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DOMINION OF CANADA.

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ANNUAL REPORT

OF THE

MINISTER

OF

RAILWAYS AND CANALS

FOR THE PAST

FISCAL YEAR FROM 1ST JULY, 1882, TO 30TH JUNE,

1883

ON THE WORKS UNDER HIS CONTROL.

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SUBMITTED IN ACCORDANCE WITH THE PROVISIONS OF THE ACT THIRTY-FIRST VICTORIA, CHAPTER TWELVE, SECTION NINETEEN, AS AMENDED BY THE ACT FORTY-SECOND VICTORIA, CHAPTER SEVEN.

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PRINTED BY ORDER OF THE HOUSE OF COMMONS.

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1884.



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# REPORT.

1882—83.

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*To His Excellency the Most Honourable the Marquess of Lansdowne,  
Governor General of Canada, &c., &c., &c.*

MAY IT PLEASE YOUR EXCELLENCY :

I have the honour to submit the Annual Report of the Department of Railways and Canals for the fiscal year ended the 30th of June, 1883.

This Report is submitted in accordance with the provisions of the Act 31 Vic., Cap. 12 (1867), as amended by the Act 42 Vic., Cap. 7, Sections 4 and 5 (1879).

The Annual Reports of the Chief Engineers, together with general and special Reports from Superintendents, both of Railways and Canals, and from other Officers of the Department, are given in Appendices.

Attached hereto, (appendix 1, page 1) will be found a statement showing the amounts expended during the past fiscal year in construction, repairs and maintenance of the several works under the Department.

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## RAILWAYS.

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The present Report deals with the undermentioned Railways of the Dominion either directly controlled by the Federal Government, or towards the construction of which subsidies have been granted or authorized.

*Controlled :*

The Intercolonial.

The Prince Edward Island.

*Subsidized, or with subsidy authorized :*

The Canadian Pacific.

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NOTE —It should be observed that while the reports furnished by the Superintending Officers deal with the fiscal year only, the General Report of the Minister applies up to the end of December, 1883.

The Canada Central (Pembroke to Callander), in the Province of Ontario.		
A Railway from Gravenhurst to Callander	"	"
The Quebec and Lake St. John,	"	Quebec.
A Railway from Rivière du Loup or Rivière Ouelle to Edmunston	"	Quebec and New Brunswick.
The Great American and European Short Line	"	Nova Scotia.
The Chignecto Marine Transport Railway	"	Nova Scotia.
The Baie des Chaleurs Railway	"	Quebec.
The Caraquet Railway	"	New Brunswick.
The Gatineau Valley Railway	"	Quebec.
The International Railway	"	Quebec.
The Northern and Western Railway	"	New Brunswick.
The Montreal and Western Railway	"	Quebec.
The Napanee, Tamworth and Quebec	"	Quebec and On- tario.
A Railway from the Intercolonial at Petitcodiac to Havelock Corner	"	New Brunswick.

#### CANADIAN PACIFIC RAILWAY.

The line of the Canadian Pacific Railway, as adopted by the Government, extends from Callander, Lake Nipissing, to Port Moody, British Columbia.

Under the terms of the contract entered into in 1881 with the Canadian Pacific Railway Company, the Government have undertaken to construct the line between Port Arthur (formerly Prince Arthur's Landing) on Lake Superior, and Red River; also between Savona's Ferry, at the foot of Lake Kamloops, and Port Moody, in British Columbia. The Company, on their part, have undertaken to construct, within a specified time, the line between Callander Station, their eastern terminus at the east end of Lake Nipissing, and Port Arthur; also, between Red River and Savona's Ferry; the whole line, upon completion, to be the property of the Company, and to be maintained and operated by them thenceforward.

*Trunk Line* :—

The Trunk Line of the Company has been extended, by the purchase of other lines, eastward from Callander to Montreal, and the distances given in the following table are calculated on a route passing through the city of Winnipeg and the Kicking Horse Pass.

	Miles.
Montreal to Ottawa .....	120
Ottawa to Pembroke.....	105
Pembroke to Callander.....	120
Callander to Port Arthur.....	650

Port Arthur to Winnipeg.....	428½
Winnipeg to Savona's Ferry (approximate) .....	1,250
Savona's Ferry to Port Moody .....	215
Total (approximate).....	2,888½

In addition to the above, the Company have branch lines, constructed and under construction, aggregating 395 miles.

The portion of the road between Pembroke and Callander, 120 miles, was formerly part of the Canada Central Railway, and was subsidized by the Dominion Government to the extent of \$12,000 a mile. It was completed during the fiscal year.

#### PROGRESS OF WORKS UNDER GOVERNMENT

Of the section between Port Arthur and Winnipeg, the portion between Winnipeg and Rat Portage, together with the Pembina Branch, from St. Boniface (opposite Winnipeg) to Emerson, having already been handed over to the Company, there remained to be constructed by the Government at the beginning of the past fiscal year the portion between Rat Portage and Port Arthur, 297 miles.

In May, 1883, this portion was in such a state of forwardness as to admit of the running of regular trains, and it being highly desirable to open it up for traffic without delay, while at the same time avoiding the danger and difficulties which would be consequent upon an attempt to carry on works of construction and operation through other than one control, arrangements were sanctioned under which the contractors for the subsection between Rat Portage and Eagle River were relieved of the remaining portion of the work thereon, the Canadian Pacific Railway Company undertaking, for a bulk sum, not only to complete this subsection, but also to execute the minor work remaining to be done on the whole section between Port Arthur and Red River. They have since steadily progressed with the work, at the same time conducting the regular traffic of the road.

The only portion, therefore, remaining to be constructed by the Government is the section in British Columbia, between Savona's Ferry and Port Moody, a distance of 215 miles. Work under the five several contracts into which this section is divided has been carried on expeditiously. On the portion from Port Moody to Emory's Bar, a distance of 86 miles, the track is laid for 70 miles, and the grading is sufficiently advanced to admit of the track being laid throughout. The whole work comprised in the contract will, it is expected, be completed by July next. On the adjoining division, 29 miles, up to Boston Bar, the work is practically completed, the track being laid and ballasted throughout. Eastward from Boston Bar to Lytton, 29 miles, the structures, with the exception of the iron bridge over the Fraser River, are nearly finished. The track is laid for about 23 miles, and the grading is rapidly

approaching completion. The masonry work for the Fraser River bridge is in progress, and the superstructure, built in England, has arrived.

From Lytton to Spence's Bridge, (Junction Flat) 29 miles, the grading is nearly completed, and from Spence's Bridge to Savona's Ferry, 42 miles, the grading is in a forward state, and, together with the bridging, will probably be completed ready to receive the track by September next, by which date it is expected that the track will be laid over the whole distance from Savona's Ferry to Port Moody.

PROGRESS OF WORKS UNDER THE CANADIAN PACIFIC RAILWAY COMPANY.

The works to be executed by the Company under their contract are comprised in the following sections :

	Miles.
From Callander to Port Arthur (Eastern Section).....	650
From Winnipeg to Savona's ferry (Central Section).....	1,250
	<hr/>
Total .....	1,900

*Eastern Section (Callander to Port Arthur).*—The various location surveys undertaken on this section have been now connected, and the results shown are favourable in respect of both gradients and curvature.

The location of the road for a total distance of 130 miles west from Callander has been approved of by Orders in Council, the last of which is dated the 6th of December, 1883. and for a distance of 68 miles east from Port Arthur, the last Order being dated the 29th of March, 1883.

For a distance of 100 miles west from Callander, to a point about 4 miles beyond Sudbury Junction the track is laid, and the line is sufficiently completed to admit of the running of regular trains.

It may be here observed that starting from Sudbury Junction, the Company have a branch line, 93 miles long, under construction to Algoma Mills, Lake Huron, upon which such rapid progress has been made that it is expected to be in condition for traffic by the opening of navigation in May, 1884. A special line of steamers owned by the Company, will run from Algoma Mills to Port Arthur, connecting with the train service. A through Canadian route to Winnipeg and the Rocky Mountains, will thus be afforded from that date.

Upon the main line west from Sudbury Junction, construction works are in active progress for a distance of about 15 miles.

From Port Arthur eastward to the River Nepigon, a distance of about 67 miles, the track has been laid, and it will, it is expected, be laid for a further distance of 35 miles during the present winter.

For a distance of about 100 miles east of the River Nepigon occurs some of the heaviest rock cutting of the section. The work is in progress.

*Central Section, (Red River to Savona's Ferry, Kamloops).*—As was shown in the report presented last year, the Company, up to the end of January, 1883, had completed 581 miles of their main line from Winnipeg westwards. During the past season, the works have made such progress that, up to the present date, the track is laid as far as the summit of the Rocky Mountains, a distance of 260 miles.

The location of the road for a total distance of 964 miles west from Winnipeg, has been approved of by a series of Orders in Council, the last of which was dated the 6th of December, 1883.

The obtaining of a route through the Rocky Mountains by a pass other than the Yellow Head, that contemplated in the original location, has long been an object with the Company, and they have selected a line *via* the Kicking Horse Pass; this route, they consider, admitting of the construction of a road which will compare favourably with existing lines to the Pacific Coast, while, in comparison with the Yellow Head route, it will shorten the distance to Port Moody by at least 100 miles. The maximum gradient it will be found necessary to employ is 116 feet to the mile.

The Company have furnished copies of reports upon this subject, made in November last by their engineers. These have been printed in an appendix attached hereto, and will be found to give information as to the engineering features of the route. (*See app. 9, p. 152.*)

The possible selection of a pass other than the Yellow-Head, on the part of the Company, was provided for and authorized by an Act passed in 1882, a special clause of which reads as follows:—

“The Canadian Pacific Railway Company may, subject to the approval of the Governor in Council, lay out and locate their main line of railway from Selkirk to the junction with the western section by way of some pass other than the Yellow Head Pass, provided that the pass be not less than one hundred miles from the boundary between Canada and the United States of America.”

*Subsidy.*—Under the ninth section of the Company's contract it was provided as follows:—“Upon the construction of any portion of the railway hereby contracted for, not less than 20 miles in length, and the completion thereof so as to admit of the running of regular trains thereon, together with such equipment thereof as shall be required for the traffic thereon, the Government shall pay and grant to the Company the money and land subsidies applicable thereto.” Under a series of Orders in Council, based upon certificates of the Chief Engineer, portions of the said subsidies have

from time to time since the commencement of the work, been paid to the Company upon such completion, the cash subsidy amounting, up to the end of December, 1883, to \$12,289,211, being for 954 miles on the central section and 167 miles on the eastern, or a total of 1,121 miles.

The land subsidy amounts to 13,755,763 acres, less one-fifth, or 2,751,152 acres, which is retained by the Government pending the completion of the contract, making the total acreage handed over to the Company, 11,004,611 acres.

*Tariff.*—Under an Order in Council dated the 28th of May, 1883, approval was given to a tariff of charges for freight and passengers on the Canadian Pacific Railway westwards from Port Arthur, together with the branches connected therewith.

The report of the Government Chief Engineer, made after recent personal inspection of the whole road, shows that the line has been well and substantially built the larger streams being spanned by strong iron bridges, resting upon abutments and piers of massive masonry, and the whole work being carried out in a manner fully up to the requirements of the contract.

The rate at which the works have progressed has been so greatly in excess of what had been anticipated, that it may be confidently expected that the whole line will be opened for traffic some five years prior to the date called for by the contract, the 1st of May, 1891. To secure so desirable a result the Government has endeavoured, in all practicable ways, to strengthen, the Company's hands, so that no unnecessary check may occur to the vigour which has hitherto characterized their operations.

#### BRANCH LINES.

In addition to the subsidy for their main line, the Company have, under their contract, the right to receive a grant, in so far as it is vested in the Government, of the land required for road-bed, stations, etc., in the construction of branch lines.

The Company have had under construction the following branches:—

*The Algoma Branch.*—This line, referred to in last year's report as the Sault Ste. Marie branch, is 93 miles in length, and extends from Sudbury Junction, a point on the main line east of Callander, to Algoma Mills, Lake Huron. As above stated, it is well advanced towards completion, and will, it is expected, be open for traffic in May, 1884.

*The Selkirk Branch.*—This line, 22 miles in length, extends from Winnipeg, along the west side of Red River, to West Selkirk. It was completed during the past season, and is now under traffic.

*Pembina Mountain or South Western Branch, (164 miles).*—The Company have constructed and now operate this branch for a distance of 102½ miles, namely from Winnipeg to Manitoba City. Beyond this, the line is being located.

*Emerson Branch.*—This line, 15 miles in length, extends from Pembina Mountain Junction to the town of Emerson: it is nearly completed and ready for traffic. The Corporation of Emerson, aided by a subsidy of \$50,000 from the Dominion Government, authorized by Parliament, are building a combined railway and ordinary passenger bridge over the Red River.

*Gretna Branch.*—This line, 14 miles in length, from Pembina Mountain Junction to Gretna, on the International Boundary line, about 20 miles west of Emerson, is completed and under traffic.

In addition to the above the Company own various branch lines, acquired either by transfer or purchase, a list of which appears in the report of the Chief Engineer, appended hereto. (app. 3, p. 7; and app. 14, p. 159).

#### GOVERNMENT RAILWAYS IN OPERATION.

The several lines operated and maintained by the Government during the past fiscal year were:—

	Miles.
The Intercolonial.....	840
Prince Edward Island.....	199
Windsor Branch (maintained only).....	32
Total mileage.....	1,071

The General Revenue Accounts for 1882-3, show the following as the financial position of these roads for the past fiscal year:—

—	Expenditure.	Earnings.	Profit.	Loss.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Intercolonial.....	2,360,373 27	2,370,921 10	10,547 83	
Prince Edward Island.....	252,808 41	146,170 42		106,637 99
Windsor Branch (earnings, one third of entire receipts).....	23,103 93	24,113 89	1,009 96	
	2,636,285 61	2,541,205 41	11,557 79	106,637 99
				11,557 79
Loss on working.....				95,080 20
Less disbursements in connection with the accident on the Prince Edward Island Railway in 10.....				9,941 45
Net Loss.....				85,138 75

## INTERCOLONIAL RAILWAY.

## LENGTH OF LINE.

*Ocean Mail Line.*

	Miles.
Point Lévis to Rivière du Loup.....	126
Rivière du Loup to Moncton.....	374
Moncton to Painsec.....	8
Painsec to Truro.....	118
Truro to Halifax.....	62
	— 688

*Extensions.*

Moncton to St. John.....	89
Painsec to Shediac.....	11
Truro to Pictou.....	52
	— 152
	—
	840
	=

*Local Branches.*

Rimouski to Wharf.....	2
Newcastle, N. B., to Deep Water Wharf.....	2
Dorchester to Shipping Wharf.....	1
Sackville to Shipping Wharf.....	0.5
Stewiacke to Wharf.....	1
	—
	6.5

The various works for the improvement of the ocean terminus at Halifax, comprising the provision of more extensive wharf and warehouse accommodation, arrangements for the delivery of coal direct into the ship's bunkers, and the building of a large grain elevator, are now all completed, affording accommodation for steamers of the largest size.

At St. John, the requirements of the traffic rendered it necessary to provide further warehouse and coaling accommodation, and the facilities for the handling of freight are much improved.

The increase of the traffic on the road made it necessary to add to the rolling stock.

The permanent way and structures have been kept in a state of thorough efficiency. The repairs and renewals have included the laying of 31 miles

of new rails in the main track, with 8 miles of sidings, the erection of 120 miles of snow and ordinary fencing, the building of six stations and five freight houses, a large wharf at Dorchester, and a new steel bridge over the River Laplanche. In addition to the above, the various existing buildings along the line have received extensive repairs, and the improvement of the water supply has been a feature of the year's work.

The snow-fall last winter was heavy, entailing an expenditure considerably in excess of that required in the previous year. Notwithstanding the severity of the season, however, the counteracting means at disposal were sufficiently complete to enable the traffic of the line to be continued practically without impediment.

From the comparative statistical tables furnished by the proper officers, which will be found in appendices to the present report, it will be seen that a very considerable increase has taken place in the quantity of freight carried.

*Capital Account.*—The total cost of the road and equipment chargeable to capital account at the close of the fiscal year 1881–82 was..... \$39,560,021 23

The expenditure charged to capital account for the year ended 30th June, 1883, is as follows:—

Halifax extension .....	\$257,824 73
Deep water terminus, St. John.....	201,312 18
Repairs and improvements, Rivière du Loup section.....	6,805 86
For the completion of the Intercolonial Railway.....	40,124 59
For additional rolling stock.....	628,244 39
The St. Charles Branch.....	482,197 09
The Dartmouth Branch.....	124 12
	1,616,632 96

Making the total cost up to the 30th of June 1883...\$41,176,654 19

*Revenue Account.*—A comparison of the revenue with that of the past three years shows a continual increase in the earnings of the road.

The gross earnings for the year were.....	\$2,370,921 10
The working expenses were.....	2,360,373 27
	\$ 10,547 83

The gross earnings exceed those of the previous year by.... 291,658 44  
 The value of the stores in hand at the [end of the past fiscal year, including steel rails and fuel, was..... 567,739 27

The engine mileage compared with that of last year was:—

	Miles.
1882-83.....	4,406,189
1881-82.....	3,900,850
Increase....	<u>505,339</u>

The car mileage compared with that of last year was:—

1882-83.....	41,526,553
1881-82.....	37,489,376
Increase.....	<u>4,037,177</u>

The train mileage compared with that of last year was:—

1882-83.....	3,615,192
1881-82.....	3,195,566
Increase.....	<u>419,626</u>

The working expenses per mile run by engines were:—

	Cents.
1882-83.....	53·57
1881-82.....	53·05
Increase..	<u>·52</u>

The working expenses per mile run by train were:—

1882-83.....	65·29
1881-82.....	64·77
Increase.....	<u>·52</u>

The gross tonnage carried was:—

	Tons.
1882-83.....	970,961
1881-82.....	838,956
Increase.....	<u>132,005</u>

The total number of passengers carried was:—

1882-83.....	878,600
1881-82.....	779,994
Increase.....	<u>98,606</u>

#### ST. CHARLES BRANCH.

The construction of this branch, which extends from St. Charles Station on the Intercolonial Railway, to Point Lévis, a distance of about 18 miles, has been proceeded with, and is far advanced towards completion.

## WINDSOR BRANCH.

The Windsor and Annapolis Railway Company are permitted to continue the operation of this line, the arrangement being that the Company pay all charges in connection with the working, two-thirds of the gross receipts being allowed them for such purpose, the Government taking the remaining one-third and assuming all cost of maintenance.

The earnings and expenditure for the year ended the 30th of June, 1883, were as follows:—

Gross earnings accruing to the Government.....	\$ 24,113 89
Expenditure for maintenance of way and works.....	23,103 93
Balance.....	\$ 1,009 96

Earnings in comparison with those of the previous year:—

1882-1883.....	\$ 24,113 89
1881-1882.....	21,053 19
Increase.....	\$ 3,060 70

Expenditure in comparison with that of the previous year:—

1882-1883.....	\$ 23,103 93
1881-1882.....	13,099 55
Increase.....	\$ 10,004 38

The increased expenditure this year has been due to the erection of a new station and freight house at Windsor Junction, the relaying with steel rails of a portion of the road, and other improvements to buildings and bridges, together with additional siding accommodation.

The road has been maintained in good working order.

## PICTOU BRANCH.

Subject to approval by Parliament and by the Provincial Legislature of Nova Scotia, arrangements have been made under which the Dominion will retain the Pictou Branch, and will acquire the Eastern Extension Railway, operating the same as a portion of the Intercolonial Railway.

## DARTMOUTH BRANCH.

At the last Session of Parliament the sum of \$110,000 was voted for the construction of a branch line from the Intercolonial Railway to Dartmouth, opposite Halifax. the grant being conditional on the Corporation of that place undertaking to pay to the Government \$4,000 a year for twenty years, or so much of that amount

as may be required, in addition to the net revenue, to pay interest at the rate of four per cent. on the sum expended.

On the 12th of June, 1883, an agreement was duly entered into with the Corporation whereby they bound themselves to fulfil the above condition. Negotiations are in progress for the purchase of the right of way.

DALHOUSIE BRANCH.

At its last Session, Parliament voted the sum of \$60,000 for the construction of a branch line from the Intercolonial Railway to Dalhousie, on the Baie des Chaleurs, a distance of about 6 miles. The grading is practically completed, and the track is laid for about 3 miles; the station buildings have been erected, and it is anticipated that the line will be finished early next season. (app. 4, p. 14).

PRINCE EDWARD ISLAND RAILWAY.

LENGTH OF LINE.

	Miles.
Tignish to Royalty Junction.....	113½
Royalty Junction to Mount Stewart.....	20
Mount Stewart to Georgetown.....	21
	154½
EXTENSIONS.	
Royalty Junction to Charlottetown.....	5
Mount Stewart to Souris.....	39
	44
	198½

*Capital Account.*—The total cost of the road and equipment chargeable to capital account at the close of the fiscal year 1881-82 was.....\$3,466,990 60  
 The expenditure charged to this account for the year ended the 30th of June, 1883 was..... 56,702 02  
Total expenditure on capital account to the 30th of June 1883.....\$3,523,692 62

*Revenue account.*—The working expenses and receipts for the year ended the 30th of June, 1883, were :

Gross expenses.....	252,808 41
Gross earnings.....	146,170 42
	Excess of expenditure over earnings.....106,637 99

The gross earnings, compared with those of the previous year, were :—

1882-1883.....	\$146,170 42
1881-1882.....	137,267 54
Increase.....	\$8,902 88

The gross expenditure, compared with that of the previous year, was :—

1882-1883.....	\$252,808 41
1881-1882.....	228,259 97
Increase.....	\$24,548 44

The engine mileage was :—

	Miles.
1881-1882.....	317,194
1882-1883.....	313,760
Decrease.....	3,434

The car mileage was :—

	Miles.
1881-1882.....	1,117,989
1882-1883.....	1,237,103
Increase .....	119,114

The expenditure includes a sum of \$9,941.45 paid in connection with the accident on this road which occurred in August 1880, the erection of a new station at Miscouche, the provision of additional sidings and the purchase of land for snow fences.

The road, and the buildings and structures in connection with it, have been maintained in good condition, and the rolling stock is in an efficient state of repair.

#### CAPE TRAVERSE BRANCH.

At the last session of Parliament the sum of \$188,200 was granted for the construction of a branch, connecting Cape Traverse with the Prince Edward Island Railway at County Line Station, a distance of about 12 miles.

The grading is practically completed, and the necessary wharf at Cape Traverse is being constructed; the road is expected to be in running order in the summer of 1884. (app. 4, p. 14).

#### SUBSIDIZED LINES.

Under an Act, 45 Vic., cap. 14, 1882, the grant of certain subsidies was authorized upon specified conditions as to construction, payments, running powers, and traffic arrangements, towards the construction of the following lines of railway :—

For a railway from Gravenhurst to Callander, both in the Province of Ontario, a subsidy not exceeding \$6,000 per mile, nor exceeding in the whole.....	\$660,000
For a railway from St. Raymond to Lake St. John, both in the Province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	384,000
For a railway from a point on the Intercolonial Railway, at Rivière du Loup or Rivière Ouelle, in the Province of Quebec, or between them, to Edmundston in the Province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	240,000
For a railway from Oxford to New Glasgow, both in the Province of Nova Scotia, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	224,000
Total.....	\$1,508,000

The Act further provided that the grants should be made "to such Companies as shall be approved by the Governor in Council, as having established to his satisfaction their ability to complete the said railways respectively, within a reasonable time, to be fixed by Order in Council, and according to descriptions and specifications to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made by the Company with the Government, and which the Government is empowered to make."

Further, by an Act passed last Session, 46 Vic., cap. 25, the grant of subsidies was authorized as follows:—

To the Baie des Chaleurs Railway Company, for 100 miles of their railway, from Metapediac, on the Intercolonial Railway, to Paspebiac, in the Province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	\$320,000
To the Caraquet Railway Company, for 36 miles of their railway, from a point near Bathurst to Caraquet, in the Province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.	115,200
To the Gatineau Valley Railway Company, for the first 50-mile section of their railway, from Hull Station, in the Province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	160,000

To the Great American and European Short Line Railway Company, for 80 miles of their railway, from Canso to Louisburg or Sydney, in the Province of Nova Scotia, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	256,000
To the International Railway Company, for 49 miles of their railway, from Sherbrooke, in the Province of Quebec, to the International Boundary Line, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	156,800
(In connection with the extension of this road through Maine, to connect with New Brunswick, at or near Vanceborough or south of that point).	
To the Northern and Western Railway Company, for 32 miles of their railway, from the Intercolonial Railway, near the Miramichi, to Moran's, near Demphy Village, in the Province of New Brunswick, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	102,400
To the Montreal and Western Railway Company, for the first 50-mile section of their railway, out of St. Jerome, in the Province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	160,000
To the Napanee, Tamworth and Quebec Railway Company, for 28 miles of their railway, from Napanee to Tamworth, in the Province of Ontario, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	89,600
To the Quebec and Lake St. John Railway Company, for 25 miles of their railway, from St. Raymond to Lake St. John, in the Province of Quebec, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	80,000
(In addition to the subsidy granted by the Act 45 Vic., cap. 14).	
For a railway from the Intercolonial Railway at Petitediac to Havelock Corner, in the Province of New Brunswick, 12 miles, a subsidy not exceeding \$3,200 per mile, nor exceeding in the whole.....	38,400

For a railway from Gravenhurst to Callander, 110 miles,  
 a subsidy not exceeding \$6,000 per mile, nor exceed-  
 ing in the whole..... 660,000  
 (In addition to the subsidy granted by the Act 45  
 Vic., cap. 14).

In relation to the foregoing and to the Act of the previous Session, it was provided as follows:—

“The nine subsidies first mentioned to be granted to the Companies hereinbefore named respectively; and the two subsidies last mentioned to be granted to such Companies as shall be approved by the Governor in Council as having established to his satisfaction their ability to complete the said railways respectively; and all the eleven lines above mentioned, and also all the lines of railway in respect of which it is provided by the Act forty-fifth Victoria, chapter fourteen, that subsidies may be granted, shall be commenced within two years from the first day of July next, and completed within a reasonable time, not to exceed four years from and after the passing of this Act, to be fixed by Order in Council, and according to descriptions and specifications to be approved by the Governor in Council, on the report of the Minister of Railways and Canals, and specified in an agreement to be made by each Company with the Government, and which the Government is empowered to make.”

*Quebec and Lake St. John Railway Co.*—An agreement was duly entered into on the 4th of September, 1883, under which this line is to be completed by the 25th of May, 1887.

Up to the 31st of December, 1883, the subsidy has been paid for the first 10-mile section, north of St. Raymond, namely \$32,000.

*Great American and European Short Line Railway Co.*—A contract was entered into with this Company on the 28th of July, 1882, for the construction of their line between Oxford and New Glasgow.

*International Railway Company.*—The object of the subsidy to this Company was the enabling them to complete their road with steel rails to the international boundary. The Company entered into contract on the 20th of July, 1883.

The work has been executed, and the subsidy contemplated by the Act has been duly paid upon a distance of 45 miles, namely \$144,000, up to the 31st of December, 1883.

*The Napanee, Tamworth and Quebec Railway Company.*—On the 31st of December, 1883, the necessary approval having been given by an Order in Council of the 21st of that month, an agreement was entered into with the Company, under which the line between Napanee and Tamworth is to be completed by the 31st of December, 1884. The works are in progress.

*New Brunswick Railway Company.*—On the 28th of June last, an Order in Council was passed, approving of the descriptions and specifications submitted, and authorizing entry into agreement accordingly. The Company are still engaged in the work of survey, and no agreement has yet been signed.

*St. John Bridge and Railway Extension Company.*—By an Act passed last session 46 Vic., ch. 26, authority was given for the advance to the above named Company of a sum not exceeding \$500,000, to aid them in the construction of their proposed bridge over the St. John River, security being taken for the said advance in the shape of a mortgage on the Company's property,

The plans and specifications of the bridge having been approved of by an Order in Council, a mortgage was executed on the 10th of December, 1883, and the Company, up to the 31st of December, 1883, have received the sum of \$34,000, representing eighty per cent of the expenditure already made in connection with the work.

*Vancouver Island Railway.*—Under the authority of Orders in Council passed in June, 1883, the Hon. Sir Alexander Campbell, during the past summer, has visited British Columbia, with a view to the settlement of matters in abeyance between the Provincial and Dominion Governments, and arrangements were provisionally entered into by him in respect of the building of a line of railway between Esquimalt and Nanaimo by a Company, to be subsidized by the Dominion Government.

The arrangements in question are conditional upon approval being accorded by the Legislature of the Province of British Columbia, and by the Parliament of Canada. Subject to such approval, their adoption has been sanctioned by an Order in Council of the 27th of September, 1883.

*Chignecto Marine Transport Railway Company.*—Under the Act 45 Vic., ch. 55, authority was given to the Government to enter into an agreement with this Company whereby a subsidy of \$150,000 a year, for a period of 25 years, should be paid to them in aid of the construction of a ship railway across the Isthmus of Chignecto, between Baie Verte, in the Gulf of St. Lawrence, and the Bay of Fundy. No agreement has yet been made with the Company.

## CANALS.

The canal systems of the Dominion, under Government control, in connection with lakes and navigable rivers, are as follows :—

1. The River St. Lawrence and Lakes.
2. The River Ottawa.
3. The Rideau Navigation, from Ottawa to Kingston.
4. The Trent Navigation.
5. The River Richelieu, from the St. Lawrence to Lake Champlain.
6. St. Peter's Canal, Bras d'or Lake, Nova Scotia.

The collection of the revenue derivable from the canals of the Dominion being in the hands of the Department of Inland Revenue, reference must be had to the annual report of that Department for all information in relation to the subject. The report in question further deals with general matters relating to the movement of freight on these canals.

The following table, however, shows the revenue accrued from the operation of the several canals during the past fiscal year, 1882-83, as ascertained from the Department of Inland Revenue.

Name of Canal.	Tolls.	Hydraulic Rents.	Total Revenue.
Welland.....	\$155,062	\$10,446	\$165,508
St. Lawrence.....	91,675	18,049	109,72
Chambly .....	23,524	130	23,654
Ottawa .....	62,132	22	62,1 5
Rideau .....	6,474	859	7,333
Burlington Bay.....	2,827	130	2,957
St. Peter's.....	1,229	.....	1,229
Newcastle District.....	329	.....	329
Fort Francis.....	.....	20	20
	343,252	29,656	372,90

### RIVER ST. LAWRENCE AND LAKES.

The River St. Lawrence, with the system of canals established on its course above Montreal, and the Lakes Ontario, Erie, St. Clair, Huron and Superior, with connecting canals, afford a course of water communication extending from the Straits of Belle-Ile to Duluth, at the head of Lake Superior, a distance of 2,284 statute miles.

The difference in level between Lake Superior and the point on the St. Lawrence, near to Three Rivers, where tidal influence ceases, is about 600 feet.

The Dominion Canals, constructed between Montreal and Lake Erie, are the Lachine, Beauharnois, Cornwall, Farran's Point, Rapide Plat, Galops and Welland. Their aggregate length is  $70\frac{1}{2}$  miles; total lockage (or height directly overcome by locks) is,  $533\frac{1}{2}$  feet; number of locks, 53.

Communication between Lakes Huron and Superior is obtained by means of the Sault Ste. Marie Canal, situated on the United States side of the channel.

The canal is a little over a mile in length, and has one lock 515 feet long, 80 feet wide, with 16 feet of water on the sills, and a lift of about 18 feet.

A statement of distances, and of sections of navigable waters, from the Straits of Belle-Ile to Duluth, at the head of Lake Superior, is given in the appendices. (App. No. 13).

#### ST. LAWRENCE CANALS.

As was observed in the report presented last year, in 1841, at the time when the system of canals between Montreal and Lake Ontario was designed, it was in contemplation to afford a depth, at all stages of the St. Lawrence waters, of 9 feet, a depth seemingly, from the data then possessed, secured through the works proposed. The River St. Lawrence is, however, from various reasons, subject to fluctuations whose extent it was impossible at the time when these canals were originally constructed, to arrive at with precision, and the continued observations and experience of subsequent years have shown that while the intermediate river reaches, at all times, afford ample depth for vessels of nine feet draught, in the canals themselves, at certain periods of low water, this depth cannot be maintained, the bottom not having been sunk to a sufficiently low level.

The following list shows the least depth of water on the sills of the locks of the St. Lawrence Canals at a time of exceptionally low water, in the year 1872 (*vide* Report of Chief Engineer, 1880):

Williamsburgh Canals—	Feet.	Inches.
Rapide Plat, guard lock .....	6	7
“ “ lower entrance.....	7	0
Galops, guard lock .....	8	1
Iroquois, lower entrance.....	9	3
Farran's Point.....	7	9
Cornwall, guard.....	8	3
“ lower entrance.....	9	0
Beauharnois.....	10	10
“ lower entrance .....	9	3

Further works of enlargement have been commenced on the Cornwall, the Rapide Plat and the Galops Canals, the scale adopted being that of the general enlargement scheme, as now in use on the Welland and Lachine canals. Reference to these works will be made under their respective headings.

LACHINE CANAL.

	Old Line.	New Line.
Length of canal.....	8½ statute miles.	8½ statute miles.
Number of locks.....	5	5
Dimensions of locks.....	200 feet by 45 feet.	270 feet by 45 feet.
Total rise or lockage.....	44¾ feet.	44¾ feet.
Depth of water {	at two locks 16 "	18 "
on sill..... {	at three locks. 9 "	14 "
Mean width of new canal.....	150 "	

This canal extends from the City of Montreal to the Village of Lachine, overcoming the St. Louis Rapids, the first series of rapids which bars the ascent of the River St. Lawrence. They are 936 miles distant from the Straits of Belle-Ile.

The canal now consists of one channel, with two distinct systems of locks, the old and the enlarged.

The canal was closed on the 1st December, 1882, and opened on the 1st of May, 1883.

No accident or interruption to navigation has occurred during the year, and the works have been maintained in a state of thorough efficiency. (App. 5, p. 81.)

NEW WORKS.

The enlargement of the entrance channel and harbour at Lachine, the principal work now remaining to be done, has made steady progress, and it is expected that a channel 200 feet wide and of the depth required for the passage of vessels of 14 feet draught will be completed early in the summer of 1884.

The works for the construction of the two new basins at St. Gabriel, for which an appropriation has been voted, have been placed under contract and are in progress.

The extension of the landing pier at Lachine, rendered necessary by the construction of the new entrance to the canal has been completed.

BEAUHARNOIS CANAL.

Length of canal.....	11¼ statute miles.
Number of locks.....	9
Dimensions of locks.....	200 feet by 45 feet.

Total rise or lockage .....	82½ feet.
Depth of water on sills.....	9 “
Breadth of canal on bottom.....	80 “
Breadth of canal at water surface ...	120 “

This canal commences on the south side of the St. Lawrence, 15¼ miles from the head of the Lachine Canal. It connects Lakes St. Louis and St. Francis, and passes the three rapids known respectively as the Cascades, the Cedars, and the Coteau.

The canal was closed by ice on the 30th of November, 1882, and was re-opened for traffic on the 30th of April, 1883.

On the 25th of August, 1882, an accident occurred at lock No. 13, the steamer “Prince Arthur” having run into and carried away three of the gates, entailing considerable damage through the consequent overflow of water from the reach above the lock. Traffic was interrupted for forty-eight hours.

The repairs and renewals effected during the year have been of considerable extent; new bridges have been constructed at Valleyfield, and some of the raceways have been repaired. (App. 5, p. 84).

#### CORNWALL CANAL.

Length of canal.....	11½ statute miles.
Number of locks. ....	7
Dimensions of locks.....	200 feet by 55 feet.
Total rise or lockage.....	48 feet.
Depth of water on sills.....	9 “
Breadth of canal at bottom.....	100 “
Breadth of canal at water surface .....	150 “

From the head of the Beauharnois to the foot of the Cornwall Canal, there is a navigable stretch through Lake St. Francis of 32¾ miles.

The Cornwall Canal extends past the Long Sault Rapids.

This canal was closed on December 6th, 1882, and re-opened on the 28th of April, 1883.

All necessary repairs were executed. (App. 5, p. 97).

#### NEW WORKS.

As was stated last year, certain works of enlargement at the lower entrance, comprising the formation of an entrance channel, and the construction of two locks (taking the place of three on the old line), together with the excavation of a basin between the locks, have been completed and brought into use, leaving four locks and

the prism of the canal to be hereafter dealt with. The dimensions of the new locks are those of the general enlargement scheme, namely: length, 270 feet; breadth 45 feet; depth of water 14 feet. The basin between these two locks is 825 feet long.

Further works, comprising the deepening of the channel at the upper end, the construction of a lock and a large supply weir will be shortly placed under contract.

The proposed channel will be sunk to such depth as to admit of the passage of vessels of 14 feet draught.

#### WILLIAMSBURGH CANALS.

The Farran's Point, Rapide Plat and Galops Canals are collectively known as the Williamsburgh Canals.

These canals were closed on the 11th December, 1882, and re-opened on the 1st May, 1883.

Navigation was carried on throughout the season without interruption. (App. 5, p. 98).

#### FARRAN'S POINT CANAL.

Length of canal.....	$\frac{3}{4}$ mile.
Number of locks .....	1
Dimensions of locks .....	200 feet by 45 feet.
Total rise or lockage .....	4 "
Depth of water on sills .....	9 "
Breadth of canal at bottom.....	50 "
Breadth of canal on water surface .....	90 "

From the head of the Cornwall Canal to the foot of Farran's Point Canal, the distance on the River St. Lawrence is 5 miles. This latter canal enables vessels ascending the river to avoid the Farran's Point Rapid. Descending vessels run the rapids with ease and safety.

The ordinary repairs were executed.

#### RAPIDE PLAT CANAL.

Length of canal.....	4 miles.
Number of locks .....	2
Dimensions of locks.....	200 feet by 45 feet.
Total rise, or lockage.....	11 $\frac{1}{2}$ feet.
Depth of water on sills .....	9 "
Breadth of canal at bottom.....	50 "
Breadth of canal at surface of water.....	90 "

From the head of Farran's Point Canal to the foot of Rapide Plat Canal there is a navigable stretch of  $10\frac{1}{2}$  miles. This canal was formed to enable vessels ascending the river to pass the rapid at that place. Descending vessels run the rapid safely.

The canal has been maintained in good repair.

#### NEW WORKS.

Steps have been taken towards the enlargement of this canal in conformity with the proportions of the general scheme. Plans and specifications have been prepared for the works to be immediately placed under contract. These consist of the enlargement of the channel way above and for some distance below the present guard lock at the head of the canal, the construction of a new lock, and a supply weir in connection with the old lock. The bottom of the channel will be excavated to an extent sufficient to afford a navigable depth of 14 feet.

#### GALOPS CANAL.

Length of canal.....	$7\frac{5}{8}$ miles.
Number of locks.....	3
Dimensions of locks.....	200 feet by 45 feet.
Total rise or lockage.....	$15\frac{3}{4}$ feet.
Depth of water on sills.....	9 "
Breadth of canal at bottom.....	50 "
Breadth of canal at surface of water.....	90 "

From the head of Rapide Plat Canal to Iroquois, at the foot of the Galops Canal, the St. Lawrence is navigable for  $4\frac{1}{2}$  miles. This canal enables vessels to overcome the rapids at Pointe aux Iroquois, Pointe Cardinal and the Galops.

The repairs have been of an ordinary character.

From a statement furnished by the Superintendent of these canals and attached to his report (p. 100) it appears that the minimum depth of water reached during the past fiscal year was on the Rapide Plat Canal in February, 1883, when, at the head or guard lock of the canal, there was only 6 feet of water. The lowest point at which the water stood on this canal during the season of navigation was in May, 1883, when the height of water at the guard lock was 8 feet, 4 inches.

#### NEW WORKS.

It is intended to proceed with the improvement and deepening of the upper entrance of this canal, in order that better access may be afforded to vessels. The work to be immediately placed under contract is the excavation and deepening of a channel way at the upper end, leading to deep water, so as to give a depth available for vessels of 14 feet draught.

GALOPS RAPIDS IMPROVEMENT.

The Galops Rapids, the most shallow of the three passed by the Galops Canal, are being improved for purposes of navigation by certain works of submarine blasting and dredging.

These works, commenced in 1830, consist of the excavation of a straight channel through the rapids, 3,300 feet long, 200 feet wide and of such depth as to afford safe passage at low water to vessels of 14 feet draught.

The principal shoals to be excavated are those known as the "Island Shoal" and the "Lower Bar." Very satisfactory progress has been made, and the Island Shoal may be said to be now practically removed, the work of dredging out some of the already blasted material being all remaining to be done. The work of drilling and blasting at the "Lower Bar" is now in progress. (App. 5, p. 126).

WELLAND CANAL.

MAIN LINE, FROM PORT DALHOUSIE, LAKE ONTARIO, TO PORT COLBORNE, LAKE ERIE.

By the works of enlargement, passage is now afforded, at all stages of the Lake Erie level, to vessels drawing 12 feet of water, excepting at the point where the canal is carried by an aqueduct over the Chippewa River. Here, the necessity of continuing to use the old work, pending the building of the enlarged aqueduct, renders care imperative, and the draught of vessels using their own motive power should not, at this point, exceed  $11\frac{1}{2}$  feet; the draught of vessels in tow, however, may be 12 feet. At periods of low water in Lake Erie, and especially during a continuance of strong easterly winds, the draught of all vessels, to enable them to pass freely through the present aqueduct, should not exceed  $11\frac{1}{2}$  feet.

	OLD LINE.	ENLARGED OR NEW LINE.
Length of canal.....	27 $\frac{1}{5}$ miles.	26 $\frac{3}{4}$ miles.
Pairs of guard gates, (formerly 3)...		2
Number of locks { lift.....	26	} lift 25
{ guard.....	1	} guard 1
Dimensions.....	2 locks 200 x 45	} 270 feet x 45 feet.
	1 (tidal) 230 x 45	
	2 $\frac{1}{2}$ 150 x 26 $\frac{1}{2}$	
Total rise or lockage.....	326 $\frac{3}{4}$ feet.	326 $\frac{3}{4}$ feet.
Depth of water on sills.....	10 $\frac{1}{4}$ "	12 "

## WELLAND RIVER BRANCHES.

Length of Canal—Port Robinson Cut to River Welland .....	2,622 feet.
“ From the Canal at Welland to the River <i>via</i> lock at Aqueduct.....	300 “
“ Chippawa Cut to River Niagara	1,020 “
Number of locks—One at Aqueduct and one at Port Robinson.....	2
Dimensions of locks.....	150 by 26½ feet.
Total lockage from the Canal at Welland down to River Welland.....	10 feet.
Depth of water on sills.....	9 “ 10 inches.

## GRAND RIVER FEEDER.

Length of canal.....	21 miles.
Number of locks.....	2
Dimensions of locks.....	{ 1 of 150 by 26½ feet. 1 of 200 by 45 “
Total rise or lockage.....	7 to 8 feet.
Depth of water on sills.....	9 feet.

## PORT MAITLAND BRANCH.

Length of canal.....	1¾ miles.
Number of locks.....	1
Dimensions of lock.....	185 by 45 feet.
Total rise, or lockage .....	7½ feet.
Depth of water on sills.....	11 “

The Welland Canal has one entrance from Lake Ontario, at Port Dalhousie, and two from Lake Erie, of which one is for the main line at Port Colborne and one for the feeder route at Port Maitland; it has also an entrance from the River Niagara, at the Town of Chippewa. The enlarged route lies between Port Dalhousie and Port Colborne.

From Port Dalhousie to Allanburgh, 11¾ miles, there are now two distinct lines of canal in operation, the old line and the enlarged, or new line.

From Allanburg to Port Colborne, a distance of 15 miles, there is only one channel, the old canal having been enlarged.

The new canal was closed on the 5th of December, 1882, and re-opened on the 5th of May 1883.

The old canal was closed on the 30th of November 1882, and re-opened on the 5th of May, 1883.

#### NEW CANAL.

With one exception, the displacement of the superstructure of the Welland Junction Bridge, by the schooner "Midland Rover," no accident of moment has occurred.

The works for the lighting of the canal with gas, from Port Dalhousie to Thorold have been completed.

For the protection of the banks of the canal between Port Dalhousie and Thorold they have been faced with stone.

Full details of the various repairs, renewals, &c., executed during the year will be found in the report of the Superintendent. (App. 5, p. 101.)

#### OLD CANAL.

The necessary repairs and renewals of the year have been heavy, but the works have been maintained in good condition.

Lock No. 2, on the line of the old canal, has been lengthened 70 feet, making it 270 feet in length, the breadth, 45 feet, remaining as heretofore. The upper wings of the lock have been extended so as to form a seat for a bridge. The whole work is completed.

A winter of exceptional severity on the Grand River, and the occurrence of a rapid thaw, led to a freshet in the spring of a dangerous character. Owing to the precautions taken in drawing down the water early in the season the river did not overflow its banks, and the mischief done was confined to the Dunville bridge and the waste weirs. (App. 5, p. 101).

#### NEW WORKS.

The work of widening the section between Humberstone and [Port Colborne, known as the "Rock Cutting," has been steadily continued, without interruption to navigation.

The work of constructing an aqueduct by which the waters of the enlarged canal are to be carried over the Chippewa River has been prosecuted during the year. The system of arches through which the river will pass is now completed for one half of its length, leaving the remaining half and the superstructure still to be built.

The several contractors for the work of enlarging the canal have now all been finally settled with, except those for sections 1, 35 and 36, and those for the work in progress, viz., sections 27 and 34, and the enlargement of old lock No. 2.

## BURLINGTON BAY CANAL.

Length of canal .....	$\frac{1}{2}$ mile.
Average breadth between piers.....	138 feet.
Least " " .....	108 "

This canal is cut through the sand bar which separates Burlington Bay from Lake Ontario, and is navigable, without locks, for vessels drawing 10 feet of water. It gives access to the Port of Hamilton, and to the town of Dundas, *via* the Desjardins Canal.

The canal was closed on the 11th December, 1882, and re-opened on the 5th of May, 1883.

The re-building of the superstructure of the piers, parts of which were destroyed by fire some years ago, has been now completed. (App. 5, p. 118).

## MONTREAL, OTTAWA AND KINGSTON.

This route extends from the Harbour of Montreal to the Port of Kingston, passing through the Lachine Canal, the navigable sections of the lower River Ottawa and the Ottawa Canals, to the City of Ottawa, thence by the River Rideau and the Rideau Canal to Kingston, on Lake Ontario—a total distance of 245 $\frac{5}{8}$  miles.

After leaving the Lachine Canal, the works constructed to overcome the difficulties of navigation are:—

- The St. Anne's Lock;
- Carillon Canal;
- Grenville Canal;
- Rideau Canal.

The total lockage (not including that of the Lachine Canal), is 509 feet—(345 rise, 164 fall)—and the number of locks is 55.

The following table exhibits the intermediate distances from Montreal Harbour:—

Sections of Navigation.	Intermediate distance.	Total distance from Montreal.
The Lachine Canal.....	8 $\frac{1}{2}$	.....
From Lachine to St. Anne's Lock.....	15	23 $\frac{1}{2}$
St. Anne's Lock and Piers.....	$\frac{1}{8}$	23 $\frac{5}{8}$
From St. Anne's Lock to Carillon Canal.....	27	50 $\frac{5}{8}$
The Carillon Canal.....	$3\frac{3}{4}$	54 $\frac{3}{8}$
From Carillon Canal to Chute à Blondeau.....	4 $\frac{3}{4}$	59 $\frac{1}{8}$
Chute à Blondeau Canal.....	$1\frac{1}{8}$	60 $\frac{3}{8}$
From Chute à Blondeau Canal to Grenville Canal.....	18 $\frac{3}{8}$	78 $\frac{6}{8}$
The Grenville Canal.....	4	82 $\frac{6}{8}$
From the Grenville Canal to entrance Rideau Navigation.....	56	138 $\frac{6}{8}$
Rideau Navigation, ending at Kingston.....	126 $\frac{1}{2}$	264 $\frac{6}{8}$

## ST. ANNE'S LOCK.

Length of canal.....	$\frac{1}{2}$ mile.
Number of locks.....	1
Dimensions of locks.....	200 feet by 45 feet.
Total rise or lockage .....	3 "
Depth of water on sills.....	9 "

This work, with guide piers above and below, surmounts the St. Anne's Rapids between Ille Perrot and the head of the Island of Montreal, at the outlet of that portion of the River Ottawa which forms the Lake of Two Mountains,  $23\frac{1}{2}$  miles from Montreal Harbour.

This lock was closed to navigation on the 30th of November, 1882, and re-opened on the 30th of April, 1883.

Traffic throughout the season was uninterrupted.

The new lock, with its entrances, having been completed, it was brought into use in August, 1882.

The work of straightening and deepening the channel above the lock, for which an appropriation has been granted, has been commenced. The length of the improved channel will be 4,700 feet, the breadth at bottom 100 feet, and the depth, at lowest water, 10 feet. (App. 5, p. 93).

## THE CARILLON CANAL.

Length of canal.....	$\frac{3}{4}$ miles.
Number of locks.....	2
Dimensions of locks.....	200 feet x 45 feet.
Total rise or lockage.....	16 feet.
Depth of water on sills.....	9 "
Breadth of canal at bottom .....	100 "
Breadth of canal at water surface.....	110 "

This canal overcomes the Carillon Rapids.

From St. Anne's Lock to the foot of the Carillon Canal, there is a navigable stretch of 27 miles, through the Lake of two Mountains and the River Ottawa.

The canal was closed on the 27th of November, 1882, and re-opened on the 28th April, 1883.

No interruption to traffic has taken place.

The new works of enlargement were completed during the past fiscal year, and the old canal was finally abandoned in August 1882.

Booms for the protection and guidance of descending vessels have been placed above the canal.

The high water of the early summer made a breach in the dam constructed across the River Ottawa, at Carillon, without, however, affecting the level of the water above. Steps have been taken towards the repair of the damage done.

For the greater safety of rafts, the entrance to the slide in the dam has been extended to a considerable distance up the river, by the construction of guide piers and booms.

By the construction of the Carillon dam the water at that point has been raised 9 feet. Above this point, for a distance of nearly seven miles, as far as the foot of Grenville Canal, the level of the river has been raised, so that the depth of water on the lower sills of the entrance lock of that canal has been increased 2 feet, and the necessity of using the Chute à Blondeau Canal, situated between these points, has been obviated. During times of very high water, however, the current at the Chute is so strong that an improvement in the channel is required. (App. 5, pp. 94, 96.)

#### CHUTE A BLONDEAU CANAL.

Length of canal.....	$\frac{1}{3}$ of a mile.
Number of locks.....	1
Dimensions of locks.....	130 $\frac{5}{8}$ ft. x 32 $\frac{5}{8}$ ft. at upper end and 36 $\frac{1}{2}$ feet at lower end.
Depth of water on sills.....	6 "
Breadth of canal at water surface.....	30 "
Breadth of canal at bottom.....	30 "

Between the Carillon and Chute à Blondeau Canals there is a navigable stretch of 4 miles. The canal is cut through solid rock, and has only one lock.

The canal was closed on the 27th of November, 1882, and, re-opened on the 28th April, 1883.

During the past year this canal has not been used except by small vessels at high water. (App. 5, p. 94.)

#### GRENVILLE CANAL.

Length of canal.....	5 $\frac{1}{4}$ milles.
Number of locks.....	5
Dimensions of locks.....	200 feet x 45 feet.
Total rise or lockage.....	43 $\frac{3}{4}$ "
Depth of water on sills.....	9 "
Breadth of canal at bottom.....	40 to 50 feet.
Breadth of canal at surface of water.....	50 to 80 "

From the head of the Chute à Blondeau Canal to the foot of the Grenville Canal, there is a navigable stretch of  $1\frac{3}{4}$  miles.

This canal, by which the Long Sault Rapids are avoided, is about 56 miles below the City of Ottawa.

The canal was closed on the 27th of November, 1882, and re-opened on the 1st of May, 1883.

All necessary repairs have been carried out.

#### NEW WORKS.

The works for the enlargement of the canal, commenced in 1871, comprise the construction of five locks 200 feet long and 45 feet wide, with 9 feet of water on the sills; the main channel having a depth of 10 feet and a mean width at bottom, of 40 feet, varying at the surface from 50 to 80 feet, with crossing basins constructed at approximate intervals of half a mile.

All the enlarged locks on this canal are now constructed. The two new single locks at the lower entrance, which are intended to take the place of the existing four combined locks at this point, cannot, however, be brought into full use until the channel at the lower entrance is excavated. This work is being carried on and will it is expected, be completed during the summer of 1884.

The work of completing a wharf and the building of retaining walls at the Grenville entrance of the canal are in progress, and are nearly finished. (App. 5, pp. 94, 96.)

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## UPPER OTTAWA RIVER.

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### CULBUTE LOCKS AND DAMS.

Number of locks.....	.....
Dimension of locks.....	..... 200 by 45.
Total rise or lockage.....	..... 18 to 20 feet.
Depth of water on sills .....	..... 6 feet.
Aggregate length of dams .....	..... 625 feet.

From the Grenville Canal to the City of Ottawa, a distance of about 56 miles, the river is navigable. Beyond the city, for a distance of 107 miles, to L'Islet or Culbute, continuous navigation is rendered impracticable by the undermentioned rapids:—The Chaudière, the Duchêne, the Chats, the Chenaux, the Portage du Fort and the Grand Calumet.

The Culbute works, situated at L'Islet, surmount the Culbute and L'Islet Rapids on the north channel of the Ottawa.

These works comprise two locks and three continuous dams, all built of wood. The dams reduce the rapids to smooth water, enabling the river to be navigated from the head of the locks to Des Joachims, a distance of 37 miles.

#### NEW WORKS.

To render the river navigable below the lock, as far as Bryson, it has been necessary to remove part of three shoals and to build two submerged dams.

All the work has been completed, opening up a navigable route of 80 miles, with a minimum depth of 7 feet at extreme low water, between Des Joachims and Bryson, making a total above and below Culbute of 117 miles. (App. 5, pp. 95, 97.)

#### RIDEAU NAVIGATION.

The Rideau system connects the River Ottawa, at the City of Ottawa, with the eastern end of Lake Ontario, at Kingston.

Length of navigable waters .....	126 $\frac{1}{4}$ miles.
Number of locks going from Ottawa to Kingston .	{ 33 ascending. 14 descending.
Total lockage.....446 $\frac{1}{4}$	{ 282 $\frac{1}{2}$ rise, and 164 fall. } at high water.
Dimensions of locks .....	134 by 33 feet.
Depth of water on sills, 5 feet; navigable depth through the several reaches .....	4 $\frac{1}{2}$ feet.
Breadth of canal reaches at bottom .....	{ 60 feet in earth. 54 feet in rock.
Breadth at surface of water.....	80 feet in earth.

For table of distances of stations between Ottawa and Kingston, see Appendix 11, page 156.

The summit level of this system is at the Upper Lake Rideau, but several of the descending reaches are also supplied by waters which have been made tributary to them. The following description gives the sources of supply:—

From the summit, the route towards Ottawa follows the River Rideau, and that towards Kingston follows the River Catarqui. The whole duty of keeping up the water to its proper level is effected by the reserves, given in detail below.

They may be divided into three systems, viz.:—

1. The summit level, supplied by the Lake Wolf system. 2. The eastern descending level to Ottawa, supplied by the River Tay system, discharging into

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Lake Rideau. 3. The south-west descending level to Kingston, supplied by the Mud Lake system, formerly known as the Devil Lake system; discharging into Lake Openacon.

Lake Openacon receives the waters of Buck Lake and Rock Lake.

All these waters on the descending level, supplemented by those of Lake Loughboro, flow into Cranberry Lake, which discharging through Round Tail outlet, forms the Rivèr Cataraqi; this river, rendered navigable by dams at various points, affords a course of navigation to Kingston.

The navigation stopped at Kingston Mills on the 30th of November, 1882, and recommenced on the 7th of May, 1883.

At Ottawa, navigation stopped the 27th of November, 1882, and recommenced on the 3rd of May, 1883.

Navigation was twice interrupted during the year. In August, 1882, the steamer "Nile" ran into the lock gates at Black Rapids, causing a delay of a week, and in October, 1882, a break occurred in the bank near Hog's Back, which stopped navigation for about ten days.

The level of the water in the several reaches was well maintained up to the close of navigation, in 1882. In the "Long Reach," however, between Burritts Rapids and Long Island, it fell below navigation height after the middle of October.

A severe storm in May, 1883, caused considerable damage to the canal embankments at Kingston Mills.

All necessary repairs were executed. (App. 5, p. 118.)

#### TAY CANAL.

This canal, when completed, will be a branch of the Rideau Canal, affording communication between Beveridge's Bay, on Lake Rideau, and the town of Perth, a distance of about 6 miles.

The works, embracing the construction of a dam and two locks, 134 feet by 32 feet, with a depth, at the lowest stage of water, of 5 feet, 6 inches, also the deepening of the channel of the River Tay, where required, have been placed under contract and a commencement has been made.

#### RICHELIEU AND LAKE CHAMPLAIN.

This system, commencing at Sorel, at the confluence of the Rivers St. Lawrence and Richelieu, 46 miles below Montreal, extends along the River Richelieu through the St. Ours Lock to the Basin of Chambly, thence by the Chambly Canal to St.

Johns and the River Richelieu, to Lake Champlain. The distance from Sorel to the Boundary Line is 81 miles.

At Whitehall, the southern end of Lake Champlain, the Champlain Canal is entered, and connection is obtained with the River Hudson, by which the City of New York is directly reached. From the Boundary Line to New York, the distance is 330 miles.

The following table shows the distance between Sorel and New York:—

Sections of Navigation.	Intermediate distance in Miles.	Total distances.
Sorel to St. Ours Lock.....		14
St. Ours Lock to Chambly Canal.....	32	46
Chambly Canal.....	12	58
Chambly Canal to Boundary Line.....	23	81
Boundary Line to Champlain Canal.....	111	192
Champlain Canal to Junction with Erie Canal.....	66	258
Erie Canal from Junction to Albany.....	7	265
Albany to New York.....	146	411

#### ST. OURS LOCK AND DAM.

Length of canal.....	$\frac{1}{8}$ mile.
Number of locks.....	1
Dimensions of locks.....	200 feet by 45 feet.
Total rise or lockage.....	5 "
Depth of water on sills.....	7 " at low water.
Length of dam in Eastern Channel.....	300 "
"    "    Western Channel.....	600 "

At St. Ours 14 miles from Sorel, the River Richelieu is divided by a small island into two channels. The St. Ours Lock is in the eastern channel.

There is a navigable depth of 7 feet between St. Ours Lock and Chambly Basin, a distance of 32 miles.

The lock was closed on the 28th November, 1882, and opened on the 19th April, 1883.

The substitution of new gates for old ones in June, 1883, caused an interruption to navigation, lasting for 28 hours.

In order to remedy inconvenience caused to vessels by the effects of west winds, the prevalence of which renders the approach to the lock difficult, guide piers and booms have been constructed to hold vessels in the channel, which has itself been deepened. (App. 5, p. 86.)

## CHAMBLY CANAL.

Length of canal.....	12 miles.
Number of locks.....	9

## Dimensions of locks—

Guard Lock, No. 1, at St. Johns.....	123 feet by $22\frac{1}{2}$ feet.
Lift “ “ 2.....	124 “ 23 “
“ “ “ 3, 4, 5, 6.....	118 “ $22\frac{1}{2}$ to 24 feet.
“ “ “ 7, 8, 9 combined.....	125 “ $22\frac{1}{2}$ to 23 “
Total rise or lockage.....	74 “
Depth of water on sills.....	7 “
Breadth of canal at bottom.....	36 “
“ “ surface of water.....	60 “

Succeeding the 32 miles of navigable water between St. Ours Lock and Chambly Basin—a natural reservoir formed by the expansion of the River Richelieu—is the Chambly Canal, which overcomes the rapids between Chambly and St. Johns, a distance of 12 miles.

This canal was closed to navigation on the 29th November, 1882, and was reopened on the 1st May, 1883.

An interruption of 30 hours occurred in October, 1883, a barge having run into and carried away the gates of lock No. 5.

In addition to the ordinary repairs, certain works of improvement have been carried out, including the dredging of the channel and the re-building of the walls of locks of St. Johns and Chambly, also the re-building of wharves at St. Ours. (App. 5, p. 86.)

## ST. PETER'S CANAL, CAPE BRETON.

Length of canal.....	about 2,400 feet.
Breadth at water line.....	55 feet.
Lock.....	one tidal lock, 4 pairs of gates.
Dimensions.....	200 feet by 48 feet.
Depth of water on sills.....	18 feet at lowest water.
Depth through canal.....	19 feet.
Extreme rise and fall of tide in St. Peter's Bay 4 “	“

This canal connects St. Peter's Bay, on the southern side of Cape Breton, Nova Scotia, with the Bras d'Or Lakes. It crosses an isthmus half a mile in width, and gives access from the Atlantic.

Navigation was closed on the 1st of January 1883, and re-opened on the 16th of April 1883. (App. 5, p. 125.)

#### TRENT RIVER NAVIGATION.

The term "Trent River Navigation" is applied to a series of water stretches, which do not, however, form a connected system of navigation, and which, in their present condition, are efficient only for local use.

This series is composed of a chain of lakes and rivers extending from Trenton, at the mouth of the Trent on the Bay of Quinté, Lake Ontario, to Lake Huron.

Many years ago the utilizing of these waters for the purpose of through water communication between Lakes Huron and Ontario, was projected.

The course in contemplation was as follows:—

Through the River Trent, Rice Lake, the River Otonabee and Lakes Clear, Buc horn, Chemong, Pigeon, Sturgeon and Cameron to Lake Balsam, the summit water, about 166 miles from Trenton; from Lake Balsam by a canal and the River Talbot to Lake Simcoe; thence by the River Severn to Georgian Bay, Lake Huron, the total distance being about 235 miles.

The execution of this scheme, commenced in 1837, was subsequently deferred. By certain works, however, below specified, sections of these waters were made practicable for navigation and for the passage of timber. A branch of the main course, extending from Sturgeon Lake south, affords communication with the town of Lindsay, and, through Lake Scugog to Port Perry, a distance of 190 miles from Trenton. Of this distance, 155 miles are navigable for vessels of light draught.

The following table gives the distance of navigable and unnavigable reaches:

	Navigable.	Unnavigable.
From Trenton, Bay of Quinté, to Nine Mile Rapids...		9
“ Nine Mile Rapids to Percy Landing .....	19½	
“ Percy Landing to Heely's Falls Dam .....		14¼
“ Heeley's Falls Dam to Peterboro' .....	51¾	
“ Peterboro' to Lakefield .....		9½
“ Lakefield to Burleigh .....	12	
“ Burleigh Rapids .....		1
“ Burleigh Rapids to Buckhorn Rapids .....	7	
“ Buckhorn Rapids .....		1
“ Buckhorn Dam to Lindsay .....	36¼	
	<hr/>	<hr/>
	126½	34¾
“ Lindsay to Port Perry at the head of Lake Scugog	28¾	
	<hr/>	<hr/>
	155¼	34¾

Total distance, Bay of Quinte to Port Perry .....	190 miles.
Passing to Fenelon Falls the distance from Buckhorn Dam to Fenelon is.....	31½ "

The following is a list of the works :—

<i>Chisholm's Rapids.</i>	Distance from Trenton in miles.
The works here consist of a canal and lock, a dam and slide	15½
<i>Percy Landing.</i>	
A retaining boom for saw logs here .....	28½
<i>Campbellford.</i>	
Guide booms.....	34¾
<i>Middle Falls.</i>	
The works consist of 4 dams and 2 slides.....	37¾
<i>Crow Bay.</i>	
A retaining boom.....	38
<i>Heeley's Fall.</i>	
A dam and slide are in operation here.....	42¾
<i>Crook's Rapids, Hastings.</i>	
The works consist of 1 lock, 1 dam and slide for timber....	34½
<i>Whitlas' Rapids.</i>	
The works situated below Peterboro, consist of a lock, dam and canal.....	92⅞
<i>Little Lake.</i>	
The works consist of 3 piers and 1 boom.....	94
<i>Burleigh.</i>	
Timber slides.	
<i>Buckhorn Rapids.</i>	
There is a dam at this point, which is important as keeping up the level of the water of the lakes west of it, as far as Bobcaygeon, including Lakes Pigeon, Ball, Buckhorn and Chemong .....	125

*Bobcaygeon.*

There are two dams here with canal, lock and slide. These dams retain the waters of the reach as far as Fenelon Falls and Lindsay Lock..... 140 $\frac{3}{4}$

*Fenelon Falls.*

A large slide and booms..... 155 $\frac{3}{4}$

*Lindsay.*

The old lock, having become useless, was rebuilt by the Government of the Province of Ontario in 1879. Its dimensions are 134 x 33 feet, with 5 feet water on the sills. The navigation is, by this work, extended to Port Perry, Lake Scugog..... 161 $\frac{2}{3}$

The dimensions of the Dominion locks are 133 feet 6 inches x 33 feet, with 5 feet depth of water on the sills.

In 1855 portions of the above named works were transferred to a committee composed of persons connected with the lumber trade. The committee was authorized to collect tolls on timber passing through. The works so transferred, at this date, were the slides and booms at Chisholm's Rapids, the retaining boom at Myersburg, the guide boom at Campbellford, the dams and slide booms at Middle Falls, the retaining boom at Crow Bay and the slide at Heeley's Falls.

These works have been re-assumed by the Government, the committee of management having failed to carry out the conditions of the transfer.

The Lindsay lock was constructed by, and is under the control of, the Province of Ontario.

Navigation ceased on the 29th November, 1882, and re-opened on the 28th of April, 1883.

At Bobcaygeon the upper dam received such repair as was necessary for its preservation; its dilapidated condition, however, will render the construction of an entirely new work necessary. (App. 5, p. 121.)

## NEW WORKS.

The new works for the improvement of the Trent Valley navigation, for the construction of which appropriations have been voted by Parliament, are at the following places:—Burleigh Rapids, Buckhorn Rapids, and Fenelon Falls. Their completion will give communication between Lakefield, 9 $\frac{1}{2}$  miles from Peterboro',

and Balsam Lake, the headwaters of the system, opening up a total of about 150 miles of direct and lateral navigation.

At Lakefield,  $9\frac{1}{2}$  miles from Peterborough, the existing dam, a private one, which maintains navigation on Lake Katchewanoe up to Young's Point, has been expropriated under the authority of an Order in Council of the 7th of October, 1882, and the construction of a new work is in contemplation, the existing dam having been seriously damaged and rendered dangerous during the prevalence of the spring freshets in 1883.

At Young's Point, 5 miles from Lakefield, the dam between Lake Katchewanoe and Clear Lake, has fallen into disrepair, and it is now in too dilapidated a state to admit of restoration. The construction of a new dam has been authorized.

At Burleigh Rapids, 10 miles from Young's Point, a canal will be constructed about  $2\frac{1}{4}$  miles in length, passing the Burleigh and Lovesick Rapids, and giving communication between Stony Lake and Deer Bay. The work, comprising the construction of three lift-locks and certain dams, has been placed under contract.

At Buckhorn Rapids, 7 miles from Burleigh Rapids, a canal about one-fourth of a mile long is to be constructed, having one lift-lock. The works have been placed under contract. The rock excavation is well advanced.

At Fenelon Falls, 32 miles from Buckhorn Rapids, it will be necessary to construct a canal about one-third of a mile in length, connecting Sturgeon Lake with Cameron Lake. This canal will have two lift locks. The works are under contract; the greater part of the excavation has been completed, and the masonry work is commenced.

In all the above named works the locks will be of the following dimensions:—

Length.....	134 feet.
Breadth.....	33 "
Depth on sill.....	5 "

(App. 5, p. 127.)

#### MURRAY CANAL.

This canal will extend through the Isthmus of Murray, giving connection westward between the headwaters of the Bay of Quinté and Lake Ontario, thereby practically extending the navigation system of the River St. Lawrence, and avoiding the circuitous and exposed route south of the Peninsula of Prince Edward.

The work on this Canal, commenced under a contract given out in August, 1882 has made satisfactory progress.

The Canal will be about 6 miles long, without locks, having a depth of 11 feet below the lowest known water level of the lake, and a width at the bottom of 80 feet

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From its terminal point on the lake, namely, Presqu'Ille, to the entrance of the Welland Canal, the distance is about 120 miles, the open lake navigation being reduced about one-half. (App. 5, p. 126.)

BRITISH COLUMBIA.

At the request of the Provincial Government, a survey has been made of the district lying between Lake Sushwap and Lake Okanagan, with a view to ascertaining the feasibility of constructing a canal to connect these lakes. The survey has established the practicability of the scheme, but the cost of the work would be considerable. The length of the canal would be about 18 miles.

I have the honour to be,

Your Excellency's most obedient servant,

CHARLES TUPPER,

*Minister of Railways and Canals.*

December 31st, 1883.



## APPENDIX No. 3

## CANADIAN PACIFIC RAILWAY.

OFFICE OF THE ENGINEER IN CHIEF.

OTTAWA, 22nd September, 1883.

SIR,—I have the honor to submit to you my Report upon the progress made, up to the present date, with the surveys and works of construction in connection with the Canadian Pacific Railway.

In the table of distances which appeared in my report of last year, I estimated the mileage of the Central Section (Red River to Savona's Ferry) at 1,350 miles. This was the distance between those points, as originally estimated *via* the Yellow Head Pass. The surveys by way of the Kicking Horse Pass were, at that time, not in a sufficiently forward state to satisfy me that a practicable route could be found in that direction; but from information which has since reached me, I believe that I am now safe in stating that a route, not only feasible, but shorter than the other by about 100 miles, has been found to exist, *via* the Kicking Horse Pass, and I think I may now confidently reduce the length of the central section to 1,250 miles or thereabout.

## TABLE OF DISTANCES.

## TRUNK LINE.

*Montreal to Port Moody.*

	Miles.
Montreal to Ottawa.....	120
Ottawa to Pembroke.....	165
Pembroke to Callander.....	120
Callander to Port Arthur (formerly Prince Arthur's Landing)	650
Port Arthur (formerly Prince Arthur's Landing) to Red River	433
Red River to Savona's Ferry.....	1,250
Savona's Ferry to Port Moody.....	215
	2,893
	2,893

## Branch lines constructed and under construction:—

	Miles.
Algoma Branch .....	93
Pembina " .....	65
Colville Landing " .....	2
Selkirk " .....	20
Stonewall " .....	20
South Western " .....	164
Gretna " .....	14
Emerson " .....	15
	393
	393

The Company have acquired and are working the following branches :—

	Miles.
St. Lin.....	13
St. Jerome.....	14
St. Eustache.....	8
Aylmer.....	9
Brockville.....	46
Perth.....	12
	102

*Summary.*

	Miles.
Trunk Line.....	2,893
Branches built and under construction.....	393
Branches acquired .....	102
	3,388

TRUNK LINE.

*Montreal to Ottawa, 120 miles.*

This section formerly constituted the Western Division of the Quebec, Montreal, Ottawa and Occidental Railway, and was built and owned by the Province of Quebec. It was purchased during last year by the Canadian Pacific Railway Company. This portion of the line is well and substantially constructed.

*Ottawa to Pembroke, 105 miles.*

Formerly a portion of the Canada Central Railway, and acquired by the Canadian Pacific Railway Company about two years ago. The line is well built.

*Pembroke to Callander, 120 miles.*

Formerly known as the Canada Central Extension Railway, and built under a Dominion Government subsidy of \$12,000 per mile. It has recently been completed and is substantially built. It is now owned and operated by the Canadian Pacific Railway Company.

*Callander to Port Arthur (formerly Prince Arthur's Landing) 650 miles.*

This appears as the "Eastern Section" in the contract with the Canadian Pacific Railway Company, who, under the terms of their contract, undertook its construction. The location surveys have been connected, and no grade will have to be encountered of greater severity than 53 feet per mile, the minimum degree of curvature being 8° which is much more favorable than was originally anticipated.

The grading and bridging are completed, and the track laid for a distance of ninety miles west of Callander; and for a further distance of ten miles (to Sudbury Junction) the grading and bridging are in a forward state. From Sudbury Junction, where the Algoma Branch leaves the Trunk line, the work of construction is in active progress for a further distance of about fifteen miles, and the location surveys are being definitely completed between that point and Pic.

From Pic to Nepigon, (Red Rock) a large force of men is at work, and it is expected that a large amount of heavy work will be executed during the coming winter.

From Nepigon (Red Rock) to Port Arthur (formerly Prince Arthur's Landing) the grading and bridging are practically completed, being so far advanced as to admit of the immediate vigorous prosecution of the track laying over the entire distance. The track is already laid, and construction trains running for a distance of about thirty-five miles.

*Port Arthur (formerly Prince Arthur's Landing) to Red River, 433 miles.*

This portion of the road appears in the contract with the Canadian Pacific Railway Company, as the "Lake Superior Section," and its construction was undertaken by the Government. Early in May last the construction was in such a forward state as to admit of the running of regular trains for passengers and freight from Lake Superior to Winnipeg. It became necessary in the interest of the country to open this section for regular traffic without delay, and arrangements were therefore made with the Company for this service over the whole distance; and as it was deemed essential that the operation of the line and the work remaining to be done, by construction trains, *i.e.*, the filling up of the temporary trestles, &c., should be under one and the same control, the Government contractors for the sub-section between Eagle River and Rat Portage were under certain conditions to which they consented, relieved of the remainder of their contract, the Company undertaking to complete the section for a bulk sum, the work remaining unfinished by the Government contractors being undertaken by the Company at the contract prices. Upon the completion of this arrangement, the entire section between Port Arthur (formerly Prince Arthur's Landing) and Red River came under the Company's control, since which the work of construction has been steadily prosecuted, and the road bed has been, in consequence, improving daily in condition. The traffic is conducted with great regularity, and has proved to be of considerable volume both in passengers and freight. I am of opinion that over 90 per cent. of the business between Eastern Canada and the North-West has followed this route, and the advantages accruing from the opening of this section have been felt during the past summer throughout the Dominion, and especially in Manitoba and the North West.

The Company have operated the road under many difficulties.

There was but one engine house on the section, and only a few station houses and section men's dwellings. The water service was incomplete, and many embankments had to be made, and others, which had subsided, picked up. Most, if not all, of these difficulties will, no doubt, be removed by next year.

*Red River to Savona's Ferry (Kamloops), 1,250 miles.*

In the contract with the Canadian Pacific Railway Company, this division of the road is designated as the "Central Section," and is being built by the Company in pursuance of the terms of their contract. The works upon this section have been pushed forward with an energy perhaps unexampled in the history of railway construction, and also under the perfect organization established by the Company, with the highest skill.

Trains are now running over a distance of 881 miles west of Winnipeg to a point forty miles beyond Calgary. Westerly from this point the grading and bridging are almost completed as far as the summit of the Kicking Horse Pass, in the Rocky Mountains, and distant from Calgary about 125 miles west, and it is expected that the track will reach this point before the close of the present season.

At the date of my last annual report, the track was laid and trains passing over it for a distance of 455 miles west of Winnipeg. To this it is believed will be added, before winter sets in, 510 miles, making the distance west of Winnipeg traversed by trains 965 miles.

Upon this portion of the road, the curves are easy, and the gradients nowhere exceed 40 feet to the mile, except on the western five miles, on which they reach 75 feet to the mile. Between the Kicking Horse Pass and Savona's Ferry (Kamloops), a large staff of Engineers have been employed during the past summer, and I am informed that the preliminary surveys are completed continuously westward, from the summit of the Kicking Horse Pass to the foot of the heavy grade on the west slope of the Selkirk Range. It is upon this portion of the road that the most severe grades occur, but it is stated that the heaviest to be encountered will not be more than 116 feet per mile, and that these heavy grades will all be contained within a distance of 100 miles, a very great advantage in every respect. From the second crossing of the Columbia River, it is proposed to run the line through the Eagle Pass,

and thence along the south side of Lake Kamloops to Savona's Ferry, but up to the present time the Company have not submitted, for the approval of the Government, any plans or profiles of the Rocky Mountain Division of the road. I have already stated that, in my opinion, the adoption of this route will shorten the central section by about 100 miles.

*Savona's Ferry to Port Moody, 215 miles.*

This portion of the road is designated as the "Western Section" in the Company's Contract, the Government undertaking its construction. In pursuance of this arrangement the grading, bridging and tracklaying have been let in five contracts, viz:—

Savona's Ferry to Spence's Bridge,	42 miles,	D. O. Mills,	Contractor.
Spence's Bridge to Lytton	- - - 29	"	"
Lytton to Boston Bar	- - - 29	"	"
Boston Bar to Emory's Bar	- - - 29	"	"
Emory's Bar to Port Moody	- - - 86	A. Onderdonk,	"

*Savona's Ferry to Spence's Bridge.*

As it was deemed probable that the Company might find it desirable to adopt a route to the south of Lake Kamloops, a new location was made during the past summer for about twelve miles west from Savona's Ferry along the south side of the Thompson River, and was found to be equally practicable, for purposes of construction, with the old location on the north side, and also two miles shorter.

The contractor was informed that he could proceed with the work on the original location on the north side of the river at any time he thought proper to do so; but he stated that it would, in his opinion, be found better to adopt the location on the south side, upon which he was equally willing to build the road. As it was not a pressing matter with him to commence work on these 12 miles, he preferred to await a decision upon the location, although he had put a large force of men upon that portion of his contract to the westward. No work has therefore been done on the old location, and a decision having been arrived at in favor of the route to the south of Lake Kamloops, I yesterday informed the contractor that he might proceed with the work on the new location along the south side of the Thompson River. From this point (12 miles west of Savona's Ferry) to Spence's Bridge, a heavy force has been employed all summer; the grading is in a forward condition and, together with the bridging, will probably be completed by September next ready to receive the track.

*Spence's Bridge to Lytton.*

About 95 per cent. of the grading upon this contract is done, and some of the bridges are in course of erection, but very little timber is to be had in this locality, and the bridges will be built as the timber is brought forward by train immediately in advance of the track-laying.

*Lytton to Boston Bar.*

A large force of laborers and carpenters has been employed upon this contract during the summer. With the exception of the iron bridge over the Fraser River, the structures are nearly finished, and the grading is rapidly approaching completion, and it is believed the track laying will reach the Fraser River Bridge in a few weeks. The masonry of the abutments and piers of the Fraser River Bridge is being built, and stone is quarried in the vicinity in quantity nearly sufficient to complete the structure. The iron superstructure was shipped from England in May last, but has not yet arrived in British Columbia. The track is laid upon this contract for about sixteen miles, upon which ballasting is in progress.

*Boston Bar to Emory's Bar.*

The works upon this contract are practically completed. The track is laid and ballasted throughout, and nothing remains to be done but some trimming up of cut-

tings and embankments. The contract has, I believe, been faithfully carried out and the road substantially built.

*Emory's Bar to Port Moody.*

The wharf at Port Moody is built, but the ravages of the sea worm have been such that it will be necessary to substitute iron screw piles for the timbers on the front. The station buildings are erected but the water service is not yet supplied.

The bridging is not entirely completed, but the grading is sufficiently advanced to admit of the track being laid throughout, and this it may be expected will be done during the present season, and the whole of this contract completed by next July. The track is now laid for a distance of forty miles.

After the completion of these contracts, there will remain the erection of engine houses, station houses and section men's dwellings.

It is estimated that the track will be laid over the whole of the western section, *i. e.* from Savona's Ferry to Port Moody, by this time next year.

It affords me much pleasure to be able to state that the Pacific Railway Company are doing their work in a manner which leaves nothing to be desired. The road is being most substantially built. The larger streams are being spanned by strong iron bridges, resting upon abutments and piers of massive masonry, and the small streams on the eastern section will be passed through solid stone culverts. On the central section, the streams are for the most part crossed by substantially built pile bridges.

The work so far as it has been done, up to the present time, has been performed most faithfully, and in a manner fully up to the requirements of the contract.

I am enabled to speak with confidence upon this point, having made a personal inspection during the last two months of the whole work from a point east of Port Arthur (formerly Prince Arthur's Landing) to Port Moody.

BRANCH LINES.

*Algoma Branch—Sudbury Junction to Algoma Mills.*

The work upon this branch is progressing rapidly; the grading is completed, and track laid from Algoma mills for a distance of fifty-seven miles, and the grading and bridging are progressing rapidly on the remaining distance, and it is the expressed intention of the Company to have the entire branch completed and in condition for traffic by the opening of navigation in May next.

*Pembina Branch—Emerson to St. Boniface.*

This branch was constructed by the Government of Canada, and transferred to the Company on 1st May, 1881.

*Colville Landing Branch—East Selkirk to Colville Landing.*

This branch was built by the Government of Canada, and transferred to the Company on 1st May, 1881.

*Selkirk Branch—Winnipeg to West Selkirk.*

This branch was completed by the Company during the past season, and is now under traffic.

*Stonewall Branch—Winnipeg to Stonewall.*

This branch was built by the Government of Canada, and by them transferred to the Company upon the Company paying the cost according to the terms of the contract.

*South-western Branch Winnipeg to Pembina Mountain.*

The Company have constructed and put in operation the section as far west as Manitoba City, a distance of 101 miles from Winnipeg; west of this point no pro-

gress is at present being made with the works of construction, but the line is being located.

*Gretna Branch—Pembina Mountain Junction to Gretna.*

The Company completed the construction of this branch in 1882, and are now working the traffic thereon. Gretna is on the International Boundary, about twenty miles west of Emerson.

*Emerson Branch—Pembina Mountain Junction to Emerson.*

This Branch is under construction by the Company, and it is expected that it will be completed and placed under traffic before the close of the present season. The Bridge over the Red River on this Branch is being built by the Town of Emerson, aided by a subsidy of \$50,000 from the Government of Canada.

*St. Lin, St. Jerome, St. Eustache and Aylmer Branches*

Were acquired by the Company by the purchase of the Western Division of the Quebec, Montreal, Ottawa and Occidental Railway, being branches of that line.

*Brockville and Perth Branches*

Formed part of the Canada Central Railway purchased by the Company.

*Rolling Stock.*

The Rolling Stock owned by the Government of Canada, and which was employed in connection with the works of construction on the Canadian Pacific Railway, consisting of:—

- 19 engines.
- 3 passenger cars,
- 1 baggage and smoking car.
- 397 platform cars.
- 2 box cars.
- 1 steam shovel car.
- 1 caboose.
- 1 boarding car,

is to be transferred to the Canadian Pacific Railway Company at a price established by appraisers appointed to value them.

*Fraser River Bridge.*

This bridge has been manufactured in England under the supervision of Mr. Joseph Tomlinson, an Engineer of the Department, a gentleman of considerable experience in bridge construction. It was shipped in May last, but has not yet reached British Columbia.

*Station Buildings and Section Men's Houses.*

Mr. John McDonald contracted to build six station houses between Rat Portage and Fort William, four of these he has completed, and the other two are in an advanced state towards completion.

Mr. John Patterson contracted to build three station houses and twelve section men's dwellings between Emory's Bar and Savona's Ferry; these were all completed last autumn, and have since been occupied by the Engineering Staff.

*Steel Rails.*

The 8,800 tons of steel rails mentioned in my last year's report as having been purchased, to be delivered at Port Moody, have all been received except one cargo which is now afloat.

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*Company's Rolling Stock.*

- 236 engines.
- 73 first class passengers cars.
- 33 second class passenger cars.
- 48 baggage and mail cars.
- 20 dining, sleeping, palace, &c., cars.
- 4,386 platforms.
- 1,735 box.
- 126 cabooses, pay cars, &c.
- 6 derriek and coal cars.
- 17 snow ploughs.

I have the honor to be, Sir,  
Your obedient servant,

COLLINGWOOD SCHREIBER,  
*Engineer in Chief.*

## APPENDIX No. 4.

## CANADIAN GOVERNMENT RAILWAYS IN OPERATION.

OFFICE OF THE CHIEF ENGINEER AND GENERAL MANAGER,  
OTTAWA, 15th October, 1883.

	Miles.
Intercolonial Railway - - - - -	840
Prince Edward Island Railway - - - - -	199
Windsor Branch Railway - - - - -	32
	1,071

SIR,—Herewith I have the honor to place before you the Reports and accounts in connection with the working of the railways in operation under my charge, for the year ended the 30th June, 1883, comprising in the aggregate, as in the preceding year, a length of 1071 miles.

The operations of these railways during the year under consideration I trust may be on the whole regarded as fairly satisfactory.

The following summary statement will show the results of the operations of the railways:

Name of Railway.	Mileage.	—	Amount.	Profit.	Loss.
			\$ cts.	\$ cts.	\$ cts.
Intercolonial.....	840	Earnings.....	2,370,921 10	10,547 83	
		Expenses.....	2,360,323 27		
Prince Edward Island.....	199	Earnings.....	146,170 42		106,637 99
		Expenses.....	252,808 41		
Windsor Branch.....	32	Earnings.....	24,113 89	1,009 96	
		Expenses.....	23,103 93		
Total.....	1,071			11,557 79	106,637 99
					11,557 79
Loss.....					95,080 20
Less disbursements in connection with accident in 1880...					9,941 43
		Nett Loss.....			85,138 75

## INTERCOLONIAL RAILWAY.

I am pleased to be able to state that upon examination of the accounts of the year just closed, it will be observed that the operations of the Intercolonial Railway show results slightly more favorable than those of the preceding year, thus:—

Nett Earnings, 1882-83.....	\$10,547 83
do 1881-82.....	9,605 18
Increase.....	\$ 942 65

The officers of the railway have been very successful in their efforts to secure business, the volume of which has steadily continued to increase, indicating a progressive movement in trade. It will be observed that the growth of the traffic is in a higher ratio than the increase of the nett earnings, owing to the fact that the classes of freight showing the most considerable increase are those which are carried at the low rates established by the Honorable Minister for the promotion of home industries.

In order that the Honorable Minister may more fully realize the increase of traffic which has taken place from year to year, I submit the following statements:

The earnings for the past four years were:—

1879-80.....	\$1,506,298 48
1880-81.....	1,760,393 92
1881-82.....	2,079,262 66
1882-83.....	2,370,921 10

The tons of freight carried were:—

1879-80.....	561,924
1880-81.....	725,577
1881-82.....	838,956
1882-83.....	970,961

The number of passengers carried were:—

1879-80.....	581,483
1880-81.....	631,245
1881-82.....	779,994
1882-83.....	878,600

The increase in the traffic from time to time so heavily taxed the rolling stock, that it became imperatively necessary to the prompt despatch of the business of the road to add to it annually; and I now submit a statement showing the rolling stock purchased on capital account up to 30th June, 1879, with the additions made thereto in each subsequent year.

### Rolling Stock.

	Engines.	Passengers Train Stock.			Conductors' Vans.	Box and Cattle Cars.	Platform Cars.	Coal Cars, Capacity in Tons.	Snow Ploughs.	Wing Ploughs.	Flangers.
		1st Class.	2nd Class.	Baggage, Mail, &c.							
	No.	No.	No.	No.	No.	No.	Ton'g	No.	No.	No.	
Total 30th June, 1879.....	100	46	34	33	34	1,162	1,028	4,500	27	9	4
Additions in 1879-80.....			2		2		18				
do 1880-81.....	12	2	2		3	68	72		1		} 12 2 Converted box " Platform.
do 1881-82.....	3	3	3	2	6	249	43	6,500			
do 1882-83.....	20	1	10		6	20	210	8,200			
Total.....	135	52	51	35	51	1,499	1,371	19,200	28	9	18

The list of rolling stock prepared by the Mechanical Superintendent shows a greater number of engines than appears in the above table, some locomotives of larger type having been purchased each year at the expense of revenue to maintain the stock; while owing to the pressure upon the engine power arising from the growth of the traffic, the old and smaller engines, which the new ones were to have replaced, were not sold nor struck off the list, but had to be kept in the service.

On reference to the reports of the Chief Superintendent, Mechanical Superintendent and Chief Engineer, it will be observed that the road and rolling stock have been maintained in a state of efficiency, and that many improvements, extensions and additions have been made along the line, which have entered into the accounts for operation. Such works are certainly not ordinary maintenance.

The improved facilities at the ocean terminus at Halifax have aided greatly in the despatch of the ocean-borne traffic, and steamship owners speak very highly of the accommodation thereby afforded.

The severe winter and unusually heavy snowfall in the West interfered seriously with the interchange of traffic with the Grand Trunk at Chaudière Junction, rendering it impossible for that railway to handle the traffic offering at the time, and causing freight from the east per Intercolonial to accumulate, while at the same time freight from the west was very slow in reaching the Chaudière. This of course gave rise to much dissatisfaction among shippers, and resulted in the diversion from the Intercolonial route of large quantities of eastern bound freight, which found its way to the Maritime Provinces by American lines *via* Boston and Portland. This was necessarily very prejudicial to the Intercolonial, but I am pleased to be able to state that early in the summer the exertions of our officers, and of the officers of the Grand Trunk Railway, were successful in recovering the traffic.

It is unnecessary that I should enter at length into the operations of the Intercolonial Railway as full information may be gathered from the reports of the Chief Superintendent, the Chief Engineer and the Mechanical Superintendent, and the accompanying accounts.

#### CAPITAL ACCOUNT.

##### *Halifax Extension.*

The long wharf with the extensive warehouse, the coal wharf, with elevated tracks complete and provided with shoots and shed, the grain elevator with its long conveyer, are now all completed, and deep water has been obtained on each side of the wharves by dredging, and by blasting out large nests of boulders; and it is now believed that the shipping facilities at the port of Halifax are equal if not superior to those at competing American ports. This has, indeed, been admitted by the agents of some of the lines of steamers frequenting the port of Halifax. The elevator was not completed early enough in the season to afford a fair trial to the grain traffic. One cargo was put through it, but not until shortly before the opening of the port of Montreal. But now that it is completed and in working order, grain can be shipped with facility during the ensuing winter.

The main line constructed along the west side of the Richmond yard with the extension of a double track to North Street, has been found to be of great assistance to the movement of traffic, and has added much to the safety of trains, the shunting being no longer interfered with by incoming and outgoing trains.

##### *Increased accommodation at St. John.*

The extensions and improvements are being carried on vigorously. A brick freight house, flour shed, and bonded warehouse, have been erected and put in use, the benefit of which is felt by the mercantile community as well as by the officers of the railway, enabling the business to be conducted much more promptly and systematically than formerly. The yard has also been graded and the tracks re-arranged, and the grounds have been drained by the construction of a large brick sewer.

##### *St. Charles Branch.*

The construction of this branch was undertaken by Mr. M. J. Hogan so far as the grading, bridging and tracklaying, &c., are concerned, and the cribwork along the front of the town of Levis, by Mr. Lachance. The work under Mr. Hogan's con-

tract was carried on during the year, but on the 30th June a considerable quantity remained to be done. Mr. Lachance completed the cribwork last winter, but the track is not yet laid over it throughout.

#### *Rolling Stock.*

The following rolling stock was supplied during the year on capital account:—

- 20 engines.
- 1 first-class car.
- 10 second class cars.
- 20 box cars.
- 210 platform cars.
- 410 gondola cars.
- 6 vans.

Without this additional rolling stock, it would, as I have said, have been impossible to move the increased traffic in a satisfactory manner.

#### PRINCE EDWARD ISLAND RAILWAY.

The reports of the Superintendent and Mechanical Superintendent herewith submitted, will be found to deal very fully with the operations of the year: and as these reports and the accounts accompanying them afford ample information as to the conducting of the traffic and the condition of the road and rolling stock, it is unnecessary for me to offer any lengthy remarks. However, as the operating expenses show so great an excess over those of the preceding year, some explanation appears to be due to myself. I may therefore call attention to the fact that in the accounts of the year under consideration there appears an item of \$9,941.45 for disbursements in connection with an accident which occurred in 1880. I may also state that two new engines were purchased during the year to maintain the stock, at a cost of \$24,198.22; that the sleeper renewals were very extensive, no less than 113,423 new ones having been laid; that several buildings were erected, and that a large well was provided, with stationary engine and pump. All those works entered into the operating expenses, and as many of them are not likely to recur to the same extent for some time, it may be expected that the expenses of no single year will in future be so heavy.

It is pleasing to observe that the engines are moving larger trains than in former years, as this indicates that the new engines added at the expense of capital, and also those purchased on maintenance account, are good serviceable machines, and that they are maintained in a state of efficiency.

#### *Capital Account.*

There have been added to the rolling stock during the year—

- 2 engines.
- 25 box cars.
- 25 platform cars.

The necessity for this increase of rolling stock arose from a great rush of business for about two months in the autumn, immediately before the close of navigation, when it was found impossible to move the freight to the satisfaction of shippers during that short period, and as each season came round for the export of the products of the soil, a great clamor for cars arose which could not be allayed owing to the smallness of the stock.

In May last Mr. L. B. Archibald resigned the office of Superintendent of this road in order to take a position on the Canadian Pacific Railway, and was succeeded by Mr. James Coleman, who immediately assumed the duties of the office.

#### WINDSOR BRANCH RAILWAY.

The reports of the Chief Superintendent and Chief Engineer of the Intercolonial Railway, herewith submitted, give a full statement of the condition of this line, which has been maintained in good running order. A number of improvements,

additions and extensions have been made, and some of the old iron rails have been replaced by steel. Notwithstanding all these works, I am pleased to be able to state that the one third of the gross earnings paid to the Government has covered the expenditure for maintenance of way and works, which has therefore been no pecuniary burden upon the country.

I have the honor to be, Sir,  
Your obedient servant,

COLLINGWOOD SCHREIBER,  
*Chief Engineer and General Manager.*

INTERCOLONIAL RAILWAY.

OFFICE OF THE CHIEF SUPERINTENDENT,  
MONCTON, N.B., 12th October, 1883.

COLLINGWOOD SCHREIBER, Esq.,  
Chief Engineer and General Manager of Government Railways,  
Ottawa.

SIR,—I have the honor to submit the following Report upon the working of the Intercolonial Railway, for the fiscal year which ended 30th June, 1883.

I enclose the reports of the Chief Engineer and the Mechanical Superintendent, and also the following statements prepared by the Chief Accountant and Treasurer.

- |     |  |                   |
|-----|--|-------------------|
| No. | 1. Capital Account.                    |                   |
| "   | 2. Revenue Account.                    |                   |
| "   | 3. Locomotive Power                    | (Abstract No. 1). |
| "   | 4. Car Expenses                        | ( " " 2).         |
| "   | 5. Maintenance of Ways and Works       | ( " " 3).         |
| "   | 6. Station Expenses                    | ( " " 4).         |
| "   | 7. General Charges                     | ( " " 5).         |
| "   | 8. General Stores Account.             |                   |
| "   | 9. General Balance.                    |                   |
| "   | 10. Comparative Statement of Averages. |                   |

The length of railway worked was the same as last year, 840 miles.

CAPITAL ACCOUNT.

The total cost of road and equipment was, on the 30th June, 1882, \$39,560,021.23. The additions during the year were as follows:—

For the Halifax Extension .....	\$ 257,824 73
" Increased accommodation, St. John.....	201,312 18
" Repairs and Improvements, Rivière du Loup Line.....	6,805 86
" The Completion of the Intercolonial Railway.	40,124 59
" Additional Rolling Stock.....	628,244 39
" The St. Charles Branch .....	482,197 09
" The Dartmouth Branch.....	124 12
	\$1,616,632 96

Making the total cost to the 30th June, 1883, \$41,176,654.19.

At Halifax the wharf and warehouse used for ocean steamers were more than doubled in size, another large wharf with a trestle work and store house on it for shipping and storing coal was constructed, a grain elevator of the most modern and

approved plan with a capacity of one hundred and fifty thousand (150,000) bushels was built, and a new main track was constructed between Halifax and Richmond Stations.

At St. John extensive improvements were made. The land owned by the railway being too small to properly accommodate the traffic, an adjoining piece of considerable extent was purchased; the tracks and buildings were re-arranged, and three large and substantial warehouses of brick were erected; an elevated trestle work and coal shed for the shipment and storage of coal was built on the wharf.

At Rivière du Loup, the station house was taken down and entirely rebuilt upon an enlarged and improved plan.

The amount for completion of the Intercolonial Railway, consists of payments on account of claims in connection with the construction of the line between Rivière du Loup and Truro, and of the legal and other expenses of settling the same. Additional rolling stock having become necessary by the great increase of traffic, it was procured in accordance with the Parliamentary votes for that purpose.

The construction of a branch line from St. Charles Station on the Intercolonial Railway to Point Lévis, a distance of about thirteen miles, was commenced and continued during the year. This work is more than half completed, and will it is believed be finished during the current fiscal year.

REVENUE ACCOUNT.

This account again shows an excess of earnings over expenditure, the nett earnings being a little more than last year.

The gross earnings of the year were.....	\$2,370,921 10
The working expenses were .....	2,360,373 27
	\$ 10,547 83

The following shows the nett earnings for each of the last three years :—  
Nett Earnings.

1880-81—Gross Earnings.....	\$1,760,393 92	
Expenses.....	1,759,851 27	
	\$ 542 65	
1881-82—Gross Earnings.....	2,079,262 66	
Expenses.....	2,069,657 48	
	9,605 18	
1882-83—Gross Earnings.....	2,370,921 10	
Expenses.....	2,360,373 27	
	10,547 83	

Total nett earnings in three years..... \$20,695 66

The gross earnings have largely increased over last year. The following shows the increase of gross earnings for three years :—

	Gross earnings.	Increase
1879-80.....	\$1,506,298 48	
1880-81.....	1,760,393 92	\$254,095 44
1881-82.....	2,079,262 66	318,868 74
1882-83.....	2,370,921 10	291,658 44

Increase in three years..... \$864,622 62

The earnings per mile of railway compare as follows with those of previous years :—

	Earnings per mile of railway.	Increase.
1878-79.....	\$1,812 46	
1879-80.....	1,825 81	\$ 13 35

	Earnings per mile of railway.	Increase.
1880-81.. .....	2,095 70	269 89
1881-82.....	2,475 31	379 61
1882-83.....	2,822 52	347 21

The following is a comparative statement of a few of the chief articles of freight showing the quantity carried in this and in the previous year:—

	1881-82.	1882-83.	Increase.	Decrease.
Barrels flour.....	692,095	983,916	291,821	.....
Bushels grain.....	560,253	1,195,601	635,348	.....
Lumber in feet.....	78,356,418	104,633,417	26,276,999	.....
Head of live stock....	73,479	68,338	.....	5,141
Other goods in tons...	647,561	704,608	57,047	.....

The following shows the quantity of each of the above articles carried each year for four years:—

	1879-80.	1880-81.	1881-82.	1882-83.
Barrels flour.....	525,248	672,310	692,095	983,916
Bushels grain.....	324,021	565,678	560,253	1,195,601
Lumber in feet.....	55,462,654	72,841,388	78,356,418	104,633,417
Head of live stock..	70,990	61,574	73,479	68,338
Other goods in tons	422,256	544,354	647,561	704,608

The quantity of coal carried to the Upper Provinces was over 51,000 tons, an increase of 7,000 tons over last year.

It will be observed that there is a very large increase in the quantity of lumber, grain and flour carried. It is worthy of remark, that the quantity of lumber carried has doubled since the year 1879-80, that the quantity of flour is almost double what it was in that year, and that the quantity of grain is more than three times as much as was carried in 1879-80. The decrease in live stock carried, is in the through cattle trade from the Upper Provinces to Halifax for shipment to Europe, very few cattle having been sent last winter.

The British mail steamers landed the mails and passengers in summer at Rimouski as usual and the Mail tender service there was satisfactorily performed by contract. They also landed in winter the mails, passengers and freight at Halifax as usual, and the improvements in the wharves and warehouses there enabled us to do this business with greater promptitude.

Steamers of the Dominion line and of other lines called more or less regularly and landed and received freight in connection with the railway and ocean business at Halifax has continued to show a considerable increase. It will be satisfactory to you to know that the owners of steamships frequenting the Halifax terminus have expressed their satisfaction with the improvements and extensions made there. One cargo of grain was shipped through the elevator and it was found to work rapidly and well.

There has been a large increase in the passenger traffic, the number carried during the year 1882-83 being..... 878,600  
While in 1881-82 it was..... 779,994

An increase of..... 98,606

As was expected, the tourist travel continues to increase.

The number of immigrants landed at Halifax was larger than previous years.

#### EXPENDITURE.

The working expenses for the year were \$2,360,373.27

The work performed by locomotives and cars was much greater than last year.

## The engine mileage

	Miles.
In 1882-83 was.....	4,406,189
In 1881-82.....	3,900,850
Increase of.....	505,339

## The train mileage compared with last year was :—

	Miles.
1882-83.....	3,615,192
1881-82.....	3,195,566
Increase of.....	419,626

## The car mileage compared with last year was :—

	Miles.
1882 83.....	41,526,553
1881-82.....	37,489,376
Increase of.....	4,037,177

## The gross tonnage carried

	Tons.
In 1882 83 was.....	970,961
In 1881-82.....	838,956

	Cents.
The working expenses per mile, run by engines were.....	53·57
do do run by trains.....	65·29

The necessary repairs were made to the permanent way and structures, and all the works in connection with the railway were maintained in a thorough state of efficiency.

Thirty-one miles of new rails were laid in the main track, and 256,203 new sleepers. A large amount of ballasting was also done.

Eight miles of new sidings were laid at different parts of the line.

The necessary repairs were made to fences, and 112 miles of new fences were built;  $8\frac{1}{2}$  miles of new snow fences were built, and 3,500 lineal feet of snow sheds were rebuilt.

The buildings on all parts of the line received necessary repairs. Six new station houses and five new freight houses were erected, besides other buildings.

Extensive repairs and additions were also made to many station houses and freight houses.

A large new wharf was built at Dorchester.

Semaphore signals were erected at twenty-four stations.

Several new tanks have been built, and a large sum has been expended in improving the water supply.

A new and substantial steel bridge with masonry abutments was built over the Laplanche River.

The cost of all these improvements and additions, and of others which I have not specified, forms part of the working expenses.

The rolling stock has received necessary repairs and is in good order.

Six new locomotives were purchased to make good the depreciation of the stock from use, and their cost was charged to the working expenses.

Ten of the oldest and smallest locomotives, which had been replaced in this way were sold.

One hundred and forty-nine cars were condemned and replaced by new ones at the cost of working expenses.

*Stores.*

The value of stores purchased was.....	\$1,088,764 87
Of stores issued.....	1,140,641 66
Old materials sold .....	121,637 98

The value of the stores on hand at the end of the year was:—

Ordinary stores, including fuel.....	\$394,951 07
Iron and steel rails .....	125,239 41
Old material for sale.....	47,548 79

Total stores on hand..... 567,739 27

The cost of clearing snow and ice from the track is annually a very large item in the operating expenses.

In 1882-83 it was.....	\$33,974 20
Cost of repairs to ploughs and flangers.....	12,588 69
Cost of building and repairing snow sheds.....	11,419 59
Cost of building and repairing snow fences.....	7,309 56

Total cost, of fighting snow.....\$65,292 04

This does not include the cost of repairs to engines damaged when engaged in clearing the track.

Snow ploughs were run last winter 42,169, miles, being about 10,000 miles more than during the winter of 1881-82.

Although the winter of 1882-83 was severe, there was scarcely any detention of the trains on account of the weather.

Mr. James Coleman having been promoted to the position of Superintendent of the Prince Edward Island Railway, the following promotions were made on the Intercolonial Railway, Mr. Joseph J. Wallace was appointed Superintendent of the Halifax and St. John District instead of Mr. Coleman, and Mr. J. R. Bruce was appointed Traffic Auditor instead of Mr. Wallace.

These changes were made on 12th May 1883.

On the night of 10th February 1883, the general offices at Moncton were accidentally destroyed by fire.

The loss of this building has caused considerable inconvenience.

A larger building to replace it is now being constructed.

It gives me pleasure to state that in general the several officers and employes have performed their duties in a satisfactory and efficient manner.

I have the honor to be Sir,

Your obedient servant,  
(Sgd.)

D. POTTINGER,  
*Chief Superintendent.*

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INTERCOLONIAL RAILWAY.

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CHIEF ENGINEER'S OFFICE,

MONCTON, N.B., 1st September, 1883.

SIR,—I have the honor to submit my Report of the working of the Engineering Department for the year ending 30th, June 1883.

TRACK.

The mileage of the main line and branches in actual operation is the same as previously reported, 840 miles. The track is laid the whole length of the St.

Charles Branch, but there is considerable filling and ballasting to do before it can be opened for traffic.

All of the iron rails on the Shediac Branch have now been taken up and replaced with steel rails. With the exception of about two miles, which still remain, all the iron rails have been removed from the Pictou Branch and replaced with steel rails,  $31\frac{1}{2}$  miles of the old steel rails in the main line were taken up and replaced with new steel rails weighing 67 pounds to the lineal yard. These rails were laid with angle fish-plates.

#### SLEEPERS.

During the year 256,203 sleepers have been put in track.

#### BALLASTING.

Beside the ballasting done on the St. Charles Branch, the St. John yard and the New Main Line and sidings at Halifax, each trackmaster has had during the working season a train and a gang of men engaged in ballasting his division.

#### SIDINGS.

Additional siding accommodation has been provided to the extent of 42,766 feet or about eight miles.

Many of the sidings in Moncton yard have been extended and thoroughly re-arranged, at very large outlay, to facilitate the shunting and making up of trains.

#### SEMAPHORE SIGNALS.

New semaphore signals were erected at the following stations, Bedford, Milford, Truro, Belmont, Debert, Tolly Lake, Westchester, Moncton, Canaan, Weldford, Rogersville, Beaver Brook, Bartibogue Station and tank, Red Pine station and tank, Bathurst tank, Petite Roche, Belledune, New Mills, Charlo, Sayabec, Cedar Hall and Isle Verte; and distance semaphore signals were put up at New Glasgow, on the old main line and new main line, Richmond. An expenditure of about \$10,000 has been made upon this service.

#### SNOW SHEDS AND FENCING.

3,500 feet of snow shedding has been renewed at a cost of \$7,000.

$8\frac{1}{2}$  miles of new snow fencing were erected at a cost of \$11,000.

In addition to the ordinary repairs to fences 106 miles of new barbed wire fencing, and  $6\frac{1}{2}$  miles of pole fencing were erected at a cost of about \$32,000.

In building the barbed wire fence this year, the posts are placed 12 feet centres instead of  $16\frac{1}{2}$  as formerly, and a  $5 \times 1\frac{1}{2}$  inch rail is put on in place of the top wire.

This makes a much better and safer fence, but also adds considerably to the cost.

#### TURNTABLES.

In the rearrangement of the yard at Moncton, a new 30 feet iron turntable was put in at the rear of the machine shop to take the place of an old wooden table near the centre of the yard, which it was necessary to remove to make room for additional sidings.

#### WHARVES, &c.

The coal bunker wharf at the new Deep Water terminus, Halifax, referred to in my report of last year, has been completed.

The old coal wharf at Dorchester was entirely rebuilt, and an addition made to it 300 feet long by 32 feet wide, at a cost of \$8,648.58.

The wharves at Richmond, Pictou Landing, and Point du Chêne received extensive repairs. In the current year a very large expenditure will have to be made on the crib wharf at Richmond.

The coal trestle upon this wharf will require to be entirely renewed.

## BUILDINGS AND PLATFORMS.

The grain elevator of 150,000 bushels capacity, referred to in my report of last year, has been completed, and works very satisfactorily.

New platforms have been erected at Windsor Junction, Shubenacadie, Brookfield, Stellarton, Thompson, Oxford, River Philip and Spring Hill.

A high level coal shed 300 feet long by 50 feet wide, with an inclined trestle approach 700 feet long, was erected at Richmond.

A new station was erected at Windsor Junction, at an expenditure of \$3,000.

New stations were erected at Debert, East Minas and Spring Hill.

The latter was a first-class station, and cost \$1,200.

Wentworth and Greenville stations were enlarged and remodelled at an expenditure of about \$800 each. A new freight house was also built at Greenville.

Shubenacadie and River Philip stations were reshingled and necessary repairs were made upon many of the stations between Halifax and Amherst.

New stations were erected at Bloomfield and at Model Farm. The station at Bloomfield is very much larger than the old one destroyed by fire.

The coal sheds at the Deep Water Terminus, St. John, and in St. John yards, referred to in my report of last year, have been completed, and have been in use for the past six months.

The brick warehouse, &c., in St. John yard, and referred to in my report of last year, are completed and have been occupied since January last.

The bulk of the grading for the re-arrangement of the tracks in the yard has been done, and a new brick station is now in course of erection.

The station (or head house) is 114 feet long by 88 feet wide, three stories high, and the train shed to the rear is 500 feet long by 82 feet wide, with baggage rooms at either end 100 feet long by 15 feet wide.

New platforms have been erected at Dorchester, Painsec, Salisbury, Pallet River, Petitcodiac, Hayward's, Penobsquis, Bloomfield, Norton, Namvigewauk, Model Farm and St. John.

Considerable repairs have been put upon the following stations: Painsec, Moncton, Shediac, Anagance, Penobsquis, Sussex and Passekeag.

A new boiler shop 106 by 36 feet, and a new oil store 48 by 30 feet, were built at Moncton.

An old tenement house at the west end of Moncton yard was thoroughly overhauled and converted into a dwelling for the night policeman.

A new floor and brick engine pits were put in the Round House at St. John.

Large repairs were made to the floors and pits of engine house and machine shop at Moncton.

An addition of 17 by 30 feet was made to the station at Petite Roche.

New freight houses, each 60 feet long by 25 feet wide, were erected at the following places—Rogersville, Petite Roche, New Mills, and Jacquet River.

An addition of 60 feet was also made to the freight house at Campbellton.

A high level coal shed, 500 feet long by 25 feet wide, with a trestle approach 800 feet long was erected at Campbellton; also a hoisting house for same (60 feet long) at the end of the trestle.

New loading platforms carrying in length from 60 to 210 feet were erected at Coal Branch, Adamsville, Rogersville, Chatham Junction, Newcastle, Bartibogue and Jacquet River.

Considerable repairs were made to the coal trestle at Newcastle; also to the Ste. Flavie engine house.

The iron girders of the latter were scraped and painted.

A new tank house was erected at Bathurst.

The roofs of Berry's Mills, Barnaby River, Newcastle and Bathurst Stations were re-shingled.

Ste. Flavie and St. Simeon Stations were filled with saw-dust between the exterior walls, and the former was painted.

The old brick station at Rivière du Loup was re-built and enlarged.

The freight house at Ste. Alexandre was fitted up for a temporary station in place of the brick station destroyed by fire.

A new station is now being erected at that place.

Tool houses were built at River Ouelle and Trois Saumons.

A portion of the platform at Chaudière Junction was roofed over for the protection of baggage from the weather.

The coal trestles at Chaudière and Rivière du Loup were closed in, and provisions made for the storage of a large quantity of coal.

#### IRON BRIDGES.

The iron bridge carrying Water street over the railway at Halifax was raised  $3\frac{1}{2}$  feet, to give the necessary headway required by law, and widened 13 feet to admit of a double track being laid.

The wooden aboisdeau at La Planche River, near Amherst, was replaced with a new steel bridge of 80 feet span, with abutments of ashlar masonry. Two iron spans of 15 feet each were put in between Dorchester and Memramcook.

A new iron overhead bridge, with a central span of 80 feet, and two side spans, of 21 feet each, was erected near Quispamsis.

An iron span of 18 feet was put in near Trois Pistoles.

The improved close floor has been put in the following bridges: Millstream Gondola Point, Trois Pistoles, L'Islet, St. Ann's, South St. Thomas, Boyer and Etchemin.

Two gangs of painters, and a gang of rivetters were engaged in scraping, painting and riveting on the iron bridges north of Moncton nearly the whole of the working season.

#### CATTLE GUARDS AND CULVERTS.

Fifty-six timber cattle guards were renewed in various parts of the line.

A gang of masons was engaged three months in repairing the old culvert.

Necessary pointing and repairs were made to the bridge masonry over the whole line.

#### WATER SERVICE.

The traffic of the road is now so large and the trains running so close after one another, that many of the old tank tubs do not hold sufficient water to supply the large number of engines calling.

On the division between Moncton and Campbellton particularly so much difficulty was experienced on this account for a few weeks in the driest time in winter, that it was necessary to put up three large temporary tanks, one at Buctouche River, one at Bathurst, and one at Charlo.

New tanks were also put up at Elmsdale, Greenville, St. Simon and Isle Verte.

During the current year, on the division between Moncton and Campbellton, it is proposed to provide four additional large tanks with a capacity of from 20,000 to 50,000 gallons each, filled with Knowle's steam pumps; and also two others of the same capacity on the division between Ste. Flavie and Hadlow.

The permanent way throughout the whole line is in good order.

I am, Sir,

Your obedient servant,

P. S. ARCHIBALD.

*Chief Engineer.*

D. POTTINGER, Esq.,

Chief Superintendent, Moncton, N. B.

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 INTERCOLONIAL RAILWAY.
 

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MECHANICAL SUPERINTENDENT'S OFFICE,  
 MONCTON, N.B., 22nd October, 1882.

DEAR SIR,— I beg to submit for your information the following statements showing the operations of the Mechanical Department, for the year ending 30th June, 1883.

A.—Statement showing the number of locomotives and the various classes of cars.

B.—Statement showing the locomotive and car mileage and the average number of passenger and freight cars hauled per mile run by engines.

C.—Abstract of locomotive returns.

D.—Statement shewing the cost of locomotive power for each month during the year.

E.—General statement of the expenses of the Mechanical Department.

During the year four new locomotives were purchased and charged to Working Expenses.

Seventy-five hopper cars were condemned and taken off the register.

Two locomotives, two second-class cars, seventy box and platform, and two gondolas to replace an equal number condemned, and twenty-five gondolas to replace the seventy-five hopper cars, were built at the cost of Working Expenses.

Ten of the oldest locomotives which had been replaced by new were this year sold.

Twenty locomotives, one first class car, ten second, twenty box freight, two hundred and ten platform, four hundred and ten gondolas and six vans were received on the road, on account of Capital.

The rolling stock is in good condition.

I am, Sir,

Your obedient servant,

H. A. WHITNEY,  
*Mechanical Superintendent.*

D. POTTINGER, Esq.,  
 Chief Superintendent, Intercolonial Railway.

A.—INTERCOLONIAL RAILWAY.

STATEMENT showing the number of Locomotives and the various classes of Cars on the 1st July, 1882, and on the 30th June, 1883.

Particulars.	The Various Classes of Cars.															
	Locomotives.	First Class Passenger.	Second Class Passenger.	Postal and Smoking.	Baggage and Express.	Vans.	Box Freight.	Cattle.	Platform—10, 15 and 20 Tons.	Hoppers—5 Tons.	Gondola—20 Tons.	Total.	Snow Ploughs.	Wing Ploughs.	Flangers.	Total.
On hand, 1st July, 1882, serviceable.....	124	51	41	15	20	44	1393	72	1161	670	348	3815	28	9	18	55
do do condemned.....						1	14					15				
Total.....	124	51	41	15	20	45	1407	72	1161	670	348	3830	28	9	18	55
Purchased on account of Capital.....																
do do working expenses.....	20	1	10				20		210		40					
Built at Moncton works, on account of Capital.....	4															
Sold—replaced by new.....																
Condemned—replaced by Gondolas.....	*10									*75	25					
Total, 30th June.....	138	52	51	15	20	51	1427	72	1371	595	783	4437	28	9	18	55
Condemned on hand, 1st July.....																
Condemned during the year.....	2		3		1	1	14					15				
Less—Rebuilt.....	2		3		1	1	12		53	75	2	148				
	2		2				20		53	25	2	163				
	2		2						50	25	2	149				
Add—Serviceable and repairing.....			1		1	1	6	2	3			14				
	138	52	50	15	19	50	1421	70	1368	595	783	4423	28	9	18	55
Total on record.....	138	52	51	15	20	51	1427	72	1371	595	783	4437	28	9	18	55

\*Deduct.

B.—INTERCOLONIAL RAILWAY.

STATEMENT of Locomotive and Car Mileage for Year ending 30th June, 1883.

Months.	Locomotive Mileage.		Car Mileage.							Average.		Snow Ploughs.
	Pas-senger.	Freight.	1st Class.	2nd Class.	Express, Postal and Baggage.	Box and Stock.	Platform and 8-wheel Coupl.	Hoppers.	Total.	Pas-senger.	Freight.	
1882—July.....	68,435	187,649	235,838	115,915	148,237	1,801,069	611,713	95,357	3,008,129	7·30	13·36	.....
August....	72,658	196,131	265,231	128,262	147,266	1,674,075	782,200	100,993	3,098,027	7·45	13·00	.....
September	68,064	202,282	239,610	126,082	145,635	1,837,433	773,214	81,920	3,203,894	7·51	13·31	.....
October ...	65,674	221,234	206,306	120,714	147,366	2,108,603	863,853	82,186	3,534,028	7·24	13·83	.....
November	68,277	223,088	201,481	129,216	148,810	2,146,078	790,813	89,702	3,506,100	7·02	13·60	1,198
December.	66,786	233,366	193,124	120,067	143,654	2,068,295	720,634	109,465	3,350,239	6·91	12·42	6,991
1883—January ..	69,354	235,760	187,628	124,879	141,795	1,710,686	833,735	100,444	3,099,167	6·50	11·22	7,936
February..	63,622	240,902	167,181	110,329	126,370	1,914,364	932,354	107,748	3,381,346	6·24	12·39	11,781
March .....	69,049	278,097	181,672	126,227	142,935	2,270,224	1,110,327	166,414	3,997,799	6·52	12·75	14,231
April. ....	70,644	265,787	199,789	156,011	142,001	2,204,287	1,484,835	123,336	4,310,259	7·04	14·34	.....
May .....	69,382	256,586	201,628	137,934	149,343	2,241,018	1,274,202	71,321	4,075,476	7·04	13·93	42
June. ....	75,695	176,219	206,281	131,554	152,580	1,641,514	764,746	55,614	2,962,089	6·47	13·97	.....
Total ...	827,640	2,717,091	2,483,769	1,526,990	1,735,992	23,647,676	10,917,626	1,184,500	41,526,089	6·94	13·16	42,169

C.—INTERCOLONIAL RAILWAY.

ABSTRACT of Locomotive Returns for Year ending June 30th, 1883.

Months.	Hours in Steam.	Locomotive Mileage.	Consumption.				Average Consumption per 100 Miles.				
			Tons of Coal.	Pints of Oil.	Lbs. of Tallow.	Lbs. of Waste.	Miles to hour in Steam.	Lbs. of Coal.	Pints of Oil.	Lbs. of Tallow.	Lbs. of Waste.
1882—July .....	29,333	314,435	7,482	18,291	9,635	5,390	10.71	53.30	5.81	3.08	1.71
August .....	30,524	329,666	7,527	18,109	9,846	5,398	10.80	51.14	5.49	3.04	1.51
September .....	31,103	330,773	7,950	18,647	9,363	5,233	10.63	53.83	5.63	2.83	1.58
October .....	32,881	347,254	9,153	23,309	7,875	5,562	10.55	59.04	6.71	2.26	1.60
November .....	33,936	354,487	9,884	23,008	8,620	5,630	10.44	62.73	6.49	2.43	1.58
December.....	37,456	375,310	10,483	23,001	10,166	5,962	9.96	62.90	6.16	2.71	1.59
1883—January.....	39,268	390,243	10,705	23,249	10,529	6,189	9.84	61.44	5.95	2.72	1.58
February.....	41,057	389,723	11,168	24,915	11,919	6,209	9.49	64.19	6.59	3.06	1.59
March.....	47,290	445,856	12,814	31,031	14,153	7,427	9.42	64.43	6.95	3.15	1.66
April.....	41,676	419,470	10,603	26,179	12,230	6,693	10.06	56.62	6.24	2.91	1.59
May.....	39,184	400,372	9,301	24,501	11,530	6,266	10.21	52.03	6.11	2.87	1.56
June .....	29,613	310,600	6,650	19,807	9,455	5,507	10.49	47.95	6.37	3.04	1.77
Total.....	433,684	4,406,189	113,720	274,047	125,231	71,473	10.16	57.81	6.21	2.86	1.62

D.—INTERCOLONIAL RAILWAY.

STATEMENT of the cost of Locomotive Power for each month, from 1st July, 1882, to 30th June, 1883.

Months.	Miles run by Engines.	Drivers' and Fire-men's Wages.		Fuel.	Oil, Tallow and Waste.		Repairs to Engines, Tenders and Tools.		Water.		Miscellaneous, including Engine houses and Staff.		Total.	Average per 100 Miles.															
		\$	cts.		\$	cts.	\$	cts.	\$	cts.	\$	cts.		\$	cts.	\$	cts.	\$	cts.										
1882—July.....	314,435	12,873	59	18,534	16	2,978	04	15,308	78	147	13	3,161	74	53,603	74	4	09	5	89	0	94	4	88	0	24	1	00	17	04
August.....	329,666	13,193	01	19,748	52	3,041	52	12,218	31	2,180	65	3,360	35	53,742	36	4	00	6	0	0	92	3	70	0	64	1	02	16	30
September.....	330,773	12,943	26	20,981	23	3,111	99	13,439	47	2,093	15	3,484	88	56,054	00	3	92	6	34	0	91	4	06	0	63	1	05	16	91
October.....	347,254	13,379	76	24,219	74	3,471	53	18,725	52	1,870	44	4,637	52	66,304	51	3	85	6	97	1	00	5	40	0	54	1	33	19	09
November.....	354,487	14,522	20	27,168	70	3,676	87	20,585	80	2,302	80	7,331	58	75,637	95	4	10	7	66	1	04	5	81	0	65	2	08	21	34
December.....	373,310	15,480	07	29,430	28	4,049	09	14,333	51	3,438	77	6,952	79	73,684	51	4	14	7	88	1	09	3	84	0	92	1	86	19	73
1883—January.....	390,243	15,523	64	29,925	10	4,044	93	8,745	63	2,535	93	5,666	13	66,441	36	1	93	7	66	1	04	2	24	0	65	1	45	17	02
February.....	389,723	15,784	79	31,607	82	4,379	68	8,350	68	3,115	52	5,405	07	68,623	86	4	05	8	11	1	22	2	14	0	80	1	39	17	61
March.....	445,856	18,191	63	36,782	41	5,457	53	18,517	53	4,431	66	5,407	70	88,788	36	4	08	8	25	1	22	4	16	0	99	1	21	19	91
April.....	419,470	15,893	92	24,168	19	4,243	47	12,052	17	1,570	78	3,257	49	61,256	02	3	79	5	76	1	03	2	87	0	38	0	77	14	60
May.....	400,372	15,291	15	21,293	08	3,253	37	7,714	47	1,835	39	3,303	84	52,691	30	3	82	5	32	0	81	1	93	0	45	0	83	13	16
June.....	310,600	12,709	56	15,047	51	2,672	11	15,261	76	1,243	04	3,301	00	50,234	93	4	08	4	85	0	86	4	92	0	40	1	06	16	17
Total.....	4,406,189	175,786	58	298,896	76	44,460	13	165,233	63	27,365	46	55,320	09	767,062	65	3	93	6	78	1	00	3	75	0	59	1	25	17	40

Engine miles.....	4,406,189
Train do.....	3,615,192
Light.....	62,716
Shunting.....	728,281

## E—INTERCOLONIAL RAILWAY.

## GENERAL STATEMENT of the Expenses of the Mechanical Department, for the Year ending 30th June, 1883.

The miles run by trains were.....		3,615,192
do engines were.....		4,406,189
do cars were.....		41,526,553
do snow ploughs were.....		42,169
The cost of locomotive power.....	\$ cts.	767,062 65
The cost of repairs :		
Repairs to passenger cars.....	55,289 05	
do postal, express and baggage cars.....	16,209 23	
do freight cars and vans.....	178,706 45	
Oil and waste for packing.....	26,724 95	
Miscellaneous.....	1,443 69	
The cost of locomotive power per 100 miles run by trains was.....	21 21	
do do do engines.....	17 40	
do do do cars.....	1 84	
The cost of repairs to cars per 100 miles by train.....	6 92	
do do engines.....	5 67	
do do cars.....	0 60	
The cost of oil and waste for packing per 100 miles by train.....	0 73	
do do engines.....	0 60	
do do cars.....	0 06	
The cost of repairs to passenger cars per 100 miles run by them.....	1 37	
do postal, express and baggage do.....	0 93	
do freight cars and vans do.....	0 49	

No. 1.—INTERCOLONIAL RAILWAY.

CAPITAL ACCOUNT, 30th June, 1883.

CR.

DR.

	\$	cts.	\$	cts.	1882.	\$	cts.
1882.							
June 30.... To Cost of Road and Equipment.....			39,560,021	23	June 30.... By Dominion of Canada..	39,560,021	23
1883.							
June 30.... To Outlay on Halifax Extension.....	257,824	73					
do Increased accommodation, St. John	201,312	18					
do St. Charles Branch and Ferry....			459,136	91			
do Dartmouth Branch.....			482,197	09			
Additional Rolling Stock.....			124	12			
Improvement Rivière-du-Loup Branch.....			628,244	39			
Expenditure on completion of Intercolonial			6,805	86			
Railway between Rivière-du-Loup and							
Truro, works, permanent way, buildings,			40,124	59	1883.		
right of way, &c.....					June 30....	1,616,632	96
						41,176,654	19

THOMAS WILLIAMS,  
Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1883.

No. 2.—INTERCOLONIAL RAILWAY.

REVENUE ACCOUNT, Year ending 30th June, 1883.

DE.

CR.

Previous Year.	Expenditure.	Year ending 30th June, 1883.	Previous Year.	Earnings.	Year ending 30th June, 1883.
\$ cts.		\$ cts.	\$ cts.		\$ cts.
684,191 41	Locomotive power	767,062 65	651,296 94	Passenger traffic.....	741,992 72
469,331 23	Car expenses	508,187 86	1,303,495 00	Freight do .....	1,487,601 98
476,134 17	Maintenance way and works do	582,638 91	124,470 72	Mails and sundries.....	141,326 40
270,355 70	Station expenses	313,496 98			
162,134 29	General charges	167,933 84			
7,510 68	Car mileage .....	21,053 03			
2,069,657 48	Balance .....	2,360,373 27			
9,605 18		10,547 83			
2,079,262 66		2,370,921 10	2,079,262 66		\$2,370,921 10

THOS. J. WILLIAMS,  
Chief Clerk and Accountant.

MONCTON, N.B., 30th June, 1883.

No. 3—INTERCOLONIAL RAILWAY.  
LOCOMOTIVE POWER.—(Abstract No. 2)

Previous Year.		Year ending 30th June, 1883.
\$ cts.		
6,401 77	Mechanical Superintendent's salary, Clerk's Office and Travelling expenses	7,475 16
148,699 57	Wages, Drivers, Firemen and Cleaners.....	175,786 58
241,681 09	Fuel.....	298,896 76
34,565 53	Oil, tallow, waste and small stores.....	44,460 13
192,289 71	Repairs to engines, tenders and engine tools .....	165,233 63
24,563 19	Water, including pump and tank repairs.....	27,365 46
35,990 55	Miscellaneous.....	47,844 93
684,191 41		767,062 65

THOS. J. WILLIAMS,  
*Chief Accountant and Treasurer.*

MONCTON, N.B., 30th June, 1883.

No. 4.—INTERCOLONIAL RAILWAY.  
CAR EXPENSES.—(Abstract No. 2)

Previous Year.		Year ending 30th June 1882.
\$ cts.		
45,527 06	Repairs to passenger cars.....	55,289 05
18,435 27	do postal, express and baggage cars.....	16,209 23
179,061 92	do freight cars and vans.....	178,706 45
142,202 34	Wages of Conductors, Train Baggage Masters and Brakesmen.....	167,755 27
21,378 52	Oil and waste for packing.....	26,724 95
47,313 70	Small stores and fuel.....	48,786 21
15,412 42	Miscellaneous.....	14,716 70
469,331 23		\$508,187 86

THOS. J. WILLIAMS,  
*Chief Accountant and Treasurer.*

MONCTON, N.B., 30th June, 1883.

## No. 5.—INTERCOLONIAL RAILWAY.

## MAINTENANCE OF WAY AND WORKS—(Abstract No. 3.)

Previous Year.		Year ending 30th June, 1883.
\$ cts.		\$ cts.
7,798 82	Engineer's salary, Clerks, Office and Travelling expenses.....	5,206 55
278,009 42	Wages in repairing Roadway, Fences and Semaphores, including new Sidings laid in.....	297,305 24
16,692 38	Rails and Fastenings, including new Sidings laid in .....	47,800 95
44,729 08	Sleepers.....	64,519 20
21,114 77	Timber, Lumber, etc., for repairs to Bridges, Cattle-guards, Crossings, Snow-sheds, Fences, etc.....	39,151 35
3,679 21	Repairs to Wharves ..	11,749 53
48,148 95	Repairs to Buildings and Platforms, including extension of and additions to same.....	67,503 78
14,801 69	Repairs to Snow Ploughs, Flangers and Tools.....	12,588 69
38,047 34	Clearing Ice and Snow.....	33,974 20
3,312 51	Miscellaneous .....	2,839 42
476,134 17		582,638 91

THOS. WILLIAMS,  
Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1883.

## No. 6.—INTERCOLONIAL RAILWAY.

## STATION EXPENSES—(Abstract No. 4.)

Previous Year.		Year ending 30th June, 1883.
\$ cts.		\$ cts.
209,309 73	Salaries and wages of Station Masters, Agents, Clerks, Telegraph Operators, Station Baggage Masters, Yard Masters, Switchmen, Watchmen and Laborers .....	243,760 22
61,045 97	Fuel, Oil, Light, Stationery, Tickets and other incidental expenses.....	69,736 76
.....	Miscellaneous.....	.....
270,355 70		313,496 98

THOS. WILLIAMS,  
Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1883.

## No. 7.—INTERCOLONIAL RAILWAY.

## GENERAL CHARGES—(Abstract No. 5)

Previous Year.	—	Year ending 30th June, 1883.
\$ cts.		\$ cts.
55,791 08	Chief Superintendent, District Superintendents, Train Despatchers, and the General Freight Agent, General Passenger Agent, Clerks, Office and Travelling expenses.....	68,120 15
20,618 04	Accounting Department, salaries of the Treasurer, Traffic Auditor, Paymaster, Cashier, Clerks, Office and Travelling expenses.....	20,360 15
14,527 95	Damages to men, animals, and goods.....	13,360 85
23,087 76	Ferry service.....	20,620 49
2,561 07	Telegraph expenses (not including pay to operators).....	1,215 00
29,887 50	Miscellaneous, printing, advertising, etc.....	32,053 59
15,660 89	Agency expenses.....	12,183 61
162,134 29		167,933 84

THOS. WILLIAMS,  
*Chief Accountant and Treasurer.*

MONCTON, N.B., 30th June, 1883.



No. 9.—INTERCOLONIAL RAILWAY.  
GENERAL BALANCE, 30th June, 1883.

DR.

CR.

	\$	cts.	\$	cts.	\$	cts.
Cash.....						
General Stores—						
Ordinary stores, including fuel .....	394,951	07				
Iron and Steel Rails, &c.....	125,239	41				
Old materials for sale.....	47,548	79				
Stations.....			567,739	27		
Acadia Coal Co.....			81,630	13		
Intercolonial Coal Co.....			4,250	16		
Spring Hill Coal Co.....			2,397	69		
Vale Coal Co.....			1	12		
Intercolonial Express Co.....			2,473	92		
Rents.....			2,609	75		
Steel Company of Canada.....			2,725	04		
Spring Hill and Parsboro' Railway.....			26,567	08		
Western Counties Railway, general account.....			3,161	99		
do traffic account.....						
Grand Trunk Railway, general account.....			17,550	77		
Albert Railway.....			4,998	55		
Windsor Branch Railway.....			2,157	80		
Windsor and Annapolis Railway, old account.....			4,502	98		
do do new account.....						
6,684	46					
1,053	05					
Prince Edward Island Railway .....			7,737	51		
St. Martins and Upham Railway.....			648	18		
Elgin Branch Railway.....			4,107	39		
Kent North-Western Railway.....			726	10		
Canada Pacific Railway, old account.....			161	96		
Central Vermont Railway.....			185	90		
Oxford Branch Railway.....			28	00		
Toronto, Grey and Bruce Railway.....			12,324	80		
Canadian Pacific Railway Co.....			19	00		
Credit Valley Railway.....			1,954	71		
Halifax and Cape Breton Railway.....			4	00		
Accidental Insurance.....			1,596	95		
Prince Edward Island Steam Navigation Co.....			3,044	15		
Coldbrook Mills.....			187	94		
Halifax Rolling Mills.....			1,967	41		
			81	49		
Dominion Account.....						857,295 62
Suspense Account.....						3,463 25
Chatham Branch Railway.....						537 09
Quebec Central Railway.....						659 58
Grand Trunk Railway, traffic account.....						9,870 08

Moncton Sugar Refining Co.....	5,169 44
Nova Scotia Government.....	280 45
Halifax Cotton Co., siding .....	11,092 03
Unclaimed freight .....	97 83
Moncton Cotton Co., siding.....	765 53
Pullman Palace Car Co.....	71 25
Kingston Car Co .....	256 44
Canadian Locomotive and Engine Co.....	694 78
National Despatch Line .....	2 00
Steamer "Admiral" and owners .....	1,460 87
Western Union Telegraph Co.....	960 50

DEPARTMENTAL ACCOUNT.

Post Office .....	40,077 44
Militia.....	1,203 90
Agriculture .....	6,340 61
Marine and Fisheries.. ..	960 81
Dorchester Penitentiary .....	2 82
Individual Accounts .....	48,585 88
	28,354 11

\$871,825 62

\$871,825 62

MONCTON, N.B., 30th June, 1883.

THOS. WILLIAMS,  
Chief Accountant and Treasurer.

## No. 10.—INTERCOLONIAL RAILWAY.

COMPARATIVE STATEMENT of Averages, Year ending 30th June, 1883.

	1883.	1882.
Mileage of railway.....	840	840
Engine mileage.....	4,406,189	3,900,850
Train do .....	3,615,192	3,195,566
Cars do .....	41,526,553	37,489,376
	\$ cts.	\$ cts.
Receipts per engine mile.....	53 81	53 30
do mile of railway .....	2,822 52	2,475 31
	Per cent.	Per cent.
Percentage of passenger earnings to gross earnings.....	31·30	31·32
do freight do do .....	62·74	62·69
do other do do .....	5·96	5·99
Expenses per engine mile—		
Drivers', Firemen's and Cleaner's wages .....	3·99	3·81
Fuel .....	6·78	6·20
Oil, tallow, waste and small stores.....	1·01	0·89
Repairs to engines.....	3·75	4·93
Water and tank repairs.....	0·62	0·63
Miscellaneous .....	1·09	0·92
Total.....	17·24	17·38
Mechanical Superintendent's salary, office and travelling expenses.....	0·17	0·16
	17 41	17·54
Locomotive power per engine mile.....	17·41	17·54
Car expenses do .....	11·53	12·03
Maintenance of way and works do .....	18 22	12·21
Station expenses do .....	7·12	6·93
General charges do .....	3·81	4·15
	53·09	52·86
Car mileage.....	0 48	0·19
Total per engine mile.....	53·57	53·05
Locomotive power per train mile.....	21·22	21·41
Car expenses do .....	14·06	14·69
Maintenance of way and works do .....	16·12	14·90
Station expenses do .....	8·67	8·46
General charges do .....	4·64	5·07
	64·71	64·53
Car mileage.....	0·58	0·24
Total per train mile.....	65·29	64·77
Working expenses per mile of railway.....	\$2,809 97	\$2,463 88

THOS. WILLIAMS,

Chief Accountant and Treasurer.

MONCTON, N.B., 30th June, 1883.

**RETURN OF ACCIDENTS AND CASUALTIES.**

INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred in Canada  
30th June,

(This Return is made up in compliance with the provisions

Date.	Time of Day or Night.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
<b>1882.</b>						
July 1...	1.10 p.m.	31	Accommodation.	A. Armstrong.....	J. Scott.....	42
do 6...	5.20 a.m.		Working.....	A. MacPherson.....	A. McCabe .....	30
do 21...	4.15 a.m.		Special.....	M. Cummings.....	F. McManus .....	8
do 27...	1.40 p.m.		do .....	R. F. Rutherford.....	E. Blair.....	72
do 28...	4.00 p.m.		Shunter .....		R. James.....	100
Aug. 10...	10.30 a.m.		do .....		Geo. Sears .....	27
do 9...	2.20 p.m.		Specia.....	Wm. Ross .....	P. O'Donnell .....	123
do 12...	6.30 a.m.		Shunter .....		W. McLean.....	94
do 12...	7.10 p.m.		do .....		W. Bastin .....	13
do 19...	7.50 p.m.		Freight .....	R. A. Rainnie .....	J. Irvine.....	46
do 17...	5.10 p.m.		Special .....	A. E. Brown.....	John Donald.....	118
do 22...	11.00 a.m.	15	Freight .....	J. Berry .....	A. Donald... ..	108
do 25...	10.45 a.m.		Special.....	G. Margeson.....	G. Feetham.....	4
Aug. 23...	6.25 p.m.		Ballast .....	J. Huppe .....	C. Jolivette .....	34
do 30...	10.30 p.m.		Special .....	G. Margeson.....		126
Sept. 1...	5.17 p.m.	36	Accommodation.	D. D. Brownell .....	R. Bulmer .....	40
do 1...	5.17 p.m.		Special .....	N. Merrill .....	T. Chilton.....	49
do 13...	7.00 p.m.		do .....	J. Coffey.....	G. A. Kantly .....	128
do 14...						

## RAILWAY.

on the Line of the Intercolonial Railway, during the Year ending 1883.

(of the Railway Act of 1868, 31 Vic., cap. 68, sec. 43.)

Place of Accident.	Name of Person Injured.	Whether Passenger or Employé.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Ste. Luce.....	J. Damour.....	Employé..	While uncoupling engine from train.	Hand smashed	
Newcastle.....	A. McCabe .....	do ...	While tightening some of the nuts under the engine.	Finger broken.	
Bathurst.....	J. Halloran .....	do ...	Fell from cars.....	Leg broken....	
Londonderry....	Jos. Kennedy ..	do ...	While uncoupling engine from train.	First joint of finger taken off.	
St. John.....	Saml. Ritchie..	do ...	Slipped from footboard of engine.	Leg broken....	
Campbellton ....	Frank Sears ....	do ...	While coupling engine to a car.	Three fingers on left hand badly cr'shd	
One mile west of Hopewell.	— Baird. ....	do ...	Engine ran over leg while endeavoring to remove hand-car off track.	Foot taken off.	
Moncton.....	B. Myrshall....	do ...	While coupling cars.....	Finger crushed	
Rivière du Loup.	— Moreauseau.	du ...	do .....	Finger jammed	
Painsec .....	G. H. Laskey...	do ...	do .....	Arm jammed..	
One mile east of Bloomfield.	Miss Floyd .....	Neither....	While walking on track, was struck by train.	Killed .....	Accidental.
Spring Hill .....	John Carroll...	Employé..	While coupling engine to a car.	Slightly jam'd	
Drummond .....	P. Kelly.....	do ...	While running after train	Ankle sprain'd	
St. Charles Branch.	J. Huppe.....	Employé..	Four cars ran off track, on one of which he was standing.	Badly bruised.	
Truro .....	.....	do ...	While coupling engine to train.	Arm bruised...	
Weldford. ....	Jos. Delahunty	do ...	Merrill's special ran into No. 36 train.	Fatal .....	Accidental.
Petitcodiac .....	H. Kennedy ...	Passenger	Fell from train while in motion.	do .....	do
Belmont .....	Allan Dykeman	Neither....	Fell into a cattle-guard...	do .....	do

## INTERCOLONIAL

## RETURN of Accidents and Casualties which have occurred in

Date.	Time of Day or Night.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1882.						
Aug. 19...	9.50 p.m.	35	Accommodation.	J. Hartenstein .....	W. Bastin .....	20
do 21...	1.30 a.m.	5	Freight .....	W. J. Campbell.....	J. J. Irvine.....	62
do 21...	7.30 a.m.	.....	Shunter ..	.....	R. James .....	100
do 21...	2.30 p.m.	.....	do .....	.....	J. McLellan .....	93
do 28...	10.40 a.m.	.....	Special .....	W. K. Reynold.....	H. Stewart.....	122
Oct. 4...	10.15 a.m.	.....	do .....	J. McNaughton .....	J. McAuley .....	121
do 4...	10.00 p.m.	32	Express .....	A. McLellan.....	Robt. Dunbar .....	66
do 4...	12.30 p.m.	.....	Special .....	R. F. Rutherford .....	Geo. Feetham.....	4
do 4...	8.05 p.m.	35	Freight. ....	W. Sprague .....	.....	.....
do 6...	11.00 p.m.	.....	Working.....	N. L. Letarte .....	J. McIntyre.....	22
do 6...	11.00 p.m.	.....	Special .....	R. F. Rutherford .....	T. Hanway .....	81
do 7...	8.30 a.m.	.....	do .....	J. Casey .....	J. Cook .....	49
do 7...	10.30 a.m.	2	Express .....	Geo. Trueman .....	J. Stewart .....	70
do 8...	2.30 p.m.	.....	Shunter .....	.....	— Sears .....	8
do 9...	2.20 a.m.	.....	do .....	.....	J. W. Boyd .....	11
do 10...	1.00 a.m.	.....	Ballast .....	J. McNaughton .....	H. M. Stewart .....	122
do 26...	.....	.....	.....	.....	.....	.....

## RAILWAY.

Canada, on the Line of the Intercolonial Railway, &amp;c.—Continued.

Place of Accident.	Name of Person Injured.	Whether Passenger or Employé.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Moffatts .....	George Duff....	Passenger	Got off train on head of tide-bridge, and fell off.	Badly hurt.....	
Sussex.....	H. McAndrews.	Employé..	Slipped and fell off cars while in motion.	Fatal .....	do
St. John.....	W. J. Campbell	do ...	While walking on track was struck by cart being shunted.	Badly bruised about head & shoulders.	
Richmond .....	Robt. Murray...	do ...	While standing on track was struck by cars.	Fatal .....	do
One mile east of Athol.	Walter Welling	do ..	Fell between cars while walking over train, and rolled down the embankment.	Badly bruised about body.	
Memramcok .....	T. Tarnio .....	do ...	Attempting to jump on train while in motion, fell, and wheel passed over him.	Foot and arm badly smashed.	
Bathurst.....	D. McLeod .....	Passenger	Cut his throat with a razor.	Not fatal .....	
Albion Siding ...	A. Wright .....	Employé ..	While coupling cars.....	Thumbjamm'd	
Dalhousie .....	O. Crossman ...	do ...	Struck by train while walking or standing on track.	Fatal .....	No inquest held.
Millstream.....	F. Lortie .....	do ...	While coupling cars.....	Hand crushed..	
Shubenacadie ...	Peter Kelly.....	do ...	do .....	Finger crushed slightly.	
Spring Hill .....	E. C. Thompson	do ...	While coupling engine to car.	End of little finger taken off.	
Petitcodiac .....	H. Babkirk .....	Neither....	While attempting to cross track in front of engine	Fatal .....	Accidental.
Campbelltown ...	K. Fraser .....	Employé..	While coupling cars.....	Hand jammed and 3 fingers taken off.	
Truro .....	W. A. Dickson.	do ...	Foot caught in frog while coupling cars.	Leg badly injured.	
Boundary Creek.	S. Hillson .....	do ...	Ballast train run into by No. 12 train.	Slightly hurt ..	
Walker's ballast pit.	C. McCarthy....	Employé..	While shovelling earth, the bank gave way and struck him.	Leg broken.....	

INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred in

Date.	Time of Day or Night.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1882.						
Oct. 15...	2.35 a.m.		Special.....	E. P. Benoit .....	J. H. Levey.....	21
do 17...	5.00 p.m.		Shunter.....		A. White .....	94
do 19...	7.50 p.m.		Ballast.....	S. Bellemare.....	R. Findlay.....	34
do 19...	11.00 a.m.		Working.....	L. N Letarte .....	W. Bastin.....	41
do 19...	5.00 p.m.	35	Freight .....	J. S. McGinn .....	B. Lutes.....	86
do 21...	8.20 a.m.		Special .....	E. L. Watts.....	S. Watson.....	54
do 21...	12.50 p.m.		do .....	C. A. Atkinson .....	E. S. White .....	45
do 31...	7.00 p.m.		do .....	J. B. Paulet.....	A. Doig .....	16
Nov. 8...	12.55 p.m.		Express .....	R. G. Duncan .....	S. Trider .....	58
do 11...	7.45 p.m.		Special ...	Jos. Guay .....	G. Lacroix....	130
do 14...	5.00 p.m.		Shunter .....		H. Como .....	26
do 15...	10.53 p.m.	9	Express.....	J. Ahearn .....	H. Tait.....	56
do 16...	8.00 p.m.	21	Freight.....	C. J. Rhodes.....	M. Wall .....	29
do 18...	3.25 p.m.		Ballast .....	A. E. Brown .....	Geo. Palmer.....	49
do 18...	7.45 p.m.		Special ...	Jos. McDonald.....	C. McCarthy.....	122
do 22...	4.20 p.m.		Shunter .....		S. Trider .....	58
do 23...	10.00 a.m.		Ballast .....	A. E. Brown.....	N. Sinclair.....	84

## RAILWAY.

Canada, on the Line of the Intercolonial Railway, &c.—*Continued.*

Place of Accident.	Name of Person Injured.	Whether Passenger or Employé.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
$\frac{3}{4}$ mile north of St. Fabien.	M. Brilliant.....	Employé.	Fell from top of cars while they were in motion.	Fatal .....	No inquest held.
Moncton.....	Albert Murray.	do ...	While coupling cars.....	Hand injured.	
St. Charles.....	E. Dionne.....	do ...	Thrown from train while applying brakes, by chain breaking.	Fatal .....	do
$2\frac{1}{2}$ miles north of Campbellton.	A. Ross.....	do ...	While loading rails one fell on his hand.	Hand crushed.	
Bathurst.....	L. Murphy.....	do ...	While coupling cars.....	Hand slightly bruised	
Canaan.....	Jvid Lockhart.	do ...	do .....	Finger dislctd.	
do .....	Henry Frites....	do ...	do .....	Arm jammed..	
Between St. Charles & St. Henri.	L. S. Paulet....	do ...	While applying brakes...	Hand sprained	
Spring Hill....	John Leishman	Passenger	Attempted to cross track in front of engine, and was struck.	Ankle joint badly sprained.	
St. Charles .....	Tobin Caron....	Employé.	While coupling cars caught foot in frog, and two cars passed over his body.	Fatal .....	do
St. John.....	Jos. Dawson....	do ...	While standing on a ladder repairing roof of a passenger car. was knocked down by engine.	Severely inj'd about body.	
Thomson .....	R. McPherson .	Passenger	While stepping from train in motion, slipped, and wheel of car passed over his foot.	3 toes crushed.	
New Glasgow....	D. McIntosh....	Employé..	While unloading a carriage from car, was knocked off.	Side and back hurt.	
Rothesay .....	G. Buddington.	do ...	While pulling pin between engine and a flat car.	Seriously jm'd	
Maccan .....	Sim Cormier...	do ...	While coupling cars.....	Slightly jam'd	
Moncton.....	H. Stewart.....	do ...	do .....	2 fingers smshd	
Rothesay ... ..	John Ryan.....	do ...	Fell from train, wheel passing over his leg.	Severely inj'd.	

## INTERCOLONIAL

## RETURN of Accidents and Casualties which have occurred in

Date.	Time of Day or Night.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1882.						
Nov. 24...	8.40 a.m.	22	Freight .....	C. J. Rhodes.....	M. Wall.....	10
do 25...	12.45 a.m.	.....	Special ....	D. McNutt.....	J. Brown.....	47
do 30...	12.30 p.m.	.....	do .....	J. Hughes.....	H. M. Stewart .....	126
Dec. 1...	10.00 p.m.	.....	Shunter.....	.....	P. Fogarty.....	94
Dec. 14...	10.30 a.m.	.....	Special. ....	J. A. Hughes. ....	H. M. Stewart... ..	126
do 14...	6.40 p.m.	36	Freight .....	P. Fontaine.....	J. Ryan .....	105
do 18...	3.30 p.m.	.....	Shunter .....	.....	P. Fogarty .....	94
do 18...	9.20 a.m.	.....	Special. ....	L. N. Leberte. ....	John Gilker .....	20
do 22...	10.35 p.m.	34	Express .....	A. E. Olive. ....	J. E. Brownell.....	63
do 23...	.....	.....	Special. ....	Wm. Morgan. ....	Geo. Milne.....	89
do 27...	1.00 a.m.	.....	Shunter.. ..	.....	J. Walsh. ....	93
1883.						
Jan. 2...	9.00 p.m.	21	Special. ....	Wm. Crockett .....	S. Watson.....	43
do 4...	8.00 p.m.	.....	do .....	D. McNutt .....	D. McQuarrie.....	103
do 9...	8.50 a.m.	.....	Accommodation.	Jas. McDonald.....	Wm. Sproul.....	85
do 18...	3.45 p.m.	.....	Special. ....	J. A. Hughes. ....	J. DeVenne.....	92
do 20...	11.45 a.m.	.....	Shunter .....	.....	M. Tobin....	67
do 23...	5.00 a.m.	.....	do .....	.....	— Walsh .....	98
do 28...	10.00 p.m.	.....	Special .....	E. P. Benoit .....	C. E. Sawyer.....	130
Feb. 2...	3.15 p.m.	.....	do .....	J. W. Henderson.....	G. Turnbull.....	51

## RAILWAY.

Canada, on the Line of the Intercolonial Railway, &c.—*Concluded.*

Place of Accident.	Name of Person Injured.	Whether Passenger or Employé.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Hopewell .....	Jos. Kennedy...	Employé ..	While coupling cars .....	Hand injured ..	
1 mile north of Beaver Brook.	{ J. Brown..... J. Fraser..... A. Crossman	do ... do ... do ...	} Collided with No. 32 { train.	{ Fatal. .... do ..... do .....	Accidental. do do
Sussex.....	H. M. Stewart..	do ..	While standing on siding, fell off engine.	Slightly hurt..	
Moncton.....	J. McCann .....	do ..	While coupling engine to a car.	Thumb and 2 fingers smshd	
Dorchester .....	N. McGinty... ..	Employé ..	While coupling cars.....	Finger hurt....	
Millstream.....	E. Levesque....	do ..	Fell off train when ap- plying brakes.	Fatal.....	No inquest held.
Moncton.....	P. Elliot. ....	do ..	Fell while coupling cars.	Hand crushed.	
Restigouche, snow shed.	— McTourney..	Neither... ..	Standing too near track, struck by wing of plough	Not seriously hurt.	
Campbellton... ..	A. Connore.....	Employé ..	While coupling safety chain.	Hand jammed.	
Williams' siding	A. E. Kimball..	do ..	While coupling cars. ....	Hand crushed very badly	
Richmond .....	M. Prendergast	do ..	Fell off cars.....	Arm broken....	
¼ mile north of Rogersville.	P. A. Belliveau	do, ...	Fell from top of cars .....	Fatal... ..	Accidental.
Newcastle.. ..	S. Babin .....	do ..	While coupling cars.....	Finger crushed	
New Glasgow Bridge.	— McKinnon ..	Neither....	While walking along the track was struck by engine.	Fatal.....	do
Spring Hill. ....	F. C. White. ...	Employé..	While coupling cars.....	Slightly jam- med.	
Richmond .....	Robt. Mason....	do ..	do .....	Hand badly bruised.	
do .....	Thos. Hind.....	do ..	do .....	Hand badly crushed.	
2miles south of { Sayabec. {	Laurent Lavoie Louise Lavoie..	Neither....	While attempting to cross track in a waggon, were run into by train.	} Fatal.....	do
Eel River. ....	Geo. Bruce .....	Employé..	Fell between cars while pulling the pin.	Badly hurt.....	

## INTERCOLONIAL

## RETURN of Accidents and Casualties which have occurred in

Date.	Time of Day or Night.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1883.						
do 7...	1'00 p.m.		do .....	C. B. Humphrey .....	{ J. Morton .....	114
					{ S. Watson.....	43
do 8...	3 30 p.m.		Shunter.....	.....	Geo. Sears.....	8
do 11...	7'50 a.m.		Special. ....	E. Thomson .....	R. McMann.....	108
do 12...	1'00 p.m.		do .....	M. Cummings.....	S. Watson.....	115
Feb. 13...	8.10 a.m.	18	Special.....	C. J. Rhodes .....	H. Smith .....	10
do 14...	5.40 a.m.		do .....	J. A. Davidson . ....	D. McQuarrie.....	77
do 21...	4.00 p.m.		do .....	J. Craigie.....	J. Scott .....	75
March 3...	10.00 a.m.		Shunter .....	.....	S. Wilson .....	99
do 5...	11.30 p.m.		do .....	.....	G. Currie.....	82
do 10...	2 30 p.m.		do .....	.....	W. Mackie.....	97
do 13...	4.35 a.m.	34	Express .....	A. McLellan.....	C. McCarthy .....	66
do 17...	6.50 p.m.		Shunter .....	.....	H. Como .....	100
do 23...	2.00 ..		do .....	H. Garrett.....	W. Lovett.....	93
do 24...	10.45 p.m.	28	Accommodation	J. A. Hughes .....	D. A. Cannon .....	137
do 26...	4.45 p.m.		Special.....	Jas. McDonald.....	J. N. Campbell .....	124
April 3...	2.15 p.m.		Shunter .....	.....	J. Ferguson .....	39
do 3...	2.30 p.m.		do .....	.....	R. James ..	100
do 17...	11.30 a.m.		do .....	.....	H. Como .....	26
do 23...	9.30 p.m.		Special.....	Wm. Crockett.....	R. Smith .....	2
do 15...	3.30 a.m.		do .....	E. L. Watts .....	D. McQuarrie.....	50

## RAILWAY.

Canada on the Line of the Intercolonial Railway, &c.—*Continued.*

Place of Accident.	Name of Persons Injured.	Whether Passenger or Employé.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Derby siding...	C.B. Humphrey	do ...	While coupling cars was caught between them.	Badly bruised about the hips	Accidental.
Campbellton ...	Wm. Ferguson.	do ...	While coupling cars.....	Two fingers crushed.	
Sackville .....	Geo. Hillson....	do ...	While attempting to get on train in motion, fell between cars and was run over.	Fatal.....	
Berry's Mills.....	Wm. Board. ...	do ...	While coupling engine to train.	Thumb jammed.	
New Glasgow ...	John Morley....	Employé.	While coupling cars. ....	Hand jammed.	
Campbellton ...	D. Bower.....	do ...	do .....	do	
St. Arsène.....	C. Kennedy....	do ...	While uncoupling engine from train.	Thumb badly jammed.	
Moncton.....	Geo. Armstrong	do ...	While coupling engine to car.	Arm jammed.	
Halifax.....	Wm. Herich....	do ...	While getting off cars, fell.	Leg slightly hurt.	
Rivière-du-Loup	John Chatigny	do ...	While coupling cars.....	Chest hurt.	
Canaan .....	E. Price.....	do ...	Jumped from engine .....	Arm hurt.	Accidental.
St. John.....	Thos. Grady ...	Neither....	Horse ran away and crossed track in front of morning train.	Fatal.....	
Richmond .....	Geo. Clewit....	do ...	Struck by engine while working on the wharf.	Hand injured.	
Spring Hill.....	J. Fenton .....	Employé..	While coupling engine to cars.	Two fingers badly cr'shd	
Riversdale.....	A. McPherson..	do ...	While coupling cars .....	Finger taken off.	
Moncton.....	W. Wallace ...	do ...	Attempting to get on engine, slipped.	Finger crushed	
St. John.....	Alex. Ward ...	do ...	Attempting to get on car, fell.	Leg injured.	
St. John.....	John Dillon ...	do ...	While coupling cars.....	Arm bruised.	
Newcastle .....	Wm. Murray ...	do ...	do .....	Thumb cr'shd	
Moncton.....	Geo. Anderson.	do ...	Putting pin between engine and car.	Finger broken.	

## INTERCOLONIAL

## RETURN of Accidents and Casualties which have occurred in

Date.	Time of Day or Night.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1883.						
do 30...	8.35 a.m.	21	Accommodation	A. Grant.....	W. Sproul .....	85
May 16...	4.00 p.m.	.....	Shunter .....	.....	W. Boyd.....	33
do 19...	10.25 p.m.	.....	Special.....	A. B. Vance.....	J. Wall.....	7
do 22...	12.15 p.m.	.....	do .....	A. Grant .....	W. Sproul.....	85
do 23...	5.15 p.m.	.....	do .....	Wm. McClafferty.....	J. Wall .....	7
do 24...	6.40 a.m.	36	Accommodation	B. Walker .....	Geo. Morrison .....	75
do 25...	10.20 a.m.	.....	Special .....	Geo. Logan .....	B. Cooke .....	133
do 28...	7.20 a.m.	.....	do .....	W. M. Thomson. ....	E. Rushton .....	43
June 1...	7.30 p.m.	10	Express .....	John McFadgen.....	R. Carr .....	68
do 14...	2.40.....	18	Accommodation	C. J. Rhodes .....	H. Smith .. ..	39
do 24..	6.02 p.m.	2	Express .....	D. Rutherford .....	Jas. Stockall .....	57

## RAILWAY.

Canada, on the Line of the Intercolonial Railway, &c.—*Continued.*

Place of Accident.	Name of Person Injured.	Whether Passenger or Employé.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Stellarton .....	Alex. Calder...	do ...	In getting off car fell, and four cars passed over him.	Fatal.....	Accidental.
Truro .....	Chas. Hall .....	do ...	Fell between cars while pulling pin.	do .....	do
Windsor Junction,	John Thomas...	do ...	While coupling cars.....	Finger badly jammed.	
Stellarton .....	J. Campbell...	do ...	do .....	Lost his hand.	
Campbell's Sid- ing.	B. Peterson ....	do ...	do .....	Thumb cr'shd	
Rivière-du-Loup	F. Beaulieu .....	do ...	While running bell cord.	Two fingers badly hurt.	
Elmsdale .....	H. McIntosh....	do ...	Attempting to cross in front of engine.	Fatal .....	do
Weldford.....	Wm. Bovard....	do ...	While coupling cars ...	Squeezed about hips.	
St. John.....	Jas. McDade....	Neither...	Attempting to cross track in front of engine.	Fatal.....	do
Near Four Mile House.	Newton Hopper	Employé..	Fell off box car .....	Hand, arm and ankle injured badly.	
Near Brookfield..	Lowther Ruth- erford.	Neither ...	Attempting to cross track with horse and waggon in front of engine.	Fatal.....	do

## PRINCE EDWARD ISLAND RAILWAY.

SUPERINTENDENT'S OFFICE,  
CHARLOTTETOWN, 2nd October, 1883.

SIR,—I have the honor to submit the following Report of the operations of the Prince Edward Island Railway for the year ending 30th June 1883, and to transmit herewith the accounts for the same period, comprising :—

No.	1. Capital Accounts.	
"	2. Revenue Accounts.	
"	3. Locomotive Power.	(Abstract No. 1.)
"	4. Car Expenses.	( " " 2.)
"	5. Maintenance of Way and Works.	( " " 3.)
"	6. Station Expenses.	( " " 4.)
"	7. General Charges.	( " " 5.)
"	8. Monthly Statement of Earnings.	
"	9. Statement of General Stores Account.	
"	10. General Balance.	
"	11. Comparative Statement of Averages.	

I also enclose the report accompanied by statements, of the Mechanical Superintendent and Storekeeper.

## CAPITAL ACCOUNT.

The total expenditure on Capital Account to 30th June, 1882, was.....	\$3,466,990 60
Add to which, the expenditure on Rolling Stock, being provided on Capital Account, for the year ending the 30th June 1883.....	56,702 02
Making a total expenditure on Capital Account to the 30th June, 1883, of.....	<u>\$ 3,523,692 62</u>

The rolling stock provided on Capital Account up to the 30th June, 1882, was :—

18 Engines.
14 First class passenger cars.
12 Second do do
2 Postal, smoking and express cars.
150 Box and stock cars.
100 Platform cars.
3 Conductors vans.
5 Snow ploughs.
6 Flangers.
1 Pay car.

And during the year ended 30th June last this stock has been increased by :—

2 Engines.
25 Box cars.
25 Platform cars.

Two Snow ploughs and two first class cars, of equal sitting capacity to the standard gauge cars, and three second class passenger cars were nearly ready for service at the close of the year. The whole of this additional car stock has been built in the work shops of the railway in Charlottetown, and I state that I believe no stronger or more serviceable cars, of their several classes, have been turned out of any shops in Canada, and the snow ploughs are strongly and well put together.

The engines were manufactured in Kingston, Ontario, and the Mechanical Superintendent, who is best able to judge, assures me they are first class machinery.

## REVENUE ACCOUNT.

Mr. Luther Archibald, the late Superintendent, in his report of last year, stated that the earnings were the largest in the history of the road. I am, however, happy to be able to report that the earnings are still larger for this year, 1882-83, which is certainly very encouraging.

The gross earnings for the year amounted to.....	\$146,170 42
Previous year.....	137,267 54
Increase.....	<u>\$ 8,902 88</u>

The earnings per mile of railway compare with the previous year as follows:—

1881-82.....	\$691 52
1882-83.....	736 37

An increase per mile of .. \$ 44 85

The length of road operated in each year was the same, viz. : 198½ miles. The passenger traffic has been fairly maintained, showing a slight falling off only.

## STATEMENT.

	Passengers carried.	Earnings.
1881-82.....	118,436	\$63,949 26
1882-83.....	117,162	63,319 55
Decrease.....	<u>1,274</u>	<u>\$ 629 71</u>

There is an increase both on the tonnage of freight carried, and in the earnings from this traffic.

	Tons of freight carried.	Earnings.
1881-82.....	48,315	\$64,776 28
1882-83.....	51,920	71,038 55
Increase .....	<u>3,605</u>	<u>\$ 6,262 27</u>

This increase in the tonnage of freight carried, rather indicates that the trade of Prince Edward Island is in a prosperous condition, and that the crops have been satisfactory.

The engine mileage compared with last year was—

1881-82 . . . . .	317,194
1882-83 . . . . .	313,760
Decrease . . . . .	<u>3,434</u>

The train mileage compared with last year was—

1881-82 . . . . .	253,185
1882-83 . . . . .	248,819
Decrease . . . . .	<u>4,366</u>

The car mileage compared with last year was—

1881-82	1,117,989
1882-83	1,237,103
Increase	119,114

The decrease in the engine and train mileage, and increase in the car mileage, goes to show that the engine power is more effective than in years previous, indicating as it does that they have hauled larger trains.

#### EXPENDITURE.

The operating expenses for the year amounted to \$252,808.41, which embraces a sum of \$9,941.45 paid in connection with the accident which occurred in the month of August, 1880, which latter amount forms no part of the actual cost of making the traffic of this year; it also embraces the cost of the erection of a new station at Miscouche, the providing of a number of additional sidings and the extension of several sidings and the purchase of land for snow fences, all of which are additions and improvements such as are not ordinarily charged to working expenses, but which, in this case, have entered into that account.

#### MAINTENANCE OF WAY AND WORKS.

The roadbed, permanent way, buildings and structures have received careful attention, and are in good condition; 113,423 sleepers have been put in the track during the year, and new sidings have been laid at—

	Feet.
Northam.....	475
Starch Factory, Mount Stewart.....	75
Morell.....	250
	—800

And the following sidings were extended :—

Portage.....	254
Miscouche.....	169
Charlottetown.....	300
	—723
Total.....	1,523

Making 148 sidings of an aggregate length of 14½ miles.

Twelve hundred and sixty-one car loads of ballast was distributed where most needed.

#### BRIDGES, CATTLE GUARDS, ETC.

The bridges received the necessary repairs and a standard floor system was put on the bridge at Milton.

Seven additional new sets of cattle guards were built, and twenty-eight sets were rebuilt, and the remainder received the necessary ordinary repairs.

A new road was graded through the Souris Station yard for a distance of 1,650 feet.

#### BUILDINGS.

A combined passenger and freight station was built at Miscouche.

The flag station at New Zealand was moved and rebuilt.

The flag station at Mill River was moved, rebuilt, and a platform laid.

The flag station at Richmond was moved and a new platform built.

New platforms were built at Barbara Weit, Loyalist, Milton and Royalty Junction.

Hunter River Station was re-shingled.

Summerside, Georgetown and Tignish engine houses were partially re-shingled. O'Leary and Summerside coal sheds received very extensive repairs.

A substantial crib foundation was built under the coal shed at Charlottetown.

The station platform at Charlottetown was lengthened.

All the rest of the buildings were overhauled and the necessary light repairs done thereon.

#### FENCING.

Fifteen thousand two hundred and eighty-six feet of additional new snow-fencing was built.

A large quantity of fencing was rebuilt, of which 36,575 feet were of barbed wire, 1,137 feet of poles, and 2,640 feet of boards, in addition to which the necessary repairs have been made on the fencing generally.

#### WATER SUPPLY.

The Haggas water system continues to work most satisfactorily, and is well suited to an isolated road such as this; the cost of repairs to the water service are much less than upon the old elevated system.

The water supply in the round house at Charlottetown having been found, from its brackish nature, to be very unsuitable for the locomotives, a large well has been put down a short distance north of the round house, and a powerful pump set on it. The water is of excellent quality and in abundance, and by this powerful engine it is driven into the tank, and by attaching hose to the pump the force is sufficient to wash all the engines, and also to throw a stream over the adjacent building in case of fire.

At County Line a Haggas water service has been set up during the year which will be of great service through the winter season.

#### ROLLING STOCK.

Two new engines have been purchased of the Canadian Engine and Machine Company of Kingston and charged to working expenses. They replace a similar number condemned and knocked off the list. The Mechanical Superintendent reports them as good, strong well built machines, and they will no doubt be a great acquisition to the road. The engine and car stock has received the necessary repairs to maintain it in an efficient state, and with the exception of one engine which is condemned, and to replace which arrangements are being made to purchase a new one at the cost of working expenses, and twenty-six cars which are about to be re-built, the rolling stock is in good serviceable condition.

The nett results of the working of the road are not so satisfactory as could be desired, but I trust in future years to be able to make a better exhibit.

#### STORES.

The purchase of stores during the year amounted to \$109,780.09, which includes \$19,842.11 for new steel rails and fastenings.

The value of stores on hand at 30th June, 1883, was:—

General Stores.....	\$43,258 83
Coal.....	4,083 09
Rails and Fastenings.....	24,762 97
	<hr/>
	\$72,104 89

The stores have for the most part been purchased by tender and contracts as has been the practice in past years.

On the 1st July, 1882, Mr. W. T. Huggan, from the Accountant's office of the Intercolonial Railway was appointed to the position of Accountant made vacant by Mr. Thomas Williams' promotion to the Treasurership of the Intercolonial Railway.

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I assumed the duties of Superintendent of the Road early in May last, upon Mr. Archibald's retirement from the service to take a position on the Canadian Pacific Railway.

I submit herewith a comparative statement for 1881-82 and 1882-83 of the quantities of the various classes of freight carried, and of the earnings from this source.

A casualty sheet is also attached.

I have the honor to be, Sir,  
Your obedient servant,

JAMES COLEMAN,  
*Superintendent.*

COLLINGWOOD SCHREIBER, Esq.,  
Chief Engineer and General Manager Government Railways,  
Ottawa.

No. 1.—PRINCE EDWARD ISLAND RAILWAY.

CR.

CAPITAL ACCOUNT.

DR.

1882.	1882.	\$ cts.	1882.	\$ cts.
June 30.... To cost of Road and Equipment to date .....	June 30....	3,466,990 60	By Dominion of Canada .....	3,466,990 60
1883.	1883.			
June 30.... To Expenditure, year ended 30th June, 1883, on Rolling Stock.....	June 30....	56,702 02	By Dominion of Canada .....	56,702 02
		3,523,692 62		3,523,692 62

W. T. HUGGAN,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1883.

No. 2.—PRINCE EDWARD ISLAND RAILWAY.  
REVENUE ACCOUNT for Year ended 30th June, 1883

Previous Year.	Expenditure.	Year ended 30th June, 1883.	Previous Year.	Earnings.	Year ended 30th June, 1883.
\$ cts.			\$ cts.		
66,996 33	Locomotive Power	86,509 95	63,949 26	Passenger Traffic.....	63,319 55
30,844 32	Car Expenses	31,584 97	64,776 28	Freight Traffic.....	71,038 55
92,735 10	Maintenance Way and Works do	81,862 92	8,542 00	Mails and Sundries.....	11,812 32
23,560 16	Station Expenses do	23,899 79		Total Receipts.....	146,170 42
14,124 06	General Charges do	22,950 78	137,267 54	Balance .....	106,637 99
			90,992 43		
228,259 97		252,808 41	228,259 97		252,808 41

W. T. HUGGAN,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1883.

## No 3.—PRINCE EDWARD ISLAND RAILWAY.

## LOCOMOTIVE POWER. (Abstract No. 1.)

Previous Year.	Details.	Year ended 30th June, 1883.
\$ cts.		\$ cts.
1,711 36	Mechanical Superintendent's salary, Clerks, Office and Travelling expenses	1,364 09
13,523 91	Wages of Drivers, Firemen and Cleaners.....	14,789 57
17,918 77	Fuel.....	17,650 59
1,717 56	Oil, tallow, waste and small stores.....	1,713 22
26,562 01	Repairs to engines, tenders and engine tools.....	47,248 17
3,959 19	Water, including pump and tank repairs.....	1,332 57
1,604 53	Miscellaneous.....	2,411 74
66,996 33	Totals.....	86,509 95

W T. HUGGAN,

*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1883.

## No. 4.—PRINCE EDWARD ISLAND RAILWAY.

## CAR EXPENSES. (Abstract No. 2.)

Previous Year.	Details.	Year ended 30th June, 1883.
\$ cts.		\$ cts.
10,984 41	Repairs to passenger cars.....	12,047 33
506 05	do postal and baggage cars.....	755 53
5,382 25	do freight cars and vans.....	4,629 96
10,221 25	Wages of Conductors, Train Baggage-men and Brakesmen.....	11,227 56
850 74	Oil and waste for packing.....	794 13
2,578 48	Small stores and fuel.....	1,984 87
321 14	Miscellaneous.....	145 59
30,844 32	Totals.....	31,584 97

W. T. HUGGAN,

*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1883.

No. 5.—PRINCE EDWARD ISLAND RAILWAY.  
 MAINTENANCE OF WAY AND WORKS.—(Abstract No.3.)

Previous Year.	Details.	Year ended 30th June, 1883.
\$ cts.		\$ cts.
350 43	Engineer's salary, Clerks, Office and Travelling expenses.....	316 64
31,940 98	Wages in repairing road way, fences and semaphores.....	39,661 14
1,249 64	Rails, chairs and spikes.....	5,480 55
20,771 00	Sleepers.....	21,644 30
7,933 14	Timber and lumber for repairs to bridge, cattle guards, fences, &c.....	7,786 17
519 19	Repairs to wharves.....	1,470 41
11,724 68	do buildings.....	7,126 86
3,623 86	do snow-ploughs, flangers and tools.....	2,953 01
14,622 18	Clearing ice and snow.....	1,423 84
92,735 10	Totals.....	87,862 92

W. T. HUGGAN,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1883.

No. 6.—PRINCE EDWARD ISLAND RAILWAY.  
 STATION EXPENSES.—(Abstract No. 4.)

Previous Year.	Details.	Year ended 30th June, 1883.
\$ cts.		\$ cts.
17,445 81	Salaries and wages of Station Masters, Agents, Clerks, Telegraph Operators, Station Baggage-men, Yardmasters, Switchmen, Watchmen and Labourers.....	18,117 37
6,114 35	Fuel, oil, light, stationery, tickets and other incidental expenses.....	5,782 42
.....	Miscellaneous.....	.....
23,560 16		23,899 79

W. T. HUGGAN,  
*Accountant and Auditor.*

CHARLOTTETOWN, 30th June, 1883.

No. 7.—PRINCE EDWARD ISLAND RAILWAY.  
GENERAL CHARGES.—(Abstract No. 5.)

Previous Year.	Details.	Year ended 30th June, 1883.
\$ cts.		\$ cts.
5,119 92	Superintendent's and Train Despatcher's salaries, Clerks, Office and travelling expenses. ....	5,642 10
5,489 03	Accountant and Auditor's, Paymasters and Cashier's salaries, Clerks, Office and travelling expenses.....	5,529 14
289 60	Advertising .....	395 58
1,888 81	Damades to men, animals and goods.....	10,394 94
444 94	Telegraph men (not including pay to Operators).....	615 67
891 76	Miscellaneous .....	373 45
14,124 06	Totals.....	22,950 78

W. T. HUGGAN,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1883.

No. 8.—PRINCE EDWARD ISLAND RAILWAY.  
MONTHLY STATEMENT OF EARNINGS.

Months.	Passenger Traffic.	Freight Traffic.	Mails and Sundries.	Total Receipts.
1882.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
July.....	8,073 93	5,207 90	702 00	13,983 83
August.....	7,760 07	4,789 84	702 00	13,251 91
September.....	5,603 90	4,873 15	705 00	11,182 05
October.....	7,901 01	7,824 09	710 10	16,435 20
November.....	6,076 08	9,937 57	704 09	16,717 65
December.....	4,523 49	7,268 12	707 00	12,498 61
1883.				
January.....	3,130 33	3,085 41	731 00	6,946 74
February.....	2,089 32	2,582 63	715 22	5,387 17
March.....	2,704 56	4,146 39	711 00	7,561 95
April.....	5,216 10	6,807 44	4,014 00	16,037 54
May.....	5,304 43	8,756 56	702 00	14,762 99
June.....	4,936 33	5,759 45	709 00	11,404 78
Totals.....	63,319 55	71,038 55	11,812 32	146,170 42

W. T. HUGGAN,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1883.

No. 9.—PRINCE EDWARD ISLAND RAILWAY.

STATEMENT of General Stores Account, Year ended 30th June, 1883.

1882.		DR.	\$	cts.	\$	cts.
June	30...	To balance brought forward.....			59,450	53
1883.						
June	30...	To purchases during the year, including rails.....	109,780	09		
		Charges from other Departments.....	14,666	70		
		Pay-rolls.....	3,584	08		
					128,030	87
1883.		CR.			187,481	40
June	30...	By Issues during the year.....			115,376	51
		Balance. { Ordinary Stores.....	\$43,258	83		
		{ Fuel.....	4,083	09		
		{ Rails and fastenings on hand....	24,762	97		
					72,104	89

W. T. HUGGAN,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1883.

No. 10.—PRINCE EDWARD ISLAND RAILWAY.

GENERAL BALANCE.

DR.		GENERAL BALANCE.		CR.	
	\$	cts.		\$	cts.
General Stores.....	72,104	89	Dominion Account.....	76,231	87
Cash.....	1,187	17	Accident Insurance.....	3,115	42
Stations.....	495	65			
Militia Department.....	65	21			
Post Office Department.....	5,328	00			
Marine and Fisheries Department...	10	83			
Suspense Account.....	155	54			
Total.....	79,347	29	Total.....	79,347	29

W. T. HUGGAN,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1883.

## No. 11.—PRINCE EDWARD ISLAND RAILWAY.

COMPARATIVE STATEMENT of Averages, for Year ended 30th June, 1883.

Details.	1883.	1882.
Mileage of railway open.....	198½	198½
Engine mileage.....	313,760	317,194
Train do.....	284,819	253,185
Car do.....	1,237,103	1,117,989
Receipts per engine mile..... Cents	46·59	43·27
do mile of railway..... \$	736·37	691·52
Percentage of passenger earnings to gross receipts.....	43·32	46·58
do freight do do.....	48·60	47·20
do other do do.....	8·08	6·22
Expenses per engine mile:—		
Driver's Firemen's and Cleaners' wages.....	4·71	4·26
Fuel.....	5·63	5·65
Oil, tallow, waste and small stores.....	·54	·54
Repairs to engines.....	15·06	8·37
Water and tank repairs.....	·42	1·25
Miscellaneous.....	·77	·51
Total.....	27·13	20·58
Mechanical Superintendent's salary, office and travelling expenses.....	·44	·54
	Cents	
	27·57	21·12
Locomotive power per engine mile.....	27·57	21·12
Car expenses do.....	10·07	9·72
Maintenance way and works, per engine mile.....	28·00	29·24
Station expenses do.....	7·62	7·43
General charges do.....	7·31	4·45
Total..... Cents.	80·57	71·96
Locomotive power, per train mile.....	34·78	26·46
Car expenses do.....	12·69	12·18
Maintenance way and works, per train mile.....	35·31	36·63
Station expenses do.....	9·60	9·31
General charges do.....	9·22	5·85
Total..... Cents	101·60	90·16
Working expenses per mile of railway..... \$	1,273 60	1,144 89

CHARLOTTETOWN, P.E.I., 30th June, 1883.

W. T. HUGGAN,

*Accountant and Auditor.*

## PRINCE EDWARD ISLAND RAILWAY.

DESCRIPTIVE STATEMENT of Freight Earnings for Year ended  
30th June, 1883.

Description of Freight.	Quantities.		Tons.		Amounts.	
	1882.	1883.	1882.	1883.	1882.	1883.
					\$ cts	\$ cts.
Oats..... Bush.	473,859	350,684	8,056	5,961	10,091 54	7,078 36
Wheat and other Grain..... "	4,177	10,699	123	321	205 97	545 61
Potatoes and Roots..... "	156,664	170,587	4,709	5,115	4,382 72	6,657 66
Flour..... Bbls.	24,819	34,540	2,434	3,456	3,954 46	5,656 85
Mackerel..... "	9,943	7,192	1,614	1,079	1,770 33	1,059 59
Herring..... "	1,437	3,844	215	576	323 21	942 02
Cod and other Fish..... "			165	122	306 89	329 94
Canned Fish..... Cases.	21,480	23,934	788	838	1,596 86	1,499 65
Oysters..... Bbls.	1,375	2,441	138	244	178 06	301 49
Fish Barrels..... No.	8,557	5,813	499	334	459 19	314 80
Timber, hewn and unhewn..... C. ft.	115,159	162,039	2,919	4,277	1,905 90	3,201 13
Lumber, sawn..... S. ft	3,319,675	2,655,248	4,270	3,495	3,111 95	2,981 86
Shingles..... M.	6,631	9,041	994	1,355	1,020 86	1,335 27
Cordwood and Tanbark..... Cords	2,166	3,159	3,997	5,969	2,252 15	3,338 06
Shingle Timber, &c..... Cars.	55	54	534	538	481 95	442 88
Coal..... "	133	147	1,205	1,355	689 09	764 58
Lime..... Bbls.	1,734	2,027	190	216	246 24	276 95
Limestone..... Cars.	165	113	1,441	1,074	435 84	343 54
Brick and Building Stone..... "	31	34	274	315	157 65	178 90
Mussel Mud..... "	124	156	1,172	1,564	393 62	521 96
Salt.....			804	1,038	837 60	1,261 50
Live Stock..... No.	4,716	4,245	789	1,012	1,718 33	2,055 60
Pressed Hay.....			537	24	548 02	32 09
Fresh Beef.....			70	136	167 69	328 76
Pork, in carcass.....			288	390	820 45	1,127 46
do in barrels..... Bbls.	1,070	2,062	159	309	237 33	397 33
Butter.....			39	20	127 16	76 49
Eggs..... Pkgs.	19,609	24,140	710	861	1,772 58	2,095 88
Mercandise.....			9,182	9,926	23,669 54	24,448 73
Wharfage, Storage, &c.....					913 10	1,443 61
Total.....			48,315	51,920	64,776 28	71,038 55

## STATEMENT OF PASSENGER TRAFFIC.

	1882.	1883.
Total Number carried.....	118,436	117,162
do Receipts.....	\$63,949 26	\$63,319 55
Receipt for each Passenger.....	53·99	54·04

## PRINCE EDWARD ISLAND RAILWAY.

MECHANICAL SUPERINTENDENT'S OFFICE,  
CHARLOTTETOWN, 29th September, 1883.

SIR,—I beg to submit the following statement showing the operations of the Mechanical Department of this Railway for the fiscal year ending 30th June, 1883.

A.—Monthly statement of cost of locomotive power.

B.—Statement of the performance and consumption of locomotives.

C.—Monthly statement of car mileage.

D.—Statement showing the number of locomotives, cars and snow ploughs.

E.—Comparative statement of the expenses of the Mechanical Department for the years 1881-82 and 1882-83.

During the year closed on the 30th June last, the rolling stock has been increased on Capital Account by two locomotives, twenty-five box cars, twenty-five platform cars of ten tons capacity, and two snow ploughs. The stock is further being increased on Capital Account by two first class passenger cars capable of seating sixty persons each, and three second class passenger cars, which were nearly completed at the close of the year, and have since been finished.

There were also purchased during the year to maintain the stock, two new locomotives at a cost of \$24,198.22, which sum is embraced in the working expenses; these two new locomotives are to replace two old locomotives condemned and struck off the list.

I am pleased to be able to state that the rolling stock has been well maintained, and (with the exception of the locomotives and cars which are set aside for renewal during the current year, 1883-84), is in good condition.

The four new locomotives referred to, were manufactured by the Canadian Engine and Machinery Company, of Kingston, and are, I consider, well built, serviceable machines.

The passenger and freight cars manufactured under my superintendence and direction in the railway work shops at Charlottetown, are I am satisfied equal to any similar class of rolling stock built in Canada.

The stock of locomotives, cars and snow-ploughs, provided on Capital Account, consists of:

- 20 Locomotives.
- 14 First-class passenger cars.
- 12 Second-class " "
- 2 Postal, baggage and express cars.
- 175 Box and stock cars.
- 125 Platform cars.
- 3 Conductors vans.
- 1 Pay car.
- 7 Snow-ploughs.
- 6 Flangers.

And as the locomotives which have been added to the original stock on the road when first built, and those provided from time to time to maintain their stock, are much more powerful than the original stock provided, I have no hesitation in saying that the locomotive power is much more efficient and effective than ever before.

The new cars built, and those re-built to maintain the stock, are much heavier, stronger and of greater capacity than the original stock, and in consequence I am satisfied will be less costly to maintain, and at the same time they will be found much more serviceable.

The water supply in the engine house at Charlottetown has been a source of great trouble, owing to its brackishness, and it was deemed expedient to endeavour

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to procure more suitable water for the service. Accordingly a large well was sunk a short distance north of the engine house, which supplies abundance of beautiful clear water, which is forced into the engine house by a powerful pump, erected for the purpose, by attaching a coil of hose to which, water can be thrown upon any part of the building, so that it can not only be used for supplying the engines, washing them out, &c., but also as fire protection. The cost of this work has been charged to the working expenses.

I have the honor to be, Sir,  
Your obedient servant,

JOSEPH UNSWORTH,  
*Mechanical Superintendent and General Store-Keeper.*

JAMES COLEMAN, Esq.,  
Superintendent Prince Edward Island Railway,  
Charlottetown.

PRINCE EDWARD ISLAND RAILWAY.

MECHANICAL DEPARTMENT.

A — STATEMENT of the cost of Locomotive Power for the Year ended 30th June, 1883.

Months.	Cost of										Average Cost per Mile run.				
	Enginemen's Wages, \$	Fuel, \$	Oil, Tallow, &c. \$	Repairs, \$	Water, Tank and Pump Repairs, \$	Miscellaneous, including Expenses of Office and Engine-houses, \$	Total, \$	Enginemen, Cts.	Fuel, Cts.	Oil, Tallow, &c. Cts.	Repairs, Cts.	Water, Cts.	Miscellaneous, Cts.	Total, Cts.	
1882—July.....	29,887	1,401 44	165 55	2,158 12	119 74	232 77	5,309 03	4.12	4.69	0.56	7.22	0.40	0.77	17.76	
August.....	31,773	1,639 54	150 09	2,560 76	46 15	171 23	5,876 40	4.11	5.16	0.47	8.06	0.15	0.51	18.49	
September.....	30,261	1,287 20	169 84	2,216 82	91 24	187 38	5,185 64	4.11	4.19	0.56	7.36	0.30	0.61	17.13	
October.....	31,827	1,885 88	202 24	1,573 06	262 65	441 68	5,867 31	4.06	5.96	0.63	4.94	0.82	1.39	17.80	
November.....	32,798	1,416 56	2,035 30	13,570 33	148 96	512 75	17,934 26	4.32	6.20	0.76	41.38	0.46	1.56	54.68	
December.....	22,763	1,195 74	212 47	2,735 31	91 73	634 00	6,372 47	5.25	6.60	0.93	13.01	0.41	2.79	27.99	
1883—January.....	21,121	1,390 79	194 47	1,403 30	96 32	332 18	17,819 08	6.58	6.59	0.92	66.77	0.46	1.62	83.94	
February.....	18,179	1,153 07	75 74	1,718 14	12 06	405 02	4,648 26	6.34	7.05	0.41	9.45	0.07	2.23	25.56	
March.....	21,372	1,149 04	66 78	2,069 97	41 87	270 69	5,033 05	5.38	6.71	0.31	6.96	0.19	1.26	23.51	
April.....	19,283	1,049 61	32 46	1,445 27	48 44	171 45	3,575 19	5.44	5.24	0.17	7.49	0.25	0.89	19.48	
May.....	26,030	1,129 77	29 37	1,381 42	51 54	287 15	4,222 93	4.52	5.49	0.11	5.52	0.20	1.03	16.87	
June.....	29,466	1,429 99	163 85	1,705 67	320 87	149 53	4,884 33	4.17	4.80	0.55	5.77	1.08	0.50	16.82	
Totals.....	313,760	14,789 57	1,713 22	47,248 17	1,332 57	3,775 83	86,509 95	4.71	5.63	0.54	15.06	0.43	1.20	27.57	

(Signed)

J. UNSWORTH,  
Mechanical Superintendent and Storekeeper.

## PRINCE EDWARD

## MECHANICAL

## B.—STATEMENT of the Performance and Consumption

Months.	Hours in Steam.	Train Mileage.				Miles run by Engines.			
		Passenger.	Freight and Mixed.	Ballasting.	Piloting.	With Train.	Light.	Shunting.	Total.
1882—July.....	3,585	10,941	13,202	1,328	.....	25,471	174	5,785	31,430
August.....	4,017	11,967	13,716	3,095	.....	28,778	30	6,326	35,134
September.....	3,828	11,108	13,148	2,590	55	26,901	5	6,293	33,199
October.....	4,065	11,076	14,019	1,911	44	27,050	489	6,669	34,208
November.....	4,375	10,429	14,467	1,127	1,056	27,079	208	6,789	34,076
December.....	3,015	2,166	14,289	.....	795	17,250	128	5,385	22,763
1883—January.....	2,724	938	13,913	.....	1,840	16,691	9	4,421	21,121
February.....	2,395	64	12,413	.....	1,772	14,249	124	3,806	18,179
March.....	2,912	.....	14,203	.....	2,723	16,926	240	4,206	21,372
April.....	2,569	2,217	12,602	.....	246	15,065	68	4,150	19,283
May.....	3,295	5,233	13,993	338	98	19,662	46	5,715	25,423
June.....	3,302	11,086	13,000	.....	.....	24,086	92	5,288	29,466
Totals.....	40,082	77,225	162,965	10,389	8,629	259,208	1,613	64,833	325,654

## ISLAND RAILWAY.

## DEPARTMENT.

of Locomotives, for the Year ended 30th June, 1883.

Total Mileage.		*Average of Cars per mile run with Train.	Average Mileage.		Consumption.				Consumption for 100 Miles run by Engines.			
Cars.	Snow Ploughs.		Miles to one hour in steam	Of Cars to one of Engine.	Bushels of Coal	Pints of Oil.	Pounds of Tal-low.	Pounds of Waste.	Bushels of Coal.	Pints of Oils.	Pounds of Tal-low.	Pounds of Waste.
128,446	.....	5·04	8·76	4·08	13,157	1,188	1,033	401	41·86	3·78	3·29	1·27
152,614	.....	5·30	8·74	4·34	15,827	1,096	970	430	46·04	3·11	2·76	1·22
137,252	.....	5·11	8·67	4·13	12,737	1,098	880	402	38·36	3·30	2·65	1·21
149,546	.....	6·27	8·42	5·37	15,158	1,248	994	437	44·31	3·65	2·90	1·27
139,520	297	5·36	7·79	4·09	15,751	1,420	1,047	495	46·22	4·16	3·07	1·45
97,996	1,460	5·96	7·55	4·30	12,150	1,337	800	377	53·37	5·87	3·51	1·65
68,009	5,913	4·58	7·75	3·22	10,818	1,070	655	395	51·21	5·06	3·10	1·87
53,700	10,762	4·70	7·59	3·22	9,632	810	568	311	52·98	4·62	3·12	1·71
73,897	9,094	5·20	7·34	3·45	11,138	918	706	367	52·11	4·30	3·30	1·71
86,621	185	5·84	7·50	4·49	8,677	696	594	317	44·99	3·60	3·08	1·64
113,872	.....	5·82	7·72	4·48	10,604	870	750	390	41·71	3·42	2·95	1·53
123,234	.....	5·11	8·62	4·18	11,065	936	794	406	37·55	3·17	2·69	1·37
1,329,707	27,711	5·30	8·12	4·08	146,714	12,717	9,791	4,728	45·05	3·90	3·00	1·45

\*Deduct piloting from train mileage in making these averages.

J. UNSWORTH,

*Mechanical Superintendent and Storekeeper.*

## PRINCE EDWARD ISLAND RAILWAY.

## MECHANICAL DEPARTMENT.

## C.—MONTHLY STATEMENT of Car Mileage for the Year ended 30th June, 1883.

Months.	1st Class.	2nd Class.	Postal, Baggage and Express.	Box, Stock and Hay.	Platform.	Total.
	\$	\$	\$	\$	\$	\$
1882—July.....	26,742	30,871	5,455	34,026	31,352	128,446
August.....	28,891	34,984	5,580	33,300	46,859	152,614
September.....	24,620	28,643	7,065	37,317	39,607	137,252
October.....	28,652	30,883	6,606	51,484	31,921	149,546
November.....	23,931	30,483	5,853	58,722	20,531	139,520
December.....	15,643	19,071	4,520	44,624	14,138	97,996
1883—January.....	14,796	14,056	5,001	22,126	12,030	68,009
February.....	12,418	14,043	967	17,900	13,372	58,700
March.....	13,906	15,161	2,211	21,914	20,805	73,897
April.....	14,868	13,807	8,476	37,008	12,462	86,621
May.....	19,798	20,341	8,095	48,872	16,766	113,872
June.....	24,659	25,643	7,649	42,814	22,469	123,234
Totals.....	248,924	277,986	67,478	453,007	282,312	1,329,707
Less Ballasting.....	.....	12,033	.....	879	79,692	92,604
Balance.....	248,924	265,953	67,478	452,128	202,610	1,237,103

J. UNSWORTH,

*Mechanical Superintendent and Stor. keeper.*

## PRINCE EDWARD ISLAND RAILWAY.

## MECHANICAL DEPARTMENT.

D.—STATEMENT showing the number of Locomotives and the various classes of Cars on hand, 30th June, 1882 and 1883.

Particulars.	Locomotives.	Classification.										
		1st Class.	2nd Class.	Postal Baggage & Express.	Box and Stock.	Platform.	Van.	Pay Car.	Total.	Snow Ploughs.	Flangers.	Total.
On hand 30th June, 1882, serviceable.....	15	14	12	2	142	89	3	1	263	5	6	11
do do condemned.....	3	.....	.....	.....	8	11	.....	.....	19	.....	.....	.....
Total Stock 30th June, 1882.....	18	14	12	2	150	100	3	1	282	5	6	11
Purchased and charged to Capital.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
do do Working Expenses.....	*2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Built at Charlottetown Railway Works and charged to Capital.....	.....	.....	.....	.....	25	25	.....	.....	50	2	.....	2
Total Stock.....	20	14	12	2	175	125	3	1	332	7	6	13
Condemned on hand 30th June, 1882 .....	1	.....	.....	.....	8	11	.....	.....	19	.....	.....	.....
do during the year.....	.....	.....	.....	.....	5	2	.....	.....	7	.....	.....	.....
Add serviceable and repairing.....	19	14	12	2	162	112	3	1	306	.....	.....	.....
Total Stock 30th June, 1883.....	20	14	12	2	175	125	3	1	332	7	6	13

\* The two Locomotives purchased and charged to working expenses, replace two of those condemned.

J. UNSWORTH,  
*Mechanical Superintendent.*

## PRINCE EDWARD ISLAND RAILWAY.

## MECHANICAL DEPARTMENT.

E.—COMPARATIVE STATEMENT of the Expenses of the Mechanical Department, for the Years ended 30th June, 1882 and 1883.

	1882.	1883.
The miles run by trains were.....	253,185	248,819
do engines were.....	317,194	313,760
do cars were.....	1,117,989	1,237,103
do snow ploughs were.....	30,827	27,711
	\$ cts.	\$ cts.
The cost of locomotive power was.....	66,996 33	86,509 95
do repairs to cars was.....	16,872 71	17,432 82
do labor, oil and waste for packing.....	850 74	794 13
do repairs to passenger cars was.....	10,984 41	12,047 43
do do postal, express and baggage cars was.....	506 05	755 53
do do freight cars and vans was.....	5,382 25	4,629 96
The cost of locomotive power per 100 miles run by trains was.....	26 46	34 76
do do do engines was.....	21 12	27 57
do do do cars was.....	5 99	6 99
The cost of repairs to cars per 100 miles run by trains was.....	6 66	7 00
do do do engines was.....	5 31	5 55
do do do cars was.....	1 50	1 40
The cost of labor, oil and waste for packing per 100 miles run by trains was...	0 33	0 31
do do do engines was.....	0 25	0 25
do do do cars was.....	0 08	0 06
Repairs to passenger cars per 100 miles run by trains.....	4 33	4 84
do postal, express and baggage cars.....	0 20	0 30
do freight cars and vans.....	2 12	1 86

J. UNSWORTH,

*Mechanical Superintendent and Storekeeper.*

## PRINCE EDWARD ISLAND RAILWAY.

RETURN of Accidents and Casualties which have occurred on the Prince Edward Island Railway, during the Year ended 30th June, 1883.

Date.	Time of Night or Day.	No. of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.	Place of Accident.	Name of Persons Injured.	Whether Passenger or Employé.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
1883.												
July 17	7.10 a.m.	1	Express....	D. H. Margoun	M. D. Armour	...	Winsloe Station	John Robertson and wife, Mr. and Mrs. Ruel, Mme St. Elizia.	Passeng'rs	Axle of forward coach broke close up to the wheel, throwing two coaches off track.	Contusions and slight cuts.	
Nov. 24.	6.30 a.m.	5	Mixed .....	J. no. Thompson	W. Watson	....	N'r County Line	Ed. Mulligan .....	Neither....	Lying on track under influence of liquor. Run over.	Shoulder and 3 ribs broken, scalp wound, & injured internally.	

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WINDSOR BRANCH RAILWAY.

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RAILWAY OFFICE,  
MONCTON, N. B., 12th October, 1883.

SIR,—I have the honor to transmit the following statements showing the results of the working of the Windsor Branch Railway for the year which ended 30th June, 1883

- No. 1.—Revenue Account.  
No. 2.—Maintenance of Way and Works.  
No. 3.—General Balance.  
No. 4.—Statement of Monthly Earnings.

I also send you the report of Chief Engineer on the condition of the permanent way and works.

This line, thirty two miles in length, was operated during the year by the Windsor and Annapolis Railway Company on the same terms as last year, the Company being allowed to retain two-thirds of the gross earnings, the balance one-third being paid over to the Government, the latter maintaining the line.

The gross earnings for the year amounted to.....	\$24,113 89
The expenditure for maintenance of way and works was.	23,103 93

The nett earnings were... ..	\$1,009 96
------------------------------	------------

The permanent way and all the works belonging to this railway have been maintained in good working order.

A quantity of new steel rails were laid, and a large number of new sleepers were put in the track.

A number of sidings were extended and improved.

The necessary repairs were made to buildings, bridges and wharves.

The fences along the line received extensive repairs.

The gross earnings of gain show an increase over the previous year.

I have the honor to be, Sir,

Your obedient servant,

D. POTTINGER,  
*Chief Superintendent.*

COLLINGWOOD SCHREIBER, Esq.

Chief Engineer and General Manager Government Railways,  
Ottawa.

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No. 1.—WINDSOR BRANCH RAILWAY.

REVENUE ACCOUNT, year ending 30th June, 1883.

Previous Year.	Expenditure.	Year ending 30th June, 1883.	Previous Year.	Receipts—Earnings.	Amount, Year ending 30th June, 1883.
\$ cts.		\$ cts.	\$ cts.		\$ cts
10,934 89	Maintenance of Way and Works..... (Abstract No. 1.)	23,103 93	7,865 31	Passenger Traffic .....	8,019 81
			12,228 01	Freight Traffic .....	15,134 41
			959 87	Mails .....	959 87
10,118 30	Balance .....	1,009 96			
21,053 19		24,113 89	21,053 19		24,113 89

R. B. BOGGS,  
Acct. W. B. Ry.

MONCTON, N.B., 30th June, 1883.

No. 2.—WINDSOR BRANCH RAILWAY.

(ABSTRACT NO. 1.)—MAINTENANCE of Ways and Works.

Previous Year.	Particulars.	Year ending 30th June, 1883.
\$ cts.		\$ cts.
5,592 99	Repairs of track.....	5,879 63
397 00	Rails and fastenings.....	3,095 63
2,834 03	Sleepers.....	4,217 31
12 90	Switch locks.....	23 50
678 12	Bridges.....	2,393 91
15 42	Signals.....	18 52
357 71	Culverts and cattle guards.....	122 57
242 55	Buildings and platforms.....	2,361 70
439 05	Fences.....	1,332 96
8 05	Hand cars and trollies.....	94 83
919 50	Removing snow and ice.....	414 12
235 49	Tools and repairs.....	365 74
0 00	Wharf at Windsor.....	9 40
1,104 63	Accountant's office and expenses.....	1,268 44
232 11	Miscellaneous.....	1,505 65
13,009 55		
2,164 66	Less—Old Material Account deducted.....	
10,934 89		23,103 93

R. B. BOGGS,  
*Acct. W. B. Railway.*

MONCTON, N.B., 30th June, 1883.

No. 3.—WINDSOR BRANCH RAILWAY.

DR. GENERAL BALANCE. CR.

		\$ cts.		1883.		\$ cts.
1883.	Windsor and Annapolis			1883.	Intercolonial Railway.....	
June 30.	Railway.....	2,332 76		June 30.	Dominion Account.....	4,602 98
	Stores.....	2,368 26				98 04
		4,701 02				4,701 02

R. B. BOGGS,  
*Acct. W. B. Railway.*

MONCTON, N.B., 30th June, 1883.

## No. 4.—WINDSOR BRANCH RAILWAY.

## MONTHLY STATEMENT of Receipts—One-third Earnings.

Month.	Passengers.	Freights.	§ Mails.	Total.
1882.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
July.....	952 76	1,122 36	80 75	2,155 87
August.....	1,014 95	1,122 04	80 76	2,217 75
September.....	923 83	1,474 96	80 76	2,479 55
October.....	763 42	1,724 70	79 74	2,567 86
November.....	588 21	1,902 92	79 73	2,570 86
December.....	656 07	1,308 54	79 73	2,044 34
1883.				
January.....	440 69	870 19	79 73	1,390 61
February.....	368 28	768 20	79 73	1,216 21
March.....	484 01	1,211 04	79 74	1,774 79
April.....	533 75	1,347 75	79 66	1,961 16
May.....	557 18	1,218 42	79 67	1,855 27
June.....	736 66	1,063 29	79 67	1,879 62
Totals ....	8,019 81	15,134 41	959 67	24,113 89

R. B. BOGGS,  
Accountant, W. B. Railway.

MONCTON, N.B., 30th June, 1883.

CHIEF ENGINEER'S OFFICE,  
MONCTON, N.B., 1st September, 1883.

SIR,—I have the honor to submit the following Report on the maintenance of the Windsor Branch, for the year ending 30th June, 1883.

The mileage operated is the same as reported last year.

*Track.*

About one and a half miles (8,061 feet) of old iron was taken up and replaced with  $4\frac{1}{2}$  inch steel rails, weighing 57 lbs. to the lineal yard.

The siding to the Windsor cotton factory was extended.

Some alterations and extensions were made to the sidings at Windsor Junction

*Sleepers.*

During the year 14,006 sleepers were renewed as against 8,100 last year.

*Fencing.*

One mile of the old pole fence was renewed with the standard barbed wire fence in use on the main line.

Extensive and necessary repairs were made to the fencing over the whole line.

*Buildings.*

A new station and a freight house were erected at Windsor Junction for the joint use of the main line and branch.

The roofs of Mount Uniacke station and freight shed reshingled; the platform at this station was renewed.

Tool houses for the section men were erected at Stillwater and Ellershouse.

Necessary repairs were made to the planking and timbers of Windsor wharf.

*Bridges.*

The old floor of Jordan's River bridge was replaced with the improved standard floor in use on the bridges of the main line.

The masonry of piers has also been thoroughly overhauled and repointed.

A new and improved floor was also put on Big Bog bridge, and the masonry of abatments and piers repointed with cement.

Small repairs were made to the Sackville bridge.

*Culverts.*

Repairs were made to culverts at Three Mile Plains and Ellershouse.

An arch culvert near Newport was converted into a beam bridge (iron girders) of 18 feet span. There was only one foot of embankment over the crown of the arch, and it was found impossible to keep the arch stones in place.

The stone cattle guards at the crossing of the Windsor road at Three Mile Plains were rebuilt.

The track is in good running order.

I am, Sir,

Your obedient servant,

P. S. ARCHIBALD,

*Chief Engineer.*

D. POTTINGER, Esq.,

Chief Superintendent, Moncton, N.B.

## APPENDIX No. 5.

## No. 1.

DEPARTMENT OF RAILWAYS AND CANALS,  
SUPERINTENDING ENGINEER'S OFFICE,  
MONTREAL, 25th September, 1883.

SIR,—I have the honor to submit the Annual Report on the works under my charge, for the fiscal year 1882-1883, which ended on 30th of June last.

These works are the Lachine and Beauharnois Canals on the River St. Lawrence, the Chambly Canal and the St. Ours Lock and Dam on the Richelieu River.

Statements are annexed showing, the greatest and least depth of water on the mitre sills at the entrance locks of each canal and of the St. Ours Lock, for each month of the navigable season, and also the fines and damages collected.

## LACHINE CANAL.

This canal was closed by ice on the 1st of December, 1882, and re-opened for navigation on the 1st of May, 1883. It was unwatered for repairs for seven days, from 24th to 30th April, inclusive.

No interruption to the traffic occurred on this canal during the fiscal year. All works in connection with it were kept in good order.

From 1st July, 1882, until the close of the season, the traffic through this canal was about the average of previous years, but from the opening of navigation this spring until the end of the fiscal year, the trade was very brisk, so much so, that Lock No. 5 at Lachine was fully taxed, this being the only station on the canal where the new lock is not in use.

The new locks, Nos. 1 and 2, at the Montreal terminus, were opened to the trade on the 23th July, 1882, and new locks, Nos. 3 and 4, on 1st May, 1883.

Since the opening of navigation this spring, a large number of sea going steam and sailing vessels have entered this canal from the harbor and passed up to Basin No. 1 and Wellington Basin, freighted with coal, sugar or plaster for the different factories and for the Grand Trunk Works.

These basins brought the ships so much closer to the points where the cargoes were required that a saving of from twenty to thirty-five cents per ton was effected for the purchaser. These ships generally took in their return cargoes of pine, deals or phosphates without leaving the canal, which was also a saving to shipowners, there being no occasion to ballast their vessels before going elsewhere for return cargoes.

The wharves in connection with the canal were placed under the management of this Department on the 25th of October last, and a wharfinger was appointed and placed in charge of them. Since then ample accommodation has been furnished to all branches of trade requiring wharf room.

Traffic through this canal is now being carried on during the night time as it is by day; not even the largest and heaviest grain laden schooners or barges having to lay over for daylight. The current has been reduced to such an extent that the large sized barges which, previously to the enlargement, required from six to eight spans of horses to tow them up the canal, when drawing eight feet of water can now be towed up quite easily by two pairs of horses. The time now required for

steamers to pass through the entire length of the canal, including the time for locking, is two and one half hours. Barges towed by steam-tug can pass in three hours, while those towed by horses take from four to five. Tugs, however, are fast, taking the place of horses for towing between the locks, but horses must still be kept at the locks to tow the boats into and out of them.

The water supply for the mills and factories fed from the canal is now probably one of the best in the country, as the water does not fluctuate in any of the reaches of the canal at any time during the year more than two inches.

The work done by the Superintendent during the fiscal year is classed under two headings, viz., "Repairs" and "Construction."

The repairs were generally of the ordinary kind, and were carefully made as required, all the structures, banks, roads, tow paths, ditches and offtake drains have been kept in thorough repair, and are now in a high state of efficiency.

Work charged to construction account was done by days labor, and consisted of restopping and raising the new lock gates to overcome the settlement of lock walls, furnishing and placing apparatus for working the valves, making and placing chain well roller frames, making and mooring glancing booms at all the bridge approaches, and furnishing working chains for the new lock gates instead of the copper wire rope which was found to be too soft for the purpose.

As previously stated, four of the new lock gates are now in use, Nos. 1, 2, 3 and 4, and give general satisfaction. No. 5, which is the entrance lock at Lachine, is also ready and can be used as soon as the channel through section No. 11 is completed, which will probably be this fall.

The time required to make a lockage through either of the new locks 1 or 2, is from 12 to 14 minutes; and through new locks, 3 and 4, from 9 to 11 minutes. The difference in time is caused by locks 1 and 2 having 5 feet more of a lift than the others, involving a greater height and weight of the gates to be moved, and a larger body of water to be passed in filling and emptying the lock. Protection wire cables have been placed on the upper gates of four of the old locks. These cables are so arranged that when the gates are closed the cables are perfectly taut, so that should a boat strike one of the gates from below, the cable will hold the other gate in place until the gate so struck returns to its proper position by the force of the water, and, on the other hand, should a boat run against the gates from above, unless the stroke be a very heavy one, the cables will prevent the gates from being displaced. When the gates are open the cable assumes a perpendicular position by the side of the back toe binder, and is quite out of the way.

This contrivance costs but little, and although very simple, will no doubt be the means of averting many accidents to the gates of the locks where they are in use.

A large portion of the basins and wharfs are still without light, and as these wharves are much used by night for discharging and loading vessels, it would be well if some method of lighting were soon adopted.

#### BRIDGE OVER THE NEW LOCK AT LACHINE.

All the materials for the superstructure of a swing bridge to be erected over the upper end of Lock No. 5, have been prepared by Mr. John McDougall, and the bridge will soon be completed.

#### NEW ST. GABRIEL BASINS, Nos. 3 AND 4.

Plans were prepared for these basins during the winter, and approved of. Tenders were received for their construction in June. The contract was awarded to Messrs. Rodgers & Farrel, who are now making preparations to commence work.

#### GATES FOR THE NEW LOCKS.

These gates were built under contract by Messrs. O'Brien, Gordon & Bergin.

There are thirteen pairs in all, ten pairs of which are now in use in the different locks, and three pairs are held in reserve in case of accident.

At the close of the fiscal year 1881-82, all the gates had been hung in their places, and but little remained to be done to them except mounting top fixtures and working apparatus. This was done to all, with the exception of those at Lachine, before the close of the season. Work on those at Lachine was not fully completed till last spring. The three pairs of spare gates were completed before the winter set in.

A final estimate was forwarded to the Chief Engineer in April last, and the contractors have been settled with in full.

### NEW WORKS OF ENLARGEMENT.

#### MONTREAL DIVISION.

This division extends from the harbor of Montreal to Côte St. Paul, 4  $\frac{8}{100}$  miles in length, and includes sections No. 1 to No. 7.

All the works on these sections were completed, and the contractors settled with at date of last annual report.

#### LACHINE DIVISION.

This division is four miles in length comprising Sections 8, 9, 10 and 11 and extending from Côte St. Paul to Lachine. It is under the charge of H. H. Killally, Esq., as Resident Assistant Engineer.

#### *Sections 8, 9 and 10.*

Work upon these sections was finished as mentioned in my report for year ending 30th June 1882; and during the year now completed, final settlements have been made with the contractors for Sections 8 and 10.

#### *Section No. 11.*

The work on this section consists in the construction of a new entrance channel and harbor in the river bed at Lachine, on the outside of the present one.

The work done during the fiscal year consisted chiefly in unwatering the Basin between the two cross dams and excavating the channel therein; the removing of the lower cross dam; the stripping of a portion of the double cribwork and placing transverse ties connecting the two rows of cribs; the filling between walls on the single 30 feet cribbing, and grading behind walls on other parts of the section, also the building of a small quantity of side wall in cement.

The superficial area of the basin which required unwatering in order to facilitate the excavation of a channel 200 feet in width, was a little over nineteen acres, with an average depth, at the time when pumping was begun, of 12 feet; the length of the enclosing dam was 4,622 feet.

The season's work was opened by an attempt at pumping this basin dry; but owing to leaks and washouts this was found to be impracticable. Repairs at detached points seemed to be of no avail, and it was consequently decided to pile the dams throughout the greater part of their length with eight inch sheet piles.

The months of July and August were spent by the contractors in driving these piles which had the effect of almost entirely stopping the leakage.

Rock excavation was commenced on the 17th of September, and was continued throughout the winter months with as large a force as could be worked to advantage,

After the completion of excavation in the upper basin, and before removing the lower cross dam it was deemed expedient to connect the two rows of cribs in the double crib-work below that dam by transverse ties, before again subjecting them to pressure from the outside. The placing of these ties was therefore immediately ordered and commenced. This involved very heavy work in the removal of frozen material from the top of cribs; the cutting and carting away of ice and snow; cutting ice in the basin to free the cribs; and getting the timber for ties out of rafts where it had been frozen in all winter.

After these ties had been placed and the cross dam removed, the remaining excavation where the cross dam had been, was commenced on March 16th and finished April 3rd. No difficulty was found in keeping the section dry.

During the last three months the contractors have had a small force at work, grading and placing mooring posts on the new pier; and for the last three weeks of June, two gangs of masons have been employed on the south side wall.

#### EXTENSION OF LANDING PIER—G. T. R. DEPOT, LACHINE.

This work consists of the extension of the old G. T. R. Pier up stream for a distance of 320 feet, and is built of detached cribs 30 feet square, spaced at intervals of 20 feet, and finished at its upper end by a sloping icebreaker placed upon a crib 70 by 40 feet and sheeted with oak timber 6 inches in thickness.

The contract was awarded March 16th, 1882, to Messrs. D & W. Gaherty & Co.; and work was commenced 27th June, and completed 18th December same year. A final settlement has since been made with the contractors.

In the superstructure of cribs and bridging of openings, provision was made for carrying a single line of railway track; and upon the completion of our work a line of rails was laid by the G. T. R. Company.

The Caughnawaga Ferry boat having ceased running at an early date last fall, the success of this extension as providing a winter landing is as yet undecided.

#### BEAUHARNOIS CANAL.

This canal was closed by ice on the 30th November, 1882, and re-opened on 30th April, 1883.

A serious accident occurred on the 25th of August, 1882. This was caused by the steamer "Prince Arthur," while ascending the canal, during the night running into and carrying away three of the gates of Lock No. 13. At the time of the collision the lock was full and some vessels were entering it.

The six mile reach above the lock was emptied and considerable damage was done to the banks and crops below by the overflow of water. Navigation was interrupted for forty-eight hours only.

Extensive repairs, alterations and renewals have been made during the year, the principal of which are enumerated below.

#### LOCKS AND LOCK GATES.

At Locks 10, 11, 12 and 13 portions of the stone coping which had been disturbed by passing vessels, were taken up and relaid; as also were the stone steps of the same locks and those of Locks 7, 8 and 9.

Four pairs of gates have been built, and two pairs which were much damaged, were repaired. Two pairs of new gates were for the St. Our's Lock. On completion they were taken there and put in place. Another pair is kept in reserve as spare gates for Lock No. 13; and the fourth pair was placed in position at Lock No. 7. The gates damaged by the steamer "Prince Arthur" at Lock 13 were brought down to the work shop, repaired, and replaced in that lock. The upper gates of Lock No. 11 received considerable repairs; and at this lock, as well as at Locks 12 and 13, gates were raised and adjusted.

New bumping posts to the number of ten were placed at different locks, and two were repaired.

#### WEIRS.

The rebuilding of the walls of the raceways of the weirs at Valleyfield, which had been begun in the previous fiscal year, has been continued and completed, and also the iron railing on top of the said walls.

Iron railings were also placed on each side of the bridge over the waste weir, near McDonald's mill.

#### BRIDGES.

The swing bridge across Lock No. 14, at Valleyfield, was removed from its old position and placed a little above the lock.

For this purpose new abutments, turning tables, &c., &c., had to be constructed, and new approaches made. This removal was made at the request of some of the inhabitants of Valleyfield.

The swing bridges over Locks 10, 11 and 13, were repaired and strengthened, and a new approach was built to the bridge at Lock 10.

New stationary bridges were built as follows: one over the waste weir at McDonald's mill at Valleyfield. This bridge was made 24 feet wide instead of 12 feet as before, consequently the masonry of piers and abutments had to be lengthened. Three others over the large weir and head race at Lock 14, also in Valleyfield, and one over the waste weir of Lock No. 7.

A large bridge was also built over the branch of the River St. Lawrence, between the Grande Isle and St. Timothy.

Ten farm bridges over back ditches were renewed and many others repaired.

#### BUILDINGS, FENCES, &C.

The Lockmaster's house at Lock 12 has been almost entirely rebuilt inside, including floors, ceilings, partitions, doors and windows, and well painted inside and outside.

The two houses occupied by the men of lock No. 8 received repairs similar to those above mentioned; and in addition, their chimneys were rebuilt and a new back kitchen was built for each.

The houses of the keepers of St. Timothy Bridge and of Ferry No. 2 also received considerable repairs.

The Lockmaster's houses at Locks 7, 8, 9, 10, 12, 13 and 14 were painted inside and outside; and those of the lockmen at Locks 7, 8, 9 and 10 were similarly treated inside and outside.

The new workshop has been brought fully into use during the past year, and some additional machinery has been placed in it. It is now a very complete shop of the kind.

#### WHARVES AND PIERS.

The wharf at the upper entrance of canal on south side has been removed above low water line, and at the upper corner 5 feet below that line. This wharf is 600 feet long by 12 feet wide.

The lower guide pier on the north side of St. Timothy Bridge was rebuilt and well filled with stone.

All the other wharves and piers were kept in a fair state of repair.

#### BANKS, DAMS, DYKES, &C.

The dams and dykes have received considerable repairs. The canal banks below Lock No. 13, which were much damaged by the overflow of water at the time of the accident in August last year, were raised and repaired.

Two hundred snubbing posts were made, many of which were placed on the banks, and the remainder will be placed on them during the present season.

All side ditches, and off take drains, were thoroughly cleaned.

Public roads, passing on the canal banks and dams, about 27 miles in length have been kept in good repair.

All thistles and weeds were cut, over the whole extent of the canal lands at the proper season.

During the past year the water level in the canal has been kept up to a little over nine feet on the sills of the locks. Some of the reaches are so much silted up in the bottom, that it will soon be necessary to deepen and clean them with a steam dredge.

### CHAMBLY CANAL.

The navigation was maintained with but one serious interruption of thirty hours, caused by a barge entering Lock No. 5 from above, under too great headway, running into and carrying away the lower gates, on the 21st October last.

The canal was closed by ice on the 29th November, 1882, and re-opened on 1st May, 1883.

The works executed during the fiscal year were of two kinds, viz: The "ordinary repairs," and "works of improvement" chargeable to income.

The ordinary repairs were chiefly as follows:

Lock No. 1 received a new set of stop logs. A new top bar and balance beam on one of the upper gates of Lock No. 2, and fenders repaired. At Lock No. 3, the protection piers were repaired. The gates of Lock No. 5, damaged by the barge *Cooper*, were repaired immediately after the accident and replaced. In the spring the lower gates received further repairs, a new balance beam and valve being supplied; the protection piers at lower end were also repaired. One new balance beam was placed at Lock 6, and two at Lock 7.

One pair of spare lock gates was built, and four balance beams, and other timber prepared.

The banks were gravelled on top, for a width of 8 feet in the vicinity of bridges 3, 4 and 6, and at Lock No. 2.

The side walls were repaired from St. Therese Island to Chambly; and 1,450 yards of new wall were built. One hundred new snubbing posts were placed on the banks, and a large number made and held ready for use. All culverts and ditches were cleaned in March, and two bywashes repaired, one of them being replanked.

Swing bridge No. 2 was re-built, including foundations, in the spring, and one tow path bridge. All the other swing bridges received new fenders, and such other repairs as they required.

All the buildings received the usual repairs. The canal office was provided with double windows. New watch houses were built at Locks 2, 3, 4, 5 and 6, and at bridges 2, 3, 4 and 5. A large one, 15 feet by 20 feet, was built for the men at the combined Locks 7, 8 and 9. Timber has been framed and other preparations made for the erection of three new lighthouses, and a carpenter's work-shop.

The steam dredge and scows, &c., connected with it, were prepared for the winter at Chambly. In March and April they were thoroughly repaired, the hull of the dredge being almost renewed. Two large scows, three small scows and twelve dumping boxes were built for the use of the dredge.

#### *Lock No. 1 at St. Johns.*

During the month of April, 30 feet in length of wall on the east side of this lock, which overhung and was in danger of falling, was taken down and rebuilt.

#### *Locks Nos. 7, 8 and 9 at Chambly.*

These are combined locks. They have been in a dilapidated state for some time past. During last winter and spring they received extensive repairs, the central lock, No. 8, having been almost entirely rebuilt. In December, the walls on both sides of Lock No. 8, and on the west side of No. 9, were taken down. The lower portions were then rebuilt with a timber facing, sheathed with boiler plate at all projecting angles and a backing of masonry and concrete to a height of 7 feet above the mure sill.

The walls above that level were built of cut stone masonry. The breast wall and the mitre sill between these two locks were also reconstructed.

The lower mitre sill of Lock 7, was repaired and strengthened.

Those portions of the walls which were not rebuilt were pointed with cement.

#### Wharves.

The superstructure of wharf No. 3 at St. Johns, 625 feet in length, was rebuilt in September and October, 1882.

Wharf No. 2, also at St. Johns, was repaired by having its upper tier of timbers renewed for a length of 764 feet.

#### STEAM DREDGE.

In July 1882, the dredge was employed in cleaning and deepening the bottom of canal between Jones' Bridge and Lock No. 1 at St. Johns. From that time until the beginning of October it worked on the worst part of the bottom below Lock No. 1, as far down as Ste. Therese Island.

In October the dredge was sent to St. Ours. Before the close of navigation in November, the dredge was sent back to the Chambly Canal, where it and the plant connected with it were placed in winter quarters.

In April, the dredge scows, &c., were thoroughly repaired and equipped.

From the opening of navigation to the close of the fiscal year, the dredge worked at cleaning the bottom in the short reaches at Chambly, below Lock No. 2.

The dredged material has been for the most part used in filling wharves, raising and widening banks, roads, &c.; a small quantity not required at St. Johns was dumped in the river. At several points along the canal where there was room for it the surplus has been placed for future use.

#### ST. OURS LOCK AND DAM.

Navigation at this lock was closed by ice on the 28th November, 1882, and reopened on 19th April, 1883. An interruption of 28 hours took place in June, while the old gates were being taken out and replaced by new gates, which were built at the Beauharnois Canal workshops.

The dam was sheeted anew with three-inch pine plank, and eighteen toises of stone were procured and piled on each bank for use when required.

The scows kept for service about the dam were hauled out and repaired, and a new ferry scow was built, as well as a row boat. The landing stage at the upper end of the lock was removed in the fall and replaced in the spring. Six mooring posts in the guide pier, which were cut away by ice in the spring, were replaced by others in boxes, so as to be removable each fall.

In March, the gates and piers were freed from ice by sawing, to prevent damage as far as possible.

The Superintendent's house and the dwellings of the lockmen with their out-buildings and fences were repaired.

The lock bottom was examined by a diver, and the leak previously reported was found to be as before, not having increased.

#### NEW WORKS.

These works were undertaken to improve the approaches to the lock. The navigators having complained that the prevailing west wind drove them into shallow water on the east side, from which it was difficult to return to the lock, it was decided to remedy this inconvenience by constructing on the east side above and below the lock, a range of piers to support booms, which would retain vessels in the channel, and to deepen the channel to 8 feet at low water.

Five piers have been built below the lock 20 feet long by 12 feet wide, and from 16 to 20 feet in height.

Above the lock there were built also five piers, of which four are 20 feet by 18 feet, and from 16 feet to 21 feet high; the fifth or upper one is 20 by 30 feet, with a height of 15 feet.

These piers are well filled with stone, and sheeted with plank above and below the water level in the fall at which the ice takes. The fifth pier at the upper end is formed as an ice breaker, having two of its faces inclined at an angle of forty-five degrees and sheeted with tamarac plank four inches thick.

The booms have a total length of 1,000 feet, of which 500 feet are above and 500 feet below the lock. They are 3 feet broad, and are connected together and moored to the piers by strong chains.

The deepening of the channel and of the seats of the piers was done by the steam dredge No. 1, in October and November, 1882.

The piers were commenced in November, 1882, and finished in March, 1883. The booms were begun in May, 1883, and were almost finished at the close of the fiscal year. They were completed shortly after and moored in their places.

These works will, I believe, fully answer the purpose intended, and have already given great satisfaction to the captains of vessels and navigators on this route.

I have the honor to be, Sir,

Your most obedient servant,

E. H. PARENT,  
*Superintendent Engineer.*

## LACHINE CANAL.

STATEMENT showing the depth of river water on the mitre sills of Lock No. 1 at lower entrance, and Lock No. 5 at upper entrance, during the Fiscal Year ended 30th June, 1883. (From Lockmaster's Returns.)

Months.	Lock No. 1, Lower Sill.		Lock No. 5, Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
1882.	ft. in.	ft. in.	ft. in.	ft. in.
July .....	21 9	19 6	13 6	12 4
August .....	19 8	19 10	12 2	11 9
September .....	19 0	18 0	11 9	11 1
October .....	18 8	17 1	11 4	10 7
November .....	17 8	16 9	11 0	10 4
December .....	30 2	16 6	12 0	10 2
1883.				
January .....	28 6	23 1	11 3	10 3
February .....	26 3	24 3	10 7	9 4
March .....	26 9	24 8	10 5	8 11
April .....	32 10	22 3	13 7	9 6
May .....	22 8	20 10	14 4	12 3
June .....	23 1	21 8	14 4	13 8

## BEAUHARNOIS CANAL.

STATEMENT showing the depth of river water on the mitre sills of Lock No. 6 at lower entrance, and Lock No. 14 upper entrance, during the Fiscal Year ended 30th June, 1883. (From Lockmaster's Returns.)

Months.	Lock No. 6, Lower Sill.		Lock No. 14, Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
1882.	ft. in.	ft. in.	ft. in.	ft. in.
July .....	13 3	11 8	12 10	12 5
August .....	11 8	11 4	12 9	12 4
September .....	11 4	11 3	12 5	11 10
October .....	11 2	9 8	12 0	11 8
November .....	9 8	9 6	11 11	11 3
December .....	10 10	9 4	12 0	11 0
1883.				
January .....	17 6	10 0	11 6	10 10
February .....	16 6	14 1	11 6	10 5
March .....	17 6	14 4	11 6	10 10
April .....	14 6	12 10	12 10	11 3
May .....	13 4	12 3	13 2	12 1
June .....	13 9	13 3	13 2	12 8

## CHAMBLY CANAL.

STATEMENT showing the depth of river water on the mitre sills of Lock No. 9 at lower entrance, and Lock No. 1 at upper entrance, during the Fiscal Year ended 30th June, 1883. (From Lockmaster's Returns.)

Months.	Lock No. 9, Lower Sill.		Lock No. 1, Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
1882.	ft. in.	ft. in.	ft. in.	ft. in.
July .....	12 6	10 4	9 7	8 5
August .....	11 5	9 4	8 7	7 9
September.....	10 0	8 7	8 8	7 3
October .....	10 1	9 4	8 6	7 6
November.....	9 7	8 8	8 2	7 0
December .....	9 5	8 3	7 4	7 0
1883.				
January.....	9 4	8 5	7 4	7 0
February .....	10 9	8 9	8 0	7 0
March.....	11 3	9 9	8 9	7 6
April .....	20 2	10 2	11 8	7 7
May.....	16 9	14 10	11 6	9 10
June .....	16 8	13 4	11 0	9 8

## ST. OUR'S LOCK.

STATEMENT showing the depth of river water on the mitre sills of St. Our's Lock during the Fiscal Year ended the 30th June, 1883. (From Superintendent's Returns.)

Months.	Lowest Sill.		Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
1882.	Ft. in.	Ft. in.	Ft. in.	Ft. in.
July.....	13 5	10 4	10 11	9 6
August.....	10 9	9 9	9 5½	8 10
September.....	10 4	9 3	9 3	8 5
October.....	10 1	8 0	9 4½	8 10
November.....	8 10	7 7	9 2	8 3
December.....	13 4½	7 6	9 1	7 9
1883.				
January.....	12 9	11 3	8 7	7 11
February.....	12 10	12 1	9 1½	8 4
March.....	12 7	11 10	9 2	9 0
April.....	22 3	11 4	18 1	9 2½
May.....	15 11	13 10	14 1	12 2
June.....	16 2	13 2	13 9	11 2

## LACHINE CANAL.

STATEMENT of Fines and Damages collected during the Fiscal Year ended 30th, June, 1883.

Date.	Name of Vessel.	Master or Owner.	Fines.	Damages.	Total.
1882.			\$ cts.	\$ cts.	\$ cts.
July 5	F. L. T. Adams.....	E. Jefe.....	4 00		
Sept. 5	Barge Dorchester.....	St. L. & C. F. Co.....	10 00	30 00	
" 9	Prop. "Alma Munro".....	J. H. Scott.....	10 00		
" 20	McCuaig.....	Murphy.....	20 00		
Nov. 1	Barge Florella.....	H. Cassidy.....		15 00	
" 22	Steamer I. K. Hard.....	S. St. Denis.....		2 00	
1883.					
May 11	Barge Ned.....	James Whelan.....	10 00	81 20	
June 21	Draws Square Oak.....	Collins Bay Co.....	4 00		
			\$58 00	\$128 00	\$186 20

M. CONWAY,  
*Superintendent.*

LACHINE CANAL OFFICE,  
MONTREAL, July, 1883.

## LACHINE CANAL.

STATEMENT of Amounts collected for Wood, Rent and Wintering Vessels, during the Fiscal Year ended 30th June, 1883.

Date.	Items.	Number.	Rate.	Amounts.
1882-83.			\$ cts.	\$ cts.
	Firewood.....			1,027 78
	Wintering vessels.....			212 66
	Total.....			1,240 44

JOHN O'NEILL,  
*Collector.*

COLLECTOR'S OFFICE,  
MONTREAL, 3rd July, 1883.

## LACHINE CANAL.

STATEMENT of Basin, Firewood, Fines and Bank Dues, &c., collected during the Fiscal Year ended 30th June, 1883.

Date.	Items.	Amount.
1882-83.		\$ cts.
	Basin dues.....	892 59
	Firewood dues.....	113 52
	Bank dues.....	121 00
	Sale of abandoned barge.....	30 75
	Collected from Muir & Sons for removing coal.....	25 46
	Total .....	1,183 32

M. CONWAY,  
*Superintendent.*

LACHINE CANAL OFFICE,  
MONTREAL, July, 1883.

## BEAUHARNOIS CANAL.

STATEMENT of Fines and Damages collected during the Fiscal Year ended 30th June, 1883.

Date.	Name of Vessel.	Master or Owner.	Fines.	Damages.	Total.
1882.			\$ cts.	\$ cts.	\$ cts.
Sept. 10	Propeller "Alma Munro".....	Capt. Scott.....	40 00		
do 26	Barge "Wheat Bin".....	Montreal Transportation Co....		5 00	
Oct. 25	Steamer "Chieftain".....	Calvin & Son.....	5 00		
do 25	Propeller "Europe".....	— Sullivan.....		20 00	
Nov. 18	Barge "Montreal".....	Montreal Transportation Co....		14 15	
1883.					
May 16	Propeller "Prussia".....	— Chesnut.....		6 00	
June 25	do "City of Montreal".....	— McQuordale.....		14 00	
			45 00	59 15	104 15

J. F. BÉRIQUE,  
*Superintendent.*

BEAUHARNOIS CANAL OFFICE,  
MELOCHEVILLE, July, 1883.

## CHAMBLY CANAL.

STATEMENT of Fines and Damages collected during the Fiscal Year ended 30th June, 1883.

Date.	Name of Vessel.	Master or Owner.	Number.	Damages.	Total.
1882.			\$ cts.	\$ cts.	\$ cts.
July 4	St. Josephh .....	N. Lamy .....	1 00	5 00	
Sept. 11	.....	H. Boivin .....	1 00		
do 18	.....	A. Deschamps .....	1 00		
do 19	L'Exportation.....	J. Caron .....	2 00		
	Total .....	.....	4 00	5 00	9 00

C. ULRIC,  
*Superintendent.*

CHAMBLY CANAL OFFICE,  
CHAMBLY, July, 1883.

## No. 2.

## OTTAWA RIVER CANALS.

## REPORT FOR THE FISCAL YEAR ENDING 30TH JUNE 1883.

SIR,—I have the honor herewith to hand you my Report for the fiscal year ending 30th June, 1883, upon the various works I have in charge under the head of maintenance.

I have the honor to be, Sir,  
Your obedient servant,

D. STARK,  
*Superintending Engineer, O. R. C.*

A. P. BRADLEY, Esq.,  
Secretary Department Railways and Canals.

## MAINTENANCE.

## STE. ANNE'S CANAL.

The navigation was closed here on the 30th November 1882 and reopened on the 30th April, 1883.

No interruptions to its regularity have occurred, and the only accident to be recorded is the sinking of an old large called the "Faith" which struck a shoal and went down in the channel above the lock. It was quickly removed, however, and inflicted no inconvenience on the navigation.

The booms between the piers across the shoal below the canal have been repaired, and a pier, for the moving of barges near the entrance of the channel enclosed by them which was much wanted, has been built.

The usual repairs have also been executed to lock gates, wharves, mooring posts &c., and some necessary pointing has been done to the walls of the old lock.

The house in which the Collector lives underwent some necessary repair and had to be bodily raised a couple of feet to meet the higher elevation of the ground around it, caused by the additional height given to the walls of the new lock.

A couple of boom piers have likewise been put in above the new lock for the better guidance of vessels, and the old guide lights have been repainted and otherwise repaired.

#### CARILLON CANAL.

This canal was closed on the 27th November, 1882, and re-opened on the 28th April, 1883.

No interruptions have been caused to the traffic throughout the year.

No repairs have been called for. Some necessary fencing, about the new locks, wharves and guide piers, has been erected, and some grading has been done.

Watch houses have been also put up for the lock-laborers.

Such public roads as are under the control of Department have received attention in the way of grading and fencing repairs. In view of the fact that the old canal is now entirely disused, and that these roads are so far from the new one, that they have not, and never can have, anything to do with it, being therefore entirely abandoned for canal purposes, it becomes a question whether they should not be handed over, as others have already been, as regards their future maintenance, to the municipality in which they may happen to be situated.

The old canal was finally abandoned on the 27th August, 1882.

#### CHUTE A BLONDEAU.

Closed on the 27th November, 1882; re-opened 28th April, 1883. The old lock here is still of use, notwithstanding its dilapidated condition, many of the steamers employed in towing being unable to stem the current which yet exists at the Chute.

Heavy repairs had to be made to the lock masonry and mitres, &c., and new balance beams have been provided for the gates. Provision was also made in the spring for the raising of the lock in the event of an excessive rise in the river level. The work was not, however, required. The question of the more effective accommodation of ascending traffic at this point will have to be considered, as during high water in the Ottawa the strength of the current is such as to render recourse to the old lock a matter of necessity. There are two modes of meeting the case; one being the establishment of a permanent chain tug at a suitable point, and the other the construction of a canal and locks affording the same area of waterway and the same depth as those just built at Carillon.

#### GRENVILLE CANAL.—GREECE'S POINT.

Closed on the 27th November, 1882; re-opened 1st May, 1883.

The old locks, with some rather extensive repairs to the gates and their machinery, have performed their work well this year at the canal entrance.

The upper lock of the enlargement was ready for the opening of navigation, rendering no longer necessary the two old combined ones at this point, which, owing to their extremely dilapidated condition, and their close proximity to the new works, had long been a source of anxiety with respect to the navigation. All traffic during the season has been passed through the new lock, the working of which has been satisfactory.

Between Greece's Point and Grenville no repairs of consequence have been called for, in so far as the locks are concerned, but a considerable amount of work had to be bestowed upon the fencing, towpaths and berm banks, as well as upon the riprap along the slopes.

I have to mention that this canal labors under a good deal of inconvenience from the meeting of vessels and tows at points other than those which were widened out during its construction to act as passing places. The rule seems to be that meetings seldom occur at those intended points of passing, and the consequence is frequent cases of confusion and delay.

It is possible that in view of the increased size of their steamboats and barges now contemplated by forwarders, the widening of the narrow portions of the canal to the present dimensions of those crossing places may before long have to be undertaken.

#### CULBUTE CANAL.

Here the locks and dams are in good order. The draw bridge at Chapeau called for some repairs.

The dam at Rocher Fendu Rapids was completed on the 2nd of March last, and this and the one at the Grand Calumet Falls are now performing the service required of them.

There is every prospect of obtaining from these works the results hoped for, but extreme low water in the Ottawa River can alone settle this point satisfactorily.

There has been no traffic.

D. STARK,  
*Superintending Engineer, O. R. C.*

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#### CONSTRUCTION.

##### STE. ANNE DE BELLEVUE.

During the year the entire work of construction comprised in the contract of Baskerville and Co., was completed, save some trimming, finishing and levelling.

The lock masonry was completed, and all about the lock, with the exception of the gates, was got ready for navigation, and these last are now in place. All the retaining walls, both above and below the lock, to the limits of the unwatered work are built, and the portions beyond these (of no great extent) would have been so also, but for the unusual height at which the water in the river has remained this year, which has prevented the proper setting of the foundation cribs.

The completion of these portions of retaining wall together with the placing of mooring posts and general levelling up, comprise all remaining to finish the contract of Baskerville and Co., and once the work can be begun a very short time will see it finished.

In the month of September last, a contract for straightening the channel above the upper lock was entered into with E. E. Gilbert and Son, who at the same time began the construction of a dredge, with improvements which they claim will enable them to perform the work rapidly, but it has not yet been set to work, though it is expected to be so by the end of the month of August.

Their drill machinery, however, has been in use since the beginning of June, boring into and blasting out the bottom of the channel in preparation for the dredge.

##### CARILLON CANAL.

During the first portion of the fiscal year, the contractors, Messrs. R. P. Cooke and Co., finished what remained to be done to the main embankment, forming the canal between the locks; and last winter they built the finishing ramp connecting the new and old canals at the lower entrance.

This completed their contract, with the exception of a small quantity of excavation still remaining to be done at the lower entrance to bring it to the specified depth.

Between the middle of February and the beginning of May, five temporary crib piers with booms between them were erected on the south side of the upper entrance to the canal, extending a distance of 800 feet westward from the end of the guide pier, for the better guidance of vessels descending the river, and as a precaution against their being drawn into the current outside the guide pier and so carried over the dam. They have well answered the purpose intended, and will continue to do so until the completion of the new entrance extension inside of Dewars Island renders them of no further use. 1,100 feet in length of boom has been also constructed and placed along the sharp jutting edge of the rocks along the north shore of this channel, for the protection of vessels and barges.

#### CARILLON DAM.

Nothing has been done to this dam during the year but staunching, carried out by filling in above it with stone and gravel.

During high water of early summer, three cribs forming a portion of the dam on the northern side of the main or centre channel were undermined and carried away, leaving a gap in the length of the dam of 58 feet. These cribs or piers were 10 feet wide each, with openings of seven feet between them, filled in with gates. This gap will have to be closed as quickly as possible, and the stone filling above the dam should be continued next winter in order to ensure future permanency. A very considerable quantity of this stone filling is still needed.

#### SLIDE.

In the course of last winter, and during the summer also, eight new guide piers and five new booms have been built above the slide, forming an extension of its entrance to a distance of 2,300 feet from the dam. The object was to secure greater immunity from danger to approaching rafts in their missing the mouth of the entrance, and at the same time, by placing the booms in a more up and down stream position than they formerly held, to obviate the risk of their being leaped over or broken through by the impetus of rafts or timber.

#### GRENVILLE CANAL—GREECES' POINT.

The works here during the fiscal year, comprises the completion of the upper new lock and its approach, the laying of the foundation of the lower one, with two courses of masonry round it, and earth and rock excavation in the canal prism. About two-fifths of the entire masonry in the upper lock was built during this year, and the whole structure was ready for the opening of navigation in spring, the two old locks it replaces having been filled up during the winter with spoil from the excavation of the middle reach. A waste weir was also built, and got ready for service at the same time. It is now hoped that both the remaining lock and the lower reach will be opened for traffic this fall, but in any case there can be no question as to the certainty of their being ready for use next year.

#### GRENVILLE ENTRANCE.

Here the works are confined to the completion of a wharf, and the building of retaining walls on either side of the entrance.

A portion of this wall had been laid during the winter of 1881-82, and the intention was to have proceeded with the work during the following summer, but unfortunately the water during that year never fell sufficiently low to admit of the carrying out of the proposition.

About the beginning of September, the contractor made arrangements for getting stone for these walls from a quarry near L'Original, that in the canal having been found unfit, and during the remainder of the navigable season he brought stone

from that quarry. On the closing of this, he discovered a quarry not far from Grenville, producing stone of a satisfactory description, and between this and Ross' quarry near Geeces' Point, he kept the work going, and finished both the walls by the beginning of April last. They are not yet quite done with; the long continuance of high water in the Ottawa River having prevented our prudently filling up behind them, but low water is all that is waited for to get them quickly out of hand.

This with the removal of a small quantity of material in the immediate entrance, by dredging, which the high state of the water prevented his taking out last spring, is all that is left here for the contractor to do.

CULBUTE CANAL.

With the completion of the Rocher Fendu dam on the 2nd March last, all the work involved in the construction of this canal was finished.

D. STARK,

*Superintendent and Engineer, Ottawa River Canals.*

No. 3.

CORNWALL CANAL.

CORNWALL 13th August, 1883.

SIR,—I beg to enclose herewith my Annual Report for the fiscal year ended the 30th of June, 1883. Also statement showing the highest and lowest depths of water on the lower sill of Lock No. 15 and upper sill of Lock No. 21.

I have the honor to be, Sir,

Your obedient servant,

D. A. McDONELL,

*Superintendent.*

A. P. BRADLEY, Esq.,

Secretary Railways and Canals, Ottawa.

CORNWALL, 13th August, 1883.

SIR,—I have the honor to submit the following Annual Report on the works under my charge for the fiscal year ended June 30th, 1883 :

The Cornwall Canal has been maintained in an efficient state, and no accident occurred during the year.

The canal was closed by ice on December 6th, 1882, and opened again for traffic on 28th April, 1883.

The works in progress during the past year will come under the head of repairs. Rebuilding one pair of lower gates, and general repairs to all lock gates in use; making four new wicket gates for supply weirs; four new foot bridges for lock gates; thirty-six new brackets for gates, and eight new sheaves; raising slopewalls, cleaning side ditches and drains and roadways through culverts; pointing lockwalls, &c., &c.

Making such repairs to the lower recess of Lock No. 18, by concreting and planking as time would permit before opening of navigation.

This foundation will require considerable work next spring.

I have the honor to be, Sir,

Your obedient servant,

D. A. McDONELL,

*Superintendent.*

STATEMENT showing the depth of river water on the mitre sills of Lock No. 15, at lower entrance, and Lock No. 21 at upper entrance, during the Fiscal Year, ended 30th June, 1883.

	Lock No. 15, Lower Sill.		Lock No. 21, Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
1882—July .....	11·4	11·2	11·6	11·0
August.....	11·3	10·11	11·4	10·8
September.....	11·6	10·6	11·2	10·0
October.....	10·6	10·0	10·6	9·9
November.....	10·2	9·7	10·2	9·3
December.....	10·8½	9·8	10·7	9·1
1883—January.....	28·0	9·10½	9·11	8·3
February.....	21·7	18·11	9·10	8·2
March.....	21·5	16·2	10·2	8·5
April.....	16·0	10·7	10·10	8·11
May.....	11·3	10·8½	10·10	9·4
June.....	11·10	11·1	11·7	11·0

D. A. McDONELL,  
*Superintendent.*

#### No. 4.

#### WILLIAMSBURGH CANAL.

MORRISBURGH, 10th August, 1883.

SIR,—I have the honor to submit my Report on the working and condition of the Williamsburgh Canals under my charge, for the fiscal year ending 30th June, 1883.

These canals which embrace the Farran's Point, Rapide du Plat, Point Iroquois Junction and Galops Canals, were closed for the season on the 11th December, 1882, and re-opened for traffic on 1st May, 1883. No interruption or delay occurred during the season of navigation.

#### FARRAN'S POINT CANAL.

The work on this canal consisted in repairs to the lock gates, crabs on lock and sheaves in chain holes, new lamp posts, and repairs to the piers and banks. Timber has been got out for re-building a portion of the dock, which will be proceeded with during the season. The ice breaker at the foot of the canal will require to be repaired.

The banks of this canal are in good repair.

#### RAPIDE DU PLAT CANAL.

The upper gates of Lock No. 24 were taken out and re-built during the winter, new valves and rollers were placed in them. Some repairs were also done to the lower gates of this lock, and all were put in good repair and order. Some repairs were also done to the lower gates of Lock No. 23. The pier at the head and the dock at the foot of the canal were repaired; the pier at the head will require some further repairs during the current year; repairs by stoning were done to the banks. This canal requires dredging in several places.

By dredging the slip on the inside of the dock at the foot of this canal vessels could load and unload at the wharf on the inside of this slip, without in any wise interfering with the outer wharf or dock leading to the lock, this would be of much convenience both to the shippers and vesselmen, as from the situation of the wharf a vessel loading or unloading at the outer wharf is obliged to move on the approach of a vessel about to enter the lock, causing delay and loss of time. The Government Wharf or Dock at the foot of the canal is the only wharf at this place.

POINT IROQUOIS JUNCTION AND GALOPS CANAL.

Repairs were done to the general lock gates on these canals. New rollers were placed under the gates at Lock No 27, and new sheaves placed in chain hole. Repairs were made to the swing bridges, and a new track was laid for bridge over Lock No. 26, a storehouse was erected at Lock No. 27, in place of the one destroyed by the storm on the 14th September, 1882, reported in my letter of the 28th of that month, and the roof of Lockmaster's house, unroofed by the same storm, was repaired and reshingled. Portions of the pier at the head of the Galops and the dock at the foot of Point Iroquois Canal were repaired; these repairs will be continued during the current year.

The Government ditch on the north side of the Point Iroquois Canal was cleaned up and the stone wall continued to within a short distance of the Nine Mile road, west of the village of Iroquois; this wall will be completed this fall.

The booms on the Point Iroquois Canal were put in good repair this spring; the banks of these canals have been further protected by stoning, and a small pier was built in the northern bank of the Galops Canal, where a portion of the bank was in danger of sliding, so as to prevent such an accident.

The buoys in the River St. Lawrence, between Johnston and Dickinson's Landing, under my charge, were replaced this spring.

The water in the River St. Lawrence being high, furnished a full depth to the canals during the greater part of the season of navigation.

I annex a statement showing the extreme depths of water on the mitre sills of the several locks during the year ending 30th June. 1883.

I have the honor to be, Sir,  
Your obedient servant,

A. G. MACDONELL,  
*Superintendent, Williamsburgh Canals.*

A. P. BRADLEY, Esq.,  
Secretary, Department of Railways and Canals, Ottawa.



## POINT IROQUOIS AND GALLOPS CANAL.

Month.	Lower Sill, Lock No. 25, foot of Point Iroquois.		Months.	Upper Sill, Lock No. 27, head of Gallops	
	Highest.	Lowest.		Highest.	Lowest.
1882.	ft. in.	ft. in.	1882.	ft. in.	ft. in.
July.....	14 0	13 3	July.....	11 10	10 10
August.....	14 0	12 8	August.....	11 1	10 6
September.....	13 6	11 6	September.....	10 9	9 11
October.....	12 9	11 0	October.....	10 4	9 6
November.....	12 6	10 10	November.....	10 3	9 0
December.....	13 6	10 6	December.....	10 6	8 9
1883.			1883.		
January.....	12 4	8 6	January.....	9 4	6 9
February.....	10 2	8 2	February.....	8 3	7 1
March.....	10 6	8 6	March.....	9 0	8 3
April.....	12 10	10 6	April.....	10 3	8 6
May.....	13 7	11 0	May.....	12 0	9 4
June.....	14 0	13 2	June.....	11 6	10 10

A. G. MACDONELL,

*Superintendent, Williamsburgh Canal,*

MORRISBURGH, 10t August, 1883.

## No. 5.

SUPERINTENDENT'S OFFICE,

ST. CATHARINES, 17th September, 1883.

SIR,—I have the honor to submit my Report on the conditions of working of the two canals—the Old and New—for the year ending 30th June, 1883.

## THE NEW CANAL.

The canal has been operated satisfactorily throughout the year and without any serious accident, except in one instance, when the schooner "Midland River" ran into and displaced the superstructure of the Welland Junction Bridge.

Many of the canal and reservoir banks, being of great height, subsided to some extent. I have, however, raised most of them to their full height again, and have also found it necessary to widen them in a few places.

The lock gates and valves work well throughout. The water wheels open the gate valves very quickly, filling and emptying the large locks in from eight to ten minutes.

The St. Catharines and Welland Canal Gas Company, have completed the works connected with their contract for lighting the Canal from Port Dalhousie to Guard Lock, Thorold, in a satisfactory manner, affording a brilliant and ample supply of light.

Several large propellers, steam barges and schooners have passed through the canal for the first time, carrying from 40,000 to 60,000 bushels of grain.

The banks of the canal and reservoirs between Port Dalhousie and the Guard Lock at Thorold, have been faced with stone throughout, thus preventing any further washing away of the slopes.

Trees have been planted both sides of the canal between Port Dalhousie and Lock 25, Thorold, and in a few years will prove a great protection to vessels from the windstorms which now occasionally render it necessary to tie up vessels until calmer weather arrives.

The experiment of sowing the banks of canals and reservoirs with grass seed has been tried successfully in several places, which would otherwise be occupied by thistles, the expense of cutting these weeds on the whole of the works under my charge has amounted to \$1,100 during the past season.

The canal was closed on the 5th December, 1882, and opened on the 5th May, 1883.

I have established a system of Semaphore Signals at suitable distances above and below the existing aqueduct, to control the movement of vessels when the water is low in the same. I have also erected another at the curve near Humberstone Bridge, to guide approaching vessels and prevent collisions.

## DETAILS OF WORK OF REPAIR AND MAINTENANCE ON THE NEW CANAL.

### DIVISION NO. 1.

#### *From Port Dalhousie Harbor to foot of Lock 13.*

##### *Port Dalhousie Harbor.*

Renewing and rebuilding parts of west pier and putting in snubbing posts. The pier on the west side of the harbor is all decayed and should be rebuilt, 324 feet fencing built, to enclose the Government property.

##### *Lock No. 1, Bridge and Level.*

One hundred and fourteen piles for spare gate berths sharpened and driven, cut off piles and capped same with timbers, and bolted on cross timbers for spare gates to lay on.

Put floating fenders each side of bridge and chains to same, cross planked aprons each end of floats to prevent tow horses slipping, faced up foot of Lock 2 waste weir with stone where gullied out.

Built and placed in position W. C. for use of lock and bridge tenders.

Put on safety locking gear to hold back foot gates in recess.

##### *Lock No. 2 and Level.*

Waste weir bridge made wide to allow teams to cross, banks harrowed and levelled up, also sown with grass seed.

Faced slopes of canal and reservoir banks with stone. Front and apron paved with stone to prevent washout.

Built and placed in position W. C.

Put on safety locking gear.

##### *Lock No. 3 and Level.*

Lock cleaned out, mud pockets thoroughly repaired, mud sills placed a short distance from front of foot gates to prevent rubbish, stone, &c., &c., from being washed between mitre sills and gates. Banks harrowed and levelled up and sown with grass seed. Trees planted along one side of level. Put on safety locking gear. Built and placed in position W. C. Faced slopes of canal and reservoir banks with stone.

*Bridge No. 2.*

Adjusted several times.

*Lock No. 4 and Level*

Lock cleaned out, mud pockets thoroughly repaired, mud sills placed a short distance from front of foot gates to prevent rubbish, stone, &c., &c., from being washed between mitre sills and gates. Banks and slopes harrowed and levelled up, and sown with grass seed. Trees planted throughout. Built and placed in position W. C. Faced slopes of canal and reservoir banks with stone. Put up safety locking gear.

*Lock No. 5 and Level.*

Lock cleaned out, mud pockets thoroughly repaired, mud sills placed a short distance from front of foot gate to prevent rubbish, stones, &c., &c., from being washed between mitre sills and gates. Banks raised and graded, banks and slopes harrowed and levelled and sown with grass seed. A bad slide occurred in west side bank, foot of Lock 5, level was drawn off, banks faced and stoned up from bottom of canal; faced slopes of canal and reservoir banks with stone; trees planted throughout; 678 feet fencing built to secure Government property. Built and placed in position W. C. Put on safety locking gear.

*Lake Street Bridge.*

Approach to bridge made wider. Repaired bridge, drove additional cluster piles at each end of rest pier, put walings around and braces between piles, and bolted all together. Put floating fenders and chains along sides of bridge and pier. Bridge tender's house brought from old canal and placed on stone foundation. Built and placed in position W. C.

*Bridge No. 4—Welland Railway.*

Drove additional clusters piles at each end of rest pier; put walings around and braces between piles, and bolted all together.

Put floating fenders and chains along side of bridge and pier. Bridge tender's house brought from old canal and placed on stone foundation. Built and placed in position W. C.

*Lock No. 6 and Level.*

Foot gates taken out, track and segment taken up, floor levelled for track circle, iron plate put under steps to raise them, gate resteped, sunken scow loaded with stone removed. Banks raised and graded. Locks cleaned out, mud pockets thoroughly repaired. Mud sills placed a short distance from front of foot gates to prevent rubbish, stone, &c., from being washed between mitre sill and gates. Banks harrowed, levelled and sown with grass seed. Trees planted throughout. Built and placed in position W. C. Faced slopes of canal and reservoir banks with stone; 2,949 feet fencing built to enclose Government property. Put on safety lock gearing.

*Geneva Street Bridge (No. 5.)*

Drove additional clusters piles at each end of rest pier; put walings around and braces between piles, and bolted altogether. Put floating fenders and chains along sides of bridge and pier. Built and placed in position water closet. Bridge tender's house brought from old canal and placed on stone foundation; 240 feet fencing built to bridge approaches.

*Lock No. 7 and Level.*

Wing-walls, head of lock, raised; pipes put through banks to supply farmers along same with water, the original supply being cut off by the building of the canal; banks raised and graded; foot gates taken out; track segment levelled up; iron plates put under steps to raise gates; gates re-stepped into place; lock cleaned out; mud pockets thoroughly repaired; mud sills placed a short distance from front of foot gates, to prevent rubbish, stones, &c., &c., from being washed between mitre sill and gates; banks harrowed, levelled up and sown with grass seed; trees planted throughout; built and placed in position W.C.; put on safety locking gear.

Faced slopes of canal and reservoir banks with stone.

1,196 feet fencing built.

*Niagara Street Bridge (No. 6.)*

Drove additional cluster piles at each end of rest pier; put walings around and braces between piles, and bolted all together; put floating fenders and chains along sides of bridge and pier; built and placed in position W.C.; bridge tender's house brought from old canal and placed on stone foundation.

*Lock No. 8 and Level.*

Banks raised and graded; lock cleaned out; mud pockets thoroughly repaired; mud sills placed a short distance from front of foot gates to prevent rubbish, stones, &c., &c., from being washed between mitre sill and gates; foot gates taken out; track removed; segment levelled up; boiler plate put under steps to raise gates; gates re-stepped.

Snubbing posts raised and re-set; slopes of canal and reservoir banks faced with stone; trees planted throughout; put on safety locking gear; banks harrowed, levelled up and sown with grass seed; built and placed in position W.C.

*Lock No. 9 and Level.*

Lock cleaned out; mud pockets thoroughly repaired; mud sills placed a short distance from front of foot gates, to prevent rubbish, stones, &c., &c., from being washed between mitre sill and gates; trees planted throughout; faced slopes of canal and reservoir banks with stone; built and placed in position water closet; put on safety locking gear.

*Queenston Road Bridge (No. 7.)*

Drove additional cluster piles at each end of rest pier; put walings around and braces between piles and bolted all together; bridge tender's house brought from old canal and placed on stone foundation; 450 lineal feet dressed cap and rail approach put up at this important crossing, and painted three coats; also three gates.

*Lock No. 10 and Level.*

Banks raised and graded; lock cleaned out; mud pockets thoroughly repaired; mud sills placed a short distance from front of foot gates to prevent rubbish, stone &c., &c., from being washed between mitre sills and gate; snubbing posts raised and reset; trees planted throughout; built and placed in position, W. C.; put on safety locking gear.

Faced slopes of canal and reservoir banks with stone.

*Homer Road Bridge (No. 8.)*

Drove additional cluster piles at each end of rest pier; put walings around and braces between piles and bolted all together. Bridge tenders house brought from old canal and placed upon stone foundation; 721 feet fencing built.

*Lock No. 11 and Level.*

Banks raised and graded; lock cleaned out; mud pockets thoroughly repaired; mud sills placed a short distance from front of foot gates to prevent rubbish and stones from being washed between mitre sill and gates; foot gates taken out; track removed; segments levelled up; boiler plate put under steps to raise gates; gate resteped.

Snubbing posts raised and re-set; built and placed in position, W. C.

Faced slopes of canals and reservoir banks with stone; banks harrowed, levelled up and sown with grass seed; trees planted; put on safety locking gear.

*Lock No. 12 and Level.*

Lock cleaned out; mud pockets thoroughly repaired; mud sills placed a short distance from front of foot gates to prevent rubbish, stone, &c., &c., from being washed between mitre sill and gates; faced slopes of canal and reservoir banks with stone.

Put on safety locking gear; built and placed in position, W. C.

Trees planted throughout.

## DIVISION No. 2.

*From foot of Lock No. 13 to Allanburg Bridge.**Lock No. 13 and Level, and Bridge No. 9.*

Banks raised and graded; foot gates taken out; track removed; segments levelled up; boiler plate put under steps to raise gates; gates re-stepped.

Lock cleaned out; mud pockets thoroughly repaired; mud sills placed a short distance from front of foot gates to prevent rubbish and stones from being washed between mitre sill and gate; built and placed in position, W. C.

Slopes of canal and reservoir banks faced with stone.

One hundred and thirty rods fence built to approaches of bridge No. 9; trees planted throughout; put on safety locking gear. Waste weir bridge made wider to allow teams to cross.

*Lock No. 14 and Level.*

Lock thoroughly cleaned out; valves, lifting rods, turbine wheels, shafting, &c., thoroughly overhauled and repaired.

Mud sills placed a short distance from front of foot gates to prevent rubbish, stones, &c., &c., from being washed between mitre sills and gates; well holes planked with oak plank to prevent wearing out of cables.

Slopes of canal and reservoir banks faced with stone.

Built and placed in position, W. C.; put on safety locking gear.

*Lock No. 15 and Level.*

Lock cleaned out; valves, lifting rods, turbine wheels, shafting, &c., thoroughly overhauled and repaired, mud sills placed a short distance from front of foot gates, to prevent rubbish, stone, &c., &c., from being washed between mitre sill and gates.

Well holes planked with oak plank to prevent wearing out of cables.

Faced slopes of canal and reservoir banks, with stone; built and placed in position, W.C.; put on safety locking gear; trees planted throughout.

*Lock No. 16 and Level.*

Lock cleaned out; valves, lifting rods, turbine wheels, shafting, &c., thoroughly overhauled and repaired.

Mud sills placed a short distance from front of foot gates to prevent rubbish, stones, &c., &c., from being washed between mitre sill and gates; well holes planked with oak plank to prevent wearing out of cables.

Built and placed in position, W. C.

Slopes of canal and reservoir banks faced with stone; banks raised and graded; trees planted throughout.

Cleared out great accumulation of mud, &c., from highway tunnel, and opened drains, and built plank sidewalk 321 feet long, two plank wide under tunnel, always wet and muddy.

Built and placed in position, W. C.; 57½ rods of fence built to close out cattle; put on safety locking gear.

*Lock No. 17 and Level.*

Built new store house 18 by 24, and painted same.

Lock cleaned out; valves, lifting rods, turbine wheels, shafting, &c., thoroughly overhauled and repaired.

Mud sills placed a short distance from front of foot gates, to prevent rubbish, stone, &c., &c., from being washed between mitre sill and gates.

Well holes planked with oak plank to prevent wearing out of cables; built and placed in position, W. C.

Banks raised and graded; slopes of canal and reservoir banks faced with stone; put on safety locking gear; trees planted throughout.

*Lock No. 18 and Level.*

New waling put on one lock gate; banks harrowed, levelled up and sown with grass seed; lock cleaned, and valves, lifting rods, turbine wheels, shafting, &c., &c., thoroughly repaired.

Mud sills placed a short distance from front of foot gate, to prevent rubbish, stones, &c., &c., from being washed between mitre sill and gates; well holes planked with oak plank to prevent wearing out of cables; built and placed in position, W. C.

Faced slopes of canal and reservoir banks with stone; trees planted throughout; put on safety locking gear; waste weir bridge made wider to allow teams to cross.

*Lock No. 19 and Level.*

Foot gate taken out, track removed, segments levelled up, boiler plate put under steps to raise gates; gates resteped.

Banks harrowed, levelled up and sown with grass seed.

Lock cleaned out; valves, lifting rods, turbine wheels, shafting, &c., thoroughly repaired; mud sills placed a short distance from front of foot gates, to prevent rubbish, stones, &c., &c., from being washed between mitre sill and gates.

Well holes planked with oak plank to prevent wearing out of cables; built and placed in position, W. C.

Faced slopes of canal and reservoir banks with stone.

Trees planted throughout; put on safety locking gear.

Waste weir bridge made wider to allow teams to cross.

*Lock No. 20 and Level.*

Lock cleaned out; valves, lifting rods, turbine wheels, shafting, &c., thoroughly repaired; mud sills placed a short distance from front of foot gates to prevent rubbish, stones, &c., &c., from being washed between mitre sill and gates. Well holes planked with oak plank; built and placed in position W. C.; faced slopes of canal and reservoir banks with stone. Banks harrowed, levelled up and sown with grass seed; trees planted throughout. Put on safety locking gear; waste weir bridge made wider to allow teams to cross.

*Lock No 21 and Level.*

225 feet 8 inches drain pipes laid in foot of slope; banks widened and graded up and down with grass seed.

Lock cleaned out; valves, lifting rods, &c., &c., thoroughly repaired; mud sills placed a short distance from front of foot gates. Well holes planked with oak plank; built and placed in position W. C. Put on safety locking gear; trees planted throughout. Faced slopes of canal and reservoir banks with stone; waste weir bridge made wider to allow teams to cross.

*Lock No. 22 and Level.*

Lock cleaned out; valves, lifting rods, &c., &c., repaired; mud sills placed a short distance from front of foot gates. Well holes planked with oak plank; built and placed in position W. C.

Banks harrowed, levelled up and down with grass seed; trees planted throughout. Put on safety locking gear.

Faced slopes of canal and reservoir banks with stone.

*Lock No. 23 and Level and Quarry.*

Soakage water through canal banks drained off to prevent slides.

Lock cleaned out; valves, lifting rods, &c., thoroughly repaired; mud sills placed a short distance from front of foot gates. Well holes planked with oak plank.

Banks harrowed, levelled up and sown with grass seed; trees planted throughout; put on safety locking gear.

Built and placed in position W. C. Faced slopes of canal and reservoir banks with stone.

Built wharf 175 feet long, 40 feet wide, and wing 22 feet by 66 feet for loading scows with stone for facing banks, weir, aprons, &c. &c.

Built one three-ton derrick and put it in place.

*Lock No. 24 and Level and Bridge No. 10.*

Soakage water through canal banks drained off to prevent slides. Built store house 18 by 24 feet, and painted same.

Lock cleaned out; valves, lifting rods, &c., &c., thoroughly repaired; mud sills placed a short distance from front of foot gates. Well holes planked with oak plank.

Banks harrowed, levelled up and sown with grass seed. Trees planted throughout. Put up safety locking gear. Built and placed in position W. C.

Faced slopes of canal and reservoir banks with stone.

Built ten small stone culverts from ditches across tow-path.

*Bridge No. 11.—(Welland Railway.)*

Built solid timber cut water protection extensions to each end of rest pier to protect same from damage by vessels. Put floating fenders and chains alongside of bridge and pier.

Bridge tender's house brought from old canal and placed upon stone foundation.

*Lock No. 25 and Level and Bridge No. 12.*

Turbine wheels, and all shafting, &c., connected with the same were placed for raising valves for first time in all gates of this lock.

Banks graded and sown with grass seed; 362 feet fencing built.

Lock cleaned out; mud sills placed a short distance from front of foot gates. Well holes planked with oak plank. Built and placed in position water closet. Put on safety locking gear. Trees planted throughout each side of lock.

Faced slopes of canal and reservoir bank with stone.

Bridge tender's house brought from old canal and placed upon stone foundation.

*Guard Lock and Level to Allanburg.*

Cleaned out Higgin's Culvert, 370 feet long under canal that was filled up almost to the crown of the arch; cut deep ditch from lower end at outlet of same, and laid in 480 feet 12 inch stoneware pipes; filled all up and left complete.

Bridge tender's house brought from old canal and placed upon stone foundation.

*Marlatt's Bridge (No. 13.)*

Fourteen additional clusters piles drove. Put floating fenders and chains each side of bridge and rest pier, and along face of both abutments.

Bridge tender's house brought from old canal and placed upon stone foundation. Adjusting cams and other gearing various times.

*Allanburg Bridge (No. 14.)*

Put floating fenders and chains alongside of bridge and rest pier; adjusting cams and other gearing various times.

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No. 3.

FROM ALLANBURG BRIDGE TO AQUEDUCT.

*Welland.*

Ditching and repairing bank, tow-paths, &c., various times.

Built and laid in box culverts under tow-paths; deep cut various places.

Repaired banks north and south quarter bridge, also bridge abutments at Allanburg.

Put dam across foot of waste weir; pumped out water; took down remaining partition, west wing-wall rest having previously fallen down; properly rebuilt same; sheet piled front; faced front of apron with heavy flag stones; faced continuation of west bank with dry stone wall; removed dam and left all complete.

Repaired high banks east and west sides Deep Cut; cleaned out and made ditches along stone road between Allanburg and Port Robinson various times; taking down and rebuilding barn for bridge tenders, Allanburg; repaired abutments, Quaker Bridge; lengthened out and widened same; repaired Port Robinson Bridge approaches with stones, &c., &c.

Cleaned out Port Robinson Lock, and repaired crabs, &c., &c.

Set in numerous snubbing posts and painted same; stripped old ferry scow, and built ferry landings at Port Robinson; painted bridge railings from Allanburg to Welland; faced sundry stretches of canal bank with stone, where dangerously washed away.

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No. 4.

FROM WELLAND AQUEDUCT TO PORT COLBORNE HARBOR.

Opened up and cleaned out ditches throughout from time to time; faced up banks in places with stone, and quarried out stone and scowed them to place for same; made approach roadway to air line ferry; caulked up ferry boat; repaired walls in harbor; hauling and setting large number of snubbing posts throughout and painted same.

Framed and put together timbers for winter float bridge at air line ferry, and taking it to place; painted junction bridge; repaired Harbor master's house for the overseers of Division; also lock tender's house at Port Colborne; re-built part of harbor walls with stones that had been displaced and thrown into harbor by vessels; built new semaphore with wire and ratchet attachments to each side of aqueduct at Welland, and put them up 1,700 feet apart.

Built 224 feet timber floats and one semaphore for Humberstone Bridge, and floats along bridge with anchor chains and  $1\frac{1}{2}$  inch iron rods, placed all in position.

Repairing and removing old protection float continually during season of navigation, throughout rock cut; excavated for and laid in pipe drain to draw water from adjoining drowned land at Humberstone.

Painted lock and bridge tender's house; two men employed day and night watching and passing vessels' lines over dangerous parts of Rock Cut.

One new ferry boat built.

#### *Generally.*

Put bars across ends of waste weirs to keep cattle off.

A large number of the lock gate cables were broken and cut by heavily loaded vessels passing over them on the lower mitre sills. A check has now been put to this practice. Copper cables were removed from lock gates throughout from time to time as they wore out, and were replaced with annealed crucible cast steel cables, the copper cables being spliced and used again as long as possible.

The lock gate valves, lifting rods, turbine wheels, shafts, clips and all valve gearing, &c., &c., connected with the gates have been constantly over-hauled throughout and kept in order. Numerous gullies washed out in banks made good from time to time.

Gravel was scowed to all Locks throughout, and the clay covered with same.

Two cross head handle levers were made for each Lock throughout to raise valves by hand, in event of turbine wheels becoming frozen, and proved very valuable.

The bottoms of the Lock well holes throughout have been filled with oak planks to prevent cables being destroyed by passing over the rough stones when working the gate. The powerful pontoon or gate litter has been considerably strengthened, rendered necessary since the gates become so much heavier through being water soaked.

When water was drawn off in spring, several valves were found minus their wrist pins, others had been driven in too tight, causing valves to work very hard. The cables were also taken off, repaired and put on again.

A large amount of ditching has been done in various places found necessary, in order to carry off soakage through the canal and reservoir banks, and other surface water. All the bridges throughout have been constantly overhauled and heightened up. Numerous long handle lock rakes and ladders made, and a large number of barrows renewed and repaired.

Before placing the twelve pair of spare gates under water on their respective cradles, the valves were all taken out, and the wrist pins turned down, the bearings of valve leaves turned and dressed off, and all eased and put in again, it being found almost impossible to work the valves, they being too tight.

A large number of snubbing posts were found to be useless, owing to the banks having to be raised, and they had to be taken up, raised and reset.

The experiment of planting trees along the canal banks has been fairly successful, and they will be a great protection to vessels in a few years against windstorms.

Many of the heel posts of the new gates were found to bind very hard against the hollow quoins, and ten pairs have been already dressed off, the remainder will be done as opportunity occurs.

Mile and half mile posts have been placed along east side of the canal throughout, and all the bridges have been numbered. Steel shafts will be substituted by

degrees for the turbine wheels in lieu of the present iron ones, which will soon wear out.

Several waste weirs have been paved with large flat stones, to prevent early undermining the aprons and wing walls.

I have had a new attachment put on the copings at the foot gates of the Locks to fasten the gates back securely into the recess, when the locks are empty, and should any headgates be carried away hereafter, I do not anticipate any more foot gates being carried out as has invariably been the case hitherto. The saving by this inexpensive appliance will be very great, both in money and time.

I have put similar attachments to the foot gates of all the locks on the old canal.

#### *Fines, Damages, &c.*

I have collected during the fiscal year from masters and owners of vessels, also locktenders, the sum of \$971.12 in fines for violation of canal regulations and for damages to the works, which amount has been handed H. H. Collier, Esq., Collector for this port, and I append a statement of the above marked A.

I also append a statement marked B. showing the greatest and least depth of water in the mitre sills at Port Dalhousie and Port Colborne Locks, in each month during the year, also a comparative statement of the average depth for the month of June, 1882 and 1883, which shows the water has been higher by one inch at Port Dalhousie, and two inches lower at Port Colborne than for the same month in the year 1882.

### THE OLD CANAL.

#### FROM PORT DALHOUSIE TO THE JUNCTION WITH THE NEW CANAL AT ALLANBURG.

This canal was closed on the 30th November, 1882, and re-opened on the 5th May, 1883.

The amount of business done on this canal, notwithstanding the opening of the new line, has been very considerable; the facilities it affords for the speedy return of tugs being found of special advantage.

In view of the insecure state of some of the structures referred to in my last annual report, extensive renewals and repairs were necessary. These are now almost completed.

On the withdrawal of the water last spring, it was found that the foundation of the east side of the chamber wall at Lock 17, had been washed out in the vicinity of the mitre sill of the head gates, the gates themselves being undermined by the action of the water to a depth of four feet. This was made good with masonry and concrete work. At least two more locks, however, are in a similar condition and will require treatment next spring.

#### DETAILS OF REPAIRS AND MAINTENANCE OF WORKS ON THE OLD CANAL.

##### *Lock No. 1, Bridge and Level.*

Put in new gate towpath side, put hold back lines and bolts on foot gates, built new bridge and abutments at Martindale's Creek, 48 feet by 16 feet, with heavy railing; widened and raised approaches, and faced same with protection stone a distance of 792 feet. Repaired floating tow path various times; took two new spare gates from gate yard to pond.

##### *Lock No. 2 and Bridge and Level.*

Repaired floats and bridge, raised bridge on pivot; replanked large bridge over weir, put in four new rollers to waste weir, repaired rollers for same, made new slash boards for waste weir; repaired boat house; put in new bents under southern waste weir bridge, and put new rack in front of same and thoroughly repaired valves, &c.; blocked up this and adjoining bridge.

*St. Paul Street Bridge.*

Built 175 feet of framed protection railing, put same up and painted three coats. Put up W. C., repaired and renewed planking, repaired fenderwork, framed planking for bridge, replanked bridge and covered same with old planks for winter, stripped winter covering and put bridge in working order in spring, shifted coping on east side of bridge to bring it in line with railing.

*Canal Office.*

Covered stone steps for winter use with boards, made cases for office papers and did sundry repairs.

*Lock No. 3 and Level.*

Put in two new foot gates, put holdback links and bolts on foot gates to prevent them being carried away in case of accident. Digging out for waste weir wall to be taken down and rebuilt with 11.15 yards new ashlar masonry and 82.26 yards of old work, puddled and filled in behind afterwards. Repaired rollers to waste weirs. Built new bridge across waste weir 60 by 4 feet, covered with 2-inch plank, put on heavy fender and hand railing; painted three coats, put on new slash boards, re-built crib-work at the end of float bridge and repaired floats.

*Lock No. 4 and Bridge and Level.*

Put in six new joists in bridge and renewed some of the planking. Framed new pivot beam, put some in place, replanked bridge various times. Repaired heel approach to bridge, repaired railing of floats. Fitted valve cranks on head gates so as to be taken off at night. Digging out for waste weir walls to be taken down, and rebuilt 19.24 yards new ashlar masonry, 136.15 yards old work puddled and filled in behind again, tore out old shute and built new throughout, 130 feet long, 8 feet 4 inches wide, 2 feet 3 inches deep; sides 5 inches thick, bolted through and lined with jointed inch lumber; the whole thoroughly coated with three coats of black oil, and faced up each side from end to end with dry stone retaining wall and each side of regulating valve, put holdback links and bolts to foot gates. Built new bridge across weir 60 by 12 feet, covered with 3-inch plank. Built new bridge at foot of shute 16 by 13 feet, covered with 3-inch pine plank. Excavated and puddled for above work, put old timber backing behind protection piles and filled up. Repaired lockmaster's house and faced bank of canal with broken stone on west side.

*Lock No. 5 and Bridge and Level.*

Built new bridge across waste weir 120 by 12 feet, put on new caps and covered with 3-inch plank; fitted valve cranks on head gates so as to be taken off at night, put holdback links and bolts to foot gates. Replanked aprons of waste weir. Repaired slash boards of waste weir.

*Lock No. 6 and Level.*

Fitted valve cranks on head gates so as to be taken off at night, put holdback links and bolts to foot gates. Replanked aprons of waste weir; faced up bank and widened east side.

*Hydraulic Race and Aqueduct.*

Built 180 feet long, 5 feet high, dry wall near Lock No. 4.

Built 90 feet long, 6 by 4 feet high.

Raised and replanked bridge at Lock No. 5, and raised all bridges along race to allow ice to pass under. Widened and deepened and sheet piled 138 feet of race back

of hospital, 436 feet of race Division street. Built dry retaining wall in race at Thorold road 186 feet long by 3 feet high and raised banks over same. Repaired bridge at roadway. Raised and replanked bridge across race at Concession Road near Lock No. 5. Took down storehouse and removed to gate yard. Cleaned out obstructions throughout.

*Gate Yard, Merritton—and Shop at Thorold.*

Made paper case, canal office; finished and launched two low lift gates; made small boat for gravel scow; repaired crane scow; repaired twenty-three wheel barrows; made two spouts for new canal 16 feet long; dismantled sixteen old gates. Built small boat for crane scow; finished framing and put together one tow path gate for Lock 1; repaired pile driver, painted leader ladders of same; framed two pieces of pine filling for small gates; made twelve small and three large mooring posts, iron capped; painted mile posts, new canal; dismantled crane scow. Hauled out, jacked up and stripped old gates from Lock 11; built one new scow No. 2, 300 tons capacity, 111 feet long, 23 feet beam, 7 feet depth of hold. Built one small boat for scow and one for three mile level. Built new crane scow for lifting lock gates and for general canal service, 78 feet long, 22 feet beam, 6 feet depth of hold, with projecting boom, derrick and fitted with powerful horse power, put new floor and masts in, repaired scow for feeder Division, and painted her. Put new mast and rigging in derrick for Port Colborne Section; altered and fitted up old crane scow for carrying stone and for other canal purposes; cut up all guard lock gates, and took five valves to shop to be repaired; built five new lock gates and re-built three others.

*Lock No. 7 and Bridge and Level.*

Put on holdback links and bolts on foot gates; made and put new sheave blocks, iron capped, on head gates; new balance beam foot gate, tow path side. Re-built the approach to bridge; repaired bridge; fitted valve cranks on head gates so as to be taken off at night. Re-planked aprons of waste weir; repaired heel path bridge at gate yard.

*Lock No. 8 and Level.*

Fitted valve cranks on head gates so as to be taken off at night; put holdback links and bolts to foot gates. Re-planked aprons of waste weir; repaired floats.

*Lock No. 9 and Level.*

Repaired floats, foot of lock. Repaired lock house. Fitted valve cranks on head gates so as to be taken off at night; put temporary bridge across lock for winter travel. Digging out for waste weir walls to be taken down and re-built 12·02 yards new ashlar masonry, 113·11 yards old work puddled and filled in behind again; put holdback links and bolts on foot gates. Re-planked aprons of waste weir; repaired floats; built new bridge across weir, 60 by 4 feet, and painted three coats.

*Lock No. 10 and Level.*

Put on new balance beam, casting new foot board; iron head gate heel path side, repaired lock house. Fitted valve cranks on head gates so as to be taken off at night; put new flooring in kitchen, Lockmaster's dwelling house, raised walls; put holdback links and bolts to foot gates. Re-planked aprons of waste weir, and repaired bridge.

*Lock No. 11 and Level.*

Repaired lock house, put in one new head gate, raised and brought old gate to yard, raised 342 feet of towing path. Fitted valve cranks on head gates so as to be taken off at night, put hold back links and bolts to foot gates, re-planked aprons of waste weir.

*Lock No. 12 and Level.*

Put new timber under and reset new crab foot gate, put new screws and guide-rods and made and put two new sheave blocks on gates, put new timber coping on, and water stops. Raised 474 feet towing path, fitted valve cranks on head gates so as to be taken off at night. Re-planked aprons of waste weir, size 16 by 60 feet, put two new sheave blocks, iron capped, finished repairing old gates and repaired mitre sill. Put on holdback links and bars to foot gates.

*Lock No. 13 and Level.*

Sheeted foot gates to prevent leakage, made and put two sheave blocks, iron capped, raised 465 feet towing path, built small gates, finished gate for lock, re-planked aprons of waste weir, size 16 by 60 feet, put on holdback links and bolts to foot gates.

*Lock No. 14 and Level.*

Finished coping, put on water stops, raised 450 feet towing path, re-planked aprons of waste weir, size 16 by 60 feet, put on holdback links and bolts to foot gates.

*Lock No. 15 and Bridge and Level.*

Raised 465 feet towing path, built new barn for lockmaster, made new vault for W. C., repaired dwelling house, filled in wash out, put down new double plank apron to waste weir, size 16 by 60 feet, put on holdback links and bolts to foot gates.

*Lock No. 16 and Level.*

Raised 333 feet towing path, put new floor at head recess of lock, put on holdback links and bolts to foot gates, raised and strengthened embankment washed out by break in Lock 17.

*Lock No. 17 and Level.*

Dug out 20 feet deep back of lock wall to make good undermining of lock wall by concrete; stone puddled, and then filled same up again, put new floor in lock and underpinned mitre sill with stone and concrete where they had been dangerously undermined; put new collar head gates, put on four new crabs waste weir, re-planked aprons of waste weir, size 16 by 60 feet, repaired heel path bridge, built new float 50 feet long, put on new holdback links and bolts to foot gates.

*Lock No. 18 and Level.*

Put new slash boards to waste weir, built and put in new waste weir gates complete, rebuilt abutment to float bridge, bolted down oak timber in front to strengthen masonry and aprons of waste weir, put on holdback links and bolts to foot gates.

*Lock No. 19 and Level.*

Built and put in new waste weir gates complete, built road bridge across race-way 12 by 28, put on holdback links and bolts to foot gates.

*Lock No. 20 and Level.*

Put on holdback links and bolts to foot gates.

*Lock No. 21 and Level.*

Put on one new screw; put in two new snub posts; built new barn for Lock master, 16 by 20 by 12 feet high; built and put in new waste weir gates complete; re-built and strengthened 200 feet fencing; put on hold-back links and bolts to foot gates.

*Lock No. 22—Keefer Bridge and Level.*

Put up new shed to lock tender's house; repaired bridge and re-planked same; put hold-back links and bolts to foot gates; lifted two old gates from pond, and put them on bank to be repaired.

*Lock No. 23 and Level.*

Put on one new screw; digging out behind for waste weir wall to be taken down and re-built; 33 yards new ashlar masonry, and 99·06 yards of old work puddled and filled behind again; built new float and abutment; removed obstruction out of lock, and put new foundation and repaired crib; re-built bridge across waste weir; put on new slash boards, &c.; put on holdback links and bolts to foot-gates; put in row protection piling front of waste weir.

*Lock No. 24 and Bridge and Level.*

Put new iron girders under bridge and renewed underwork and other parts; spliced balance beam; digging out behind for waste weir; walls taken down and re-built 24·24 yards new ashlar masonry and 135·5 yards old work; puddled behind and filled in again; put new floor timber and plank to heel of bridge; built new bridge heel path 13 by 22 feet; put new approach to bridge; built new bridge across waste weir, 47 by 4 feet, with railing; put in one new gate complete; put on new chain and pin fastenings to hold back gates.

*Lock 25, Guard Lock and Three Mile Level.*

Put new anchor and collar on lift lock and two snub posts; built new bulkhead and gates; floored flume to mill pond; built two abutments for float bridge across race; repaired Hurst's and Marlatt's bridges; raised and repaired lock-gate tow path side; put new screw in lock gate; widened raceway; put on hold-back links and bolts to foot gate; put new pivot and needle beams on Marlatt's bridge; put new floor under approaches, and aprons to culverts at Beaver Dam and Davis' Basins made centres for masons; digging out for and extending stone work Beaver Dam and Davis' culverts west side Beaver Dam, 125·20 yards; east side, 76·26 yards; west side, Davis', 64·13 yards; east side, 41·25 yards; puddled, filled up and graded back of and over new stone masonry work.

*Allanburg Lift-Lock.*

Widened out bank and faced with stone foot of lock, west side.

*Generally.*

The Government scow has been fully occupied taking stone from quarry to fill up the very numerous and dangerous washouts at the pit of nearly all the waste weir aprons. I hope to have them all secured by end of present fiscal year. A large quantity of stripping and quarry waste has been scowled to the points in danger of overflowing, &c.

Blocked up all bridges for winter and took out same in spring.

Raised banks and cleaned out ditches from time to time throughout.

The planking of the aprons of many of the waste weirs has been entirely renewed.

The usual examination and repairs to all the lock gates, machinery, face planking, &c., has been attended to when water was drawn off.

*Feeder Junction to Dunnville and Port Maitland, 23 miles.*

From Dunnville to Stromness and Port Maitland the distance is six and one-third miles, and comprises the following works, viz—one canal office, one overseer's house, one tollkeeper's house, four swing bridges, five culverts, one very long toll bridge, two locks, one sluiceway, one dam with twenty-six flood gates, one lock-master's house, two bridge shanties, three long waste weirs, one fish ladder, eight stationary bridges, of an aggregate length of 2,200 feet, one harbor, two piers, two breakwaters and about 300 feet of boom.

From Stromness to Boulton Ditch, Marshville, and junction with main line of canal, sixteen and one-third miles, there are:—Three swing bridges, one float bridge, five stationary bridges, with an aggregate length of 150 feet, one sluiceway, one lock, one waste weir, one lock shanty, one lockmaster's house. The supply of water has been better than during the previous year, and the mills have been allowed to run continuously, with the exception of a few days this spring, when the water was drawn down about 8 feet, to prepare for the spring freshet. It was fortunate this precaution was taken, or a serious inundation would have occurred to the country in the vicinity of Dunnville. There have not been any accidents to shipping, and with few exceptions, general satisfaction has been expressed by shippers and mill owners.

*Grand River Flood and Its Consequences.*

The past winter was exceptionally severe along the Grand River and ice formed to an unprecedented thickness. Heavily laden teams used the ice road up to 5th of April. On the 7th a very rapid thaw set in, followed by a flood which the creeks and ditches were not able to discharge (owing to their being frozen up). The water came down, carrying with it long heavy logs, stumps, whole trees, cakes of ice 18 inches thick, and all sorts of rubbish; and, notwithstanding that the water in the Grand River had been previously drawn down as low as it could be (in anticipation of a high flood) on the 11th, it had risen until it was within two inches of the top of the banks. A large number of extra men had to be employed night and day, and used every exertion to keep the waste weirs and flood gates clear of the formidable obstructions above alluded to, some of which, however, came with such force against the protecting piles in front of the toll bridge that five of them were broken. The planks were also tore from the ends of the piers supporting the bridge, and five of the bunters, and split a number of the flood gate posts. The small stone piers in the first and second waste weirs were shifted, and three of them carried away over the new weir. The flood gates were split, more or less, and a number of the valve rods bent. The greater part of the boom timbers were broken and passed over the dam with the driftwood. It will take about \$1,500 to put the works in a good state of repair and I am losing no time in doing so, and am rebuilding the injured stone piers with heavier new stone, and am dowelling them throughout. In order to insure the safety of the extensive and important works in the vicinity there should be additional flood discharge provided by the erection of another waste weir, now that the floods come down more suddenly than formerly, as the surrounding country is becoming better cleared up and drained. The old stationary bridge across Sulphur Creek was removed and new piles driven and a new bridge built, 207 feet long by 16 feet wide, sheeted on the sides to keep the planks covered with snow during the winter, and painted three coats. The approaches were thoroughly repaired and planked up on outside and otherwise protected with stone facing to prevent wash from waste weirs.

*Dunnville Guard Lock.*

The old timbers and planks were taken off down to the stone work, and new timber coping and bed timbers put in, and covered with 2 inch oak plank. Piles were driven at head and foot of lock, backed with timber and filled in with stone to protect the retaining walls. Bridges worn out and defective planks were removed and re-placed, swing bridges were raised on their pivots and properly balanced, and rods tightened.

*Dunnville Embankment and Dam.*

A leak at south end of toll bridge, and one at Scott's Factory were stopped by sheet piling and puddling. The plank walk and roadway across the embankment were kept in good repair; 100 yards of gravel was placed on each side of Fish Pass, to prevent wash during high water. The lockmaster's house at Port Maitland was rebuilt. The lot was also fenced; a new verandah has been also built in front of toll-keeper's house, Dunnville, and the lot fenced.

Large quantities of sunken logs and rubbish have been removed from bottom of feeder. The water in the feeder has been kept during the winter at a uniform level of 7 feet above Lake Erie level. The entrance to Dunnville Guard Lock and Port Maitland Lock were cleaned out; large quantities of driftwood, logs, stumps and rubbish have been removed from entrances to waste weirs and dam.

The towpath and other banks have been kept in good repair, and faced with stone and gravel to prevent wash.

Canada thistles and obnoxious weeds have been cut on both sides of feeder, also on all Government lands in connection with canal. The well holes of all the culverts have been cleaned out, and the rubbish burnt. Some stationary bridges have been coated over with paint and oil.

Breakwater at Port Maitland was rebuilt by R. F. Lattimore last season.

WILLIAM ELLIS,  
*Superintendent.*

A.—STATEMENT of Fines and Damages collected from Vessels and Locktenders contravening Canal Regulations, for the fiscal year ending 30th June, 1883.

Date.	Name of Vessel.	Fines.	Damages.	Total.
1882.		\$ cts.	\$ cts.	\$ cts.
July 1...	Tug "Gordon".....	5 00		
do 1...	do "Bennett".....	5 00		
do 1...	do "C. J. Munroe".....	10 00		
do 1...	do "Aikins".....	10 00		
do 10...	do do.....	10 00		
do 15...	Schooner "Paragon".....		20 00	
do 15...	Barge "Niagara".....		40 00	
do 29...	Tug "Bennett".....	20 00		
do 29...	do "Armstrong".....	20 00		
Aug. 1...	do "Douglass".....	20 00		
do 1...	do "Hector".....	20 00		
do 19...	Propellor "Lake Ontario".....		26 50	
do 23...	Schooner "M. C. Cameron".....		25 00	
do 26...	do "Anglo Saxon".....		22 00	
do 29...	Tug "Armstrong".....	100 00		
Sept. 9...	Schooner "Pride of America".....	20 00		
do 10...	Barge "Lincoln".....		60 00	
do 18...	do "Glenora".....		20 00	
do 18...	do "Gaskin".....		15 00	
Oct. 9...	Tug "Neelon".....		50 62	
Nov. 14...	do "Golden City".....		100 00	
do 14...	do "Robert Hardy".....	5 00		
do 14...	do "Wm. H. Kerrigan".....	10 00		
do 14...	do "Wm. Care".....	10 00		
1883.				
May 18...	Schooner "Kate Eccles".....		50 00	
do 21...	do "O. M. Bond".....		21 00	
do 21...	Barge "Enterprise".....		256 00	
		265 00	706 12	971 12

\*Handed to H. H. Collier, Esq., Collector at St. Catharines.

B.—STATEMENT showing the depth of Water on the Lower Sill of Lock No. 1, Welland Canal, Port Dalhousie, for Fiscal Year ended 30th June, 1883.

Months.	Lower Sill.		Months.	Lower Sill.	
	Highest.	Lowest.		Highest.	Lowest.
1882.	Ft. In.	Ft. In.	1883.	Ft. In.	Ft. In.
July.....	14 8	13 10	January.....	12 6	11 8
August.....	14 4	13 9	February.....	12 4	11 10
September.....	14 1	13 3	March.....	13 8	12 0
October.....	13 8	12 5	April.....	13 4	12 2
November.....	12 11	12 3	May.....	14 2	13 2
December.....	12 7	12 2	June.....	14 8	14 0

Average, 1882..... Ft. In. 14 2  
do 1883..... 14 3

STATEMENT showing the depth of Water on the Upper Sill of Lock No. 27, Welland Canal, Port Colbourne, for the Fiscal Year ended 30th June, 1883.

Months.	Upper Sill.		Months.	Upper Sill.	
	Highest.	Lowest.		Highest.	Lowest.
1882.	Ft. In.	Ft. In.	1883.	Ft. In.	Ft. In.
July .....	14 2	12 11	January .....	13 4	11 5
August .....	13 10	12 9	February .....	13 10	11 7
September .....	14 4	11 10	March .....	12 9	13 3
October .....	13 3	12 2	April .....	13 0	11 4
November .....	14 3	11 2	May .....	13 4	11 0
December .....	15 1	11 7	June .....	15 5	12 11

	Ft. In.
Average, 1882.....	13 7
do 1883.....	13 5

Your obedient servant,

(Signed) WILLIAM ELLIS,  
*Superintendent.*

### BURLINGTON BAY CANAL.

#### No. 6.

UPERINTENDENT'S OFFICE,  
ST. CATHARINES, 17th September, 1883.

SIR,—I have the honor to submit my Report on the working and condition of the Burlington Bay Canal for the year ending 30th June, 1883.

The canal was closed on the 11th December, and opened May 5th. No interruptions to the passage of vessels has occurred during the year.

The rebuilding of the piers is now completed, and some changes and improvements in the ferry landings, now under way, will end expenditure for superstructure on this canal, probably for some years; some dredging, however, should be done, as there is not 8 feet of water in some places. I am having soundings taken throughout and will in a few days submit a plan showing the present condition of the channel, and what should in my opinion be done, to meet the cost of which an unexpended balance of about \$5,000 will be available.

Your obedient servant,

WILLIAM ELLIS,  
*Superintendent.*

A. P. BRADLEY, Esq., Secretary,  
Department Railways and Canals,  
Ottawa.

### RIDEAU CANAL.

#### No. 7.

RIDEAU CANAL OFFICE,  
OTTAWA, 13th September, 1883.

SIR,—I have the honor to submit the annual Report on the state of the works under my charge for the fiscal year ending 30th June, 1883.

Navigation closed at Ottawa and Kingston Mills on November 27th and 30th, 1882, respectively, and opened on May 3rd and May 7th, 1883.

Until the close of navigation 1882, the water in the several ascending and descending reaches was well maintained, the "Long Reach" (twenty-one miles) between Burritt's and Long Island being the only one complained of—it fell below navigation height after October 14th.

There were two delays to navigation. On August 8th the steamer "Nile" owned by Mr. Rathbun & Co., ran into the lower lock at Black Rapids, wrecking one side of the gates. The cause of the accident was clearly traced to the signal bell not working. The gates had served their life, and would have had to be renewed the next winter; the delay of a week to passing boats was the most serious effect of the accident.

On October 23rd, a break in the canal bank occurred between the Hog's Back and Hartwell's, which delayed navigation for about ten days.

The cause of the wash out was the caving in of an old log culvert which had been buried in the bank since the first construction of the canal, and the existence of which no one was aware of.

The season of 1883 opened with unusually high water all along the line of the canal, which was increased by continuous heavy rains well on to June, taxing our waste weirs to their fullest capacity to keep the water from overflowing the works.

Considerable damage was done to the long embankments at Kingston Mills and the Narrows by the storm of May the 20th which lasted for three days.

The high water with wind combined made several ugly breaches which had to be promptly repaired.

Some 500 yards of stone will be required to be placed this winter on the banks as a reserve.

At the Whitefish the dam owing to the water raising above the crest level was for several hours in great danger of being carried away, the prompt action of the Lockmaster in obtaining the use of some teams alone saved it.

A good many complaints were made about the height of the water this spring causing the low lands adjoining the canal to be flooded; allowances will have to be made for such an exceptional amount of rain; our waste weirs were all open to their fullest capacity, and were kept so until the water fell to the ordinary spring height.

At Jones' Falls a new swing bridge over the locks and a fixed bridge over the arm of water from the locks to the main land were built during the past winter, these will be a great benefit to the inhabitants living on the west side of the Rideau waters.

At Manotick new bulk heads were built across the main channel leading to the locks, as well as the channel leading to the mills at Manotick; this will now give us a chance to keep our bulk heads tight and to prevent the leakage complained of.

At Ottawa a much needed improvement was made between the Dufferin and Sappers' Bridge, by raising the canal walls, grading and terracing the ground on either side of the canal.

The survey for the Tay Canal was completed; tenders for the work were duly sought by advertisement this spring, and it was subsequently let to Messrs. Manning & Co., who have made a commencement near Beveridge's Bay.

The principal repairs to the works were as follows:—

*Kingston Mills.*

Kingston Road Bridge replanked. New stop logs and sluices repaired.

*Brewer's Lower Mills.*

Swing bridge replanked.

*Brewer's Upper Mills.*

New beams on upper gates and swing bridge repaired.

*Jones Falls.*

Two pairs of lock gates repaired.

*Chaffeys.*

One pier of new gates complete.

*Newboro.*

Lockmaster's house repaired; repairs to lock gates.

*Old Sluys.*

Two new sluice frames; new mitre post on middle gates, and repairs to sill of lock.

*Merrickville.*

One pair of lock gates renewed; four glancing piers on basin walls.

*Burritt's Rapids.*

One pair of lock gates renewed; swing bridge repaired, and two new sluice frames.

*Manotick.*

Renewed swing bridge across canal; repairs to piers above bulkhead.

*Black Rapids.*

Renewed one pair of lock gates; stone wing wall of by-wash taken down and re-built; new store house built.

*Hogsback.*

Repaired settlements in dam, and built new store house; break in bank repaired.

*Hartwell's.*

Repaired wing wall of lock, and made good the bank washed out by the leakage.

*Ottawa.*

One pair of lock gates repaired; renewed man hole gratings and chain blocks; renewed planking on wharves round the basin.

The works at the different stations are all in good working order, with the exception of the Narrows Lock, which will require heavy repairs to the masonry as soon as the period of low water again occurs. Preparations for these repairs will require now to be made.

Your obedient servant,

FREDERICK A. WISE,  
*Superintending Engineer.*

A. P. BRADLEY, Esq.,  
Secretary Department Railways and Canals,  
Ottawa.

## No. 8.

## TRENT CANAL.

PETERBOROUGH, 6th October, 1883.

SIR,—In accordance with the regulations established by Act of Parliament, I have the honor of presenting to you my Annual Report on the canal works under my charge for the fiscal year ended the 30th June, 1883.

On 1st July the waters on the several reaches stood at a good summer level, the gauge registering over 7 feet on mitre sills of locks; from that date to 6th November when it reached its lowest point, it fell 2·4 feet. Navigation closed 29th November, and opened 28th April.

On 9th April the water commenced to rise with unusual rapidity, and attained on the several reaches a higher level than has ever been known by the oldest inhabitants of the district, excepting in the spring of 1870. This heavy freshet I anticipated, and made preparations for by running off the large lake, in the winter months, and opening out every possible water way, until the water subsided and resumed its ordinary spring level.

The works received no injury beyond that caused by an ordinary freshet.

The greatest number of lockages made at any single lock during the season, was 1,380, comprising steamboats, 500; barges, 880.

The following is a statement of the repairs executed during the past year, together with those required during the ensuing year.

*Fenelon Falls.*

The works at this station consist of a dam, slide and booms. The slide and booms are under the charge of the Department of Public Works, and received general repairs during the past year, consisting in the renewal of the river wall of the slide and the supplying of cross timbers where required. At this station the works for connecting the waters of Sturgeon Lake with Cameron's Lake, consisting of two lift locks and a short cut through limestone rock, making them available for the navigation of vessels drawing 5 feet of water, such works forming a portion of the proposed extension of the "Trent Valley Navigation" are in course of construction, and will, it is anticipated, be completed next year.

*Lindsay.*

The question regarding the ownership of part of the lot adjoining the lock, the whole of which contains about one-half acre, should be definitely settled as soon as possible. The claimant has, I am informed, sold the portion adjoining King Street, which makes a settlement of the question the more urgent. The Government of the Province have applied for the entire lot, but it would be advisable, for reasons already stated in my detailed report thereon, dated 12th March last, for the Federal Government not to dispose of it at present.

On the stretch between this and Port Perry, at the head of Lake Scugog, a great difficulty occurs in maintaining the water at the standard navigable height during the autumn months; the only way in which this can reasonably be accomplished, is by placing bracket boards on the dam at Lindsay. The objection to this is the alleged damage which would be caused to some low swampy lands on the Scugog River; but this is a question which has not yet been satisfactorily solved, and it is not improbable that the water can legally be maintained at the standard height, fixed upon when the works were first constructed and all parties compensated for damages sustained. The mills when first constructed used very little water in proportion to what they do now, their capacity has been largely increased, and consequently the level of the water on the upper reach has been drawn down more rapidly

than in former years; also, the lockages in former years were trifling compared to what they are at present.

The dam and certain hydraulic privileges at this station were transferred by Order in Council in 1875 to the Ontario Government, but whether the transfer was ever completed I am not informed.

*Boyceygeon.*

The upper dam is in a bad state of repair, and it is only by the greatest care and attention that it is kept from being carried away. During the spring it was the cause of great anxiety, and its giving out was daily expected by the inhabitants, every possible precaution was, however, taken to ensure its safety. It is absolutely necessary to construct an entirely new dam on a different location, the cost would be very much less than that of the existing dam. The dam received some new braces and sills, and several hundred yards of gravel. On examining it closely it was found that all the tenons of the trusses were completely rotted out and it would be a useless expenditure to make any extensive repairs.

The lower dam is in a fair state of repair and received no damage from the freshet, but a drive of logs breaking loose at the head of the channel came down against it with such force as to injure about 40 feet of the eastern portion, knocking out the masonry pier at the head of the canal, this was repaired and made good.

The extreme height of the freshet washed away a portion of the berms of the canal and for a few days great anxiety was felt regarding its safety. A large gang of men with teams was set to work and repaired the breach, but in a few days a second wash out occurred which was also promptly attended to, and the mended portion continues to hold good, but it is necessary to raise it about a foot throughout its entire length and to fill in behind it for at least 15 feet.

The lock bottom leaks so as to make the gates extremely hard to work, it is the intention to have it replanked this year. The new upper gates are stepped and work as well as can be expected. New lower ones will be supplied this year.

The tail bay of lock requires to be extended at least 20 feet, and a line of crib work about 60 feet in length constructed at north side of approach thereto to protect vessels from grinding on that shore.

Boatmen complain of the loss they incur by the barges running ashore in the canal in consequence of the sharp bend that occurs near the entrance, and also of the danger and difficulty in approaching the canal with a tow. The entrance being so close to the dam, sometimes the barges are carried upon it and run a great risk in high water of being carried over. To remedy this difficulty it would be necessary to straighten up the canal by cutting off the bend, this would be a great benefit to the navigation and would give a more direct and deeper channel.

*Buckhorn.*

The works here for the descent of timber are under the control of the Department of Public Works. The dam, which is under the management of this Department has been renewed and is in a good state of repair. The works under contract at this station for the extension of navigation are progressing favourably, and will, it is expected, be completed next year. Previous to their completion and before vessels can make use of the improvements it will be necessary to construct works altogether independent of the present contract for the protection of navigation from the drive.

*Young's Point.*

The dam and slide having been assumed by Government in connection with the proposed improvements and extension of this navigation system, the former comes under the charge of this Department, but the slide, booms, &c., connected with the descent of timber comes, I presume, under the control of the Department of Public Works. The dam is in a bad state of repair and leaks excessively. It would be more

economical to construct an entirely new dam at this station than to attempt to repair or patch up the present one. Should a new dam be constructed I would strongly recommend that the slide therein should not be more than 20 feet wide, with not more than 2 feet draught, so as to prevent the waste of an unnecessary volume of water when logs are running, which now occurs with the 33 feet slide all along the line of waters. I would also strongly recommend that not more than one deep sluice of the same breadth as the slide be allowed in the dam, as I find from experience that too many sluices, especially when unequally opened, have undermining effects on the adjoining cribs, particularly in a gravel bottom.

A great difficulty to navigation presents itself here, owing to the channel becoming every season blocked with the "drive." When connection is made with the upper waters there is no doubt but that the navigation will be of much greater extent, and consequently it becomes necessary to devise some means to obviate this difficulty. I shall repeat here what I have already stated in my Report to the Department of Public Works on the subject.

"The most feasible plan that presents itself is as follows:—A short distance above the dam a channel exists between an island and the east or Dummer shore, about 50 feet wide. At low water this passage is nearly dry; but by excavating it to a depth of say three feet, with the addition of two small piers and a guide boom at the head, it would make a complete and separate channel for timber. The excavation would be in gravel. The channel at present for both timber and steamboats is on the west side of the island between it and the 'Smith' shore, and the timber is constantly blocking the channel. By clearing this Dummer channel and compelling the lumbermen to use it, would, I am of opinion, solve the difficulty. I tested the question this spring when there was about three feet of water in the passage, by compelling a 'drive' of Messrs. Rathbun's to use it, and the foreman in charge expressed himself as preferring it by 'long chalks' to the other channel."

#### *Lakefield.*

As far back as the year 1874 the subject of the advisability of the Government assuming possession of this dam was brought up, and being referred to me for report, I had the honor in March, 1874, of advising that the control of a dam that maintains navigation should not be held by private parties. Further negotiations were deferred until a few years back, and it is now a matter of congratulation that negotiations again set on foot have resulted in the Government assuming control of the dam in the interests of navigation. A new dam is required, the present one being so old and leaky as to make it almost impossible to retain the water on the reach above at the required navigable height.

Between this Station and Young's Point, there is a constant conflict between the interests of navigation and those of the lumber trade, caused by the blocking up of the steamboat channel by the "drive." This has become a public nuisance, and passenger boats and tows have frequently been delayed for over forty-eight hours at a time. I have represented this matter also in my report to the Department of Public Works, and pointed out how the difficulty could be removed by the construction of certain piers and booms at the points needed, viz: The Three Islands and Henderson's Narrows.

There are also a number of boulders that require removal, and a channel should be cut through a bar that exists a short distance below Young's Point.

If a small dredge suitable to these waters were built and retained on this stretch of navigation, especially now when these new works are progressing it would be of great usefulness, and would save expenditure.

#### *Peterborough.*

The Ontario and Quebec Railway Company having obtained power to construct under certain conditions a bridge across the Otonabee River at this town without a

swing, thus rendering necessary the removal of the steamboat landing further from the town, have in accordance with one of the conditions of the agreement submitted to this office for approval a plan of the wharf they propose building, and I beg to state that its details are in every respect of a substantial character and superior to those of the present one. The location proposed, however, I cannot agree to, as at low water, there will not be a sufficient depth for steamboats to go along side, the quay must run out into the river until the required depth is obtained. The dredging operations for which an amount was voted at last session of Parliament are being carried out under the direction of the Department of Public Works, but I beg to state that these operations will prove futile, unless the sawdust nuisance is put a stop to.

#### *Whitlows Rapids.*

The lock walls were pointed up with English Portland cement, and the gate platforms rebuilt; the gearing for working the gates being out of repair, was refixed.

The cap of the cross dam was sprung up by the high water, and also the flooring of the waste weir, these will be fixed at low water.

The portion of the wing dam adjoining the lock, about 50 feet in length, was swept away during the spring. It is in course of repair.

When constructing the lock at this station the lower mitre sill was not sunk sufficiently to give the required depth of water; when there is 5 feet 6 inches on the sills of the other locks we can scarcely get 4 feet 6 inches on this. It will therefore be necessary to sink this sill about a foot to obtain the depth the navigation demands.

#### *Hastings.*

A large floating bog, having an area exceeding four acres and about 4 feet deep was brought down by the spring flood from Rice Lake and lodged against the works, breaking the booms and damaging the slide, filling up the approach to the lock, and lodging on the dam. It was a source of great annoyance and trouble, and took nearly two weeks to get rid of. This was affected by cutting it into small areas and locking it through. The consequence was that the lock chamber became choked with the debris, and it was necessary to use a diver to clean it. The slide and booms were repaired under the Department of Public Works. The guard and "laying to" wharf above the lock is undergoing renewal under this Department. Applications for water power have been made at this station during the past year, one on the north side, adjoining the lock, and the other on the south side, below Powld Bros.' saw-mill; these I have reported on in detail.

The lock walls require pointing up and the gates need four new top courses. The approach to the swing in the railway bridge across the river has been completed by the company.

#### *Heely's Falls.*

The slide and booms were repaired under the direction of the Department of Public Works.

The dam was injured by the freshet, about 60 feet being carried away. It will be necessary to repair it this fall.

#### *Middle Falls.*

The works here, being erected exclusively for the benefit of the lumber trade, are under the management of the Department of Public Works, and instructions have been given to have the repairs required carried out.

#### *Chisholm's Rapids.*

The dam is undergoing repairs, which consist in supplying new posts and braces where required.

The sluices are being renewed. The lock chamber, for which authority has been granted, will be cleaned out and the new lower gates stepped.

The slide and booms being under the management of the Department of Public Works, instructions have been given by that Department to have the required repairs thereto carried out this fall.

The Central Ontario Railway Company have completed the bridge across the river and erected a temporary structure across the canal.

The works on the River Trent erected for the descent of timber, which were managed some years ago by a Committee have been again assumed by Government, the Committee failing to comply with the terms of the transfer.

I have the honor to be, Sir,

Your obedient servant,

THOMAS D. BELCHER,

*Superintending Engineer.*

A. P. BRADLEY, Esq.

Secretary, Department of Railways and Canals,  
Ottawa.

No. 9.

ST. PETER'S CANAL.

OTTAWA, 24th October, 1883.

SIR,—Navigation through the St. Peter's Canal was closed on the 1st January, 1883, and opened on the 16th April, 1883.

The following is a statement of the traffic through this canal during the fiscal year ended 30th June, 1883 :—

Month.	No. of Ves- sels bound North.	Tonnage.	Amount col- lected for Tolls.	No. of Ves- sels bound South.	Tonnage.	Amount col- lected for Tolls.
1882.						
July .....	72	4,236	86 00	59	2,343	61 33
August.....	61	3,762	65 11	42	1,923	45 18
September.....	84	4,362	87 62	53	3,249	52 12
October.....	69	2,984	54 61	87	5,023	98 21
November.....	83	3,064	70 40	73	3,818	82 31
December.....	32	1,243	32 05	17	856	13 05
1883.						
April.....	14	823	17 14	6	350	5 12
May.....	71	2,408	70 10	52	4,243	90 10
June.....	118	8,261	162 43	90	9,121	212 21
Totals .....	604	31,143	645 26	479	30,886	659 63

I have to report that the canal has been in good working order during the year, and that only some small repairs were required and made to the lock gates and roadway.

An appropriation has been made for protection works at the northern or Bras d'Or end of the canal, which will be proceeded with during the present fiscal year.

I have the honor to be, Sir,

Your obedient servant,

HENRY F. PERLEY,

*Engineer in charge.*

A. P. BRADLEY, Esq.,

Secretary, Department of Railways and Canals,  
Ottawa.

## No 10.

CORNWALL 31st October, 1883.

A. P. BRADLEY, Esq.,  
Secretary Department of Railways and Canals,  
Ottawa.

SIR.—I have the honor to submit my Annual Report for the fiscal year 1882-83.

The works under my charge comprise the Murray Canal, the Galops Rapid Improvements, and the enlargement of the Cornwall Canal, &c., on the upper St. Lawrence, also the surveys for the proposed Trent Valley Canal, and the following works of construction authorized and in progress on the Back Lake Division thereof, viz : the Young's Point Dam, and the Burleigh, Buckhorn, and Fenelon Falls Canals.

## UPPER ST. LAWRENCE.

*Murray Canal.*

The construction of this canal, the importance of which to the carrying trade of the Dominion cannot be over-estimated, implies the extension westward through Lake Ontario of the Upper St. Lawrence River navigation by way of the land locked waters of the Bay of Quinté to Presqu'Isle Harbour, a point on the north shore of the lake nearly equi-distant from Kingston and Toronto.

Presqu'Isle, the future Harbour of Refuge of Lake Ontario, is situated midway of the lake, and above the dangerous coast of the Prince Edward peninsula.

From Presqu'Isle to the entrance of the Welland Canal at Port Dalhousie, the actual distance will be less than 120 miles, thus reducing the extent of open lake navigation nearly one-half.

The canal when completed will have the effect of developing a considerable coasting trade along the north shore of Lake Ontario.

The contract was entered into with Messrs. J. D. Silcox & Co., 24th August, 1882, to be completed 1st July, 1885.

The works which extend over a distance of about nine and a-half miles, consist of a through cutting in ordinary excavation four and one-eighth miles in length across the Isthmus of Murray, and of stretches of sub-marine excavation in sand or clay, &c., at the Presqu'Isle and Bay of Quinté entrances and the new entrance to Presqu'Isle Harbour.

Work was commenced on the isthmus near the Presqu'Isle end on September 1st, and dredging operations, Presqu'Isle entrance, October 3rd, 1882; and during the present season a commencement has also been made at the Bay of Quinté entrance.

The whole of the lands required for canal purposes have been expropriated; and the chopping and clearing throughout is now completed.

Excavation has been carried on over the entire length across the isthmus: and in reference thereto it is stated by the contractors, 30th June, 1883, that "the excavation, &c., is going on with good success, nothing appearing as yet, indicating any change in the character of the material different than was represented."

The contractors have made very satisfactory progress since the commencement of the work, and have displayed great skill and energy in its conduct, notwithstanding many difficulties incident to the present high stage of water in the lake.

*Galops Rapid Improvements.*

This work, about three quarters of a mile in extent, is situated near the head of the Galops Canal, seven miles below Prescott, and was designed in connection with the enlargement of the St. Lawrence Canals, to facilitate the descent of deeply laden vessels by the main channel of the river to the head of the Cornwall Canal, at which point the Long Sault Rapid obstructs further progress down stream.

To render the navigation of the "Galops" practicable in all stages of water, several rocky shoals which now exist therein are required to be removed, and the bed of the river depressed, in order that a depth of at least sixteen feet at low water may be obtained, *vide* Report 1881-82.

When these improvements are effected—and it having been ascertained that the rapids below have a sufficient depth for the proposed enlarged scale of navigation—all downward bound vessels will be enabled to use the new channel and the river, and thus avoid the passage through the Williamsburg Canals and the delay occasioned thereby.

Of the shoals referred to above, the most extensive and difficult of removal are the "Island Shoal" and "Lower Bar."

Thus far operations have been confined to Island Shoal, the work on which was commenced late in 1880, and has been continued each subsequent season with increasing success, as well in the management of the drilling and the blasting, as of the dredging plant and machinery.

The working season usually lasts from April to November, about seven months.

Island Shoal, it may now be said, is practically removed, the drilling and blasting having been completed and dredging well advanced.

The work of drilling and blasting at the head of Lower Bar has been successfully commenced.

#### *Cornwall Canal.*

Section number one of the enlargement, the new low entrance is, completed and in general use.

#### *Trent Valley Canal.*

*Surveys.*—The location surveys for this work, which were commenced in August, 1882, are now substantially completed, and the maps, plans and estimates are being prepared as rapidly as possible.

As indicated in a previous report, the main line of water communication, as recommended by Mr. N. H. Baird, in 1833-35, is that which has been generally adhered to; substituting, however, in certain cases, inland routes or cut-offs, which, upon examination, were found to possess advantages over the original project, wherein the canalization of the rivers formed an important feature.

#### *Trent Navigation.*

The works authorized, or now under construction, are necessary to complete and render continuous the several isolated stretches of navigable water, designated the "Back Lake Division," which extends from the village of Lakelfield to Balsam Lake, the summit level on the main line of the proposed Trent Valley Canal, and are referred to in ascending order as under.

1. *Lakefield Dam*, which forms a part of the Strickland mill property—the dam proper was expropriated for navigation purposes in October, 1882—although constructed for milling purposes only, has hitherto served to maintain the navigation on Katchiwannoe Lake to the lock at Young's Point.

Its present condition, however, owing to the serious damage which it sustained this season, during the freshet, is considered dangerous, and it should at once be replaced by a permanent regulating dam, upon a site immediately below the present structure.

2. *Young's Point Dam.*—The present dams, situated between Katchiwannoe and Clear Lakes, was built by private enterprise, and subsequently—about 1874—assumed by the Provincial Government, by which it was repaired in the interests of navigation and in connection with the lock. It has, however, from neglect and decay, become unsafe, and authority has accordingly been obtained—February, 1883—to construct a new regulating dam, adapted to the requirements of the Trent navigation, in maintaining and controlling the levels of Clear and Stony Lakes.

A small expenditure was made last April for the purpose of strengthening the present dam, in anticipation of the freshet.

All damages which may be caused by overflow to the lands bordering upon Katchiwannoe Lake, including Young's Point, have been arranged for with the owners by the Government valuers.

3. *Burleigh Canal*.—This work extends from Stony Lake to Deer Bay, a distance of about two and one-fourth miles, and embraces the Burleigh Chute and rapids, and Lovesick Lake and rapids.

The contract was awarded to Mr. George Goodwin, 27th September, 1882, to be completed 1st July, 1885.

The work consists in the construction of three lift locks, regulating and flat dams, bridge abutments and other works.

The work has not as yet been commenced by the contractor, owing, as he states, to the difficulty in procuring men, and the absence of any settlement in the neighborhood.

4. *Buckhorn Canal*—about one-fourth of a mile in length—is situated at the upper rapids, between Deer Bay and Buckhorn Lake.

This contract was also awarded Mr. George Goodwin, 27th September, 1882, and is to be completed 1st September, 1884.

The work consists in the construction of a lift lock and entrance, and short reach of canal; also the improvements required in the channel of Little Buckhorn Rapids, near the entrance of Deer Bay.

Work was commenced 30th March, 1883, and has since been carried on satisfactorily.

The excavation in granite rock is well advanced, and the lock-pit is nearly ready to receive the foundation.

The contractor has procured a limestone quarry within a mile of the work, and is now engaged in dressing stone for the lock.

5. *Fenelon Falls Canal* is situated at the falls, between Sturgeon and Cameron Lakes, in the Village of Fenelon Falls, and is about one-third of a mile in length.

The contract was awarded to A. F. Manning & Co., 14th October, 1882, to be completed 1st July, 1885.

The work consists in the construction of two lift-locks, with entrance piers, the formation of a short reach of canal, and of an opening and pier in the central span of the Victoria Railway Bridge, &c., &c.

Work was commenced 16th October, 1882, and very satisfactory progress has since been made.

The greater part of the excavation (limestone rock) has been completed.

Masonry has been commenced in the upper lock.

The cribs forming the foundation for the entrance piers have been sunk and the necessary dredging performed.

And timber for lock foundations and superstructure of piers, &c., &c.; also a large quantity of dressed stone for locks from Bobcaygeon quarry, has been delivered on the work.

I have the honour to be, Sir,

Your most obedient servant,

THOMAS S. RUBIDGE,  
*Engineer-in-charge.*

APPENDIX No. 6.  

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OTTAWA, 11th August, 1883.

SIR,—I beg to transmit to you herewith a statement of claims referred to and arbitrated upon by the Official Arbitrators in connection with the Department of Railways and Canals, during the fiscal year ended 30th of June last.

I am, Sir,  
Your obedient servant,

CHAS. THIBAULT,  
*Secretary to Official Arbitrators.*

A. P. BRADLEY, Esq.,  
Secretary Department of Railways and Canals.

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STATEMENT of Claims referred to and arbitrated or reported upon by the Official Arbitrators in connection with the Department of Railways and Canals during the Fiscal Year ended 30th June, 1883.

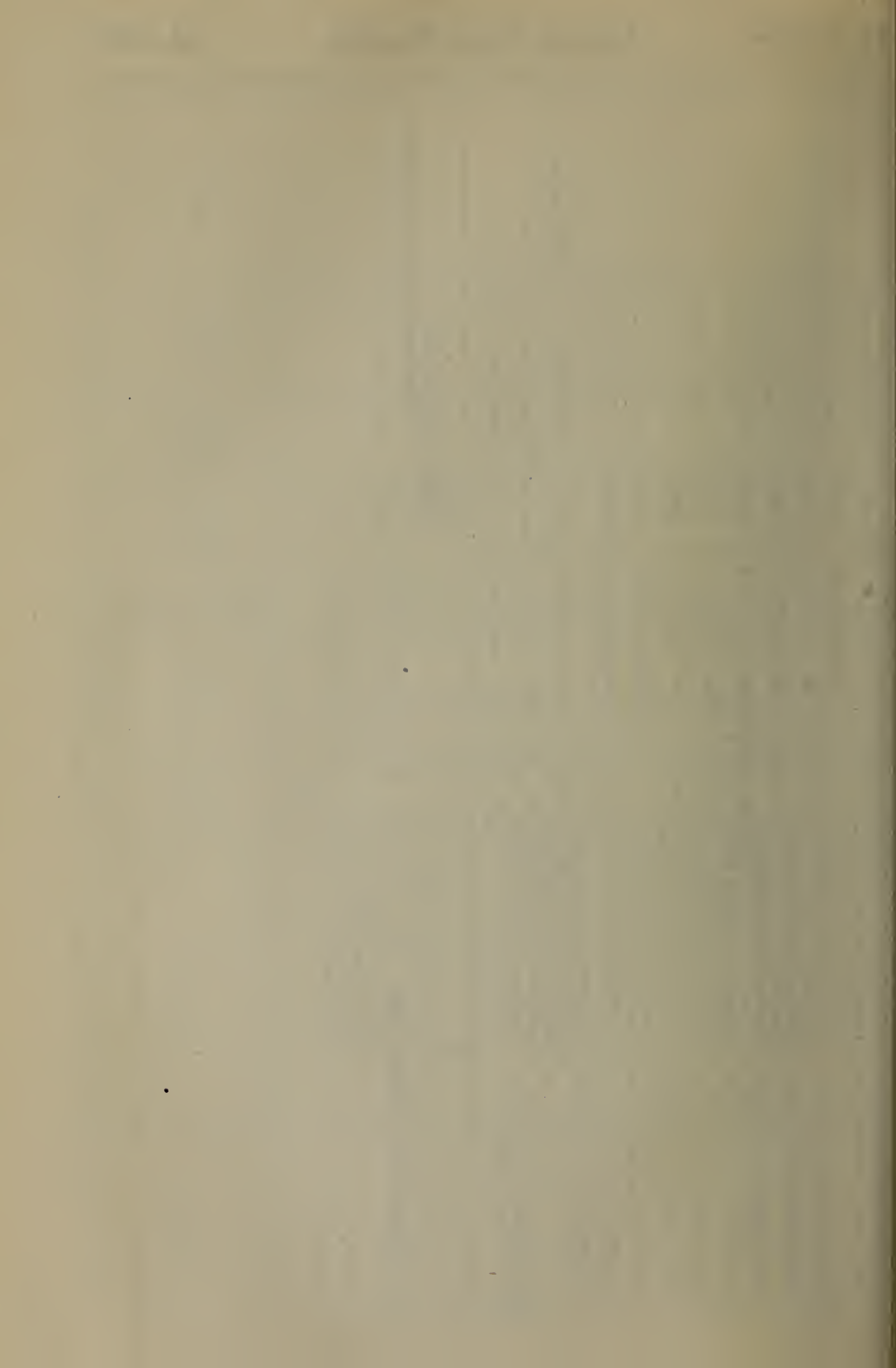
Claimants.	Nature of Claim.	When referred.	To whom referred.	Whether for Award or Report.	Amount claimed.	Amount awarded or recommended.	Date of Award or Report.	Remarks.
Mrs. James Isbister.....	Old Portage la Prairie line of C.P.R.	1882.			\$ cts.	\$ cts.		
Duncan Livingstone....	Land taken for, and damage .....	Oct. 9...	Full Board ...	Report.	Not stated	762 25	Oct. 14, '82.	
Wm. J. Almon.....	do do .....	do 9...	do .....	Award.	335 25	335 25	do ...	
Chas. M. Almon & W. B. Gravelly .....	Pembina Branch of the C.P.R.—Land taken for .....	do 9...	do .....	do ...	Not stated	.....	.....	
Maxime Boudreault.....	do do .....	do 9...	do .....	do ...	1,500 00	200 00	Oct. 14, '82.	
Mrs. Robert Ross.....	I. C. R.—Damage by fire to fruit trees	do 9...	One arbitrator.	do ...	Not stated	162 00	July 28, '83.	
John Hune and G. Wright.....	do do .....	do 9...	do .....	Report..	6,225 00	6,225 00	do 5, '83.	
Birds Hill Ballast Pit (Bustoned) .....	Damage for the killing of her husband.....	do 9...	do .....	do ...	.....	.....	.....	\$30 to Hune and \$132 to Wright—\$162 in all.
Jas. Taylor and W. McKay Taylor .....	do do .....	do 9...	do .....	do ...	19,413 00	100 00	Oct. 11, '82.	
Charles Wilson.....	Pembina Branch of the C.P.R.—Land taken for ballast pit.....	do 9...	do .....	do ...	4,160 79	1,498 00	Apr. 26, '83.	
Wm. Ferguson.....	C.P.R.—Lot 65, St. Clements, taken for and given back.....	do 9...	Full Board....	Award.	.....	.....	.....	
J. Bte. Lepage.....	Old Portage la Prairie line of C.P.R.—Land taken for gravel.....	do 9...	do .....	do ...	3,000 00	2,500 00	June 15, '83.	Referred to full Board for award, Feb. 10, 1883.
Stanislas Meunier and Saul Hardy.....	I. C. R.—Land taken for the Moncton cotton siding.....	do 9...	One arbitrator.	Report.	Not stated	800 00	Nov. 28, '82.	
R. A. R. Hubert .....	do do .....	do 11...	Full Board....	do ...	.....	.....	.....	
	St. Jours Dam—Damage to land.....	do 16...	One arbitrator.	do ...	.....	.....	.....	
	Lachine Canal—Damage to land through leakage .....	do 21...	Full Board.....	do ...	22,407 33	2,800 00	Dec. 16, '82.	Recommending to buy a strip of land alongside of the Lachine Canal.



STATEMENT of Claims referred to and arbitrated or reported upon by the Official Arbitrators, &c.—Continued.

Claimants.	Nature of Claim.	When referred.	To whom referred.	Whether for Award or Report.	Amount claimed.	Amount awarded or recommended.	Date of Award or Report.	Remarks.
					\$ cts.	\$ cts.		
David Recons.....	do	1883.						
James Jones.....	Damage on account of of proper works.....	Jan. 5...	One arbitrator	Report..	250 00			
Thos. Hayes.....	Damage to land, diversion of water and land taken.....	do 5...	Full Board.....	Award.	2,800 00	2,600 00	June 27, '83	
Mrs. Dennis Carroll....	Damage for a horse killed by do cow do .....	do 8...	do .....	do .....	45 00			
Allen Price.....	Barn destroyed by fire from. do .....	do 9...	do .....	do .....	40 00	Nil.	July 24, '83	
Mrs. Ann Connell.....	Damage for two horses killed by .....	do 10...	do .....	do .....	100 00			
Jules Larivée.....	Damage through want of a proper drainage.....	do 11...	do .....	do .....	250 00			
Joseph Roy dit Desjar- dins.....	do do do .....	do 17...	do .....	do .....	50 00			
James Falconer.....	Damage to land by flooding from.....	do 25...	do .....	do .....	5 00			
Cyprien Gagnon.....	Damage for a cow killed by. do .....	do 29...	do .....	do .....	1,170 00			
J. P. Kelly.....	Carillon Canal—Damage for a horse drowned in the.....	do 29...	do .....	do .....	30 00			
John Smith.....	P. E. I. R. Y.—Damages and land taken for.....	do 30...	do .....	do .....	150 00			
J. Bte. Plante.....	St. Charles Branch, I. O. R.—Two horses killed by .....	do 30...	do .....	Award.	165 00			
Theophile Laraway.....	I. C. R.—Damage for a horse killed by do Ties used for and not paid..	July 1... July 10...	do .....	Report..	150 00			
R. Carr Harris.....	do do .....	do 27...	One arbitrator	Report..	80 00			
John McDonald.....	Damage for cattle killed by do .....	Mar. 20...	do .....	do .....	700 00.			
G. T. Bowser.....	Land taken for .....	do 31...	do .....	do .....	50 00			
Nat Fitzsimmons.....	do do .....	do 31...	do .....	do .....	Not stated			
Wm. Fraser.....	House and furniture destroy- ed by fire.....	April 4...	Full Board.....	Award.	680 00	275 00	June 15....	
John Gunn.....	Damage to fence and wood by fire from.....	do 11...	One arbitrator	Report.	Not stated	Nil.	July 9...	
Edward Lefebvre.....	do do .....	do 25...	Full Board.....	Award.	106 00	106 00	June 15....	
	Oulbute Canal—Damage to land and to water privilege by.....	do 25...	do .....	do .....	30 00	22 00	do 15....	
		do 27...	do .....	do .....	Not stated	Nil.	April 27....	





## APPENDIX No. 7.

## GENERAL STATEMENT SHOWING.

- 1st Water Power and other Public Property leased on Canals and Railways, during the Fiscal Year ending 30th June, 1883.
- 2nd. Property purchased by the Department of Railways and Canals, for the Dominion Railways and Canals, and Property sold by the same Department, as not being required for said Railway and Canals during the Fiscal Year ending 30th June, 1883.

## GENERAL STATE

## 1st. Water Power and other Public Property leased on Canals

Date of Signature.	Term of Lease.	Lessees.	Property Leased.	For what purpose used.
<i>Beauharnois Canal.</i>				
Aug. 22, 1882	Dur. pleasure of Government	James Wattie .....	Lot near dam in rear of lot 122, and of McDonald's lot, Valleyfield.	Drying cloth, &c.
Apr. 7, 1883	do ...	Montreal Cotton Co..	Lot 845, above Guard Lock, Valleyfield.	Public park.....
<i>Lachine Canal.</i>				
Oct. 27, 1882	do ...	Acer & Kennedy.....	Lot on S. E. of Mill street, Point St. Charles, Montreal.	Hotel.....
Apr. 23, 1883	do ...	do .....	Part of lot 323, Mill street, Point St. Charles, Montreal.	Cattle and stock yard.
do 4, 1883	21 years (renewable).	Pillow, Hersey & Co.	Recognized by Government as tenants of mill lots 15 and 16.	Spike and nail factory.
<i>Rideau Canal.</i>				
Jan. 4, 1883	21 years (renewable).	London and Canadian Loan and Agency Co. (Lmtd)	Renewing lease 2792, surplus water, Manotic, Long Island.	Grist mill.....
Apr. 21, 1883	Dur. pleasure of Government	Michael Keily .....	Part of lot E., Concession D, Rideau front, Nepean, head of Deep Cut.	Farming .....
Aug. 13, 1883	do ...	Corporation of City of Ottawa.	Lot at east end of Slater street, Ottawa, west of Canal.	Weigh house.....
do 31, 1883	do ...	Patrick O'Donnell ...	Part of lot E., Concession D., Rideau front, Nepean, at head of Deep Cut.	Farming .....
<i>St. Anne's Lock.</i>				
July 4, 1882	do ...	Canada Mutual Telegraph Co.	To place a pole on canal land for their telegraph.	Telegraph .....
<i>Chambly Canal.</i>				
Sep. 1, 1882	do ...	Montreal, Portland & Boston Railway Co. (now called South Eastern Ry. Co.)	Wharf lot at St. Joseph de Chambly, on berm bank or south side of Canal, between bridge No. 7 and lock No. 4, and to lay a railway track in rear of wharf.	Wharf and railway track.
<i>Carillon Canal.</i>				
Dec. 30, 1882	do ...	Henry E. Mason .....	Land between old canal and Ottawa River, from head of old canal, eastward.	Farming .....
do 30, 1882	do ...	John Brophy .....	Land between old canal and Ottawa River, from head of old canal, westward.	do ...
<i>Trent Works.</i>				
do 22, 1882	do ...	Ontario and Quebec Railway Co.	To construct a bridge over Otonabee River, and remove a town wharf to foot of Wolfe street, Peterborough.	Bridge .....

## MENT SHOWING:

and Railways, during the Fiscal Year ended 30th June, 1883.

Amount of Water-power Leased.	Area of Property leased.	Date from which Lease is reckoned.	Annual rental.	Terms of Payment.			Remarks.
				Amount of each instalment.	When payable each Year.	When first instalment was payable.	
			\$ cts.	\$ cts.			
.....	280x100 ft.	July 1, 1882	20 00	20 00	July 1.....	On delivery of lease.	
.....	105,000 sq. ft.	Jan. 1, 1883	20 00	20 00	Jan. 1.....	do ...	
.....	100x225 ft.	Aug 1, 1882	400 00	400 00	Aug. 1.....	do ...	
.....	6 acres ....	Dec. 1, 1882	150 00	150 00	Dec. 1.. .....	do ...	
4 runs... do ...	44½ perches do ...	Jan. 1, 1851	430 00 430 00	215 00 215 00	Jan. 1..... } July 1..... }	do ...	In place of Holland & Dunn and T. D. Bigelow & Co.
All the surplus water.	.....	Jan. 1, 1882	50 00	25 00	Jan. 1 & July 1.	July 1, 1882.	Formerly M. K. Dickinson.
.....	5 a., 3 r. & 22 p.	May 1, 1883	13 00	13 00	May 1.....	On delivery of lease.	
.....	.....	do ...	1 00	1 00	do .....	do ...	
.....	2 r., 24 p., 3 a., 3 r. & 5 p.	do ...	9 50	9 50	do .....	do ...	
.....	.....	July 4, 1882	1 00	1 00	Jan. 1. ....	do ...	
.....	356 x 46 ft. 354 x 38 ft.	July 1, 1882	60 00	60 00	July 1.....	do ...	This includes wharf lot formerly occupied by Willet & McPherson.
.....	22½ acres..	July 1, 1883	10 00	10 00	do ...	July 1, 1882.	
.....	24½ acres..	do ...	10 00	10 00	do ...	do ...	
.....	.....	.....	Free.....	.....	.....	.....	

## GENERAL STATEMENT showing: 1st. Water Power and other

Date of Signature.	Term of Lease.	Lessees.	Property Leased.	For what purpose used.
Dec. 28, 1882	21 years (renewable).	Toronto Paper Manufacturing Co.	<p style="text-align: center;"><i>Cornwall Canal.</i></p> Surplus water at lock No. 18, at Cornwall.	Paper mill.....
Oct. 18, 1882	do ...	Whitman & Barnes Manufacturing Co.	<p style="text-align: center;"><i>Welland Canal.</i></p> Part of lot 14, in 7th Concession, Grantham.	Knife works .....
Sept. 5, 1882	do ...	S. H. Fowler .....	<p style="text-align: center;"><i>Fort Francis Canal.</i></p> Assigns to the Rainy Lake Lumber Co. (Limited), his lease of Aug. 1, 1881, of land both sides of canal, at Alberton, &c.	.....

Public Property leased on Canals and Railways, etc.—*Concluded.*

Amount of Water-power Leased.	Area of Property leased.	Date from which Lease is reckoned.	Annual rental.	Terms of Payment.			Remarks.
				Amount of each Instalment.	When Payable each Year.	When first instalment was payable.	
			\$ cts.	\$ cts.			
400 h. p.	.....	Jan. 1, 1883	120 00	60 00	Jan. 1 & July 1.	July 1, 1884.	
.....	$\frac{1}{2}$ acre.....	Oct. 1, 1882	75 00	75 00	Oct. 1.....	Oct. 1, 1882.	
.....	.....	.....	.....	.....	.....	.....	

GENERAL STATEMENT showing: 1st Water Power and other Public Property Leased on Canals and Railways, etc:--Concluded.

Date of Signature.	Term of Lease.	Lessees.	Property Leased.	For what purpose used.
Aug. 19, 1878.....	do	... Albert Railway Co..	Loan of 302 tons iron rails from I. C. Ry... do ...	For Branch at Salisbury, N.B. do Hampton, N.B.
Sep. 23, 1878....	do	... St. Martin and Upham Railway Co.	do 2,246	do do
Oct. 5, 1878.....	do	... Elgin and Petitcodiac Railway Co.	do 1,395	do do
Aug. 15, 1879.....	do	... Richibucto Railway Co.	do 650	do do
June 17, 1881.....	do	... Kent Northern Railway Co.	do 500	For Branch from town of Richibucto, N.B. (formerly Northern Ry. Co.) For their railway.
do 24, 1881.....	do	... Albert Railway Co... Chatham Branch Railway Co.....	do 420	do do
Dec. 6, 1875.....	do	... Kent Northern Railway Co.....	do 900	do do
Nov. 17, 1882.....	do	... Kent Northern Railway Co.....	do 620	N.B. from junction of I. C. R. to Chatham, For their railway.

2nd. PROPERTY purchased by the Department of Railways and Canals, and Property sold by the same Department as not being required for the Railways and Canals, during the fiscal year ending 30th June, 1883.

Date of signature.	Vendors.	Purchasers.	Property Purchased or Sold.	For what purpose used.	Area of land.	Price of sale.	Remarks.
Apr. 13, 1883	Hugh Robertson .....	Her Majesty.	<i>Carillon and Grenville Canals.</i>			\$ cts.	
Mar. 4, 1882	Reuben Weldon <i>et ux</i>	do	Release for damages to mills at Isle aux Chats, Chatham, by feeder.....	Carillon Canal.....	.....	1,600 00	
Dec. 11, 1882	do	do	Deed of part of lot 13 in 1st range, Chatham	Grenville Canal.....	0.952 acres	9 52	11th Nov., '82, discharge of mortgage by Jos. Greenshields on lot 13.
Feb. 27, 1883	Patrick Farrell.....	do	Release for damages to lot 7, 1st range, block C, Chatham, by leakage.....	do	.....	400 00	
41 do	John Veitch.....	do	Release for damages to lot 12, 2nd Con, block A, Chatham, North River water.....	Carillon Canal.....	.....	150 00	
do	do	do	Release for damages to lot W $\frac{1}{2}$ 16, block A, Chatham, North River water.....	do	.....	250 00	
Apr. 24, 1883	David Gauthier.....	do	Release for damages to lot 4, 1st Con., block A, Chatham, North River water.....	do	.....	300 00	
do	do	do	Release for damages to lot W $\frac{1}{2}$ 1, 2nd Con. (official lot 230), Chatham, North River water.....	do	.....	200 00	
Mar. 15, 1883	Jean Morin (or Moran)	do	Release for damages to lot 13, 2nd Con, block A, Chatham, North River water.....	do	.....	50 00	
May 1, 1883	John Fitzgerald .....	do	Deed to Govt., part of lots 4, 5, or official lots 187-46 and 187-56, 1st Con., Chatham, North River water.....	do	.....	300 00	
do	do	do	And release of damages to do	do	8.00 acres	300 00	
do	do	do	And with interest.....	do	.....	24 00	
Aug. 22, 1883	Finlay McMartin.....	do	Receipt damages by North River dam, to lots 130, 131, 133 to 137, 159, 66, part 303, 304, 305, St. André .....	do	.....	300 00	From 12th Nov., '81 to 12th Nov., '82.
July 23, 188.	do	do	do	do	.....	1,200 00	From 12th Nov., '77, to 12th Nov., '81
Oct. 20, 1882	Michael J. Anderson,	do	Deed to Govt. of lot 6, near Town of Cornwall, on Potash Point .....	Cornwall Canal.....	3.07 acres	1,669 88	

2nd. PROPERTY purchased or sold by the Department of Railways and Canals, &c.—Continued.

Date of signature.	Vendors.	Purchasers.	Property Purchased or Sold.	For what purpose used.	Area of land.	Price of sale.	Remarks.
Nov. 25, 1882	do	Her Majesty	<i>Cornwall Canal—Continued.</i> Order of High Court of Justice, Q. B., to pay do With costs of application..... (Refund balance to Minister R. & C., \$306.42)	Cornwall Canal... do	..... .....	\$ cts. 1,363 46 150 31	
Jan. 19, 1883	William Evans.....	do	<i>Lachine Canal.</i> Release damage to lot 3607, Village St. Augustin, by filling Côte St. Paul drain... do 3615 do .. do 3614 do .. do do do .. do 3616 do ..	Lachine Canal..... do do do do	..... ..... ..... ..... .....	275 00 100 00 100 00 200 00	
Jan. 23, 1882	Executors late Wm. Molson .....	do	do 1065, St. Ann's Ward, Montreal, and under lease of Island above St. Gabriel Lock.....	do	.....	{ 2,280 30 741 00 123 23	
Sept. 26, 1882	Jules Tremblay <i>et ux,</i> <i>et al.</i> .....	do	<i>Ste. Anne Canal.</i> Deed to Govt. of lot 121, official plan, Ste. Anne du Bout de l'Isle.....	Ste. Anne Canal... do	{ Principal... Interest... Rent .....	100 00 11 50 12 00 75 00 8 77 3 00	
Nov. 25, 1882	J. G. P. Madore <i>et ux,</i> <i>et al.</i> ..... Emm. Pilon.....	do	do 144 do Sentence of Ratification by Superior Court, Montreal, of Govt. title to official lot 143, Ste. Anne du Bout de l'Isle..... do Sentence of Ratification by Superior Court, Montreal, of Govt. title to official lots 141 and 142, Ste. Anne du Bout de l'Isle .....	do do do	do do	{ 150 00 21 75	} Cannot be found.
Jan. 22, 1883	David Madore .....	do	do	do	.....	174 30	Title being encum- bered.

Nov. 25, 1882	J. L. Daoust <i>et al.</i> .....	do	...	Sentence of Ratification by Superior Court, Montreal, of Govt. title to buildings and wharves on official lots 104, 105, 110, Ste Anne .....	do	...	do	...	{ 3,792 00 390 18		
Dec. 20, 1882	Delphis Lebeau <i>et uz</i> .....	do	...	Deed to Govt. of lot 112, official plan, Ste. Anne (except buildings to be removed by him).....	do	...	{ Paid..... do ..... Still due...	Also receipt \$75 interest. 20th March, 1883, notified to re- move houses, &c. O.C. 127th March, 1883, to pay him \$105.48 interest.	{ 5,000 00 600 00 2,500 00		
Jan. 22, 1883	J. L. Daoust <i>et al.</i> .....	do	...	Report of collocation and distribution, <i>re</i> works on lots 104, 105, 110, Ste. Anne .....	do	...	.....		4,572 18		
June 27, 1883	J. O. Cheverfils, Rev. Geo. L. Cheverfils and A. Decelles.....	do	...	Deed to Govt. part lot 105, Ste. Anne, with water power, mill site, dams, excavations, shores, riparian rights, &c., attached to lots 105, 104 and 110.....	do	...	19,053 feet.		{ 9,175 00 1,690 27		
Aug. 24, 1883	Estate of Jas. Holden	Her Majesty.		<i>Williamsburg Canals.</i> Release in full for storehouse and rent at Morrisburg.....			Rapide Plat Canal .....		{ 120 00 540 00		Storehouse. Rent.
Sept. 5, 1882	John McDonagh .....	do	...	<i>Welland Canal.</i> Release, damages by flooding lots 49 and 73, Thorold .....			Welland Canal.. { 13.06 acres 1.06 do		{ 1,400 00		
Oct. 24, 1882	Hugh A. Rose <i>et uz.</i> ..	do	...	Deed to Govt. of parts of lot 27 in 5th Con., Growland, in Town of Welland.....	do	...	{ 0.29 do 0.40 do		{ 476 00		
Nov. 22, 1882	Ann E. Donaldson <i>et al.</i> .....	do	...	Release, damages by road closed on lot 10 in 6th Con., Grantham.....	do	...	.....		450 00		
do 27, 1882	J. P. & T. R. Merritt <i>et uz.</i> .....	do	...	Deed to Govt., part lot 27 in 1st Con., Humberstone, on East street, Port Colborne	do	...	0.90 acres		771 00		
Mar. 1, 1883	Mary & Thos. Nixon.	do	...	Release, damages to lot 12 in 8th Con., Grantham .....	do	...	.....		100 00		
Apr. 11, 1883	Widow and heirs of John Rae .....	do	...	Deed to Govt., part lot D, on East St., Port Colborne; on lot 27, 1st Con., Humberstone	do	...	0.005 acres		675 00		
Mar. 1, 1883	Port Robinson and Thorold Macadam- ized Road Co. ....	do	...	Release, damages to Port Robinson & Thorold Road Co .....	do	...	.....		150 00		

2nd. PROPERTY purchased or sold by the Department of Railways and Canals, &c.—Continued.

Date of signature.	Vendors.	Purchasers.	Property Purchased or Sold.	For what purpose used.	Area of land.	Price of sale.	Remarks.	
Apr. 15, 1882	John M. Ellsworth ...	do	<p><i>Welland Canal—Continued.</i></p> <p>Deed to Govt., part lot 26 in 3rd Con., Ham- berstone .....</p> <p>Deed to Govt., part lot 14 in 6th Con., Gran- tham, (N.E. part) St. Catharines.....</p> <p>Release, water damages to lot 14 in 6th Con., Grantham, (south of N.E. part), St. Catha- rines.....</p>	Welland Canal....	1.68 acres	300 00		
July 7, 1883	John Berryman <i>et ux.</i>	do		do	do	1.50 do	1,240 00	
do 7, 1883	do	do		do	do	.....		
June 20, 1883	Synod of Diocese of Niagara or Church of England. ....	do	Deed to Govt., part lot 27 in 5th Con., Crow- land, or lot H.A.R., or Holy Trinity Church Parsonage lot. (Raceway for water power) (Blocks G. & L. in Town of Welland.....	do	0.19 acres	500 00		
July 9, 1883	Rosanna Lane <i>et vir.</i>	do	Deed to Govt. of Lots 28, 29, 35, 36, in Town of Welland, W. of Catha- rine St.....	do	3.61 do	500 00		
do 31, 83	1st. Fred. Boyer, A. Boyer <i>et ux.</i> , tenants 2nd. The Security Loan and Savings Co., mortgagees ...	do	Release, damages by explosives to lot 1, south of Clarence St., Port Colborne, and to build- ing and contents.....	do	0.03 do	100 00		
Mar. 5, 1883	Harmon Root.....	do	Release, damage to personal property at Dunn- ville, Gore lot A and No. 1, Chesnut St.....	do	.....	1,405 00		
Aug. 16, 1882	Samuel Sullivan.....	do	<p><i>Canadian Pacific Railway.</i></p> <p>Deed to Govt. of N.W. ¼ sec. 20, Tp. 2 R. 3 E., County of Manchester.....</p> <p>Deed to Govt. of lot 1, block 5, Emerson, County of Manchester.....</p> <p>Deed to Govt. of N.E. ¼ sec. 32, Tp. 2, R. 3 E., County of Provencher.....</p>	Pembina Branch...	4.21 acres	5 41		
May 12, 1883	Edwd. Metcalf.....	do		do	do	.....	45 30	
June 2, 1883	And. W. Russell.....	do		do	do	2.22 acres	328 00	



2nd. PROPERTY purchased or sold by the Department of Railways and Canals, &c.—Continued.

Date of signature.	Vendors.	Purchasers.	Property Purchased or Sold.	For what purpose used.	Area of land.	Price of sale.	Remarks.
Mar. 7, 1883	John H. Beatty <i>et al.</i>	do	<i>Intercolonial Railway</i> —Continued. Bond in \$33,000 to pay \$16,500 balance due on price of 10 locomotives sold him.....	Not required for railway .....		\$ cts. 16,500 00	
Aug. 15, 1883	John McFadden.....	do	Release—judgment recovered by Weathy Ann Hall and W. J. Law, her husband .....	Accident.....		2,659 08	Personal injuries.
Feb. , 2, 1883	Jane McInnes.....	do	<i>Prince Edward Island Railway.</i> Receipt on account—without prejudice—for accident to and death of her husband on 25th August, 1880 .....	do .....		400 00	
Dec. 20, 1882	R. C. Bishop of Charlottetown.....	do	Deed part lot 45, at Souris, King's County, for railway.....	P. E. I. Railway...	2.10 acres	1,276 30	
			<i>Trent Valley Canal.</i> Release for overflow, by dams, for Burleigh Canal, to: Lot 40 in 16th Con., Smith .....				
			33 15th do 33 in 17th, 32, 33, 34 in 18th .....				
			37 16th do .....				
			39 16th do .....				
			38 16th do .....				
			36 16th do .....				
			34 16th do .....				
			32 16th do and 34 in 17th .....				
			33 16th do .....				
July 26, 1883	John Carnegie .....	do	Deed of lot 4 in 1st Con., Tp. of Harvey .....		50.00 acres	1 00	To each owner.

Date	Parties	Description	Canal	Area	Rate	Amount	Notes
July 26, 1883	A. P. Poussette et ux and M. Roger	do 40 16th do Smith	Burleigh Canal	200 00	9.00	200 00	
Aug. 1, 1883	Re W. H. Hall	Deposit into Court, re lot 9 in 8th Con., Harvey	.....	3,500 00	3.90	105 00	
Aug. 13, 1883	James Davis	Three releases, for damages by raising waters of "Deer Bay," to lots 31, 33, 34 in 18th Con., Smith	.....	75 00	.....	75 00	
Aug. 29, 1883	Order in Council	Transferring Island No. 31 from Indian Department to this Department	Burleigh Canal	200 00	.....	200 00	
do	Jos. McArthur et ux	Deed of south part lot 3, east of May street, Village of Fenelon Falls	Fenelon Canal	500 00	0.06 acres	500 00	
Sept. 4, 1883	Anne Holmes et vir	Deed of west part Island 15, or Burleigh Island, Tp. of Smith	Burleigh Canal	300 00	5.00 do	300 00	
<i>Murray Canal.</i>							
Dec. 29, 1882	John McMaster et ux	Deed of part lot 23, Con. C, Tp. of Brighton, (except road)	Murray Canal	1,000 00	20.22 do	1,000 00	
do	Chas. Clindinnin et ux	Deed of part lot 22, Con. C, Tp. of Murray	do	1,000 00	7.58 do	1,000 00	
do	Samuel May et ux	do 20 do do	do	20 00	0.24 do	20 00	
do	Joseph Wilson et ux	do 20 do do	do	150 00	1.99 do	150 00	
Jan. 4, 1883	J. C. Rankin (tenant)	Release, damages to crops on lot 23, Con. C, Tp. of Murray	do	40 00	.....	40 00	Vendors to keep and maintain fences.
do	Jonathan Hutcheson et ux	Deed of part lot 20, Con. C, Tp. of Murray	do	3,000 00	6.13 acres	3,000 00	
do	Wm. Lovett et ux	do 21 do do	do	2,500 00	8.54 do	2,500 00	
do	do	do 18 do do	do	500 00	7.47 do	500 00	
Jan. 4, 1883	Esther A. Lee et vir	Deed of part lot No. 17 Con. C, Tp. of Murray	Murray Canal	125 00	4.82 do	125 00	
do 18, 1883	C. K. Stoneburgh et ux	do 16 do do	do	400 00	3.32 acres	400 00	
do 18, 1883	Mary Goldsmith et vir	do 17 do do	do	75 00	3.32 do	75 00	
Feb. 28, 1883	Henry S. Allard	do 13 do do	do	10 00	0.20 do	10 00	
do 17, 1883	Hannah Gould et vir	do 13 do do	do	10 00	0.02 do	10 00	
do 17, 1883	Ph. H. Lawson et ux	do 17 do do	do	250 00	2.95 do	250 00	
do 17, 1883	W. H. Goldsmith et ux	do 15 do do	do	250 00	3.13 do	250 00	
Dec. 29, 1882	Ohas. Lee et ux	do 19 do do	do	600 00	7.63 do	600 00	
Feb. 26, 1883	Jos. Pelkey et ux	do 18 do do	do	50 00	0.54 do	50 00	
do 17, 1883	Thos. P. Powers et ux and et al.	do do do	do	75 00	0.84 do	75 00	
Mar. 21, 1883	Wm. H. May et ux	do do do	do	260 00	2.97 do	260 00	
Feb. 17, 1883	Peter Gould et ux	do do do	do	800 00	1.62 do	800 00	
Mar. 31, 1883	Saml. F. May	do do do	do	210 00	4.97 do	210 00	
Apr. 14, 1883	Re P. H. Lawson	Deposit into court re 17	do	100 00	0.41 do	100 00	
Mar. 31, 1883	A. W. Talmage et ux	Deed of part lot No. 27	do	3 00	1.674 do	3 00	

2nd. PROPERTY purchased or sold by Department of Railways and Canals, &c.—Continued.

Date of signature.	Vendors.	Purchasers.	Property Purchased or Sold.	For what purpose used.	Area of land.	Price of sale.	Remarks.
Apr. 21, 1883	Thos. A. Porter <i>et ux</i>	do ...	<i>Murray Canal—Concluded.</i> do 6, carrying place block, Township of Murray	Murray Canal.....	0.92 do	75 00	25th May, '83, bond
May 31, 1883	John May <i>et ux</i> .....	do ...	do 14, Con. B do	do	6.844 do	385 00	<i>re</i> £75 mortgage, Wm. Ryan to
do 31, 1883	H. G. Lawson <i>et ux</i> .	do ...	do N. W. pt. 26 Con. C do Brighton	do	0.097 do	10 00	Hon. J. Macaulay of 7th May, 1854, (not discharged).
do 31, 1883	Wm. Evans <i>et ux</i> . . .	do ...	do 16 B do Murray	do	7.29 do	400 00	
June 16, 1883	<i>Re</i> Widow Sprung ...	do ...	Deposit into court <i>re</i> 15 C do Brighton	do	6.838 do	15 00	
Mar. 21, 1883	Martha Church <i>et viz</i>	do ...	Deed of part lot No. 28 C do Brighton	do	0.556 do	300 00	
June 18, 1883	Louis Latour <i>et ux</i> ....	do ...	do S. E. 13, carrying place block, Township of Murray	do	2.776 do	40 00	
May 31, 1883	School Trustees No. 1, Murray. ....	do ...	do 9 do do	do	9.218 do	175 00	
Aug. 24, 1883	<i>Re</i> George May.....	do ...	Deposit into court <i>re</i> 15, Con. B do	do	2 065 do	500 00	
Sept. 13, 1883	<i>Re</i> L. Latour.....	do ...	do 12, carrying place block, Township of Murray	do	2.258 do	50 00	
June 22, 1883	Ben. Row <i>et ux</i> .....	do ...	Deed of parts lots 7 & 8 do	do	17 769 do	180 00	
Aug. 11, 1883	S. H. Flindall <i>et ux</i> .	do ...	do 8 & 9, Con. C do	do	2.757 do	5 40	

H. A. FISSIAULT,

OTTAWA, 28th September, 1883.

## APPENDIX No 8.

## STATEMENT of Contracts entered into between 1st July, 1882, and 30th June, 1883.

Railways and Canals.	No. of C.P.R. Contract.	Deed, Letter or otherwise under which contract was made.	Name of Contractor.	Date of Contract.	General Description.
Canadian Pacific Railway.....	94	do 6,940.....	Horton & Son.....	Sept. 4, 1882	Supply 70 tons bolts and nuts, and 200 tons spikes, delivered f.o.b., ship at London, or at Cardiff or Newport for Canadian Pacific Railway.
do .....	95	do 6,941.....	Bayliss, Jones & Bayliss.....	Sept. 5, 1882	Supply 40 tons bolts and nuts, and 310 tons spikes, delivered f.o.b., ship at London, or at Cardiff or Newport for Canadian Pacific Railway.
do .....	96	do 6,938.....	Guest & Co. ...	Aug. 19, 1882	Supply 8,800 tons steel rails and 490 tons fish plates for Canadian Pacific Railway, delivered f.o.b. at wharf at Cardiff, England.
do .....	97	do 6,929.....	John McDonald.....	Nov. 14, 1882	Construct 6 combined passenger and freight buildings at, viz.: Rossland, Cormac, Summit, Gilbert, Vermillion and Eagle River, on Section B or 42nd contract, Canadian Pacific Railway, between Prince Arthur's Landing and Winnipeg.
do .....	98	Deed No. 6,924.....	C. N. Black.....	Jan. 19, 1883	Supply 30,000 tamarac ties 8' 7" x 6 in. for Canadian Pacific Railway.
Intercolonial Railway.....	.....	do 6,821.....	Spring Hill Mining Co.....	July 11, 1882	Supply coal for district No. 2, Intercolonial Railway--75,000 tons of 2,240 lbs.
do .....	.....	do 6,822.....	James Harris & Co.....	July 13, 1882	Construct 5 2nd class passenger cars for Intercolonial Railway.
do .....	.....	do 6,823.....	Ontario Car Co.....	July 26, 1882	Construct 5 2nd class passenger cars for Intercolonial Railway.
do .....	.....	do 6,827.....	Kingston Car Co.....	July 21, 1882	Construct 50 gondola cars for Intercolonial Railway.
do .....	.....	do 6,835.....	James Harris & Co.....	Aug. 12, 1882	do do 75 do do
do .....	.....	do 6,874.....	Kingston Car Co.....	Oct. 16, 1882	Two combined postal and smoking cars for Intercolonial Railway, delivered at Chaudière Junction.
do .....	.....	do 6,875.....	Carrier, Laine & Co.....	Oct. 27, 1882	75 gondola cars for Intercolonial Railway, delivered at Point Lewis.
do .....	.....	do 6,904.....	Halifax Co (Limited).....	June 29, 1882	Supply about 25,000 gross tons of round coal for Intercolonial Railway, District No. 1, delivered on cars at Albiton Mines siding or at coal drops on tenders.

STATEMENT of Contracts entered into between 1st July, 1882, and 30th June, 1883.—Continued.

Railways and Canals.	Deed, Letter or otherwise under which contract was made.	Name of Contractor.	Date of Contract.	General Description.
do	6,916.....	James Crossen.....	Feb. 7, 1883	Construct 200 platform cars for Intercolonial Railway, delivered at Chaudière Junction.
do	7,004 ....	Guest & Co.....	March 5, 1883	Supply 2,000 tons steel flange rails for Intercolonial Railway; 67 lbs. to the yard with necessary fish plates, bolts and nuts, delivered at railway wharf at Halifax, N. S.
do	7,048.....	Barrow Hoematite Steel Co....	April 9, 1883	Supply 300 tons steel flange rails and necessary fish plates, bolts and nuts, delivered for Intercolonial Railway on wharf at Halifax, N. S.
do	7,080.....	Charles Powell.....	May 28, 1883	Carrriage of freight by packet, between Pointe du Chêne, Shediac and Richibucto, N. B., in conjunction with Intercolonial Railway.
do	7,081.....	John Smith & N. McPhail....	do	Carrriage of freight by packet between Pointe du Chêne, Shediac and Bouctouche.
do	7,082.....	Henry O'Leary.....	May 26, 1883	Carrriage of freight by packet between Pointe du Chêne, Shediac and Richibucto.
do	7,100.....	Town Council of Dartmouth, N. S.	June 12, 1883	Agree to pay \$4,000 a year, for 20 years to Government, if Intercolonial Railway be extended to a point within 3,750 ft. from west end of Portland Street, in town of Dartmouth, N. S., and equipped and operated.
do	7,110.....	West Cumberland Iron Steel Rails Co.	June 22, 1883	Supply 1,200 tons steel flange rails, fish plates, bolts and nuts for Intercolonial Railway.
Prince Edward Island Railway .....	do 29,247 O. C.	Canadian Locomotive Co.....	July 10, 1882	Accepts offer of Company, and extends contract 6,671 for 2 additional locomotives for Prince Edward Island Railway.
do	7,044.....	Samuel McAnslin.....	Dec. 1, 1882	Supply 1,000 sleepers for Prince Edward Island Railway, delivered between Ellersite and Northane.
do	7,045.....	James Barclay .....	Nov. 30, 1882	Supply 60,000 sleepers for Prince Edward Island Railway, delivered between Tignish and Summerside.
do	7,062.....	Vale Coal, Iron, &c, Manufacturing Co.	June 6, 1883	Supply 3,000 tons of round coal for engines of Prince Edward Island Railway.
do	7,063.....	Intercol. Coal Mining Co.....	June 21, 1883	Supply 2,500 tons of round coal for engines of Prince Edward Island Railway.
Welland Canal.....	Deed No. 6,662.....	St. Catharine's and Welland Canal Gas Light Co.....	July 7, 1883	Light with gas the new Welland Canal, from Port Dalhousie to the Guard Lock, at north end of summit level, and south of Marlait's Pond (9 miles)—108 lights in all.

do	6,830	E. A. Smyth.....	Aug. 16, 1882	Construct bridge abutments and enlarge old Lock 2.
do	6,850	C. F. & W. T. Dunbar.....	Sept. 27, 1882	Complete Section 24 of Welland Canal enlargement.
do	96,062-58,798	R. F. Latimore.....	Aug 28-31, 1882	Clearing out and forming back ditches along feeders between Stromness and Welland Junction—Section 1, Welland Canal.
do	96,066-58,797	Richard Wood.....	Aug 25-31, 1882	Clearing out and forming back ditches along feeders between Stromness and Welland Junction—Sections 2-3.
do	96,067-58,799	W. Hutchinson.....	do	Clearing out and forming back ditches along feeders between Stromness and Welland Junction—Section 5.
do	Deed No. 6,876	J. Vincent Browne & Co.....	Nov. 8, 1882	Protection by a facing to Welland Canal banks, on summit level, between Thorold and Humberstone—4 Sections.
do	6,944	Corporation, Township of Louth.....	Feb. 20, 1883	Government agrees to expend \$400 to repair bridge and approaches on Martindale's Creek, damaged by Welland Canal waters.
do	6,945	Harry Buchner.....	March 31, 1883	Formation of a raceway at town of Welland, west of Welland Canal.
do	7,022	Wm. J. Douglass.....	April 19, 1883	Repairs to side pier work of channel, Lake Ontario.
do	6,834	Brecken & Co.....	Aug. 14, 1882	To substitute name of Archibald Stewart as Contractor for works at lower entrance, in lieu of John Nicholson.
do	6,730	George Crain.....	July 26, 1882	Supply timber for lock gates, Grenville and St. Anne's Canals.
do	6,863	E. E. Gilbert & Sons.....	Oct. 16, 1882	To form a channel through shoal above new St. Anne Canal.
do	6,853	A. F. Manning & Co.....	Oct. 14, 1882	Formation of Fenelon Falls Canal, &c.
do	6,855	George Goodwin.....	Sept. 27, 1882	do Buckhorn Canal, &c.
do	6,857	do	do	do Burleigh do
do	6,825	J. D. Silcox & Co.....	Aug. 24, 1882	To construct the Murray Canal connecting Bay of Quinté and harbour of Presqu'isle, Lake Ontario.
do	7,078	A. F. Manning & Co.....	June 15, 1883	Construct Tay Canal from Beveridge Bay, on Rideau Lake, to connect the town of Perth, east side Craig St., with Rideau Navigation.
do	6,862	St. Lawrence Steam Navigation Co.....	Sept. 27, 1882	Steamboat service between Rimouski wharf, and mail steamers.
do	6,880	St. Lawrence Steam Navigation Co.....	Nov 14, 1882	To run the steamer "St. Lawrence" between Gaspé and Campbellton, on Baie des Chaleurs, or steamer "Progress" if required, in its place.
do	6,836	The Great American and European Short Line Ry. Co.	July 28, 1882	Construct a railway from Oxford on Intercolonial Railway to New Glasgow, N.S., and branches to Pugwash, Wallace, River John, Tatamagouche and Pictou, &c.

GENERAL.

## APPENDIX No 9

## THE CANADIAN PACIFIC RAILWAY COMPANY.

OFFICE OF THE GENERAL MANAGER,  
MONTREAL, 27th November, 1883.

SIR,—In response to your inquiry of the 17th inst., I have the honour to submit herewith the preliminary report of Mr. A. B. Rogers, Engineer in Chief, in charge of the location of the Mountain Section of the Canadian Pacific Railway, together with a report of Mr. James Ross, Manager of construction of the Western Division.

These reports cover the only section of the line upon the practicability of which any doubts have recently been cast.

Beyond this section to the point of connection with the section under construction by the Government, no engineering difficulties exist; on the contrary, the work is light and may be quickly done.

I am happy to be able to report rapid progress on the Lake Superior Section of the line. Track-laying has been completed eastward from Port Arthur to the Nipigon River, and will be continued to a point thirty-five miles beyond before the close of the season. From that point eastward, for a distance of one hundred miles, is encountered the heaviest rock work on the Lake Superior Section. This is covered by one mile contracts and is heavily manned. Work will be carried on throughout this winter and it is expected that a considerable portion of this section will be ready for the track in the early spring.

The track of the main line extension westward from Lake Nipissing has advanced beyond Sudbury Junction. This section is also heavily manned, and the work will be pushed forward throughout the winter.

I have the honour to be, Sir,

Your obedient servant,

W. C. VAN HORNE,  
*General Manager.*

HON. JAMES H. POPE,  
Acting Minister of Railways and Canals, Ottawa, Ont.

MONTREAL, 20th November, 1883.

DEAR SIR,—The results of the surveys on the Mountain Division made during this year, 1883, are briefly, as follows: A line of definite location from the summit of the Rocky Mountains to the summit of the Selkirks, a distance of  $95\frac{62}{100}$  miles, and a preliminary survey from the summit of the Selkirks to the west crossing of the Columbia (opposite the mouth of the Eagle Pass), a distance of 43 miles. The route adopted proceeds from the summit of the Rockies westerly down the Kicking Horse River,  $44\frac{70}{100}$  miles to the valley of the Columbia, which it follows in a north-westerly direction nearly 30 miles, until it enters the valley of the Beaver, which it follows southerly and westerly for about 20 miles to the summit of the Selkirks. From this latter point it descends westerly down the east fork of the Ille-cillewait, about 20 miles to a junction with the main stream, which it follows south-westerly about 23 miles to the west crossing of the Columbia. A maximum gradient of 116 feet per mile is found necessary in the descent westerly from the summit of the Rockies down the Kicking Horse Pass for a distance of about 17 miles and again for a distance of two miles in the Lower Kicking Horse.

The same gradients are used in the ascent of the Selkirks for about 16 miles and for nearly 20 miles down their west slope. In no instance is this rate of grade exceeded, and a proper compensation for curvature is made in every case by a reduction of the rate of grade.

We have used a maximum rate of curvature of 10 degrees, mainly in the Kicking Horse Valley, but only an occasional use of that rate of curvature in the canôn of the Columbia and in the Selkirks. I am confident, however, that in the final adjustment of the line after the right of way shall have been cleared, a material improvement will be made in this respect.

There will be three crossings of the Kicking Horse in the upper valley and eight in the lower—all of one span, and no span exceeding two hundred feet. The first, or easterly crossing, of the Columbia will require a bridge of 350 feet in length and the west crossing about 800 feet.

The heaviest work to be encountered in construction lies in the upper Kicking Horse, where about six miles may be classified as hard mountain work with about two miles of hard work near the mouth of the Kicking Horse, the remainder averaging from medium to light. For 10 miles near the bend of the Kicking Horse, and 20 miles in the valley of the Columbia, the work will compare favorably with that in the Bow Valley. In the 6 miles of the Columbia canôn the work may be rated as 2 miles hard work and the remainder light. Through the Selkirks the work is more uniformly distributed than through the Rockies and presents no special engineering difficulties, and for mountain work may be considered moderate, the percentage of rock being unusually small.

Estimates for the entire line, in sections of one mile each, accompanying the plans and profiles submitted with this report.

Tunnelling will be required as follows:—

	Lineal feet.
In the Upper Kicking Horse.....	1,800
“ Lower “ .....	1,400
“ Columbia Canôn.....	2,200
“ East slope of Selkirks.....	none
“ West “ “ not to exceed.....	1,200
	<hr/>
Making a total of.....	7,600

Longest tunnel 1,400 feet; next in length 1,000 feet; others from 150 to 600 feet in length.

I am glad to state that my expectations of the feasibility of the route adopted have been more than realized by the results of the surveys of this year, and as shewn by the plans and profiles the work is of such nature that any desired force can be used on the construction, and with a certainty of the greatest dispatch in its completion.

The track having reached the summit of the Rockies, there remains a gap of not over 270 miles to be completed between that point and Kamloops.

The elevations above the sea level of some of the prominent points on the line are as follows:—

	Feet.
Summit of the Rockies.....	5,300
Bend of the Kicking Horse .....	3,647
Mouth “ “ (in Columbia Valley).....	2,541
East Crossing of Columbia River (grade).....	2,392
Summit of Selkirks.....	4,316
West Crossing of Columbia (grade).....	1,436

The highest elevation attained is that in the Rockies, 5,300 feet. The highest elevation to be overcome in the Gold Range is the Eagle Pass, which is not more than 400 feet higher than the West Crossing of the Columbia.

Yours truly,

A. B. ROGERS,

*Chief Engineer in charge of Surveys, Mountain Section.*

W. C. VAN HORNE, Esq.,

General Manager Canada Pacific Railway, Montreal, Canada.

MONTREAL, 23rd November, 1883.

DEAR SIR,—Our track will, at the end of this week, reach the summit of the Rocky Mountains, thus fully carrying out this year's programme of work under my superintendence nearly six weeks ahead of the time allowed for it; besides we have some work done on the Western Slope down the Kicking Horse Pass.

At present there are about seven hundred and fifty men employed in the Rocky Mountains, but it is our intention to reduce this force somewhat and confine our operations this winter to making ties and timber, forwarding supplies and completing the final adjustment of the line.

During the year I have been able to personally examine very thoroughly our route through the Rockies to the Columbia, and besides having Major Roger's reports of the work on the Selkirks, I sent Mr. Hogg to examine and report upon it, and am satisfied that we have the most direct practicable line for the Canadian Pacific Railway, with summit elevations lower than on the other Pacific lines.

I desired, however, as I explained to you in a former letter, before commencing construction on the Western Slope of the Rockies to feel perfectly assured that the Kicking Horse line had been thoroughly developed by surveys so as to give us a line with the shortest heavy grade planes, the least amount of curvature, located where it could be maintained after construction, and at the least cost, and I have had other surveys made through the Bow River and Howse Passes to determine whether we could get a line, which though evidently longer than the Kicking Horse, would present such features as would compensate for its increased distance.

As the result of our examinations and surveys, I am glad to say that we can commence our work in the spring feeling quite satisfied that we have secured beyond doubt the best line through the mountains.

The heavy portion of our next season's work will be in the Kicking Horse Valley, but it is placed so that we can distribute a large force upon it. The longest tunnel is 1,400 feet, and we can, if found necessary to expedite the construction, build a temporary line around the heavy work.

Yours faithfully,

JAMES ROSS,

*Manager of Construction.*

W. C. VAN HORNE, Esq.,

General Manager Canada Pacific Railway.

## APPENDIX No. 10.

LIST of Contracts entered into in connection with the Canadian Pacific Railway.

No. of Contract.	Names of Contractors.	No. of Contract.	Names of Contractors.
1	Sifton, Glass & Co.	49	Richard Dickson
2	Richard Fuller.	50	Miller, Brothers & Mitchell.
3	F. J. Barnard.	51	Dominion Bolt Co.
4	Oliver, Davidson & Co.	52	North-West Transportation Co.
5	Joseph Whitehead.	53	Barrow Hematite Steel Co.
5a	Joseph Whitehead.	54	Guest & Co.
6	Guest & Co.	55	West Cumberland Iron and Steel Co.
7	Ebbw Vale Steel, Iron and Coal Co.	56	The Kellogg Bridge Co.
8	Murray Steel and Iron Co.	57	The Truro Patent Frog Co.
9	West Cumberland Iron and Steel Co.	58	W. Hazelhurst.
10	West Cumberland Iron and Steel Co.	59	Whitehead, Ruttan & Ryan.
11	Naylor, Benson & Co	60	D. O. Mills.
12	Hon. A. B. Foster.	61	D. O. Mills.
13	Sifton & Ward.	62	D. O. Mills.
	Purcell & Ryan.	63	D. O. Mills.
14	Sifton & Ward.	64	Ryan, Whitehead & Ruttan.
	Jos. Whitehead (completing contract No. 14).	65	James Crossen.
15	Joseph Whitehead.	66	Bowie & McNaughton.
16	Canada Central Railway Co.	67	Moncton Car Co.
17	Anderson, Anderson & Co.	68	Ontario Car Co.
18	Red River Transportation Co.	69	North-West Transportation Co.
19	Moses Chevette.	70	North-West Transportation Co.
20	Merchants Lake and River Steamship Co.	71	Toronto Bridge Co.
21	Patrick Kenny.	72	Ontario Car Co.
22	Holcomb & Stewart.	73	Toronto Bridge Co.
23	Sifton & Ward.	74	Wm. Gooderham, Jun.
24	Oliver, Davidson & Co.	75	Pillow, Hersey & Co.
25	Purcell & Ryan.	76	Cooper, Fairman & Co.
26	James Isbester.	77	Stubbs & Co.
27	Merchants Lake and River Steamship Co.	78	Skead & Haycock.
28	Red River Transportation Co.	79	The Truro Patent Frog Co
29	Cooper, Fairman & Co.	80	James Crossen.
30	Robb & Co.	81	Dunlop & Rannie.
31	Patent Bolt and Nut Co.	82	Ontario Car Co.
32	Cooper, Fairman & Co.	83	James Crossen.
32a	LeMay & Blair.	84	Ontario Car Co.
33	Kavanagh, Murphy & Upper.	85	Nobles & Follis.
34	North-West Transportation Co.	86	Fairbanks, Morse & Co.
35	Cooper, Fairman & Co.	87	James Crossen.
36	William Robinson.	88	Walter Oliver.
37	Henev, Charlebois & Flood.	89	J. Patterson
38	Edmond Ingalls.	90	Ferris, Paul & Milwar.
39	John Irving.	91	Canadian Pacific Railway Co.
40	Gouin, Murphy & Upper.	92	Andrew Onderdonk.
41	Purcell & Co.	93	Andrew Onderdonk.
42	Manning, Macdonald, McLaren & Co.	94	Horton & Son.
43	Joseph Upper & Co.	95	Bayliss, Jones & Bayliss.
44	West Cumberland Iron and Steel Co.	96	Guest & Co.
45	Barrow Hematite Steel Co.	97	John McDonald.
46	Ebbw Vale Steel, Iron and Coal Co.	98	Colin Nicol Black.
47	Patent Bolt and Nut Co.		
48	John Ryan.		



## APPENDIX No. 12.

TABLE showing the dates of the closing of the Canals in the Autumn of 1882 and of the opening in the Spring of 1883.

Canals.	Closing.	Opening.
Lachine Canal.....	December 1, 1882.	May 1, 1883.
Beauharnois Canal.....	November 30,	April 30,
Cornwall Canal.....	December 6,	do 28,
Williamsburg Canals.....	do 11,	May 1,
Welland Canal—		
New Canal.....	December 5,	May 5,
Old Canal.....	November 30,	do 5,
Burlington Bay Canal.....	December 11,	do 5,
St. Anne's Lock and Dam.....	November 30,	April 30,
Carillon Canal.....	do 27.	do 28,
Grenville Canal.....	do 27,	May 1,
Culbute Lock and Dam.....		
Chute à Blondeau.....	November 27,	April 28,
Rideau { Kingston Mills.....	do 30,	May 7,
Ottawa.....	do 27,	do 3,
St. Ours' Lock.....	do 28,	April 19,
Chambly Canal.....	do 29,	May 1,
Erie Canal (New York).....	December 7,	do 8,
St. Peter's Canal (Cape Breton).....	January 1, 1883.	April 16, 1883.
Trent Canal Works.....	November 29,	do 28,

## APPENDIX No. 13.

## ST. LAWRENCE NAVIGATION.—TABLE OF DISTANCES.—A.

FROM STRAITS OF BELLE-ILE TO DULUTH, AT HEAD OF LAKE SUPERIOR, BY WATER.

From	To	Sections of Navigation.	Statute Miles.	
			Inter- mediate.	Total to Straits of Belle-Ile
Straits of Belle-Ile.....	Cape Whittle.....	Gulf of St. Lawrence.....	240	240
Cape Whittle.....	West Light, Anticosti.....	do do .....	201	441
West Light, Anticosti.....	Father Point.....	River St. Lawrence.....	202	643
Father Point.....	Rimouski .....	do .....	6	649
Rimouski .....	Bic .....	do .....	12	661
Bic .....	Isle Verte.....	do .....	39	700
Isle Verte (opp. Saguenay)	Quebec .....	do .....	126	826
Quebec .....	Three Rivers.....	do to Tide-water	74	900
Three Rivers.....	Montreal.....	do .....	86	986
Montreal.....	Lachine.....	Lachine Canal.....	8 $\frac{1}{2}$	994 $\frac{1}{2}$
Lachine.....	Beauharnois .....	Lake St. Louis .....	15 $\frac{1}{2}$	1,009 $\frac{3}{4}$
Beauharnois .....	Ste. Cécile .....	Beauharnois Canal.....	11 $\frac{1}{2}$	1,021
Ste. Cécile .....	Cornwall.....	Lake St. Francis.....	32 $\frac{3}{4}$	1,053 $\frac{3}{4}$
Cornwall.....	Dickinson's Landing.....	Cornwall Canal.....	11 $\frac{1}{2}$	1,065 $\frac{1}{2}$
Dickinson's Landing.....	Farran's Point .....	River St. Lawrence..	5	1,070 $\frac{1}{2}$
Farran's Point.....	Upper end of Croyle's Island.	Farran's Point Canal ..	3 $\frac{1}{2}$	1,071
Upper end Croyle's Island.	Williamsburg or Morrisburg.	River St. Lawrence	10 $\frac{1}{2}$	1,081 $\frac{1}{2}$
Williamsburg.....	Rapid Plat .....	Rapid Plat Canal.....	4	1,085 $\frac{1}{2}$
Rapid Plat .....	Point Iroquois Village.....	River St. Lawrence.....	4 $\frac{1}{2}$	1,090
Point Iroquois Village.....	Upper end Presqu'Île .....	Point Iroquois Canal.....	3	1,093
Presqu'Île .....	Point Cardinal, Edwards- burgh.....	Junction Canal.....	2 $\frac{5}{8}$	1,095 $\frac{5}{8}$
Point Cardinal.....	Head of Galops Rapids .....	Galops Canal.....	2	1,097 $\frac{5}{8}$
Galops Rapids .....	Prescott .....	River St. Lawrence .....	7 $\frac{3}{8}$	1,105
Prescott.....	Kingston .....	do .....	59	1,164
Kingston .....	Port Dalhousie..	Lake Ontario .....	170	1,334
Port Dalhousie.....	Port Colborne.....	Welland Canal.....	26 $\frac{3}{4}$	1,360 $\frac{3}{4}$
Port Colborne.....	Amherstburg.....	Lake Erie.....	232	1,592 $\frac{3}{4}$
Amherstburg .....	Windsor.....	River Detroit.....	18	1,610 $\frac{3}{4}$
Windsor.....	Foot of St. Mary's Island.....	Lake St. Clair.....	25	1,635 $\frac{3}{4}$
Foot of St. Mary's Island.....	Sarnia.....	River St. Clair.....	33	1,668 $\frac{3}{4}$
Sarnia.....	Foot of St. Joseph's Island.....	Lake Huron .....	270	1,938 $\frac{3}{4}$
Foot of St. Joseph's Island	Foot of Sault Ste. Marie.....	River St. Mary.....	47	1,985 $\frac{3}{4}$
Sault St. Mary .....	Head of Sault Ste. Marie.....	Sault Ste. Marie Canal..	1	1,986 $\frac{3}{4}$
Head of Sault Ste. Marie.....	Pointe aux Pins.....	River St. Mary.....	7	1,993 $\frac{3}{4}$
Pointe aux Pins.....	Duluth.....	Lake Superior.....	390	2,383 $\frac{3}{4}$
Prince Arthur Landing to Lake Shebandowan .....			45	45
Lake Shebandowan to North West Angle.....			312	357
North West Angle to Fort Garry (Winnipeg).....			95	452

Of the 2,383 $\frac{3}{4}$  miles from the Straits of Belle-Ile to the Head of Lake Superior, 71 miles are artificial navigation, and 2,312 $\frac{1}{2}$  open navigation.

Straits of Belle-Ile to Liverpool, 1,942 geographical or 2,234 statute miles.

The total fall from Lake Superior to Tide-water is about 600 feet.

The Steamboat voyage from Collingwood to Prince Arthur Landing is 532 miles.

## APPENDIX No. 14.

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CANADIAN PACIFIC RAILWAY,  
OFFICE OF THE ENGINEER-IN-CHIEF,  
OTTAWA, 12th January, 1884.

(Copy of No. 33,033.)

SIR,—Subsequently to the date of my Annual Report of the 22nd September, 1883, more correct information has been obtained in connection with the mileage from check measurements recently made, which necessitates the following corrections, viz:—

Port Arthur to Winnipeg—

Previously 433 miles, corrected to 428½ miles.

Winnipeg to West Selkirk—

Previously 20 miles, corrected to 22 miles.

Branch lines constructed, or under construction—

Previously 393 miles corrected to 395 miles.

I have the honor to be, Sir,  
Your obedient servant,

COLLINGWOOD SCHREIBER,  
*Chief Engineer.*

A. P. BRADLEY, Esq.,  
Secretary Railways and Canals.

