with their knowledge and capacity, to fix their salary, to settle their accounts and to dismiss them if necessary, keeping, however, within the limits assigned him by the mechanical superintendent, and in accordance with the requirements of the service ;

To get all work done in accordance with the instructions of the mechanical superintendent ;

To see that no work is undertaken without a special order authorized by the mechanical superintendent ;

To distribute the orders amongst the foremen of the various sections

of the workshops which have to contribute to their being carried out and to arrange the work so that no time will be lost;

To forward in good time, the requisitions for supplies of materials required for the work to be carried on; to see that proper use be made of these materials and of the labor;

To make out the cost price of the work done, which is verified by the accounts of the office;

For that purpose an employee from the mechanical accountant's office and known as a "Check Clerk," jointly with the foreman, makes out the time of the workmen for the different works and charges each of the orders with the cost of labour, material and general expenses connected therewith. The items of expenditure so made out are forwarded to the accountant of the office, who checks them, enters them in his books and accounts to the mechanical superintendent for the economical results obtained in carrying out the work.

Every engine has an account opened for it in the books of the office and the account for each engine is subdivided into nine heads;

These nine heads include:

1. Salaries of the engine drivers, firemen and cleaners.
2. Fuel;
3. Ordinary repairs;
4. Oil;
5. Tallow;
6. Cotton-waste;
7. Coal oil;
8. Packing;
9. Small stores.

Statistics.

The statistics for the mileage of axles give the number of miles run by the engines, cars and snow-ploughs.

Every engine-driver has a diary in which he enters the daily work done by his engine. This diary mentions the date and the number of the engine, the number of the train, the names of the driver, fireman, the conductor of the train, the stations of departure and arrival, the composition of the train; first class, second class, express, baggage and postal cars; freight, box, cattle, hay and platform cars and snow-ploughs; finally the number of empty and loaded cars.

At the end of each day the engine-driver transfers the entries in his diary to a blank form of return.

This return must contain the following information:

The number of the folio on which the running account of his engine is entered in the office books;

The number of the engine;

The names of the driver, fireman and conductor;

The number of the train;

The names of the stations of departure and arrival;

The distance in miles between the stations;

The hours of departure and arrival;

The description of the train which he has hauled, passenger, freight, mixed, ballast, pilot, shunting, empty, &c.

In the case of passenger trains, the number of first class, second class, express, baggage and postal cars;

In the case of freight trains, the number of box, cattle and hay cars;

In the case of ballast, pilot, or coal trains, the number and description of the cars composing the same;

The total number of cars composing the train;

The total number of miles run by it;

The hour at which he fired up;

The hour at which he raked out his fire;

The number of hours under steam.

This return is verified and certified by the depot-master, the foreman of the roundhouse or shed, as the case may be, on the departure and arrival of the engine;

It is afterwards forwarded to the mechanical superintendent.

The accountant of the office collects these returns, classifies the same, and makes a synopsis of them monthly.

Annexed to the expense accounts, they form a general synopsis of the work, mileage, expenditure of stores and cost of running.

When the mechanical superintendent is required to supply his engines, cars and workmen for the use and benefit of another branch of the undertaking, he is entitled to a remuneration, determined by the general superintendent, who reduces his expenditure by so much.

The value of the labor supplied for repairs to the buildings, road, fences, signals, crossings, track-masters' tools and snow-ploughs is debited to the road department.

The use of trains for transporting ballast and materials is charged to construction account.

The cost of transport, labor, storage and handling of fuel and repairs to depots are charged to " fuel " account.

The engines and cars employed in new work and heavy repairs to the road, as well as in the transport of the materials required for this work are charged to " capital " account.

The cost of transport is determined by the tariff rates.

The mechanical department being credited with the amounts debited to the above mentioned branches, balances its monthly account by carrying the balance of its account to the debit of the " general summary of running expenses " to which it contributes, as explained in the chapter relating to the chief accountant.

Auxiliary stores.

The transactions between the mechanical department and that of the general store-keeper are numerous; three fourths of the stores supplied by the store-houses are ordered by the mechanical superintendent.

The " Montreal " store-house, being in the immediate neighborhood of the construction and repair shops, the foremen have every facility for obtaining the necessary materials for every kind of work they have to do.

The " Quebec " store-house, being also in the neighborhood of the work shops, can supply the same demands.

Still a certain number of forges and small repairs shops are temporarily situated in places where there are no store-houses.

To obviate the delay between the application for and the arrival of the articles, the general store-keeper places at the disposal of the mechanical

superintendent at each round-house, forge or work shop an assortment of materials and stores which are likely to be required.

These materials and stores are debited by the general store-keeper to the mechanical superintendent who has to account therefor in his monthly report to the chief accountant.

Control of the work on and repairs to rolling stock.

The depôt and round house foremen must report every morning, how many engines they have housed during the night with their numbers; the work and journey performed by each engine during the previous day; the available engines and those which are employed in shunting, the state in which they arrived and the repairs they require;

If the engines have passed the night on a switch, then the station master must make such return.

Damages.

Damages to the rolling stock, of whatsoever nature they may be, are established by the track masters, conductors and station masters as soon as they are reported by either department.

The station master sends in a weekly return of the number of cars which have arrived at his station in a damaged condition. The return must shew the nature of the damage, the temporary steps taken to repair the same and the responsibility of the employees who, by carelessness or incapacity, have contributed to the causing of the damage. The returns are made out in duplicate; one remains in the possession of the station master and the other is sent to the mechanical superintendent.

Returns of heated axle boxes.

The station masters make a weekly return of the number of cars which have arrived at their stations with heated axle boxes. This return must mention the date of the last inspection, the number and description of the cars, the damage and the responsibility of the employees.

Returns of repairs.

A return of repairs is made out, at the end of each week, by the foremen of the workshops, shewing the number of cars undergoing repairs in each workshop; the return must mention the number and description of the cars, those on which repairs have not been commenced; the cars undergoing repairs, those repaired and turned out since the last return.

Foremen of engine sheds.

The foremen of engine sheds are obliged:

To supply locomotive power, to house the engines after their journey, to examine and have them cleaned, to order such repairs as may be necessary and to see, before they leave the depot, that they are in good working order.

For that purpose they regulate the daily duties of the engine drivers and firemen as well as those of the cleaners and oilers; they see that substitutes are provided for such employees as are sick or prevented from performing their duties.

They are in constant communication with the station masters, to decide with them as to the composition of trains, so as to make the most of the motive power of the engines;

Before the engines leave the sheds, the foremen confer with the en-

gineers and firemen, in order to make sure that they are fit to do their duty, that they are provided with the necessary tools and that they are in a position to draw, with safety, the trains given them.

Fuel.

The supplying and distribution of fuel are under the charge of a special department.

The general store keeper calls for tenders for the supplying of both coal and wood and gives the contract to the party whose tender is considered the most advantageous.

The cost of transport, handling and storage, having been added to the original cost, the mechanical superintendent determines the price at which the fuel is to be charged to the different branches.

The fuel yards are established at various places along the line, in the vicinity of the store houses, round houses, workshops or stations.

The foremen of round houses, workshops or stations are responsible for the storage, keeping and distribution of the fuel.

They account to the mechanical superintendent, and for that purpose they are provided with an entry and delivery book; the fuel-yard is debited with the quantity supplied and credited with the quantity delivered; the balance must be represented by the stock on hand;

Every month the fuel-yard keepers send in a return of their doings to the mechanical superintendent and state the quantity of fuel remaining on hand.

XII.

Maintenance of way and buildings department.

CHIEF ENGINEER.

The department for the maintenance of way and buildings is managed by an officer known as the chief engineer.

He receives and carries out the instructions of the general superintendent, in all matters relating both to the running of the road, its maintenance and superintendence;

He studies all technical questions, prepares plans, makes out drafts, specifications and contracts, respecting the construction, improvement and repairing of the road;

He is assisted by four track-inspectors.

Track–inspectors.

The road is divided into four divisions which are known as divisions Nos. 1, 2, 3 and 4.

The track-inspectors, under the direction of the chief engineer, have the charge of everything relating to the maintenance and supervision of the road within their divisions; under their orders are the section foremen and the section-men;

The track-inspectors keep the chief engineer informed as to the state of their divisions and the working of the department. They suggest all measures which they consider advisable for ensuring regularity or effecting improvements;

They frequently go over their divisions, report to the chief engineer everything they have noticed and suggest any steps they may consider advisable for the good of their department.

Section foremen.

Each division is subdivided into a certain number of sections, the length of which is generally from five to seven miles. At the head of each section is a section foreman, assisted by a tracklayer and by a staff which varies from four to eight men, according to the requirements of the service;

He goes over his section every day, either on foot or in a hand-car;

He sees that the track and all its materials are in good order, carefully examines the rails, plates, bolts and ties, taking special care to screw up the nuts which may be loosening;

He ascertains that the joints are properly distanced, the ties solid and also the state of the crossings and switches;

He sees that the fences and semaphores are in good order, and is careful that the ditches and culverts for draining the track are cleaned out and in good order.

The section men must collect all passengers' effects, bales, etc., which may have fallen from the cars while running, as well as all bolts, nuts and other pieces which may have dropped from the cars, and leave them at the nearest station;

During storms of rain, snow or hail all section-men must be on duty with all the tools they require;

When snow or sleet begins to settle on the rails to a serious extent, so as to endanger the running, they must at once clear out and clean the switches, sidings, and the rails at level-crossings, approaches to bridges, &c.

They must go over their sections and signal dangerous spots to the conductors of the trains they meet; in a word they must do their utmost to enable trains to run freely and safely;

Every track-repairer must always carry with him a working time-table, and so carry on his work as not to stop the trains;

If the work to be carried on is likely to stop the running of the trains at any given point, such point must be protected by a danger signal and torpedoe placed at a distance of twenty telegraph posts from such point; and it is only after he has ascertained that it is protected that the section foreman allows the work to be done;

The track-inspector must see that the section foremen are provided with time-tables, signal flags and lanterns, twelve torpedoes, a level and all the tools necessary for their work;

When materials are required for repairs, the track-inspector sends a requisition for them to the chief engineer, who approves and forwards it to the general storekeeper and the latter sends the articles required.

XIII

Office of the general freight agent

The duty of the general freight agent, subject to the order of the general superintendent, is to study the freight tariffs, to apply them in an intelligent manner, to carry out the necessary measures to secure a maximum of traffic, to increase and improve it; to negotiate agreements for connections with other companies, to draft and study all subjects, the object of which is to bring more traffic to the road or to extend and improve its connections.

He must superintend and control the operations of connecting lines, follow up their working, inspect their offices and ascertain that the staff is in a position to give to the public all requisite information as to conveyance of goods by the railway.

He must ascertain, by inspecting their books, that the corresponding lines do not divert traffic to the injury of his railway, that the tariffs are

faithfully adhered to and the amounts due are regularly collected and paid.

To see that facilities are given at the stations to the connecting lines, so as to make sure that the latter find in them all that they require for their proper working, but that they do not make an improper use of the same.

To direct and assist station-masters in applying the tariffs, to follow up personally all transactions whose importance takes them beyond the limits of the station-masters' powers.

To ascertain the position and resources of rival lines, or of lines with which it would be advantageous to establish connections; to study their tariffs and compare the advantages which they offer to the trade and to the public for the conveyance of goods.

To draft and make agreements with express companies.

To pay special attention to local traffic and study the measures to be taken in order to increase and develop it.

To make arrangements with the proprietors of manufacturing establishments situated on or near the line.

Claims

The general freight agent is charged with the settlement of claims and with the correspondence entailed thereby.

All claims for indemnity, rebate and reductions of accounts must be sent to the general freight agent.

As soon as he receives a claim he must collect all the information which can facilitate its settlement, ascertain the delays in forwarding and

delivering goods, the accidents which have occurred in transit and how they were caused.

He gives directions to the station-masters for regulating the forwarding of goods, and prepares all the transactions to effect such regulation.

If, after enquiry, the general agent decides that the claimant is entitled to an indemnity, he makes out an order in his favor for reimbursement, rebate, or reduction (as the case may be) and sends it to the chief accountant, who books it and makes out a cheque to cover it.

The order for reimbursement, rebate or reduction must contain a description of the goods, the original figure, the amount of the reduction, the reason for the same, the sending and the receiving stations, the number of the train and the number of the way-bill.

The general freight agent makes a weekly return to the general superintendent, in which he enters his remarks, as to the working of his department, the steps he has thought proper to take on his own responsibility and the suggestions he has to make.

The general freight agent exercises his authority over the station-masters in everything connected with his department. They must supply him with all the information he requires and consult him on all commercial questions which may arise. When transactions are likely to be made which are beyond the powers of the station-masters, they must, at once, refer them to the general freight agent.

XIV

General passenger agent

The duty of the general passenger agent, subject to the orders of the superintendent, is to superintend the conveyance of passengers, to study and draw up the tariffs and agreements for connection with other lines and to see that they are carried out by station-masters and ticket agents.

His duties and powers, are, with respect to passengers, similar to those of the general freight agent with respect of goods. They must mutually assist each other, so as to ensure the success of the undertaking; the settlement of claims and the prompt and efficient despatch of all the business of their department.

XV

Station–masters.

The station-master represents the assistant-superintendent in everything relating to the general management and conduct of the affairs of his station as well as of his division.

He is responsible for the efficient discharge of the duties devolving on his employees, for their politeness in all their dealings with the public; for the safety of the rolling stock, offices and buildings at the station; for the keeping of the registers, the supervision of switches and signals and, in a word, for everything relating to the general good of the service.

He must know how to read and write correctly, be conversant with the elementary rules of arithmetic and be able to keep books neatly;

He must see that all general and other orders are faithfully carried out and entered in a special register. Whenever the employees fail in their duty or any complaint or claim is made against them, he must, after having

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made himself acquainted with the facts, communicate them immediately to the assistant-superintendent.

He is also responsible for the cleanliness and keeping in order of the station and its buildings, which he will inspect every day ;

He shall see that all station and signal lamps are trimmed and that signals of every kind are kept in good order and ready for instant use;

In stations where there are no operators, he must properly understand telegraphing ;

He must see that the time of arrival and departure of every stopping train is accurately entered in the train book; where there are none, he will indicate it in the book, by writing the word *nil* ;

He must report immediately to the assistant-superintendent whenever any train leaves or passes his station before the time prescribed in the time table ;

He must not, in any case, permit any engine or train to leave or pass his station within fifteen minutes of another going in the same direction ;

He will carefully superintend the train-signals and inform the conductors of the orders or arrangements affecting trains.

He must see that no engines or cars are left upon the main line, without direct authority from the assistant-superintendent ; when such authority is given the cars must be at once taken to a siding and their wheels carefully scotched ;

He must not allow any engine or car to cross or shunt on the main line within ten minutes of a train being due at his station ;

He must see that all switches at his station are in good order, and especially before and after the arrival and departure of trains, which must always leave the main line free for the passage of special trains. Where there is no switchman he must himself perform the switchman's duty;

He shall, forthwith, communicate to the assistant-superintendent, all unusual occurrences in connection with the railway; in case of any obstruction or land-slide or other casualty, the station-master at the nearest station to the scene of accident must immediately give notice of the same by telegraph or otherwise, to the superintendent or nearest section foreman;

He is responsible for all money received on account of the railway and will make good any deficiency whether arising from errors in book-keeping or otherwise;

He must make up and balance his accounts daily in the form prescribed and remit his cash as called for by special instructions;

Any station-master who shall render a statement of account which contains errors plainly traceable to carelessness, wrong calculations or want of care in taking an inventory of the freight in store, or shall enter remittances not actually made at the time indicated, is open to the serious charge of falsifying his accounts.

All goods or articles, without exception, received for transportation, must be properly entered on way-bills to accompany the same;

He is held personally responsible for the safe keeping and proper delivery of all goods received by him and for all charges due thereon; and all articles entered on the way-bills shall be considered as having reached his station in good order, unless it is otherwise stated on the face of the way-bill;

He shall see that all loaded box-cars of freight, not required to be opened till their destination is reached, are locked and sealed.

Station masters shall not permit freight cars to be over or improperly laden. If a doubt exists, they shall take the safe course, by consulting the Freight Tariff as to estimated weights and measurements;

To avoid misunderstanding and delay, requisitions for freight cars must be made on the form provided for the purpose and handed to the conductor; if previously telegraphed for, the fact must be stated on the requisition;

Freight and cattle cars must be thoroughly cleansed on being discharged. The station-master shall immediately report every instance in which a car, not previously cleaned by the sending station, arrives at his station;

He must not supply or lend, under any circumstances, stores or other articles belonging to the railway.

XVI

Conductors.

Conductors are under the orders of the station master of the place where they reside, and, while running trains, are under the orders of the masters of the stations where they may, for the moment, be.

The conductors have the brakesmen under their immediate control; they have full authority over all the train hands, including the engine driver and fireman, in everything relating to the proper running and security of the train.

Outside station-limits, the conductors are personally responsible for their trains; when, in consequence of an accident or a signal, or for the requirements of the railway, trains are brought to a stand-still at any point outside a station, the conductors perform, with respect to the engine-drivers and firemen, the duties of the station-masters;

Conductors must be able to speak and write correctly, both French and English, and be conversant with the elementary rules of arithmetic;

They shall wear a uniform and a badge denoting their office;

They are specially recommended to show and to see that the brakesmen show the greatest politeness and attention towards travellers consistent with their duties;

Conductors must give obligingly, and without unnecessary words, the information which passengers may require; they will not enter into conversation with the latter, except on matters connected with the performance of their duties;

The conductor must be at the station from which he is to start, at least half an hour before the time appointed for the departure of his train;

On his arrival, he reports himself to the station-master and awaits his orders; he sees that the brakesmen are on duty at the proper time;

Before leaving, the conductor shall see that the cars are properly coupled, and, in winter, properly heated; that the signal lanterns are properly placed and lighted, if necessary, and finally that he has on the train the following articles:

1 Axe;
1 Saw;
1 Hammer;
1 Oil Filler;
1 Pair scissors;
1 Case containing 12 torpedoes;
1 Broom;
2 Red and 2 green and 2 white flags;
3 Red lamps;
2 White lamps;
1 Green lamp;
1 Signal lamp;
1 Conductor's lamp;
2 Tail lamps;

Alarm cords and couplings;
1 Tail rope;
2 Water pails;
1 Chain, 12 feet long with hooks attached;
1 Pound sulphur;
6 Links and 6 pins;
2 Dippers;
1 Pinch bar;
2 Shovels;
1 Chamois skin;
1 Whisk;
4 Brass brushes;
4 Axle box wedges;
1 Pair trimmers;
1 Oil pail and packing iron;
1 Water crock;
1 Water can;
3 Oil cans;
1 Scrub brush;
3 Ice picks;
1 Mop;
1 Monkey wrench;
1 Duster.

In making up a train, he shall see that baggage, freight and lumber cars are not placed in rear of the passenger cars;

The rear car of every train must be a brake-car, and a man must, when the train is in motion, always be stationed on that car;

Conductors shall strictly obey all signals and special orders which they may receive from the officers in charge at stations;

They must not give the signal to start while passengers are getting on board, and should, when making it, stand on the platform of the last car and look out for any signals that may be given them;

After the train has started it is under the conductor's entire charge and control. He is responsible for the safety of the train and all on board. He must see that the rules and regulations of the railway are strictly observed by both passengers and employees, and must himself take care to observe all such rules and regulations, and enter any infringements thereof in his return.

Always, when backing a train, there must be a man specially stationed upon the rear part of it to give due warning and prevent accidents;

It is the conductor's duty to check the engine-driver should the train be running at an unsafe speed, and to direct that the regular rate of speed prescribed in the time-table, or a slower rate, if the track be in bad order, be observed, as the case may require;

Negligence or recklessness on the part of the engine-driver will be taken as a proof of the inefficiency of the conductor, unless such conduct has been duly and distinctly reported on every occasion of its taking place;

In very extreme cases only, can a train which has once left a station be allowed to return, and this proceeding must be accompanied with the greatest degree of caution; before anything else is done, two men with red flags or lights must be sent fully half a mile in advance of the rear-end of the train, to give warning to any train that may be approaching from that direction, in order to guard against the possibility of collision; the train must not move until these two men have proceeded at least half a mile; every other available measure must also be taken to notify track-men and to stop any approaching engine; the officers of a train so situated are to assume, in every case, that a train is approaching and act accordingly;

Conductors or other officers in charge of any trains that may receive such warning are responsible for protecting their own trains in the same manner;

When a train breaks down, or is stopped or seriously delayed on the road, similar precautions must be taken to guard against being run into by any other train; proper use must be made of the flags, or red lanterns, and torpedoes placed at a distance of twenty telegraph poles in front and in rear, and the conductor must inform the masters of the stations both in front and in rear, and communicate directly with the assistant-superintendent or one of his officers;

The conductor shall, from time to time, during the journey, examine the wheels, brakes, springs, trucks and journals of the cars, and see that they are kept in proper order;

The tail-signal must also be examined at every station, and in the event of a train being brought to a stand on the main track, the conductor must take care that no person obstructs the rear view of it;

Whenever telegraphic despatches, directing the movements of trains, are sent they must be repeated back by the receiving office to the sending office and acknowledged by the persons to whom they may be addressed; such acknowledgment shall always show how the message is understood by the parties receiving it, and such persons shall not start the train until they have found their construction of the message to be the true one. *If doubt should arise, they must take the safe course.*

Verbal messages which, in any way, affect the movement of engines or trains, must not, under any circumstances, be given or received through a third party, whatever confidence may be placed in the veracity of such person.

All instructions, not communicated verbally or by telegraph to the individual for whom they are intended, must be in writing;

The responsibility of an accident, resulting from a misunderstanding of this fact, will rest upon the person acting without proper authority;

In the event of any passenger being drunk or disorderly, to the annoyance of others, he must use all gentle means to stop the nuisance; failing which, he must exercise his authority and restrain, or keep him in a separate place, until he arrives at the next station, or a station near to a police-office or lock-up, where the passenger must be left, and may, if considered expedient, be delivered to the police and charged with the offence, in the usual way.

Whenever a fare is collected in the cars, the conductor must at once

issue a ticket to the passenger and enter the amount in his book. No excuse will be admitted for any departure from this rule;

Conductors must promptly deliver all letters, way-bills and despatches entrusted to their care;

They must not allow the sale of books, newspapers, etc., in the cars without permission from the general superintendent;

Freight trains must always keep out of the way of passenger trains, at least a quarter of an hour before the hour fixed by the time-table for the passage of such trains; if they cannot do so, they must act with the station-master in giving the necessary signals to guard against a collision;

Conductors of freight trains must not take loaded cars without way-bills, nor way-bills without the proper cars;

Cars must not be taken beyond the stations to which their contents are destined, without orders.

In superintending the loading of a car with goods for different stations, the conductor will see that the bales are so arranged as to be easily unloaded;

Conductors are held personally responsible for the proper care of all goods or property entrusted to them, and will be careful to see that the same are delivered to the station-masters, according to the way-bills;

A conductor shall not permit live stock to be carried in close cars; when there are horses on a train, unless the owner has sent a person in charge of them, he will see that they are carefully watered and moderately fed on the road; and the expense thus incurred shall be paid him at the end of his journey by the station-master, who shall be reimbursed by the consignee;

It is his duty to make himself acquainted, as much as possible, with the condition of the goods conveyed on his train; and when they are stowed so as to be liable to damage, to stow them differently, or if that be not possible, to leave them at a station to be sent on, more securely stowed, by another train, reporting the same to the assistant-superintendent; he shall see that no pilfering of the contents of the car takes place, and that the doors of loaded cars are sealed and empty ones closed;

If, from any cause, it becomes necessary to leave freight where it does not belong, the conductor shall note the fact on the way-bill and give notice in writing to the assistant-superintendent; he shall take all proper means to have the same forwarded to its destination without delay;

Conductors will duly call the attention of the mechanical superintendent, or in his absence, that of the station-master, to any repairs required or damage that may have been sustained by the cars, and, in the latter case, report the particulars to the assistant-superintendent;

They must be careful also to report to the nearest station-master or to the assistant-superintendent any defect they may observe on the line;

Conductors must keep a diary of their proceedings, which must be ready for inspection at all times, and they shall make their daily returns upon the proper form to be supplied them;

Whenever a conductor may have had charge of a train for only part of a trip, he must insert in his return, upon the proper form and over his own signature, the particulars of the same, which, with any money he may have collected, he will hand over to the officer relieving him, who will complete and forward the return, also signing it;

The conductor shall enter in his diary all delays, casualties or unusual occurrences, and report the facts to the assistant-superintendent; he will also make a note of them in his return.

XVII

Engine drivers.

The engine-driver, when at a station, shall be subject to the orders of the station master ;

He shall be guided by instructions from the conductor, as to when to start or stop the train ;

He must not proceed after sunset unless the proper lights are exhibited on his engine.

No special train or engine shall leave any station without the authority of the assistant-superintendent.

Every engine driver and fireman must provide himself with a good watch, and compare the time with the conductors and drivers of other trains as well as with station-clocks, reporting all differences to the assistant-superintendent ;

He must pay immediate attention to all signals, whether the cause for giving them be known, or not ;

The driver must be in attendance at the station at least half an hour, and the fireman at least forty-five minutes, before the appointed time for starting the train. He must see that the engine is coupled, at least ten minutes before the time for starting—that it is in proper working order, sufficiently supplied with fuel, and water and properly oiled—that the alarm-cord is attached to the gong or whistle, and that the lamps, and signals are in a fit state for use. Before taking charge of the engine, he and the fireman must sign their names in the appearance book, kept by the locomotive foreman.

Conductors and drivers of trains supplied with air-brakes, are responsible for seeing that such are in perfect working order before starting from terminal stations; this also applies to the ordinary brakes and running gear on all cars.

Every engine-driver shall have with him at all times, the following tools:

2 jack screws,
1 set stand wrenches,
3 oil cans (a full set),
1 large monkey wrench,
1 small monkey wrench,
3 cold chisels,
1 hand hammer,
1 copper hammer,
1 pinch bar,
2 fire buckets.
2 sets signals (flags),
1 engineer's lamp,
1 red tail lamp,
1 signal lamp,
1 green lamp,
1 head light,
1 hand saw,
1 tallow kettle,
6 iron plugs for tubes,
2 large boxes or chests,
2 small chests,
5 chains, with rings and hooks attached,
1 narrow axe,
1 switch rope (30 feet),
1 plug iron,
1 scraper for ash pan,
1 poker, for fire,
1 case containing 12 torpedoes,
A quantity of flax and twine;

for which he shall be held responsible, and any party found guilty of destroying them, shall be fined or dismissed.

The engine-driver shall not allow any persons, except the superintendents and track-masters, to ride on his engine or tender, without due authority.

He must not start his train until the bell be rung, and he receives the signal from the conductor which he must answer with two short sharp whistles; he must, invariably, start carefully, without jerking,

and see that he has the whole of this train ; he must run the train as near to time as possible, arriving at the stations neither too late, nor too soon. He must not shut off steam suddenly, so as to cause concussion of the cars, unless in case of danger.

If a train becomes separated while in motion, care must be taken not to stop the portion in front before the after part has stopped, and the men on such detached part must apply their brakes in time to prevent collision with the cars in front.

No engine shall run tender or train foremost, unless from unavoidable necessity, or by order of the assistant-superintendent.

The driver shall stand by the hand-gear, and keep a good look-out. The fireman also must be on the look-out when not engaged in other duties.

Before passing switches, he must be careful to see that the targets are correctly set.

An engine driver on duty must not leave his engine except in cases of great necessity, on which occasions he must place it in charge of the fireman. On no account shall both leave it until it is given in charge to the party authorized to receive it.

Engine drivers are required to run slowly and carefully over rough or bad track, and round curves, or through cuttings. The track-masters are authorized, when it is found necessary, to prescribe rates of speed, faster than which an engine must not be driven over the parts of the road indicated, and they are instructed to report violations of their instructions in this respect.

In running behind another train, the driver must so run as to allow the leading train to be not less than two miles in advance, and, on approaching a station, and entering, or running round a curve, he must

exercise great caution, so as to avoid the possibility of a collision. No excuse, as to being deceived about the distance, will be received for neglect of this rule. The responsibility of a collision will rest upon the conductor and engine-driver of the rear train.

When trains have to pass each other, the train having the right to the road shall occupy the main track.

Engine-drivers are to take care that the whistle be sounded 800 yards before reaching every level crossing of a public road, and that the bell be rung 600 yards before reaching such crossing, and until the crossing be passed. The bell, and whistle are also to be sounded, when approaching a cutting, station, or junction. During foggy weather also, the bell must be sounded at proper intervals.

They must never allow themselves to be governed by any information they may receive as to where the train ahead will stop for fuel or other cause, but must always be prepared to stop short of the station. They should invariably run on the supposition that a train may be found out of place at a station.

In bringing up his train, the driver must pay particular attention to the state of the weather, and the condition of the rails, as well as to the length of the train, and these circumstances must have due weight in determining him when to shut off the steam. Stations must not be entered so rapidly as to require a violent application of the brakes, or to render necessary the sounding of the signal whistle. He must report every instance of overshooting a station to the assistant-superintendent.

Unless he himself is in the cab of the engine at the time, and directing its movement, he must not allow the fireman to shunt cars, or move the engine; cars must not be shunted, at so great a speed, as to endanger the lives of men employed in coupling, or in any way injure the property of the railway.

An engine or train shall not pass from a branch on to the main line, until the proper signals are given.

No engine-driver, when acting without a conductor, shall, without the express permission of the station-master, move his engine, on any pretence, from any siding, on to the main line.

When there is an unavoidable necessity, from an accident, or other special cause, for an engine to stop on the main line, the engine-driver must send a man, each way with signals, to the distance of twenty telegraph poles, and more, if at or near a steep grade or curve, in order to protect the train or engine.

Engine-drivers shall not, except in case of accident or sudden illness, change engines on the journey, without permission.

They must not allow fuel or waste to be thrown from the engine, or tender, while in motion.

Engine-drivers must guard against killing stock. Should any animal be injured by the engine, the engine-driver must report the same, in writing, to the assistant-superintendent, stating the facts of the case. Any engine-driver, who neglects to make such a report immediately, will be held responsible for all damages.

Should a fire occur on a train, it must be stopped, and the proper measures at once be taken for protecting the train. The burning car, or cars must be detached with as little delay as possible. No attempt must be made to run to a tank, if it be more than three hundred yards distant, as such a proceeding is likely to cause the fire to spread.

In case of doubt and difficulty, engine-drivers and conductors must consult and advise with each other, as they will be held equally responsible for any violation of the rules, through forgetfulness, negligence, misappre-

hension, or any other cause. In all cases of doubt, the safe side must be taken, *safety being the first consideration.*

Should a conductor be disabled, the engine-driver will have full charge of, and be held responsible for the safety of the train until another officer takes charge. In such case, he shall observe the rules laid down for the guidance of conductors.

Engine-drivers, when on the line, will obey the direct orders of the superintendent, whether the same shall be communicated verbally, by telegraph or in writing; and in all cases where a message directing the train or engine to proceed cautiously, or at a given rate of speed, over any part of the railway, or any bridge or viaduct, is given to the conductor of any train, he shall at once hand the same to the engine-driver, and call his attention to the contents thereof, and the engine-driver shall retain it in his possession. If any engine-driver shall, after the receipt of such messages, incautiously, or at a greater rate of speed than that named, drive his engine over the portion of the railway, bridge or viaduct named, he shall at once be dismissed from the service; and any conductor failing to obey the requirements of this order will receive like punishment.

Every engine-driver must carefully examine his engine after each journey, and he must immediately report to the locomotive foreman, and enter in the book that is kept for that purpose, any defect or deficiency in his engine. He must also report to the assistant-superintendent and to the station-master at the nearest station any accident, neglect or irregularity that may have occurred on the journey.

Engine-drivers must keep diaries, and make such returns to the locomotive department, as may be required.

XVIII

Firemen.

Firemen are subject to the orders of the engine-drivers while on their engines.

They will keep the engines cleaned and properly oiled, and assist the engine-driver as may be required.

XIX

Brakesmen.

The brakesmen are under the orders of the station-master of the place where they reside, and, while on the road, are under the orders of the conductor of their train; on their arrival and departure, and while stopping at stations, the brakesmen, subject to the orders of the conductors and station-masters, take charge of everything connected with the working of the train.

The rear brakesman is responsible that the lights and signals at the rear of the train are in good order;

Brakesmen must be at the station at least half an hour before the departure of their train; they report to the station-master, who gives them his orders after ascertaining that they are fit for duty; while the train is stopped they assist in unloading baggage, and perform the other duties assigned them by the conductors;

As soon as the train is made up, and the brakesmen know their posts, they must see that the brakes on the cars to which they are told off are in good order, and that the passenger cars under their charge are clean, well ventilated, well heated in winter, provided with lamps and the necessary fittings; brakesmen must not allow dogs in the cars, and must prevent passen-

gers in a state of intoxication, or encumbered with unwieldy, dirty or dangerous articles to enter the cars; every passenger who carries a firearm must discharge it before he arrives at the station; if passengers persist in infringing the rules, the brakesman will immediately notify the conductor;

While on the road the duties of brakesmen consist in attending to everything which may relate to the running or to the safety of the train and of the passengers; brakesmen must also prevent passengers from leaning out of the cars, from going from one to the other, from standing on the platforms, getting off and getting on while the train is in motion, and from smoking elsewhere than in the smoking car;

Brakesmen are particularly entrusted with the working of the brakes according to circumstances and in obedience to the engine-driver's signals; they must strictly and solely obey such signals, and, unless in the event of some imminent danger requiring the train to be stopped, they must never apply the brakes before the whistle signals;

Brakesmen must, both by day and by night, pay the greatest attention to the signals of the brakesmen behind them, as well as to the signals of sectionmen, so as to repeat them, if necessary, to the engine-driver;

The working of the brakes is governed by the engine-driver by means of the following signals:—

One short and sharp whistle means down-brakes.

Two short and sharp whistles mean that the train is about to start and order off-brakes.

Before the departure of a train, and at the latest, when the engine driver gives the signal for starting, all brakes must be taken off, so as to prevent the breaking of the couplings;

On the arrival of a passenger train at a station, the brakesmen shall go through the train calling out aloud the name of the station and the length

of the stay, and whether there is a refreshment-room at the station; when requested by the passengers, they help them to descend; they see to the coupling of the cars as well as to their lighting and heating, when necessary; when a train stops away from a station, the rear brakesman must run back to a distance of at least twenty telegraph posts to place the signals to STOP; in case of accident or unforeseen stoppage, brakesmen must implicitly comply with the instructions they receive from the conductor as to the precautions to be observed, the steps to be taken and the signals to be made;

On the arrival of a train, brakesmen must assist in discharging baggage and express matter; in all cases they must assist the conductor in everything and only leave the station when they have received his permission to do so.

XX

SWITCHMEN.

Normal position of the Switches.—As a rule switches on the main line must be left so as to leave the traffic on such line quite free when they are not being worked.

For that purpose their balance-weight shall be riveted so as to keep them fixed in such normal position.

Switchmen are special employees charged with the working and keeping in order of one or more crossings.

At stations where there is little train-traffic, the station-master will also act as switchman;

With the exception of the switches near the principal stations and which are frequently worked, they must be kept in their normal position by means of a padlock securely locked.

The assistant-superintendent shall indicate, by special instructions, the switches which are to be padlocked and those which may remain unlocked; a copy of such instructions will be given to each of the switchmen.

It is the duty of the station-master to see, on his own responsibility, that the general orders respecting switchmen are carried out.

The keys of the padlocks for the switches shall be kept by the station-masters.

For changing the line, the switchmen will be under the direct control of the station-masters, and must, in all cases, obey the orders they receive from them.

They arrange the switches before the arrival of each train, so as to shunt them properly on the right track, after first seeing that such track is clear.

If necessary, they hold the switches while the train is passing.

Switchmen must thoroughly examine their switches, before and after the passing of each train, to see that they are in good order and work easily.

In winter or during frost, crossings must be cleaned several times a day in order to prevent the formation of any ice which might interfere with their working.

Every switchman, when on duty, must be provided with a red flag in the day time and a lantern, showing a red and a white light at night; and six torpedoes, so as to signal, if necessary, and stop trains.

XXI

Signals used for trains in motion.

When a train or a locomotive is in motion, the absence of any signal on the track, a white light on the semaphores or crossings, at night, the arms of the semaphores hanging down and crossing signals turned in a direction parallel to the track, all indicate that the track is clear and that the locomotive may run on.

But the absence of signals where one is usually displayed, is to be taken as denoting danger.

Hand-signals.

Day-signals are made by means of a red or green flag; a red flag means *Stop;* a green flag *Proceed slowly.*

Night signals are made by means of a lantern which shews a white or a red light, at will. The white light means that the track is clear and that the engine may go on. The red light when held steadily or waved about, means: *Stop.* During all the time they are on duty, station-masters, engine-drivers, conductors, brakesmen, switchmen, gate-keepers and section men must be provided with all things necessary for hand-signalling, including detonating signals, of which mention will be made hereafter.

If, owing to some unforeseen circumstance, one of the employees above mentioned or any other person is under the necessity of making a signal, without being provided with the aforesaid articles, he can stop a train by standing on the track with both arms raised above his head.

Detonating signals.

A signal to stop may likewise be given by means of one or more torpedoes laid upon the track and which explode under the weight of the engines and cars.

The explosion of these torpedoes is a signal to stop, and replaces the red signals.

The object of these detonating signals is to replace hand-signals, when the latter cannot be used, or as auxiliaries to them when it is feared that they will not be seen; they are chiefly used in foggy weather, snow storms or very bad weather.

As far as practicable the torpedoes must be placed one hundred feet in advance of the hand-signal, in connection with which they are to be used.

As a precaution, two torpedoes should be laid on the rails, one on the right and one on the left. In damp weather three torpedoes should be used.

Caution signals.

The caution signal is made by day, by means of a green flag, and by night of a green lantern.

It must be placed:

1. In advance of the cross-frogs;

2. At the approaches to junctions;

3. In foggy weather, in advance of the semaphores, covering stations and junctions;

4. Finally whenever, for any reason whatsoever, trains should only proceed slowly over a portion of the road.

When an engine-driver notices a caution signal he must shut the regulator valve and, if necessary, apply the brakes, to control the train and pass the guarded spot at a speed which shall not exceed one-half of his former speed.

Fixed signals—semaphores.

Distance semaphores.

At approaches to stations, to junctions and generally wherever such a precaution is considered necessary, semaphores are placed which are moved from a distance called *distance semaphores*, and are intended, either to cover trains or to maintain the prescribed distance between trains in motion.

During the day the red disc or the arm raised to a horizontal position means stop.

At night the red light also means stop.

These semaphores are so placed that the officer responsible for their working, can ascertain, as easily as possible, that the light is turned in the prescribed direction, according to the state of the track.

The signal lanterns are trimmed and lighted under the supervision and responsibility of the station masters. The switchmen have to light and attend to the lanterns and semaphores within a radius of 200 feet from their switches. In stations where there are no switchmen, the station masters themselves must attend to this. Lanterns are lighted and replace flags and semaphores at sunset and are extinguished at sunrise. As an exceptional case, lanterns are lighted in day time in heavy foggy weather when night signals are better seen than day ones.

Working of the semaphores.

Distance signals must be turned to *danger:*

1. Whenever the track which they cover is occupied or when a train or engine cannot pass;

2. When a train or engine arrives at a station, the distance signal must always be turned to *danger* as soon as the train has passed; it is maintained

in this position during the whole time the train is stationary and for ten minutes after its departure, to keep the prescribed distance between trains running in the same direction.

Train signals.

Every train running during the night must display a white head-light; and two red lights called tail-lights;

The engine driver is responsible for the engine and tender-lights;

The conductor is responsible for the train-lights.

Whistling Signals.

To put on brakes—one short sharp whistle;
To start or take off brakes—two short sharp whistles;
To back—three short sharp whistles;
To turn switch—four short sharp whistles;
Danger—a repetition of short sharp whistles;
On approaching level crossings of public roads and curves—two long whistles;
On approaching stations—one long continuous whistle.

A red flag carried upon the head of an engine and tail of a train by day, or a red light by night (in addition to the usual white light on the head of the engine and red light on the tail of the train) *denotes that an extra engine or train is following, having right of track over all others.*

A white signal carried in like manner denotes that an extra train is following, but will keep clear of all regular trains. The default to carry out or observe signals, which may have the most disastrous consequences with respect to the safety of traffic, is the most serious offence of which an employee can be guilty. Every fault of this kind will therefore be severely punished.

XXII

Passenger and station regulations.

Passengers at ticket stations are required to purchase their tickets before entering the cars, otherwise they have to pay to the conductor an additional charge of ten cents.

Express proprietors, dealers, agents and messengers holding season tickets, shall not carry with them baggage or parcels, for the purpose of their business, unless the freight for the same be prepaid at double first class freight rates. In case of violation of this rule, the ticket shall be forfeited.

No person must be allowed to get into or upon or off any car after the train has been put into motion, or until it stops. Any person doing so, or attempting to do so, has no recourse upon the railway department for any accident which may take place in consequence of such conduct.

Persons drunk and unable to take care of themselves, shall not be furnished with tickets, or be allowed to enter the cars or station premises; and, if found in the cars or station premises, may be removed.

Passengers are required to produce and deliver up their railway tickets to the conductor, or other person in charge of the train, whenever requested so to do by such officer. Should they refuse to do this, and to pay the proper fare, they may be removed from the train at or near a station.

Passengers are not entitled to occupy more than one sitting in a passenger car for each ticket.

Passengers, before they can have their baggage checked, must show their tickets to the station baggage-master. To avoid mistakes, they must attend personally to the checking and marking of their baggage.

Passengers can only have their baggage checked to the station to which they hold tickets.

Coachmen, hackmen, carters, porters, and runners for railroads, boats, stage lines and hotels, will not be allowed to solicit custom or passengers upon any of the trains,—nor will they be allowed to enter the stations nor come upon the platform on the arrival of passenger trains, to solicit or influence passengers, but they shall stand in such places as directed by the station-master, agent or policeman. Cattle-dealers, butchers and marketmen will not be allowed in the cars, stations or freight-houses, or upon the platforms, on the arrival of the trains, for the purpose of trading; nor will hucksters, or vendors of newspapers, books, fruit, flowers, confectionery, and other such articles, be allowed in the cars or upon the trains, nor to enter the stations or come upon the platform for the purpose of disposing of the same, except by permission of the station-master or conductor, under the authority of the general superintendent.

Coachmen, hackmen, and porters holding checks will be admitted into the stations for the purpose of obtaining baggage—they will also be admitted when taking baggage to the trains.

Private carriages, trucks and other vehicles for carting goods must, while waiting for trains, remain in such places as directed by the station-master, his agent or policeman; all disturbances, obscene and insulting language are strictly forbidden.

All persons are strictly forbidden to walk upon the track of the railway, or to trespass upon the railway premises.

XXIII

Station Baggage-masters.

Station baggage-masters shall wear a badge denoting their office, and be in attendance at least forty-five minutes before the advertised departure of the train.

They must compare baggage-checks with the duplicates, and see that they correspond.

They must not keep more checks on hand than are necessary.

Checks, when not in use, must be kept under lock and key.

A passenger is allowed 100 lbs. of personal baggage. Any quantity exceeding that weight must be charged double first-class freight rates, and must be prepaid.

They must not check baggage until a short time previous to the departure of the train.

They are to request passengers to exhibit their tickets before checking their baggage, and to check the baggage accordingly.

All previous station-numbers on baggage must be effaced.

Checks must only be given to passengers, and not to cabmen, or others, on their behalf.

Baggage, while in charge of the railway officers, must be well guarded or left in a secure place.

A record must be kept at stations of all baggage received from passengers and forwarded by train, giving the date, number of check, train, and destination, in every case.

A record must also be kept of all baggage received by trains and delivered to passengers.

Baggage for flag stations must be numbered but not checked.

On no account are passengers to be allowed to take checked baggage out of the possession of baggage-masters, unless properly claimed.

Special care must be taken not to deliver baggage without first removing the checks and obtaining the duplicates from the passengers.

A report must be sent to the general baggage agent, Montreal, of all baggage received, the checks and duplicates of which do not tally. The report must show the time of arrival, number of train, and the name of the station whence received.

When a passenger has lost his duplicate check the baggage must not be given up unless he can describe the contents of such baggage, and pays twenty-five cents for the lost check.

A receipt must be taken from the owner for all baggage so delivered without the duplicate check being presented, as also for all baggage mis-checked.

Station baggage-masters, or station-masters, will report immediately to the general baggage agent any baggage missing at their station, and will also report any baggage that may have remained unclaimed one week.

All lost or unclaimed baggage must be sent properly labelled to Montreal monthly.

No baggage shall be opened except in the presence of the owner.

Reports must be made periodically to the general baggage agent of all inward and outward baggage.

XXIV

Train baggage-masters.

Train baggage-masters shall wear their proper badge of office, and must report any baggage they receive not properly marked and checked; they must be particular to see that the number of the station for which the baggage is intended is distinctly marked.

All checks and duplicates in charge of train baggage-masters, must be compared by them before being used.

Checks must not be carried loose in the baggage car, but be kept in a box supplied for that purpose.

Baggage for flag stations shall be numbered but not checked.

Train baggage-masters shall keep a proper account, in books provided for the purpose, of all baggage, checked or unchecked, showing stations at which the baggage is received and delivered.

They shall not allow persons, except those working the train, to ride in the baggage-car, except by direction of the conductor.

They shall not leave the station, at the end of the journey, until the baggage has been claimed or properly disposed of.

They shall obey such other instructions in regard to baggage, and perform such other duties, as may be required of them.

Although the duties of each of the officers are essentially different, they must nevertheless assist each other, so as to assure the proper performance of all the work and the success of the undertaking.

These regulations are given as general instructions and independently of the special rules which the heads of the different departments may think it advisable to publish, when and where the same may be necessary, according to circumstances and the requirements of the undertaking.

XXV.

Telegraph Department.

In virtue of a special agreement between the Government of the Province of Quebec and the "Dominion Telegraph Company," the latter has undertaken to work the entire telegraph system of the Quebec, Montreal Ottawa & Occidental Railway, and to see to the maintenance of the wires and telegraph poles as well as of the electric batteries.

The maintenance and working of all the apparatus in use in the stations and offices, is within the attributes of the assistant-superintendent's department.

It is the duty of the train-despatcher, who is also the superintendent of the telegraph, subject to the orders of the assistant-superintendent, to superintend the telegraph branch, to see to the maintenance of the apparatus and the technical instructions to be given to the telegraph operators; he has authority over the latter in everything relating to his branch.

The keeping in order, cleaning and preservation of the apparatus are entrusted to the operators who are responsible therefor.

The keeping in order consists in daily testing the various parts of which the batteries are made up; in replacing those which are unserviceable; in taking care of the elements required for supplying electricity and replacing those which are no longer of use.

Every morning, on coming on duty, the operators must examine the battery and see that there is no break in the connection between the zinc plates and their joints or between the sheets of copper which are bathed in the solution. They must re-arrange or change the elements which are not properly placed and regulate in the jars the level of the liquid required to feed the battery.

The exterior of the large glass jars, as well as the bottom of the box must always be kept perfectly clean and dry.

When a battery is considered to be unserviceable, owing to the entire saturation of the jars and the oxidation of the zinc plates, the superintendent will cause the battery to be taken to pieces by the operators themselves. The jars and the bottom of the box will be carefully cleaned by them and the unserviceable zinc plates be replaced, as ordered by the superintendent.

All material which becomes unserviceable will be sent to the general store-keeper to be condemned and sold for the benefit of the telegraph department.

The telegraph is at the disposal of the employees of the road for the purpose of sending messages necessary to secure the safe and regular running of trains.

The wording of the despatches must always be clear and concise.

The telegraph must only be used when it is really of advantage to the service that the slow channel of ordinary correspondence should be dispensed with. Only the officers and employees hereinafter designated are authorized to correspond by telegraph:

The Minister of Railways.

" General Superintendent.

" Assistant do

" Chief Accountant.

" Chief Engineer.

" Auditor.

" General Freight Agent.

" " Passenger Agent.

", Mechanical Superintendent.

FOR THE REQUIREMENTS OF THE SERVICE.

The Train Despatcher.

" Station-Masters.

" Ticket Agents.

The Inspector of Agencies.

" Bridge Inspector.

" Track Inspectors.

Every employee with an order from the general superintendent or the head of a department.

The order of sending despatches is as follows:

1. Messages relating to the safe running of trains.
2. " from the ministry.
3. " " general superintendent.
3. Private Messages.

Every message not relating to the working of the railway is considered as a private message, unless it be handed in by one of the officers above mentioned; all others are charged tariff rates.

All telegraph operators are required to keep strictly the secrets of private messages. The violation of such secrets, which is provided for and punished by law, entails instant dismissal.

XXVI

SHOP RULES.

HOURS OF ATTENDANCE.

The shop whistle will be blown at 7 a.m., to commence the day's work. Men must have their overalls on, and tools in readiness to start work in three minutes after 7 a.m., and 1 p.m.

The whistle will again be blown at 12, noon, for dinner, and at 1 p.m., to start work, and at 6 p.m. to close the day's work. Men must not quit work or stop their machines to prepare for leaving before the whistle blows.

The washing of hands with oil is strictly forbidden. Men must not wash themselves before 12, noon, and 6 p.m., in the shops, and when buckets for washing the hands and face are kept, the water must be emptied before leaving the shop and buckets put away clean and in order

CARE OF TOOLS AND MACHINERY.

All men working at machines, either lathes, planers, drills, wood or iron working machines, must keep them perfectly clean and properly oiled. For all machine pins and fast running spindles, standard oil must be used, which is a mixture of castor oil and the best lard oil.

Machine men shall be held strictly accountable for any damage to their machines caused by want of proper oiling.

It is strictly forbidden to get any new machine tools for lathes, drills, planers, etc. forged or made, without first obtaining an order from the foreman.

All alterations to machine tools must be made with the consent of the foreman and not otherwise. Turning, planing, shaping and drilling tools must be altered as little as possible, either in size or shape. When it becomes necessary for any workman to take his tools to the blacksmith shop for alteration or repairs, he must, under no circumstances, loiter about the shop, but must return to his work immediately. As much as possible, apprentices must be sent with tools to and from shops, and the men must remain in their own respective shops, except in cases of emergency.

LOITERING, &c.

Any workman found in any of the shops outside of his own, unless ordered there by his foreman and is on business connected with his work, shall be immediately dismissed.

Men having tools to sharpen on a grindstone must never stand waiting, when it is engaged, but take their turn when there is a vacancy. They must grind their tools to the edge of the stone as much as possible, and report to the foreman when the stone is in bad order or in want of water.

No man will be allowed to grind his tools on emery wheels except with special permission from his foreman.

On the breakage of taps, dies or tools of any kind through carelessness, the damage will be retained from the wages of the person in fault.

None of the men must be visited by strangers during working hours, except with the special permission of their foreman, in which case they must at once speak to the person that calls upon them, either in the foreman's office or outside the shop. No conversation will be allowed during working hours.

Quarrelling or fighting on the works shall cause dismissal.

No person shall be allowed to make tools of any kind without special authority from the mechanical superintendent through the foreman.

Anyone found wasting materials of any kind by carelessness or otherwise, shall be instantly dismissed.

All templates, patterns, stencils and shapes of any kind made on the works, are the property of the line, and any attempt to remove them will be treated as pilferage.

Men must appear on the works on Monday morning clean and tidy, and must always keep as much so as their occupation will allow.

Machinemen will be allowed twenty minutes on Saturdays, before six o'clock, for the cleaning of their respective machines.

All men working outside with tools of any kind must return them to the shop or put them under lock and key as the day closes.

Any man found intimidating other men on the works or using any coercion shall be instantly dismissed.

CLEANLINESS.

All shavings, chips and inflammable material of all kinds shall be removed from the shops before six o'clock, and the shops must be left perfectly clear and free of all inflammable material. Painters must never leave any waste or rags that have been used during the day in wiping turpentine, oil, benzine or paints of any kind. Such waste and rags must be kept in a box during the day and burnt in the stationary boiler every night.

Every man using a lamp whilst on duty must return the same to the store or place designated, for its cleaning and refilling before quitting work.

All men are strictly forbidden to use waste in the water closets or to smoke therein or on the works.

NOTICE OF LEAVE.

In case a workman should desire to leave the service, he shall be obliged to give (14) fourteen days notice, and should the railway no longer require the services of any employee, the same notice will be given, provided said employee has not been guilty of insubordination or any grave offence.

Time checks must be deposited at the time office by the same persons who receive them morning or noon.

Any one depositing at the office a time check that is not his own, shall be dismissed.

Men must not absent themselves without the permission of their respective foremen. Should they be sick and unable to come to their work, they must send a message to that effect.

Any man bringing liquor on the works, or appearing on duty under the influence of liquor, shall be dismissed.

FIRE.

In case of fire about the works or accident of any kind, it is expected that every man about the works shall render every possible assistance, whether on duty or otherwise.

OVERTIME.

When it is necessary to work overtime, it will be calculated as follows:—

From 6.30 p.m., to 8.30 p.m.....	¼ day
" " 10.30 "	½ "
" " 12.00 "	¾ "
All night.....	1½ "

The same for Sundays.

When men work half an hour or an hour overtime, the time will be registered until ¼ day or ½ day is made up, and then entered in time book accordingly.

It is strictly forbidden to allow any work which is not legitimately the work of the line to be performed on the works, during working hours or otherwise, whether at the expense of the line or not, and any foreman or workman performing or attempting to perform such work, shall be instantly dismissed.

No petty stores or materials of any kind are to be taken from the store without a written order on the regular form. No files shall be given to any workman unless he produces the old file he wishes to have replaced—except in case of special work. The foremen must keep a strict account of all oil, files and small tools used by any of the workmen in order to check any waste that may possibly take place from carelessness.

When mechanics are leaving the service they must hand the key of their tool box or drawer to the foreman, who shall make an inventory of the tools, and should any be missing which have been served out to him from the stock, the amount covering the value of those missing shall be retained from his salary. The foreman of every shop must make a personal inspection once a month of all workmen's tools, and check the same according to register, and should any be found out or missing, and a satisfactory explanation not forthcoming, the workman will be dealt with accordingly.

The foreman of each shop must have a box neatly fitted up and placed in a convenient part of the shop, with an opening on top of the cover sufficiently large to admit of all brass turnings, borings, etc. All scrap brass must be collected daily and placed in a box expressly for that purpose, the key of which must be kept in the petty store, with a proper label.

Foremen must see that proper trays for machines are kept for the collection of brass turnings and borings. The scrap, cast and wrought iron and steel, must be deposited daily in the bins designated for that purpose. The foreman shall be obliged to see that no serviceable material is thrown with the scrap. He must make it a rule to see all scraps personally before

they are deposited. He must see that his shop is always kept clean and neat.

Stationary engines must be started three minutes before the whistle is blown to commence work.

Stationary boilers must be examined by the foreman whilst being washed out once a month. He must take great care that no accumulation of soot and ashes is allowed to remain in the tubes or ash pits of the smoke arches.

Men in charge of wood-working machines must use great caution in the repairing of belts with copper rivets, and notify the foreman of the shop immediately, in case he notices extra friction on cross-belts that are connected with copper rivets, to prevent danger of fire or damage to the workmen by electric shock; also the same precaution must be used to prevent the heating of fast-running journals.

The foreman of carpenters must prevent all men from collecting nails, screws and small fittings about their tool chests. All such materials must be deposited in a tray and locked up in the foreman's cupboard as the day closes.

All painters will be served with their colours, paints, varnishes and brushes by a man appointed for that purpose. The paint pots, brushes, etc., shall be collected at the close of the day and deposited in the paint room, one man only being employed to mix all colours and to supply the necessary materials for painting.

Foremen must see that none of the workmen are allowed in the paint room, except the person appointed for supplying the above materials.

Allowance of waste and oil for use of workmen as follows, per week :—

	Waste.	Oil.
Fitters	½ lb.	¼ lb.
Machinists	1 "	1 "
Iron machine men	do.	do.
Coppersmiths	½ lb.	*nil.*
Tinsmiths	do.	do.
Boilermakers	do.	¼ lb.
Fitter's assistants	do.	do.
Apprentices	do.	do.
Wood machine men	do.	do.

The waste must be distributed at one p.m. on Saturdays, by a man appointed for that purpose, who shall distribute to each man his allowance.

Cleaners or fitter's assistants, who wish to become firemen, must know how to read and write legibly. They must be free from bodily ailments, have good hearing and eyesight, and must not be over 25 years of age. They should get a copy of the rules and regulations at the office and study them carefully, in order that they may be somewhat acquainted with the duties when they are promoted.

Any man who is insubordinate and disrespectful to his foreman shall be dismissed.

Should the men have any grievance of any kind, they will always be heard and respectfully treated by the mechanical superintendent.

RULES FOR APPRENTICES.

Apprentices shall make application in their own hand-writing. They should be not less than sixteen (16) nor more than twenty-two (22) years of age. They must have a fair education, knowing how to read and write properly and a fair knowledge of mathematics. They should be free from all bodily ailments, deformity and epileptic fits; they also should have good hearing and good eyesight.

The term for apprenticeship for mechanical engineers, machinists and blacksmiths shall be five years; for carpenters and painters, four years.

The wages for mechanical engineers, machinists and blacksmiths shall be as follows:—

First year, 30 cents per day.
Second " 45 " " " with 10c. per day kept back.
Third " 65 " " " " " " "
Fourth " 80 " " " " " " "
Fifth " 1.20 " " " " 20c. " " "

For carpenters and painters as follows:—

First year, 30 cents per day.
Second " 45 " " " with 10c. per day kept back.
Third " 60 " " " " " " "
Fourth " 90 " " " " " " "

The amount kept back per day shall be paid in a sum total at the expiration of the term of the apprenticeship. This shall be a reserved amount to encourage apprentices to remain in the service of this line, and to prevent their leaving before their apprenticeship is completed, as it is disastrous to apprentices to leave their shops and look for other work before they have served the full term of apprenticeship, in conformity with the rules and regulations of the shops.

Apprentices who are insubordinate and show no aptitude for the trade they are learning, will be rejected for that trade, and the amount kept back will be forfeited.

As an inducement, an apprentice shall be allowed the privilege of six months in his favour should he prove himself competent by his efficiency of being classified a journeyman; that is, he shall be out of his time six months before the stated time for completing his apprenticeship, and shall then command journeyman's wages at the regular rate paid in the shop. This mark of favour shall be earned by the apprentice's regular attendance to his work, good conduct and efficiency.