

DOMINION OF CANADA.

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ANNUAL REPORT

OF THE

MINISTER

OF

RAILWAYS AND CANALS

FOR THE

FISCAL YEAR 1ST JULY, 1880, TO 30TH JUNE,

1881.

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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# REPORT.

1880—81.

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*To His Excellency the Marquis of Lorne, K.T., K.C.M.G., Governor General of Canada,  
&c., &c., &c.*

MAY IT PLEASE YOUR EXCELLENCY :

I have the honor to submit the Annual Report of the Department of Railways and Canals for the fiscal year ended 30th June, 1881.

This Report is submitted in accordance with the provisions of the Act 31 Vict. Cap. 12 (1867), as amended by the Act 42 Vict. 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.

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## RAILWAYS.

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In the course of the past year arrangements have been made to place the Canadian Pacific Railway in the hands of a company, now known as the Canadian Pacific Railway Company.

The arrangement made between the Government and the Company is set forth in documents given in full in Appendix 13, page 158.

Under the terms of the contract the Government have undertaken to construct the line, between—Prince Arthur's Landing on Lake Superior, and Red River;—and between Savona's Ferry, at the foot of Lake Kamloops, and Port Moody, in British Columbia; and the Company, on its part, have undertaken to construct, within a specified time, the line between Callander Station, their eastern terminus at the east end of Lake Nipissing, to a point of junction with the line from Prince Arthur's Landing to Red River; and between Red River and Savona's Ferry. The whole line to be the property of the Company and to be maintained and operated by the said Company.

The length of the various sections are approximately as follows:—

	Miles.
From Callander Station, near Lake Nipissing, to Prince Arthur's Landing.....	650
From Prince Arthur's Landing to Red River.....	412
From Red River to Savona's Ferry, Lake Kamloops.....	1,350
From Savona's Ferry to Port Moody on the Pacific Coast....	217
	<hr/>
Total length of main line.....	2,629

The Pembina Branch, on the eastern bank of the Red River, 86 miles, will also become the property of the Company.

The contract with the Canadian Pacific Railway Company was ratified by Act of Parliament Vict. 44, Cap. 1., 15th February, 1881, and in accordance with section No. 2 of the said Act, on the 16th February, 1881, an Order in Council was passed authorizing the issue of letters patent under the Great Seal of Canada, granting a charter to that Company.

Subsequently to the ratification of the contract, the following sections of road then in operation were transferred to the Company under the authority of an Order in Council dated the 9th April, 1881, viz.:—

	Miles.
The Pembina Branch line from Emerson to Selkirk .. .. .	86
The line from Selkirk to Telford.....	73
	<hr/>
	159

GOVERNMENT WORKS OF CONSTRUCTION.

The Government Chief Engineer of the line reports that on the section between Lake Superior and Red River (412 miles), the rails are laid for a distance of 232 miles from the eastern end, and for 113 miles from the western end; and that on the unfinished portion (67 miles) rapid progress is being made.

In British Columbia, between Emory's Bar and Savona's Ferry (127 miles), the contractors are making fair progress with the work.

The location of the line between Emory's Bar and Port Moody has been completed, and the works will be shortly placed under contract.

TELEGRAPH LINE.

The section from Thunder Bay to Selkirk on the Red River, is being operated under contract with fairly satisfactory results.



The section from Selkirk to Fort Edmonton, including the line from Selkirk to Winnipeg, is now maintained and operated under Government control.

#### BRITISH COLUMBIA.

A line of telegraph has been constructed from Cache Creek to the Kamloops Valley and up the North Thompson, for a distance in all of 82 miles.

Of this section 52 miles are in operation. (Appendix 2, page 9.)

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### PROGRESS OF WORK UNDER CANADIAN PACIFIC RAILWAY COMPANY.

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#### *Location, Construction, Operation.*

*Eastern Section.*—From Callander Station the first 50 miles of the line westwards has been located and the work of construction commenced.

*Central Section.*—West of Winnipeg the line has been located as far as Moose Jaw Creek, a distance of 404 miles from Winnipeg.

The Company, having been permitted to abandon the old location from Stonewall to Portage la Prairie, have constructed a new line, about 53 miles in length, running direct from Winnipeg to Portage la Prairie.

On this central section the Company has completed the grading for about 218 miles of the line, and laid 163 miles of track westward out of Winnipeg. The line from Winnipeg to Stonewall, about 20 miles, being retained by the Company as a branch.

The road is open for traffic to a point on the main line 161 miles west of Winnipeg.

From Winnipeg south-westerly, passing to the vicinity of Turtle Mountain a branch of about 220 miles in length has been located. On this branch construction is far advanced for 89 miles.

From Brandon, another branch passing in a south-westerly direction has been located for a distance of about 195 miles.

#### SURVEYS.

The Company have had a staff of engineers employed examining the various passes of the Rocky Mountains, south of the Yellow Head Pass, to ascertain if any more favorable point of passage exists than that already determined. (Appendix 2, page 14.)

On the 9th June, 1881, the Canadian Pacific Railway Company acquired all the rights of the Canada Central Railway, and incorporated its works with those of the Canadian Pacific Railway system.

	Miles.
Ottawa to Carleton Place.....	29
Carleton Place to Pembroke.....	76½
Pembroke to Callander Station, C.P.R. junction.....	130
	—
	235½
Carleton Place to Brockville (branch).....	45½
	—
	281

By this arrangement the main line of the Canadian Pacific Railway has been extended eastwards from Callander Station to Ottawa, and its total length from Port Moody increased to about 2,864 miles.

## RAILWAYS IN OPERATION.

### GOVERNMENT RAILWAYS IN OPERATION.

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

The Intercolonial.....	840
Canadian Pacific (ten months only),.....	229
Prince Edward Island.....	199
Windsor Branch (maintained only).....	32
	—
Total mileage.....	1,300

The returns of all lines show that a material increase of business has been done.

The General Revenue Accounts for 1881, shows:—

	Expenditure.	Earnings.	Profit.	Loss.
Intercolonial.....	1,759,851 27	1,760,393 92	542 65	.....
Canadian Pacific.....	236,944 98	291,498 06	54,553 08	.....
Prince Edward Island.....	203,122 88	131,131 43	.....	71,991 45
Windsor.....	20,502 26	17,462 84	.....	3,039 42
			55,095 73	75,030 87
			.....	55,095 73
Total.....	2,220,421 39	2,200,486 25	Balance loss in working.....	19,935 14

## INTERCOLONIAL RAILWAY.

### LENGTH OF LINE.

#### *Ocean Mail Line.*

	Miles.
Point-Levis 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

#### *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
Total .....	846.5



To meet the requirements of the increased ocean traffic at Halifax, additional—wharf, storage, and coaling, accommodation has been provided.

Buildings for storage purposes have been erected and additional tracks have been laid at the deep water terminus at St. John.

At both Halifax and St. John, further accommodation is required.

The work, of relaying with steel rails, and ballasting the Rivière du Loup section, has now been completed.

The increased traffic has called for the construction of a number of new sidings. The various buildings along the line have received all necessary repairs, and several new structures have been erected, amongst the latter,—a cattle shed and coal shed at Rivière du Loup,—a high level coal shed at Chaudière Junction,—and a large building at Moncton for the storage of lumber. New station buildings have been put up at Five Mile House, Johnson Road and Nappan, and a locomotive house has been built at Stellarton to replace one destroyed by storm last winter.

Extensive repairs have been made to the masonry of bridges and culverts and wooden bridges have in several cases been replaced by iron structures.

The water supply has been further improved at various points on the line by the building of tanks and the introduction of steam pumps.

The passengers and mails to and from the British Mail steamers at Rimouski in summer, and Halifax in winter, have been given prompt despatch and the advantages of this route over all others have become apparent.

The rolling stock has been efficiently maintained, but owing to the largely increased traffic it is not sufficient to meet the requirements of the service.

The track has been maintained in a thoroughly efficient condition.

The total cost of the road and equipment chargeable to  
Capital account at the close of the fiscal year 1879-80,  
was..... \$38,365,719 64

The expenditure charged to capital account for the year  
ended 30th June, 1881, is as follows:—

Halifax extension .....	\$ 33,684 27	
Deep water terminus, St. John .....	10,373 15	
Completion of the Intercolonial.....	24,372 54	
Repairs and improvements, Rivière du Loup section.....	315,362 60	
Rolling stock for Rivière du Loup Branch	224,940 24	
		608,732 80

Making a total cost to 30th June, 1881, of.....\$38,974,452 44

The revenue account shows for the first time that the earnings of the road **have** been sufficient to cover the cost of working.

The gross earnings for the year were.....	\$1,760,393 92
The working expenses were.....	1,759,851 27
	_____
Nett earning.....	\$542 65

The gross earnings exceed those of the year previous by \$254,095.44.

The earnings from passenger traffic show an increase of \$54,775.82.

The earnings from freight traffic show an increase of \$198,385.71, mails and sundries of \$933.96.

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

1880-81 .....	3,453,078
1879-80.....	3,076,342
	_____
Increase.....	376,736 miles.

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

1880-81.....	32,201,157
1879-80.....	28,254,065
	_____
Increase.....	3,947,092 miles.

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

1880-81.....	2,813,723
1879-80.....	2,535,654
	_____
Increase.....	278,069 miles.

The working expenses per mile of railway, were :—

1880-81.....	\$2,095.06
1879-80.....	1,943.55

The working expenses per mile run by engines were :—

	Cents.
1880-81.....	50.95
1879-80.....	50.12

The working expenses per mile run by train were :—

1880-81.....	62.52
1876-77.....	63.23

The gross tonnage carried during the year 1880-81, was..... 725,577 tons.

The quantity carried in 1876-77, was..... 421,327 “

Showing an increase in four years of (nearly 42 p. c.)..... 304,250 “  
(Appendix 3, page 16.)

#### WINDSOR BRANCH.

This branch is still operated by the Windsor and Annapolis Railway Company, under the arrangement 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 main tenance.

#### PICTOU BRANCH.

By the Statute of Canada 42 Vict. ch. 12, amending the original Act 40 Vict. ch. 46, it is enacted that the transfer of the Pictou Branch line of the Intercolonial shall be made to the Halifax and Cape Breton Coal and Railway Company so soon as the 82 miles of Railway extending from New Glasgow to the Gut of Canso have been constructed and equipped to the satisfaction of the Nova Scotia Government, and a ferry has been established between the main shore and the Island of Cape Breton at the terminus of the Railway.

The transfer has not yet been made.

### 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.....	32
	— 44
	—
	198½

The total expenditure on capital account to the 30th of June, 1880, was \$3,466,588.57. No further charge has been incurred during the year.

The business of the road has increased, though owing to heavy expenditure on account steel rail renewals, and the erection of new station buildings, the nett results shown are not as favourable as they would otherwise have been.

The working expenses and receipts for the year ended the 30th of June last, were:—

Total expenses.....	\$203,122.88
“ earnings.....	131,131.43
	—————
Excess of expenditure.....	\$ 71,991.45

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

1880-1881 .....	\$131,131.43
1879-1880 .....	113,851.11
	—————
Increase.....	\$ 17,280.32

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

1880-1881 .....	\$203,122.88
1879-1880 .....	164,640.55
	—————
Increase .....	\$ 38,482.33

The car mileage compared with that of the previous year, was:—

1880-1881 .....	1,122,419 miles.
1879-1880 .....	1,010,483 “
	—————
Increase.....	111,936 “

The engine mileage, compared with that of the previous year, was:—

1880-1881 .....	314,918 miles.
1879-1880 .....	295,190 “
	—————
Increase.....	19,728 “

All necessary repairs have been made to bridges, culverts, station buildings and other works along the line. New freight and passenger stations have been erected at York, Bedford and Bear River. (App. 3, page 58.)

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## CANADIAN PACIFIC RAILWAY.

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### LENGTH OF LINE.

Cross Lake to Selkirk.....	75 miles.
Selkirk to Emerson.....	86 “
Winnipeg to Portage La Prairie <i>via</i> Stonewall .....	68 “
Total.....	229 “

These sections were operated by the Government to the 30th April last.

The earnings for the ten months were.....	\$291,498 06
Expenditure.....	236,944 98

Excess of earnings over expenditure.....	\$54,553 08
--	-------------

(App. 3, page 78.)

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## CANALS.

The canal systems of the Dominion, under Government control, 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, Cape Breton, Nova Scotia.

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## RIVER ST. LAWRENCE AND LAKES.

The River St. Lawrence with the system of Canals established on its course above Montreal, and the Lakes of Ontario, Erie, St. Clair, Huron and Superior, provide a system of navigation which extends from the Straits of Belle-Ile to Thunder Bay and Duluth, at the head of Lake Superior, a distance of 2,384 statute miles.

The difference in level between Lake Superior and that 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 St. Marie Canal, situated on the United States side of the Channel.

The canal it 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.

The rise, or height overcome by the lock is 18 feet.

A statement of distances, and sections of navigable waters, from the Straits of Belle-Ile to Duluth, at the head of Lake Superior, are appended. (App. 11, page 152.)

#### LACHINE CANAL.

	Old Line.
Length of canal.....	$8\frac{1}{2}$ statute miles.
Number of locks.....	5
Dimensions of locks.....	200 feet by 45 feet.
Total rise, or lockage.....	$44\frac{3}{4}$ feet.
Depth of water on sills {	
at two locks.....	16 "
at three locks.....	9 "
Breadth of canal at bottom.....	80 "
Breadth of canal at water surface.....	120 "

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 986 miles distant from the Straits of Belle-Ile.

This canal was closed on the 27th November, 1880, and opened on the 1st of May, 1881.

The displacement of the gates of lock No. 2, by the steamer "Bohemian" on the 29th of June, 1880, caused, as was stated in the last report, a delay of five and a half days, four of which were embraced in the fiscal year 1880-81.

No further interruption to traffic occurred during the year.

The work of repairing the damage done by this accident has been duly performed together with all other repairs necessary for the maintenance of the canal in an



efficient condition. The flour sheds and wharves, together with the houses belonging to Government and occupied by the canal staff have been well maintained.

Telephonic communication has been established between the different locks, the Canal Office, and the Superintendent's residence, much facilitating the management of the works. (App. 4, page 94.)

#### NEW WORKS.

As was stated in last year's report, the scheme of enlargement comprises the following features :—

The construction of five locks between Montreal and Lachine, each 270 feet long and 45 feet wide at the bottom.

The two lower locks at Montreal between the harbour and Wellington Basin, have a depth of 18 feet of water on the sills, and the three, at St. Gabriel, Cote St. Paul and Lachine, a depth of 14 feet.

The new locks are independent structures adjoining the old ones, so that the canal will be navigable, through a double range of locks and double entrances, both at Montreal and Lachine.

Between Montreal Harbour and Wellington Street Bridge, the depth of the canal is 19 feet, and between Wellington Street Bridge and Lachine, 13 feet, provision being made for the future deepening of the prism to 15 feet, without disturbance of the foundations of any permanent structure along the line.

From Wellington Street Bridge upwards to the locks at Côte St. Paul, the mean width of the enlarged prism of the canal is 200 feet, thence to Lachine it is 150 feet wide.

The enlarged locks could be shortly brought into use, as the construction of the gates is well advanced, but until the new entrance at Lachine is completed vessels will have to pass by the old line.

#### BEAUHARNOIS CANAL.

Length of canal.....	11 $\frac{1}{4}$ statute miles.
Number of locks.....	9
Dimensions of locks.....	200 feet by 45 feet.
Total, rise or lockage.....	82 $\frac{1}{2}$ 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,  $15\frac{1}{4}$  miles from the head of the Lachine Canal. It connects Lakes St. Louis and St. Francis, and avoids the three rapids known respectively as the Cascades, the Cedars, and the Coteau.

This canal was closed by ice on the 28th of November 1880, and was reopened for traffic on the 25th of April, 1881.

No interruption to traffic has occurred during the past fiscal year.

The rebuilding of a number of the old gates, the renewing of portions of the houses occupied by the staff, and all the general details connected with the proper care of the canal have been carried out. (App. 4, page 98.)

#### CORNWALL CANAL.

Length of canal.....	11 $\frac{1}{2}$ statute miles.
Number of locks.....	7
Dimensions of locks..	220 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  $32\frac{3}{4}$  miles.

The Cornwall Canal reaches past the Long Sault Rapids.

This canal was closed on the 6th of December 1880, and re-opened on the 26th of April of 1881.

Navigation during the open period of the year has been uninterrupted.

The work executed during the year includes the building of a new bridge over the canal at Cornwall, and ordinary repairs. (App. 4, page 110.)

#### NEW WORKS.

The works of enlargement under contract comprise the construction of :—

1. A new lower entrance channel—300 feet to the south of the existing line.
2. Two enlarged locks, each 270 feet long, 45 feet wide, with 14 feet of water on the sills, and a basin between the locks 825 feet long.

3. Increasing the depth of the reach for a short distance above the second lock to 13 feet.

These works will be ready for use shortly after the opening of navigation in the spring of 1882.

---

### WILLIAMSBURGH CANALS.

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

No interruption to navigation occurred except that resulting from the lowness of the water of the River St. Lawrence in the month of October, 1880, and of May, 1881, which caused some detention. The longest delay experienced, in the five cases reported, was 12 hours.

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### 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 canal was closed on the 11th December 1880, and re-opened on the 27th April 1881.

Portions of the pier and ice breaker at the head of the canal, destroyed by fire, have been rebuilt.

Ordinary repairs have been duly executed. (App. 4, page 111.)

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## RAPIDE PLAT CANAL.

Length of canal.....	4 miles.
Number of locks.....	2 “
Dimensions of locks.....	200 feet by 45 feet.
Total rise, or lockage.....	11½ 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 10½ miles. This canal was formed to enable ascending vessels to pass the rapid at that place. Descending vessels run the rapid safely.

The Canal was closed on the 11th December 1880, and re-opened on the 27th April 1881.

Repairs have been of a comparatively small and ordinary character.

(App. 4, page 111.)

## GALOPS CANAL.

Length of canal.....	7½ miles.
Number of locks.....	3
Dimensions of locks.....	200 feet by 45 feet.
Total rise, or lockage.....	15¾ 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 4½ miles. This canal enables vessels to overcome the rapids at Pointe aux Iroquois, Pointe Cardinal, and the Galops.

The canal was closed on the 11th December 1880, and reopened on th 27th April 1881.

In addition to the ordinary repairs that were needed, a wing wall and some of the stone work at the entrance of Lock No. 27 has been rebuilt during the year.

(App. 4, page 111.)

## IMPROVEMENT OF CHANNEL THROUGH THE GALOPS RAPID.

It has been frequently stated by the Engineer of the Department that, during low stages of the River St. Lawrence, the Galops Rapid forms an obstruction to the passage of vessels of even light draught running down the river.

The improvements now under contract comprise the deepening of a channel, by sub-marine blasting, through a number of detached rocky bars and shoals, which are from one to seven feet above the contemplated bottom. The proposed channel will be about five-eighths of a mile in length, about one-half of which has to be more or less deepened. The Channel will be 200 feet in width, the depth being such that, at seasons when there is a depth of 9 feet of water on the sills of the guard lock of the canal, there may be a depth of 16 feet in the channel through the rapids. (In two places, where the water is most rapid and turbulent, this depth will be increased to 17 feet).

### WELLAND CANAL

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

	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	2
Number of locks { lift .....	26	{ lift 25
{ tidal .....	1	{ tidal 1
Dimensions..... {	2 locks 200 x 45	} 270 feet x 45 feet.
{	1 (tidal) 230 x 45	
{	24 150 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, vid 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 26 $\frac{1}{2}$ feet.
Total lockage from the Canal at Welland down to River Welland.....	10 feet.
Depth of water on sills.....	9 feet 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 of lockage.....	7½ feet.
Depth of water on sills.....	11 “

The canal was closed on the 30th November 1880, and re-opened from Port Dalhousie to Port Maitland *via* the Feeder on the 29th April 1881, and by the direct line to Port Colborne, on the 2nd May. There was no interruption to navigation during the season.

The water from the Grand River, by way of the feeder, was used to supply the canal until about the middle of June, when the necessary arrangements were made to introduce the water supply from Lake Erie.

An unusually large amount of work has been done during the year in the way of repair to old structures and renewal of others. (App. 4, page 113.)

The Welland Canal has one entrance from Lake Ontario at Port Dalhousie, two from Lake Erie, one 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.

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 Allanburgh to Port Colborne, a distance of 14 miles, the canal has only one channel.

On the 15th September 1881, the new line of the Welland Canal, though not absolutely completed, was so far finished as to admit of its being opened for the passage of vessels larger than those which the old canal could accommodate.

## BRIEF REVIEW OF THE HISTORY OF WELAND CANAL SINCE ITS INCEPTION.

In January 1824, a charter was granted to the Welland Canal Company, and power given to construct a line of water communication between Lakes Erie and Ontario.



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The scheme formed by the Company, was, at that time, limited to the construction of a canal 4 feet deep, 7 feet wide at bottom, and 19 feet wide at the water surface, to accommodate vessels not exceeding 40 tons burthen.

As the work progressed its national importance became more apparent, and additional powers were conferred upon the Company. Their capital was increased and loans were granted them.

In November 1829, the work, on a scale larger than contemplated in the original design, was so far completed, that two vessels, (one of 85 tons) were taken from Lake Ontario to Port Robinson, thence by a descent of  $15\frac{1}{2}$  feet through two locks, to the Chippewa or Welland River, by which they were borne to Chippewa and fairly launched on the River Niagara at a point less than 2 miles above the Falls.

The water supply for this canal was obtained from the Grand River, by a feeder 27 miles long, 20 feet broad at the bottom, 40 feet at the surface and 5 feet deep; the river being dammed up at Dunnville to give the necessary height.

The rapid current of the Niagara was found to be a grave objection to the permanent adoption of this line, and measures were soon taken to extend the canal from Port Robinson direct to Gravelly Bay, (Port Colborne) Lake Erie.

In 1833, this extension to Port Colborne was completed and opened to traffic.

The dimensions of the work were small and its accommodation limited. The locks (40) in number, built of wood, were only 100 feet long by 22 feet wide, and the navigation limited to vessels drawing  $7\frac{1}{2}$  feet of water.

The enterprise, though liberally aided by grants of land and loans from the Imperial and Provincial Governments, and by investments of Provincial funds in the stock of the Company, proved too heavy a burden for its means, and the Government by an Act passed at the time of the Union in 1841, relieved the Company of its responsibility and assumed the charge of the canal.

Works of enlargement and general improvements were then so vigorously prosecuted by the Government that, by the close of the year 1844, the canal bed, from Port Dalhousie to the Feeder, and from the mouth of the Feeder to Dunnville—had been enlarged. A branch from the Feeder to Port Maitland on Lake Erie had been constructed, and the feeder thereby made available for the passage of vessels to Lake Erie. The locks reduced in number from 40 to 27, were built of cut stone and increased in size, the smallest being 150 feet long by  $26\frac{1}{2}$  feet wide, with 9 feet of water on the sills, and the bed of the main line widened to 26 feet at the bottom.

These improvements fully doubled the capacity of the prism and locks of the original design.

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Between 1853 and 1855, the lock walls were raised and the channel of the summit level was deepened throughout to 10 feet, and the width at the summit level was increased to 50 feet at bottom.

The weak point in the system was its water supply. Owing to the summit level being 8 feet above Lake Erie level, the Grand River Feeder was of necessity drawn on to supply the demands of navigation both to Port Colborne on the one side, and to Port Dalhousie on the other.

To meet such demand the supply from the Grand River was insufficient, and the summit reach of the canal had to be lowered to the level of Lake Erie.

The deepening of this reach although commenced in 1846 and continued at intervals was not completed and brought into use before the present year 1881.

The rapid development of the lake trade gave rise to further demands for enlargement, and in November, 1870, a special commission was appointed to report on the whole question of inland lake navigation.

In 1871, the commission reported, and recommended that a uniform size of lock and canal should be adopted on the line of water communication between Lake Superior and Montreal, the dimensions of the locks to be 270 feet long, 45 feet wide, with 12 feet of water on the sills—and the canals to be at least 100 feet wide at bottom.

In determining the line of the enlarged Welland canal it was found advantageous to adopt an altogether new location from Port Dalhousie to Allanburgh.

From Allanburgh to Port Colborne the old channel has been retained but enlarged to a bottom width of 100 feet, or a mean width of 126 feet.

The scale of enlargement at first undertaken was for a draught of 12 feet water, but in 1875 it was decided that arrangements should be made, for the foundations of all permanent structures on those parts of the canal not then under contract, to adapt them for a 14 feet navigation.

Four lines of railway intersect this canal :

1. The Grand Trunk crosses it by means of a swing bridge situated a short distance below the locks at Port Colborne.
2. The Canada Southern also crosses it on a swing bridge situated about a quarter of a mile to the north of where the feeder connects with the main line.
3. The Great Western crosses it at two places—one of which is about midway between the junction and what is known as Ramey's bend, and the other is over the

old canal at Merritton, and about a mile and a-half to the eastward of the latter place the Great Western passes under the new canal through a tunnel formed for the purpose of obviating the necessity of constructing a swing bridge where the railway is on a grade of 33 feet to the mile.

4. The Welland railway crosses the new line of canal north of the City of St. Catharines, and again south of the Town of Thorold. There are also eighteen road bridges over the new and enlarged line of canal between Ports Dalhousie and Colborne.

As stated in the report of last year, the works connected with construction of an aqueduct over the Chippawa River at the Town of Welland, and other works embraced in section No. 27 of the enlargement, were given up by the contractors, and after the necessary examinations and arrangements were made and the original contractors settled with the contract for the completion of all the works on this section was relet. The above mentioned section and the rock cutting between Humberstone and Port Colborne known as section No. 34 are the principal works that remain to be completed.

The canal will be opened in the spring of 1882 for a 12 feet navigation throughout, and now that Lake Erie furnishes the supply no deficiency of water need be anticipated.

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### BURLINGTON BAY CANAL.

Length of canal.....	1/2 mile.
Average breadth between piers.....	138 feet.
Least do .....	108 "

This canal is cut through the sand bar which separates Burlington Bay from Lake Ontario, and is navigable without locks for vessels drawing ten 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 9th of December, 1880, and re-opened on the 18th of April, 1881.

No interruption to the passage of vessels occurred during the year.

The reconstruction of the piers on both sides of the canal, under contract, is making satisfactory progress.

Repairs have been slight in character. (App. 4, page 124.)

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## 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  $246\frac{1}{4}$  miles.

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

The St. Anne's Lock;

Carillon Canal;

Chute à Blondeau Canal;

Grenville Canal;

Rideau Canal;

The total lockage (not including that of the Lachine Canal,) is  $533\frac{1}{2}$  feet—( $356\frac{1}{2}$  rise, 177 fall)—and the number of locks 59.

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.....	2 $\frac{1}{8}$	52 $\frac{3}{4}$
From Carillon Canal to Chute à Blondeau.....	4	56 $\frac{3}{4}$
Chute à Blondeau Canal.....	$\frac{1}{8}$	56 $\frac{7}{8}$
From Chute à Blondeau Canal to Grenville Canal.....	1 $\frac{3}{8}$	58 $\frac{1}{4}$
The Grenville Canal.....	5 $\frac{3}{4}$	64
From the Grenville Canal to entrance Rideau Navigation.	56	120
Rideau Navigation, ending at Kingston.....	126 $\frac{1}{4}$	246 $\frac{1}{4}$

### ST. ANNE'S LOCK.

Length of canal.....	$\frac{1}{8}$ mile.
Number of locks.....	1
Dimensions of locks.....	190 feet by 45 feet.
Total rise, or lockage.....	3 "
Depth of water on sills.....	$\left\{ \begin{array}{l} 6 \text{ feet at low water.} \\ 7 \text{ feet at ordinary high water.} \end{array} \right.$

This work, with guide piers above and below, surmounts the St. Anne's Rapids between Ile 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 24th of November 1880, and opened on the 18th<sup>th</sup> April 1881.

No interruption to navigation has occurred during the year.

Repairs have been made wherever needed. (App. 4, page 109.)

#### NEW WORKS IN PROGRESS.

These works embrace the construction of a lock, 200 feet long between the gates 45 feet wide at bottom, with a depth of 9 feet of water on the sills; also the formation of channels of approach, 100 feet in width at the bottom, increasing to 150 feet at the upper entrance, and of such depth as to give 10 feet of water at the lowest known level of the river.

The works are in progress, the excavation of the lock pit and canal, is well advanced, and other works are being proceeded with.

#### THE CARILLON CANAL.

Length of canal.....	$2\frac{1}{4}$ miles.
Number of locks.....	3 (two ascending—one descending.)
Dimensions of locks:—Lift	
Lock, No. 1.....	128 feet x $32\frac{1}{2}$ feet.
Lift Lock, No. 2.....	$126\frac{1}{2}$ " x $32\frac{1}{2}$ "
Guard Lock, No. 3.....	$126\frac{1}{2}$ " x $32\frac{1}{4}$ "
Total lockage.....	$34\frac{3}{4}$ feet. <span style="font-size: 2em; vertical-align: middle;">}</span> $21\frac{3}{4}$ upwards. <span style="font-size: 2em; vertical-align: middle;">}</span> 13 downwards.
Depth of water on sills.....	6 "
Breadth of canal at bottom.....	30 "
Breadth of canal at water surface...	50 "

This canal overcomes the Carillon Rapids.

From St. Anne's Lock to the foot of the Carillon Canal, there is a navigable stretch of twenty-seven miles, though the Lake of Two Mountains and the River Ottawa.

The canal was closed on the 23rd of November 1880, and re-opened on the 29th of April 1881.

The worn out condition of the locks on this canal has necessitated a considerable amount of repair during the year.

Portions of the canal which had become silted up were cleaned out prior to the opening of navigation, and the works have been generally maintained in a serviceable condition. (App. 4, page 109.)

#### NEW WORKS.

The new works consist of a dam across the River Ottawa  $\frac{3}{4}$  of a mile above the village of Carillon, also a canal of  $\frac{3}{4}$  of a mile long with two locks 200 feet by 45 feet, with 9 feet of water on the sills.

The construction of the dam has been completed and the gates of the dam were closed on the 9th of November.

The masonry of the upper lock and reach below it is completed, and that of the outlet lock well advanced. There is therefore every reason to believe that the works will be open for navigation in the spring of 1882.

#### CHUTE A BLONDEAU CANAL.

Length of canal.....	$\frac{1}{8}$ of a mile.
Number of locks.....	1
Dimensions of lock.....	130 $\frac{5}{8}$ feet x 32 $\frac{5}{8}$ feet at upper end and 36 $\frac{1}{2}$ feet at lower end.
Total rise, or lockage.....	3 $\frac{3}{4}$ feet.
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 Canal there is a navigable stretch of four miles. The canal is cut through solid rock, and has only one lock. It is only used by vessels going up the river ; all down vessels run the rapids.

Closed on the 23rd of November, 1880, re-opened on the 29th April 1881.

By the construction of the Carillon dam, all occasion for this work has been removed, and it will cease to exist as part of the Ottawa Canal system. (App. 4, page 109.)



## GRENVILLE CANAL.

Length of canal.....	5 $\frac{3}{4}$ miles.	
Number of locks.....	7	
Dimensions of locks—Lift Lock No. 5	} Combined { 130 $\frac{2}{3}$ feet x 32 $\frac{1}{8}$ feet.	
“ 6		128 $\frac{1}{3}$ “ x 32 $\frac{1}{3}$ “
“ 7		128 $\frac{1}{3}$ “ x 31 $\frac{5}{8}$ “
“ 8		128 “ x 32 $\frac{1}{6}$ “
Locks Nos. 9 and 10, and Guard Lock No. 11.....	200 “ x 45 “	
Total rise, or lockage.....	45 $\frac{3}{4}$ “	
Depth of water on sills.....	6 “	
Depth of water on sills of Locks Nos. 9, 10 and 11..	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 $\frac{3}{8}$  miles.

This canal is about 56 miles below the City of Ottawa ; the Long-Sault Rapids being thereby avoided.

The canal was closed on the 23rd of November 1880, and re-opened on the 2nd of May 1881.

The repairs necessary to maintain the old locks in a condition fit for service have been considerable. (App. 4, page 109.)

## NEW WORKS.

The works for the enlargement of the canal, commenced in 1871, comprise the construction of 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.

The work has been divided into two portions, the eastern and the western.

The eastern end, at Greece's Point, comprising the construction of two locks about a quarter of a mile apart and the excavation of the intervening space, was placed in the hands of Messrs. Heney, Stewart & Co., by a contract dated the 20th of July 1880, completion being required by the 1st of May 1882.

The contractors during the year, performed some work, chiefly in the way of excavation and the provision of stone and other material, but it becoming evident, from the unsatisfactory progress made that a very serious delay would occur in the completion of this important part of the Ottawa River system,—the contractors

further, representing themselves as unable any longer to continue operations,—the works were taken out of their hands under the authority of an Order in Council of the 1st November 1881.

On the western portion of the new works with the exception of the excavation of the entrance reach to a width of 100 feet, to afford the passing accommodation urgently called for by the carrying trade, the whole of the works have been completed.

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## UPPER OTTAWA RIVER.

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### CULBUTE LOCKS AND DAMS.

Number of locks.....	2
Dimension of locks.....	200 x 45
“ “ .....	200 x 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, up the River Ottawa to the city of Ottawa, a distance of about 56 miles, there is a fair course of navigation. Beyond the city for a distance of 107 miles, to L'Islet or Culbute, continuous navigation is rendered impracticable by the following mentioned rapids:—The Chaudière; the Duchêne; the Chats; the Chenaux (or “the Snows”); 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.

Pending the completion of the works now under construction, there is no navigation at this point. (App. 4, page 110.)

### NEW WORKS.

In order to render the river navigable below the locks, as far as Bryson, it is necessary to remove part of three shoals and to build two submerged dams.

Of the shoals, the first, 1,000 feet below the locks, is 160 feet in length and composed of gravel; the second, one mile lower down, is 450 feet long and composed of mud and sand; the third, just above Chapeau Bridge, six miles below the locks, is 50 feet in length and formed of gravel. An average depth of  $2\frac{1}{2}$  feet has to be removed from these shoals.

The dams are to be built, one on the Flat rapids in the Rocher Fendu or main channel, 24 miles below the locks, and the other at a reef above Grand Calumet Falls, 43 miles below the locks. These dams have an aggregate length of about 500 feet and an average height of five feet.

When the shoals are lowered and the dams built, a navigable reach of 80 miles, with a minimum depth of 7 feet at extreme low water, will be opened between Bryson and Des Joachim.

The work was placed in the hands of Messrs. Poupore & Charleton, on the 3rd of August, 1881. The excavation of the shoals at Culbute is now completed, and the building of the dams is in progress. The contractors undertake to have all the works finished by the middle of April 1882.

### RIDEAU CANAL.

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 $\frac{1}{4}$ rise, and } at high water.
	{ 164 fall. }
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.
“ at surface of water.....	80 feet in earth.

For table of distances of Stations between Ottawa and Kingston see (App. 10, page 167.)

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.



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From the summit, the route towards Ottawa follows the River Rideau, and that towards Kingston follows the River Cataraqui. 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 the 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 River Cataraqui; this river, rendered navigable by dams at various points, affords a course of navigation to Kingston.

The navigation stopped at Kingston Mills on the 17th of November 1880, and recommenced on the 2nd of May 1881.

At Ottawa navigation stopped the 24th of November 1880, and recommenced on the 2nd of May 1881.

During the fall of 1880, owing to dry weather, increase of lockages and the want of sufficient resources, the water level both at the summit and on the descending reaches towards Ottawa and Kingston, fell below navigation height, necessitating the lightening of vessels in order to enable them to use the canal up to the close of the season. The water supply during the season of 1881, has been sufficient on all the reaches.

The repairs executed during the fiscal year, have been of no great importance, a more considerable expenditure in this direction will, however, shortly be required. (App. 4, page 125.)

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#### BRANCH LINE OF NAVIGATION TO THE TOWN OF PERTH.

A survey of the River Tay, from its junction with the Rideau River to the Town of Perth, has been commenced to determine the best mode by which navigation can be opened up to the Town of Perth.

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## 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. John's 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 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 distance.
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.....	1/8 mile.
Number of locks.....	1
Dimensions of lock.....	200 feet by 45 feet.
Total rise, or lockage.....	5 feet.
Depth of water on sills.....	7 feet at low water.
Length of dam in Eastern Channel.....	300 feet.
"    "    Western Channel.....	600 feet.

At St. Ours', fourteen 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 thirty-two miles.

The lock was closed on the 22nd November, 1880 and opened on the 11th April 1881.

No interruption to navigation has occurred during the past fiscal year.

The ordinary repairs have been executed. (App. 4, page 102.)

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 CHAMBLY CANAL.

Length of canal.....	12 miles.
Number of locks.....	9
Dimensions of locks—	
Guard Lock, No. 1, at St. John's.....	122 feet by 23½ feet.
Lift “ “ 2,.....	124 “ 23½ “
“ “ “ 3, 4, 5, 6.....	118 “ 23 to 23½ feet
“ “ “ 7, 8, 9 combined.....	125 “ 23½ feet.
Total rise, or lockage.....	74 “
Depth of water on sills.....	7 “
Breadth of canal at bottom.....	36 “
“ “ surface of water.....	60 “

Succeeding the thirty-two 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. John's, a distance of 12 miles.

This canal was closed to navigation on the 25th November 1880, and was re-opened on the 2nd of May 1881.

In addition to the ordinary canal repairs, portions of the walls of certain locks, being in urgent need of more than ordinary repair, have been taken down and rebuilt, and the masonry of all the locks has received careful attention together with the gates of the respective locks.

The canal is being widened in places where the channel is narrow. The steam dredge has been employed on this work. At the close of the fiscal year the dredge had made a cut of 20 feet wide for about a mile in length giving eight feet draught of water on the west side of the canal. (App. 4, page 100.)

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 ST. PETER'S CANAL, CAPE BRETON.

Length of canal.....	about 2,400 feet.
Breadth at water line.....	55 feet.
Lock.....	One tidal lock, 4 pair of gates.
Dimensions.....	48 by 200 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 feet.

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.



The works were so far completed in October 1880, as to admit of the canal being then used for traffic purposes. They were brought to a conclusion in December.

Navigation was closed on the 26th of December 1880, and was re-opened on the 23rd of April 1881. (App. 4, page 132.)

### 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.

The course in contemplation was as follows :--

Through the River Trent, Rice Lake, the River Otonabee and Lakes Clear, Buckhorn, Chemong, Pigeon, Sturgeon and Cameron to the Lake Balsam, the summit water, about 166 miles from Trenton. From the 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 Quinte, to Nine Mile Rapids..		9
“ Nine Mile Rapids to Percy Landing.....	19½	
“ Percy Landing to Heeley's Falls Dam.....		14½
“ 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.....	36½	
	126½	34½
“ Lindsay to Port Perry at the head of Lake Scugog	28¾	
	155½	34½

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 :—

*Chisholm's Rapids.*

	Distance from Trenton in miles.
The works here consist of a canal and lock, a dam and slide...	15½

*Percy Landing.*

A retaining boom for saw logs here.....	28½
---	-----

*Campbellford.*

Guide booms.....	34¾
------------------	-----

*Middle Falls.*

The work consisted of 4 dams and 2 slides.....	37¾
--	-----

*Crow Bay.*

A retaining boom.....	38
-----------------------	----

*Heeley's Fall.*

A dam and slide are in operation here.....	42¾
--	-----

*Crook's Rapids, Hastings.*

The works consist of 1 lock, 1 dam and slide for timber.....	34½
--	-----

*Whitlas's Rapids.*

The works situated below Peterboro consist of a lock, dam and canal.....	92⅞
---	-----

*Little Lake.*

These works consist of three piers and 1 boom.....	94
--	----

*Burleigh.*

Timber slides.

*Buckhorn Rapids.*

This dam is important in keeping to a high level the water of the lakes west of it as far as Bobcaygeon, including Lakes Pigeon, Ball, Buckhorn and Chemong. The dam is effec- tive.....	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.....	140¾
---	------

*Fenelon Falls.*

A large slide and booms.....	155¾
------------------------------	------

*Lindsay.*

Distance from  
Trenton in miles.

The old lock, having become useless, was rebuilt by the Government of the Province of Ontario in 1879. Its dimensions are 134 x 34 feet with 5 feet water on the sills. The navigation is, by this work, extended to Port Perry, Lake Scugog.....

161½

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 of gentlemen connected with the lumber trade. The Committee was authorized to collect tolls on timber passing through. The works so transferred, at this date, are the slides and booms at Chisholm's Rapids, the retaining boom at Myersburgh, the guide boom at Campbellford, the dams and slide booms at Middle Falls, the retaining booms at Crow Bay and the slide at Heeley's Falls.

These works are kept in repair by the Committee.

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

Navigation ceased on the 10th November 1880 and recommenced on the 26th April 1881.

No accident occurred during the year, and except at Hastings Station where repairs were urgently needed, navigation was uninterrupted.

All necessary repairs were duly executed. (App. 4, page 127.)

*Survey for a through line of Navigation.*

Under an appropriation voted at the last session of Parliament, a further survey and examination of the rivers and lakes lying between the Bay of Quinte and Georgian Bay, has been undertaken on certain proposed new lines of connection between lakes and navigable reaches of rivers, which are alleged to offer advantages over the line embraced in the scheme of 1837.

MURRAY CANAL.

The construction of a canal from the head of the Bay of Quinte, westward into Lake Ontario, having been authorized by Parliament, the location of the work is now in progress, and so soon as it is effected, the work of construction will be undertaken and pushed to completion without delay.

Respectfully submitted,

CHARLES TUPPER,

DEPARTMENT OF RAILWAYS AND CANALS,

*Minister of Railways and Canals.*

31st December, 1881.



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DOMINION OF CANADA.

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ANNUAL REPORT

OF THE

MINISTER OF RAILWAYS AND CANALS

FOR THE

FISCAL YEAR 1<sup>ST</sup> JULY, 1880, TO 30<sup>TH</sup> JUNE, 1881.

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APPENDICES.

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APPENDIX No. 1

STATEMENT showing the amount expended by the Department of Railways and Canals, Dominion of Canada, during the Fiscal Year ending 30th June 1881.

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## STATEMENT.

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Showing the amount Expended by the Department  
of Railways and Canals, Dominion of Canada,  
during the Fiscal Year ended 30th June, 1881.

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## APPENDIX No. I.

STATEMENT showing the amount Expended by the Department of Railways and Canals, Dominion of Canada, during the Fiscal Year ending 30th June, 1881.

Name of Work.	Construction.	Repairs.	Staff and Maintenance.
CANALS.	\$    cts.	\$    cts.	\$    cts.
Lachine.....	292,165 51	19,888 33	39,027 99
Beauharnois .....		10,770 67	17,659 93
Cornwall.....	53,948 14	5,524 10	15,173 60
Williamsburgh.....		5,020 73	7,572 35
St. Lawrence.....	6,927 96		
Welland.....	1,242,943 37	69,249 53	56,398 04
do rebuilding Dunnville Bridge .....		6,593 19	
Burlington Bay.....		15,967 60	
St. Anne's.....	69,042 76	3,257 92	2,553 02
Carillon.....	191,326 56	8,076 91	13,059 18
Grenville .....	145,380 97		
Culbute.....	4,721 62		962 85
Rideau.....	133 50	8,627 00	26,024 71
Trent.....		2,233 50	2,489 93
St. Ours.....		1,299 77	1,741 97
Chambly.....		20,705 17	13,950 47
St. Peter's.....	69,434 76		959 58
Baie Verte.....	520 00		
Miscellaneous .....	1,136 84		
do Surveys.....	560 24		
Red River Route.....	641 33		
Arbitrations.....			5,535 22
Total on Canals.....	2,078,883 56	177,214 42	203,108 84
RAILWAYS.			
Pacific.....	4,968,503 93		236,944 98
Intercolonial .....	608,732 80		1,759,851 27
Windsor Branch.....			20,502 26
Prince Edward Island. ....			203,122 28
Total on Railways.....	5,577,236 73		2,220,420 79
Grand Total.....	7,656,120 29	177,214 42	2,423,529 63

Total amount expended..... \$10,256,864 34

**J. BAINE,**  
*Accountant.*

**DEPARTMENT OF RAILWAYS AND CANALS,**  
**OTTAWA, December, 1881.**

## APPENDIX No. 2.

### CANADIAN PACIFIC RAILWAY.

OFFICE OF THE ENGINEER-IN-CHIEF,  
OTTAWA, 1st November, 1881.

SIR,—I have the honor to submit my report upon the progress made with the works of construction, the surveys, etc., in connection with the Canadian Pacific Railway, during the fiscal year ended 30th June, 1881, and up to date.

#### GENERAL REMARKS.

In October, 1880, a contract (which was subsequently ratified by Parliament) was made with a company, to construct the following sections of the Canadian Pacific Railway:—

From Callandar Station to Prince Arthur's Landing, a distance of about.....	650 miles.
From Red River to Kamloops, a distance of about....	1,350 “
Total to be constructed by the Company.....	2,000 “

The Government undertaking to build the remaining sections, viz:—

From Prince Arthur's Landing to Red River, a distance of about.....	412 miles.
From Kamloops to Port Moody, a distance of about....	217 “
Total to be constructed by the Government...	629 “
Which with the Pembina Branch in length about.....	86 “
Makes a total of.....	2,715 “

to be owned and operated by the company upon the terms and conditions of the contract being fulfilled.

As soon as arrangements could be made after the ratification of the contract by Parliament, the sections of road being operated by the Government were, on the 1st May, 1881, transferred to the Canadian Pacific Railway Company to work.

These sections were as follows:—

The Pembina Branch in length about.....	86 miles.
From Red River to Cross Lake “ .....	76 “
Making a total of.....	162 “

The works of construction being prosecuted by the Government on the west side of Red River, were also transferred to the company under the terms of the contract.

#### WORKS OF CONSTRUCTION.

*Prince Arthur's Landing, to Fort William, 6 miles.*

This section of road was formerly known as the Prince Arthur's Landing and Kaministiquia Railway, and was constructed and owned by a company from whom



it was purchased by the Government for the sum of \$14,000, exclusive of the rails. It has since been laid with steel rails and put in good running order.

*Fort William to English River, 112 miles. Contract No. 25. Messrs. Purcell and Ryan, Contractors.*

The work upon this contract has been completed and the contractors settled with, but owing to the lengthened period which has elapsed since some of the small structures were erected and the sleepers cut, they have become so rotten as to require renewing, in order to keep the track in safe condition for the passage of trains. It will also be necessary in order to give free vent to the drainage, to clear the slurry out of the cuttings and ditches. These works, as well as some fencing, which it is essential should be erected through settled portions of the line, I recommend should be undertaken as soon as the weather permits.

*English River to Eagle River, 114 miles. Contract No. 41. Messrs. Purcell, & Co., Contractors.*

The terms of this contract require that the grading and track-laying be completed, and in safe condition for the passage of trains, by the 1st July, 1882, and that the section be fully completed by the 1st July, 1883. Should the above, however, be accomplished a year earlier than the dates named, the contract provides for an addition to the rates in the schedule of prices attached thereto.

I am pleased to be able to state that the contractors have prosecuted the work with vigour, and although they had not the track laid over the whole section by the 1st July last, they accomplished this work a very short time thereafter, viz: on the 25th August, thus giving rail communication from Prince-Arthur's-Landing to Eagle River, (the east end of Contract 42), a distance of about 232 miles. Although much remains to be done, in making up embankments, trimming cutting, erecting structures and ballasting, yet if the work is prosecuted vigorously during next season, I can see no reason why the contract should not be fully completed by August or September, 1882.

The object in having the track laid over Contract 41, in safe condition for the passage of trains by the 1st July, 1881, was to facilitate the prosecution of the works upon the adjoining Contract No. 42 by enabling the contractors for that section to transport rails, &c., from Prince-Arthur's-Landing to the easterly end of their work, and to proceed with the track-laying there, as well as at the west end.

The work of grading, &c., was not, however, sufficiently advanced on the easterly end of Contract 42, to enable the contractors for that section to proceed with the work of track-laying by the 1st July, 1881, or indeed until some time after the 25th August. It appeared to me, therefore, that the contractors for Section 41, had accomplished the desired object and inasmuch as I believed they had made great efforts at considerable expense, to complete the track-laying by the earlier date named in the contract, and had succeeded in doing so a few weeks thereafter, I recommended that it should be accepted as a due fulfilment of that portion of their contract.

*Haggas Water Supply System, Contract No. 74. William Gooderham, Contractor.*

In my report of last year, I stated that a contract had been entered into for the introduction of the Haggas Water System, on the first 140 miles of road, west of Fort William; this work has now been completed. Instructions were given to extend the system over a further distance of 100 miles and the work is far advanced. When complete the Haggas System will be in operation over 240 miles of the road. The contractors for the ballasting on Section 41, state that the system works well and has given good satisfaction.

*Eagle River to Keewatin, 67 miles. Contract No. 42. Messrs. Manning, McDonald, McLaren & Co., Contractors.*

According to the terms of this Contract No. 42, the track is to be laid throughout for the safe passage of trains, by the 1st July, 1882, and the whole work completed by the 1st July, 1883.

During the summer and autumn of 1880, sufficient energy, in prosecuting the work, was not being displayed to ensure the track being laid by the time specified, and the contractors were from time to time urged to exercise greater vigour. As the winter approached, much more energy was shewn and since, a very large amount of work of various classes has been executed, so that I now have great hopes that rail connection will be made between Prince Arthur's Landing and Winnipeg by September next. With this object in view, the contractors are now engaged in laying track eastward, from the west end of the section and the grading being sufficiently advanced on the east end, they are making preparations to carry on this work from that point westward, and now have a train on the road, transporting rails &c., from Prince Arthur's Landing for this purpose.

After the track is laid throughout, there will still remain a very large quantity of earthwork and ballasting to be done, which even if great energy is displayed, will take more than a year to accomplish. The prosecution of this work, however, need not materially interfere with the passage of through trains.

As material for filling many of the heavy embankments is not to be had in the immediate neighborhood, the contractors have erected substantial temporary trestles in order to make up the permanent embankments by means of engines and cars.

*Keewatin to Selkirk, 113 miles. Contract No. 15. Joseph Whitehead, Contractor.*

The work on the portion of this section, between Keewatin and Cross Lake, has been prosecuted with vigour during the past season, and is now completed and in fine running order. This work would have been finished much earlier in the season, had not several of the embankments broken through the original surface and settled many feet, entailing very much additional labour and expense. It is believed, however, that the embankments referred to have found bottom and are now solid and substantial.

Between Cross Lake and Selkirk, there yet remains a quantity of ballasting to be done.

In order to facilitate the works of construction west of Red River, it became necessary to transfer this section to the Canadian Pacific Railway Company to operate, and it being considered desirable that they should have full control of all trains running over it, an arrangement was entered into with them, to complete the ballasting, giving Contract 15 credit for the work at contract prices and debiting it with the cost of the work. The Company have commenced the work under this arrangement, but it will not be completed this season.

The entire length of this contract is now in condition to be placed under traffic.

*St. Boniface to Emerson, 63 miles. Contract No. 33. Messrs. Kavanagh, Murphy & Upper, Contractors.*

The work to be executed under this contract has been completed, and the road has been transferred to the Canadian Pacific Railway to operate.

Before this branch was ballasted it was opened for traffic, and a heavy business passed over it for many months, which, owing to the wetness of the season and the peculiar sticky glutinous nature of the soil, caused the rails and sleepers to be driven into the mud and rendered the road almost impassable. The work of ballasting and lifting the track was consequently very heavy, tedious and costly of execution.



*Iron Bridges. Contracts Nos. 71 and 73. Toronto Bridge Company, Contractors.*

The two 200 feet iron bridges to span the Winnipeg River, were to have been erected in October 1880, but owing to a difficulty which arose in having them transported over the Northern Pacific Railway, they did not reach the sites until the following December. The first crossing to be bridged was a difficult job, and the builders considered it prudent to postpone its erection until spring. An unwarrantable delay then arose, on the Contractors' behalf, in commencing the erection of these bridges, and no work was done until July. The two bridges were not finished until September, 1881.

Of the three iron bridges for the Pembina Branch, that over the Rousseau River has been erected during the past summer, and is a good substantial structure. The iron for the other two bridges has been delivered in Winnipeg and is ready for erection.

*Barbed Wire Fencing. Contract No. 77. Messrs. Stubbs & Co., Contractors.*

The work covered by this contract was 200 miles of single fence. None of the fencing had been erected upon the opening of last spring, but a large quantity of wire and cedar posts had been delivered during the winter within the railway limits. In April last, the Contractors were directed to take their instructions, as to where to build the fence, &c., from Mr. Stickney, the Canadian Pacific Railway Company's Superintendent.

The work has been proceeded with under his instructions, and a good substantial fence erected.

*Contract No. 78. Messrs. Skead and Haycock, Contractors.*

A further length of 200 miles of single fence was included in this contract.

During the winter a quantity of wire was delivered and some cedar posts cut. These contractors were also directed, in April, to take their instructions, as to where to build the fence, &c., from Mr. Stickney. Up to this time, however, they have not commenced the work of erection, and the working season now having closed, nothing further will be done this year.

*The first 100 miles west of Red River. Contract No. 48. John Ryan, Contractor.*

The work on this section of road was carried on by the Government up to the 1st May 1881, at which date it was transferred to the Canadian Pacific Railway Company. Owing to the wetness of the season, large stretches of the prairie being submerged, the works were prosecuted with great difficulty.

The expenditure on this work will form a charge against the Canadian Pacific Railway Company.

*The second 100 miles west of Red River. Contract No. 66. Messrs. Bowie & McNaughton, Contractors.*

This contract having been cancelled, no work has been executed since the date of my last report.

*Emory's Bar to Savona's Ferry, 127 miles. Contracts Nos. 60, 61, 62 & 63. D. O. Mills, Contractor.*

Contract No. 60.—The work on this contract is very heavy, being composed chiefly of rock excavation, tunnelling, bridging, retaining wall, &c. Good progress has been made, a number of the tunnels having been completed, the rock excavation far advanced, many of the bridges erected and the track laid, ballasted, and in good running condition for a distance of 10 miles from Emory's Bar easterly.



has been made, a number of the tunnels having been completed, the rock excavation far advanced, many of the bridges erected and the track laid, ballasted, and in good running condition for a distance of 10 miles from Emory's Bar easterly.

It is expected that the track will be laid over the whole of this contract not later than this time next year.

Contract No. 61.—The work of construction on this section has been commenced, but little work done. The season has been occupied by the Engineering staff in improving the location and preparing the necessary plans for a vigorous prosecution of the work next summer.

Contract No. 62.—The work on this section is composed chiefly of earthwork and cemented gravel (hardpan), the structure being for the most part small and the rockwork comparatively light.

Satisfactory progress has been made with the grading, which it is expected will be completed next season. The material for the structures will have to be brought forward by train and their erection will consequently be delayed until the track is laid over contracts 60 and 61.

Contract No. 63.—Very little work has been executed on this section, it being so far distant from the source of labor and the work being of such a character that it is believed it can be carried forward to completion with greater dispatch after the track reaches contract 62.

The Engineering staff have been employed during the season in improving the location and preparing for a vigorous prosecution of the works.

#### *Telegraph Lines.*

The contractors for the telegraph lines have all been settled with, except Messrs. Oliver, Davidson & Co., the contractors for the section between Thunder Bay and Red River.

#### *Thunder Bay to Red River.*

This section is being maintained and worked by the contractors, Messrs. Oliver, Davidson & Co., under the term of their contract. Considering the difficulties of maintenance, in a country where rock blasting is in progress, communication may be considered to have been fairly kept up during the past year.

#### *Red River to Edmonton.*

*(Including the line from Selkirk to Winnipeg.)*

This section is being maintained and operated by the Department, under the superintendence of Mr. Latouche Tupper, who also has supervision over the contractors between Thunder Bay and Red River. He reports the line in fair working order.

#### *Edmonton to Cache Creek.*

On this section, 82 miles of telegraph line have been erected eastward from Cache Creek, of which 52 miles is between Cache Creek and Kamloops, and 30 miles up the North Thompson.

The section of 52 miles is being operated in connection with the telegraph system of British Columbia.

#### *Steel Rails.*

Of the 39,000 tons of steel rails purchased the season before last, about 32,300 tons have gone forward to Winnipeg and Prince Arthur's Landing, and 1,500 tons to British Columbia. Of the balance, about 600 tons are now at Collingwood, and some 4,600 tons have still to be delivered in British Columbia.

The Canadian Pacific Railway Company have been allowed the use of about 4,400 tons of rails, to be replaced when required, and such further quantity sent to

Winnipeg that may not be needed for the road east of Red River are being delivered to the Company under the terms of their contract.

#### SUBSIDIZED LINES.

*Pembroke to Callander Station (in the vicinity of Lake Nipissing), 130 miles.*

The grading and bridging on this line has been completed and the track laid to the 102nd mile west of Pembroke. The works of construction are in progress to the 130th mile; ballasting to the 70th mile west of Pembroke is nearly completed, and partially so as far as the 101st mile. Station buildings and water services have been erected, and the line is now being operated for a distance of 94 miles west of Pembroke. As stated in my last report, the rails have been delivered on the ground for the entire length of the line subsidized, and the works have been prosecuted with vigour.

The amount of subsidy earned, is as follows:—

From June 30, 1880, to June 30, 1881.....	\$394,743
“          1881, to Oct. 31, 1881.....	60,000
	<hr/>
	\$454,743
	<hr/>

#### SURVEYS.

Since the date of my last report, no surveys in connection with the Canadian Pacific Railway have been undertaken by the Department, this duty now devolves upon the Canadian Pacific Railway Company, under their contract.

#### *Location.*

The surveys made in previous years to establish the route from Emory's Bar to Port Moody, fixed the general direction. During the past season, a revision has been made of the location with a view to improvement, and in order to obtain the fullest information possible to furnish intending contractors. This work has been conducted by Mr. Marcus Smith.

#### CANADIAN PACIFIC RAILWAY COMPANY.

#### *Progress.*

On the 1st May last, the Canadian Pacific Railway Company commenced to organize preparatory to beginning operations, under their contract, and have, during the past season, been actively engaged, both upon surveys and construction.

#### *Trunk Line.*

A staff of Engineers has been operating in the field, between Callander Station and Prince Arthur's Landing, during the summer, and it is reported that they have succeeded in finding a more favorable location than obtained by any previous survey. The first 50 miles west of Callander Station has been located and the work of construction in progress.

West of Red River, the location on the direct line from Winnipeg to Portage La Prairie has been completed as far as Moose Jaw Creek, a point about 404 miles west of Winnipeg; the grading is completed to a point about 218 miles, and the track laid for a distance of 163 miles west of that place. In the Rocky Mountains, a large staff of Engineers has been employed all the summer in examining the several passes to the south of the Yellow Head, with a view to finding a more favorable passage than by the line already located, but so far I have not learned that their efforts have been entirely successful. Large quantities of ties and timber were cut

last winter and delivered on the line east of Red River, to be used for purposes of construction on the prairie, and I am informed that a large force is now employed in the woods with the intention of getting out over 100,000 ties during the coming winter.

The road is now being operated as far west as Brandon via Stonewall, a distance of 145 miles from Winnipeg, and a further length of 31 miles is now ready for the passage of trains. When the direct line from Winnipeg to Portage La Prairie is opened for traffic it will shorten the distance to Brandon by 15 miles.

*Branch Lines.*

Engineers have been employed in locating a branch line from the main line of the Canadian Pacific Railway to Sault St. Marie, a distance of about 200 miles. 60 miles of which is now under construction.

A branch line has also been located southerly from Winnipeg to Smuggler's Point, and westerly to near the Turtle Mountains, a distance of about 164 miles which is under construction and the grading far advanced.

In addition to these branches, a direct line has been built between Winnipeg and Portage La Prairie, a distance of about 53 miles.

It will thus be seen that the Canadian Pacific Railway Company have, during this short season, made great progress with their works. They may be summarized as follows :

218 miles of Trunk Line graded ;  
89 " " Branch Lines "

making a total of 307 miles, on which the track has been laid for 163 miles, and is in condition for the passage of trains. The old location from Stonewall to Portage La Prairie is assumed to be abandoned.

I observe that the rolling stock manufacturers in the country are busily engaged in building a large number of engines and cars for the company, so that they should be well equipped for a vigorous prosecution of the work next season.

I have the honor to be, Sir,

Your obedient servant,

COLLINGWOOD SCHREIBER,

*Engineer-in-Chief.*



## APPENDIX No. 3.

## GOVERNMENT RAILWAYS IN OPERATION.

OFFICE OF THE CHIEF ENGINEER,  
OTTAWA, 31st October, 1881.

SIR,—I have the honor to submit to you herewith the reports and accounts in connection with the working of the railways in operation under my charge, for the year ended the 30th June, 1881, comprising the Intercolonial, Prince Edward Island, Canadian Pacific, and Windsor Branch Railways, and having an aggregate length of 1,300 miles.

It is gratifying to be able to report that the traffic on these lines shows a very material increase during the year just closed, and that, in comparison with former years, they have been worked at a very trifling loss. The excess of working expenses over earnings being only \$19,935.14. This result is very near to the estimate made by the Honorable the Minister of Railways and Canals early last season, and will therefore, I trust, be satisfactory to him.

The following is a summary of the operation of each of these lines of railway.

Name of Railway.	Length in Miles.	—	Amount.	Profit.	Loss.
			\$ cts.	\$ cts.	\$ cts.
Intercolonial Railway .....	840	Earnings.....	1,760,393 92		
		Expenses.....	1,759,851 27	542 65	
Prince Edward Island .....	199	Earnings.....	131,131 43		
		Expenses.....	203,122 88		71,991 45
Canadian Pacific Railway.....	229	Earnings.....	291,498 06		
		Expenses.....	236,944 98	54,553 08	
Windsor Branch.....	32	½ Earnings.....	17,462 84		
		Maintenance.....	20,502 26		3,039 42
		Loss.....	.....	.....	75,030 87
		Profit.....	.....	55,095 73	55,095 73
Total Length.....	1,300	Net Loss.....	.....	.....	\$19,935 14

## INTERCOLONIAL RAILWAY.

The reports of the Chief Superintendent, Mechanical Superintendent and Engineer treat so fully of the traffic, the additional accommodation provided, and the maintenance of the road and rolling stock, that I have nothing to add upon these subjects. I shall, therefore, merely state my views as to those increased facilities for which, in my judgment, provision should be made in the year 1882-83.

### *Capital Account.*

*Halifax Extension.*—In order to give the necessary accommodation to the growing ocean traffic, *viâ* the port of Halifax, and to enable the Canadian route to compete with the American lines, it will, in my opinion, be necessary to provide, besides the works now constructed, and in course of construction, at the south end of Her Majesty's dockyard, a large wharf with a commodious warehouse and elevator, as well as siding accommodation; and at Richmond, a coal-shed, a coal trestle, and a new line for the main track along the west side of the yard, in order to allow of the shunting of the freight without interruption.

*Increased Accommodation at St. John.*—The business of this station is now of such magnitude that the existing cramped accommodation is quite inadequate, and considerable dissatisfaction exists.

I therefore recommend as a beginning, that in 1882-83, provision be made for the erection of a commodious freight house, a bonded warehouse and an extension of the yard.

### *Rolling Stock.*

Owing to the increasing coal, ocean, and other traffic, the stock of engines and cars is much too small to enable the business to be conducted with regularity and dispatch.

Last winter unavoidable delays occurred in filling requisitions for cars, both for the coal business for the west and ocean borne traffic, and, until additional stock is provided, delays must necessarily arise.

I therefore recommend that 200 box freight cars, and 200 coal cars be provided at once, and I estimate that the increasing business demands that a further supply should be furnished during the year 1882-83, of fifteen locomotives, 200 box freight cars, 200 coal cars and 100 flat cars.

In 1880-81, there were transported over the road 16,246 car loads more than in 1879-80, and 22,085 more than in 1878-79; and during the current year the traffic has considerably increased in volume.

### *Increased Accommodation at Hadlow or Point Levis.*

It is believed that the coal traffic for the West would be facilitated by the construction of a suitable wharf at Hadlow or Point Levis, as the rate on coal by rail must necessarily be cut so low that when better freights are offering the Grand Trunk Railway Company very naturally prefer accommodating the better paying business first.

### *Operation.*

While the road has been worked with due regard to economy, great care has been taken to maintain both the road and its equipment in a state of thorough efficiency, and I confidently assert, that they were never in finer running order.

Owing to the thorough canvass for business made by the officers of the road, and to the improved condition of trade throughout the country, the traffic has very largely increased, and continues to improve, and with the co-operation of the Messrs. Allan and the Grand Trunk Railway Company, we may anticipate a very large ocean borne business this winter.

### PRINCE EDWARD ISLAND RAILWAY.

Attached hereto will be found the reports of the Superintendent and Mechanical Superintendent, which deal fully with the operations of the year, the nett results of which are not so satisfactory as I had hoped to see them. The working expenses have been heavier than I had calculated upon, owing to the unprecedentedly heavy snow-fall, the extensive steel rail renewals, the construction of the Haggas water

service, and the additional station buildings, which have been provided. The earnings, however, show a considerable increase over those of 1879-80, and amount to about the sum estimated, giving evidence of an improved state of trade in the Island. The traffic continues to improve, and it is believed that the current year's operations will show more favorable results.

Four locomotives have been purchased during the past two years to maintain the stock in a state of efficiency. The four old engines replaced by these will be either sold or otherwise disposed of. The road and its equipments have been well maintained.

#### CANADIAN PACIFIC RAILWAY.

The sections of road between Emerson and Cross Lake and Rat Portage, and between Winnipeg and Portage La Prairie were operated by the Government for the ten months ended the 30th April, 1881, and with the exception of the section between Cross Lake and Rat Portage, were transferred on the 1st May to the Canadian Pacific Railway Company. Owing to the limited amount of rolling stock at command and the absence of machinery wherewith to repair it, the traffic was worked at a great disadvantage. With better facilities the road could have been operated with much greater economy; but as negotiations were in progress for the construction and operation of the Canadian Pacific Railway by a company, it was not considered prudent to go to the expense of purchasing additional rolling stock.

The accounts accompanying this report show that the road was worked at a profit of \$54,553.08, thus:—

Earnings .....	\$291,498 06
Expenses.....	<u>236,944 98</u>
Excess of Earnings .....	\$ 54,533 08

The working expenses per train mile were \$1.10.

Upon the transfer of the road the Canadian Pacific Railway Company assumed all the freight in store and in transit, paying the Government the amount of back charges and freight due thereon. Such of the rolling stock as could be spared from the work of construction to be carried on by the Government, as well as all stores, fuel, &c., was taken over by the company at a valuation.

#### WINDSOR BRANCH RAILWAY.

Appended hereto will be found the Reports of the Chief Superintendent and Engineer, giving a clear statement of the service performed.

It will be observed upon reference to the accounts, that the one-third of the earnings stipulated to be paid to the Government has not been sufficient to cover the cost of maintenance by \$3,039.42. The road has been well kept, and is in good condition.

I have the honor to be, Sir,

Your obedient servant,

COLLINGWOOD SCHREIBER,

*Chief Engineer of Government Railways.*

F. BRAUN, Esq., Secretary

Department of Railways and Canals.



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INTERCOLONIAL RAILWAY.

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OFFICE OF THE CHIEF SUPERINTENDENT,  
MONCTON, N.B., 13th October, 1881.

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, 1881.

I enclose the reports of the Engineer and the Mechanical Superintendent, and also the following statements prepared by the Accountant:—

- |        |                                    |                   |
|--------|------------------------------------|-------------------|
| No. 1. | Capital Account.                   |                   |
| “ 2.   | Revenue Account.                   |                   |
| “ 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.   | General Stores Account.            |                   |
| “ 9.   | General Balance.                   |                   |
| “ 10.  | Comparative Statement of Averages. |                   |

The length of railway worked was 840 miles.

*Capital Account.*

The total cost of the road and equipment was, on 30th June, 1880, \$38,365,719.64.

The additions during the year were as follows:—

For the Halifax Extension.....	\$ 33,684 27
“ the Deep Water Terminus, St. John.....	10,373 15
“ the completion of the Intercolonial.....	24,372 54
“ Repairs and Improvements, Rivière du Loup Line.....	315,362 60
“ Rolling Stock for Rivière du Loup Line.....	224,940 24
	\$608,732 80

Making the total cost to 30th June, 1881..... \$38,974,452 44

In consequence of the large increase of ocean traffic at Halifax, it became necessary to provide additional wharf and storage accommodation, also additional means for coaling large ocean steamers. These improvements have been made, and have had the desired effect of facilitating the movement of freight, and of increasing the business of the railway; and as it was desirable that there should be a deep-water terminus nearer to the business centre of the city than the one at Richmond, negotiations were entered into for the purpose of acquiring a quantity of valuable water side property at the southern end of Her Majesty's dockyard.

These negotiations were satisfactorily completed, but the property did not come into possession of the railway until July in the current year. Since that time the work of preparing it for the next winter's traffic has been steadily prosecuted, and a wharf, a warehouse, and a number of sidings will be ready for use by the middle of November.

The work of completing the deep-water terminus at St. John was continued during the year, and is still in progress; sheds for the storage of general freight and for coal are being built, and additional tracks have been laid.

The large increase of traffic at such an important distributing centre as St. John makes it necessary that steps should be taken at an early day to provide more suitable accommodation for both the passenger and the freight business.

The expenditure for completion of the Intercolonial consists of payments on account of old claims in connection with the construction of the line from Rivière du Loup to Halifax, and the legal and other expenses of adjusting them.

The relaying of the Rivière du Loup line with steel rails was completed last season, the ballasting was also completed with the exception of about ten miles. Early this season the work of completing the ballasting was commenced, and it was finished this summer; considerable work was also done in repairing bridges and culverts. A large portion of the new equipment of rolling stock for this portion of the line was received from the contractors, and the balance will be delivered during the current year. The line from Rivière du Loup to Hadlow is now in excellent condition, and in as good running order as any other part of the Intercolonial.

#### *Revenue Account.*

This account shews a more satisfactory condition of affairs than in any previous year, more so even than last year, for the receipts and expenses balance each other, and, for the first time in its history, the railway was worked without loss.

The gross earnings for the year were.....	\$1,760,393 92
The working expenses were.....	1,759,851 27

Net earnings.....	542 65
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The gross earnings shew a large increase over last year, as follows:—

In 1880-81 the gross earnings were.....	\$1,760,393 92
In 1879-80 " " " .....	1,506,298 48

Increase .....	254,095 44
----------------	------------

This increase is chiefly in the freight traffic, and it is gratifying to find that both the local and the through traffic have increased in about equal proportions.

The increase in passengers traffic being.....	\$ 54,775 82
" " freight traffic being.....	193,385 71
" " mails and sundries being .....	933 91

Total increase.....	\$ 254,095 44
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The earnings per mile of railway compared with last year are as follows:—

Earnings per mile of railway 1880-81.....	\$ 2,095 70
" " " 1879-80.....	1,825 81

Increase per mile of railway.....	269 89
-----------------------------------	--------

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

	1879-80.	1880-81.	Increase.
Barrels of flour.....	525,248	672,310	147,062
Bushels grain.....	324,021	565,678	241,657
Timber in feet.....	55,462,654	72,841,388	17,378,734
Head of live stock.....	70,990	61,574	Decrease. 9,416
All other goods in tons.....	422,256	544,354	Increase. 122,098

In January last a cargo of wheat from Detroit, 3,700 bushels, was carried over the railway and shipped at Halifax for Europe.

The quantity of coal transported

In 1880-81 was.....	326,941 tons.
" 1879-80 " .....	252,006 "

Increase .....	74,935 "
----------------	----------

Of the total quantity 28,326 tons were shipped at Halifax, and over 21,000 tons were taken by rail to Chaudière and Quebec for points in the Upper Provinces.

The very serious accident which happened to the Albion Mines in November, 1880, put a stop to the raising of coal from these mines for some time. The owners, however, immediately took steps to open new mines on their property, and from these a considerable quantity was raised during this summer.

The Steel Company of Canada, at Londonderry, continued to give us an increasing volume of business, although their works were for a time somewhat interrupted by the accident at the Albion Mines, whence they drew large supplies of coal and coke.

The traffic has been considerably increased by the establishment of two new sugar refineries, one at Moncton and one at Halifax.

The Moncton refinery has a capacity of turning out 250 barrels of refined sugar a day. It commenced operations in December, 1880, and from that time until June 30th, 1881, the traffic in raw and refined sugars, to and from this establishment, amounted to over 7,700 tons, and the coal used was about 3,000 tons.

The Halifax refinery is capable of turning out 600 barrels a day. It did not commence operations until May, 1881, and for that month and the month of June, the quantity of refined sugar sent from it over the Intercolonial amounted to about 1,500 tons.

This refinery, from its position, necessarily receives its supply of raw sugar by water, and no doubt, a considerable portion of its out-put finds its destination in the same way, without passing over the railway. The largest portion of the coal used, however, has hitherto passed over the Intercolonial.

Our traffic in raw sugar for the Montreal refineries is a large item, the quantity carried from the ports of Halifax and St. John over the railway, during the year, having amounted to over 14,300 tons.

It may also be mentioned that a new industry has been commenced by the Amherst Meat Company, who have erected slaughter-houses and refrigerators near the Amherst station. They have already sent an immense quantity of meat in refrigerator cars provided by the railway, to Halifax, and from thence it was shipped to Europe.

As in previous years, during the season of navigation in the St. Lawrence, the mails and many of the passengers were landed from and embarked on the British mail steamers at Rimouski, by means of the steam tender belonging to the railway; the aggregate number of passengers thus landed and embarked during the season of 1880, was 580. This tender was originally constructed mainly for the mail service, with but very little accommodation for passengers and their baggage; but the mails have increased from year to year, and the increase in the number of passengers landing and embarking at this point is so considerable, that the tender is found to be inadequate to the service, and it is desirable that, before another season, a steamer more suitable for the requirements of the service should be provided.

During the past winter the British mail steamers landed the mails, passengers and freight for the interior, at Halifax, as formerly; but an attempt was made to divert this passenger and freight traffic from Halifax to Boston, and thence over foreign railways, through a foreign country, to the interior of Canada.

Vigorous measures were taken to counteract this movement, and the promptitude, regularity and despatch with which both passengers and goods were carried over the Intercolonial, established the superiority of this route, and enabled us, not merely to retain our former share of this important traffic, but also to increase it considerably.

#### *Expenditure.*

As I have already stated, the gross earnings for the year were \$1,760,392.92, and the working expenses were \$1,759,851.27.



The engine mileage compared with last year was :—

	Miles.
1880-81 .....	3,453,078
1879-80 .....	3,076,342
Increase.....	376,736

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

	Miles.
1880-81 .....	2,813,723
1879-80 .....	2,535,654
Increase.....	278,069

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

	Miles.
1880-81 .....	32,201,157
1879-80 .....	28,254,065
Increase .....	3,947,092

The working expenses per mile, run by engines, were :

In 1880-81 .....	Cts. 50-95
In 1879-80.....	“ 50-12

And per mile, run by trains, they were :

In 1880-81.....	Cts. 62-52
In 1879-80.....	“ 63-23

It will be seen from these figures that the working expenses maintained this year about the same proportion to the traffic as they did last year.

Great attention has been given to the repair and improvement of the permanent way.

During the working season, new sleepers required were put in, and the track was well ballasted where necessary.

Over 18,800 feet of new siding were laid to provide for the increased traffic.

The expenditure on account of fences, \$28,990, was much larger than last year; on many parts of the line barbed wire fence has been used, and it is found to have the advantage over either pole or board fence, as it is not so liable to cause accumulation of snow, and not so likely to be destroyed by fire.

The wooden turn-tables at Sussex and at Stellarton were removed, and replaced with new iron tables.

The buildings on all parts of the line received necessary repairs, and a considerable number of new ones were erected. Among the latter I may mention a combined passenger station and section-man's dwelling at the Four-mile house, and a similar building at Johnston's Road; a combined passenger and freight station at Nappan, an engine house for locomotives at Stellarton, a new tank house at Elmsdale, also one near Greenville, and a large building at Moneton for the storage of lumber.

Extensive repairs were made to the masonry of bridges and culverts.

Several wooden bridges were taken down and replaced by iron ones.

The floor timbers of many of the bridges were relaid on an improved plan, which it is believed will conduce to the greater safety of the trains.

The arrangements for storing coal at Newcastle and Campbellton, and for delivering it rapidly on the tenders, have been very much improved.

The cost of all these repairs and improvements, and of others which I have not specified, was charged to the working expenses.

Great improvements have been made along the line in the water supply for the service of locomotives, by the erection of new tanks, steam pumps and water cranes.

I have no hesitation in stating that, in consequence of the great care and attention given to the maintenance of the permanent way, and the execution of many important repairs and improvements, some of which I have particularized, the railway and the several works connected with it, are now in a better condition, and in a more thorough state of efficiency than at any previous period in the history of the Intercolonial.

### *Rolling Stock.*

All the rolling stock has been well maintained, and is in a very efficient condition; the cars of all kinds received necessary repairs, and a very much larger number of cars was rebuilt than in any previous year. Four new locomotives were purchased to maintain the stock, and their cost was charged to the working expenses. Two locomotives were sold to the Canadian Pacific Railway, and in their stead two new and more powerful ones were purchased; the difference in cost between those sold and the new ones purchased was charged to the working expenses. During the year six of the oldest locomotives, which had become too expensive to maintain in consequence of their age and service, were sold.

I may here explain that when the Intercolonial was completed through to Rivière du Loup in July, 1876, the stock of locomotives was 100; and this number seems to have been considered sufficient for the traffic, as no more were procured at the cost of capital. As locomotives necessarily wear out and ultimately become useless, the General Superintendent of that day very properly made arrangements by which three new locomotives were to be procured in each year, so that the original stock might be always maintained in a state of efficiency. Accordingly,

In the year	1876-'77	3	locomotives	were	purchased.
"	"	1877-'78	3	"	"
"	"	1878-'79	3	"	built.
"	"	1879-'80	3	"	purchased.
"	"	1880-'81	4	"	"

Making a total of fifteen locomotives procured, and charged to working expenses. If the original idea had been strictly carried out a number of old locomotives would have been annually sold or broken up, equal to the number of new locomotives procured yearly, and charged to the working expenses.

This, however, was not done; and the chief reason, no doubt, was that the traffic had increased so that the original number of one hundred locomotives was insufficient for the service, as the increase of traffic during the last few years was very great, which will be seen from the following statement of the mileage of engines and cars, and of the gross tonnage carried:

	Miles.
For the year 1880-'81 the engine mileage was.....	3,453,078
" " 1876-'77 " " " .....	2,176,201

Increase ..... 1,276,877

	Miles.
For the year 1880-'81 the car mileage was.....	32,201,157
" " 1876-'77 " " " .....	15,973,420

Increase ..... 16,227,737

The increase in car mileage for the two years, 1879-'80 and 1880-'81, was 10,343,716 miles.

	Tons.
The gross tonnage carried in 1880-'81 was.....	725,577
" " " 1876-'77 " .....	421,327

Increase..... 304,250



The increase in 1880-'81 over the previous year was 163,653 tons, and in 1879-'80 over the previous year, 51,063, being an increase in the last two years of 214,716 tons.

These figures show clearly the great additional service that the rolling stock is called upon to perform, and that it is very desirable that a considerable addition should be made to it without delay. I would, therefore, recommend that a sufficient number of new locomotives and cars be procured to conduct the increased traffic with satisfaction; the cost, of course, being charged to capital account.

Since the Rivière du Loup line was purchased, authority was given to procure fifteen new locomotives for that line at the cost of capital, also a number of cars of each kind.

These were rendered necessary by the acquisition of that line, and do not diminish the necessity for the additional locomotives and cars which I have asked for.

#### Stores.

The stores account compares as follows with the previous year:—

The value of stores purchased in 1880-'81 was .....	\$630,277 98
“ “ “ 1879-'80 was .....	472,302 50
Difference.....	\$157,975 48

The stock of stores on hand compares as follows with the previous year:—

	1879-80.	1880-81.
Ordinary stores.....	\$106,821 12	\$226,272 43
Iron and steel rails.....	48,528 41	67,030 13
Old materials for sale.....	8,539 50	20,398 50
Totals.....	\$163,889 03	\$313,701 06

The snow fall last winter along the greater part of the line was much heavier than it had been for some years, and the cost of removing snow and ice exceeded \$32,000; the snow ploughs and flangers were, however, so persistently and skillfully used that the traffic was not interrupted.

It is very gratifying to be able to state that, in general, the several officers and employés of the railway have performed their duties in a satisfactory and efficient manner.

And it is very pleasing to me to know that my anticipations, expressed at the conclusion of last year's report, with regard to the success of the operations of the year, have been realized.

I have the honor to be, Sir,

Your obedient servant,

DAVID POTTINGER,

*Chief Superintendent.*

COLLINGWOOD SCHREIBER, Esq.,  
Chief Engineer,  
Government Railways, Ottawa.



No. 1.—INTERCOLONIAL RAILWAY.

DR.

CAPITAL ACCOUNT, 30th June, 1881.

CR.

83

1880.		\$	cts.	\$	cts.	\$	cts.	1880.		\$	cts.
June 30....	To Cost of Road and Equipment.....					38,365,719	64	June 30....	By Dominion of Canada..	38,365,719	64
1881.											
June 30....	To Outlay on Halifax Extension.....	33,684	27								
	do Deep-Water Terminus, St. John....	10,373	15								
				44,057	42						
	do Rivière-du-Loup Branch.....			533,100	67						
	do Nut Locks .....			7,202	17						
	Expenditure on completion of Intercolonial Railway between Rivière-du-Loup and Truro, works, permanent way, buildings, right of way, &c .....			4,349	28						
	Salaries and expenses F. Shanly and Staff....	11,958	12								
	Legal expenses .....	8,065	14					1881.			
				20,023	26			June 30....	By Dominion of Canada..	608,732	80
						608,732	80				
						38,974,452	44			38,974,452	44

[1881]

THOS. FOOT,  
Accountant.

MONCTON, N.B., 30th June, 1881.

No. 2.—INTERCOLONIAL RAILWAY.

DR.

REVENUE ACCOUNT, Year ending 30th June, 1881.

CR.

Previous Year.	Expenditure.	Year ending 30th June, 1881.	Previous Year.	Receipts.	Year ending 30th June, 1881.
\$ cts.		\$ cts.	\$ cts.		\$ cts.
550,574 41	Locomotive power Abstract No. 1.....	586,998 84	490,338 66	Passenger traffic .....	545,114 48
359,304 68	Car expenses do 2.....	411,391 76	915,486 50	Freight do .....	1,113,872 21
385,556 57	Maintenance way and works do 3.....	380,312 89	100,473 32	Mails and sundries .....	101,407 23
192,036 98	Station expenses do 4.....	241,194 44			
117,946 71	General charges do 5.....	122,708 59			
1,605,419 35		1,742,606 52	1,506,298 48		
1,989 64	Car mileage .....	17,244 75			
		1,759,851 27			
	Balance.....	542 65	97,131 23		
1,603,429 71		1,760,393 92	1,603,429 71		1,760 393 92

THOS. FOOT,  
*Accountant.*

MONCTON, N.B., 30th June, 1881.

No. 3.—INTERCOLONIAL RAILWAY.  
LOCOMOTIVE POWER.—(Abstract No. 1.)

Previous Year.		Year ending 30th June, 1881.
\$ cts.		\$ cts.
5,318 73	Mechanical Superintendent's salary, Clerks, office and travelling expenses	5,814 00
122,152 83	Wages, Drivers, Firemen and Cleaners.....	137,417 89
177,728 49	Fuel.....	185,168 19
28,026 44	Oil, tallow, waste and small stores.....	31,211 15
170,132 76	Repairs to engines, tenders and engine tools.....	167,290 27
23,538 14	Water, including pump and tank repairs.....	24,492 16
23,677 02	Miscellaneous.....	35,605 18
550,574 41		586,998 84

THOS. FOOT,  
*Accountant.*

MONCTON, N.B., 30th June, 1881.

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

Previous Year.		Year ending 30th June, 1881.
\$ cts.		\$ cts.
55,276 58	Repairs to passenger cars .....	56,983 46
16,412 21	Repairs to postal, express and baggage cars.....	16,003 50
127,681 45	Repairs to freight cars and vans.....	146,842 74
113,984 22	Wages of Conductors, Train Baggage Masters and Brakesmen.....	128,969 23
10,043 79	Oil and Waste for packing.....	15,422 49
26,371 02	Small stores and fuel .....	35,179 54
9,535 41	Miscellaneous.....	11,990 80
359,304 68		411,391 76

THOS. FOOT,  
*Accountant.*

MONCTON, N.B., 30th June, 1881.



## No. 5.—INTERCOLONIAL RAILWAY.

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

Previous Year.	—	Year ending 30th June, 1881.
\$    cts.		\$    cts.
6,628 40	Engineer's salary, Clerks, office and travelling expenses.....	7,089 38
230,124 44	Wages in repairing roadway, fences and semaphores, including new sidings laid in.....	248,528 51
7,962 92	Rails and fastenings, including new sidings laid in.....	9,280 09
18,695 59	Sleepers.....	9,731 13
27,367 75	Timber, lumber, etc., for repairs to bridges, cattle-guards, crossings, snow sheds, fences, etc.....	18,087 40
8,265 54	Repairs to wharves.....	4,696 89
45,652 08	Repairs to buildings and platforms, including extension of and additions to same.....	31,015 82
16,249 21	Repairs to snow ploughs, flangers and tools.....	17,319 15
22,161 47	Clearing ice and snow.....	32,244 24
2,449 17	Miscellaneous .....	2,320 28
385,556 57		380,312 89

THOS. FOOT,  
*Accountant.*

MONCTON, N.B., 30th June, 1881.

No. 6.—INTERCOLONIAL RAILWAY.

STATION EXPENSES—(Abstract No. 4.)

Previous Year.	—	Year ending 30th June, 1881.
\$    cts.		\$    cts.
148,761 05	Salaries and wages of Station Masters, Agents, Clerks, Telegraph Operators, Station Baggage Masters, Yard Masters, Switchmen, Watchmen and Laborers.....	184,049 40
43,275 93	Fuel, oil, light, stationery, tickets and other incidental expenses.....	57,145 04
.....	Miscellaneous.....	.....
192,036 98		241,194 44

THOS. FOOT,

*Accountant.*

MONCTON, N.B., 30th June, 1881.

## No. 7.—INTERCOLONIAL RAILWAY.

## GENERAL CHARGES.—(Abstract No. 5.)

Previous Year.		Year ending 30th June, 1881.
\$ cts.		\$ cts.
39,366 89	Chief Superintendent, District Superintendents, Train Despatchers, and the General Freight and Passenger Agent, Clerks, office and travelling expenses.....	45,052 75
21,017 58	Accounting Department, salaries of the Accountant, Traffic, Auditor, Paymaster and Cashier, Clerks, office and travelling expenses.....	21,155 01
3,075 45	Damages to men, animals and goods.....	3,675 60
24,251 39	Ferry service.....	23,277 05
2,448 01	Telegraph expenses (not including pay to operators).....	1,247 46
20,026 00	Miscellaneous, printing, advertising, etc.....	21,765 07
7,761 39	Agency expenses.....	6,535 65
117,946 71		122,708 59

THOS. FOOT,  
*Accountant.*

MONCTON, N.B., 30th June, 1881.



No 8.—INTERCOLONIAL RAILWAY.

DR.

GENERAL STORES ACCOUNT, Year ending 30th June, 1881.

CR.

1880.		\$ cts.	\$ cts.	1881.		\$ cts.	\$ cts.
June 30....	To Balance.....		163,889 03	June 30....	By Issues during year.....	687,735 49	
					Old material sold.....	66,381 64	754,117 13
1881.					Balance—		
June 30....	Purchase during year.....	630,277 98			Ordinary stores, including fuel.....	226,272 43	
	Charges from other Departments. ...	262,830 63			Iron and steel rails, &c.....	67,030 13	
	Pay Rolls.....	10,820 55	903,929 16		Old material for sale.....	20,398 50	313,701 06
			1,067,818 19				1,067,818 19

THOS. FOOT,  
*Accountant.*

MONCTON, N.B., 30th June, 1881.

[1881]

No. 9.—INTERCOLONIAL RAILWAY.

DR.

GENERAL BALANCE, 30th June, 1881.

CR.

	\$	cts.	\$	cts.		\$	cts.	\$	cts.
Cash.....			8,844	63	Dominion Account.....			501,760	34
General stores—					Chatham Branch Railway ..			372	71
Ordinary stores including fuel.....	226,272	43			Halifax and Cape Breton Railway.....			53	81
Iron and steel rails, &c.....	67,030	13			Grand Trunk Railway, general account .....	6,694	75		
Old material for sale.....	20,398	50			do                    traffic account .....	14,266	14		
			313,701	06				20,960	89
Station .....			56,932	35	Accident Insurance.....			11,505	21
Spring Hill Coal Co.....			18	39	Washburn Car Wheel Co .....			71	90
Acadia Coal Co .....			2,606	67					
Intercolonial Coal Co.....			5,529	00					
do    Express Co .....			1,872	08					
Rents.....			3,198	81					
Suspense.....			2,791	92					
Steel Company of Canada.....			12,882	18					
Prince Edward Island Steam Navigation Co.....			117	28					
Spring Hill and Parrsboro' Railway.....			3,171	99					
Western Counties Railway, general account.....	15,857	35							
do                    traffic account .....	1,657	42							
			17,514	77					
Windsor Branch Railway.....			225	59					
Windsor and Annapolis Railway, old account .....	6,746	58							
do                    do    Punchard, Clark & Co.	7,652	34							
			14,398	92					
Prince Edward Island Railway .....			317	86					
St. Martins and Upham Railway.....			4,122	39					
Elgin Branch Railway .....			726	10					
Kent Northern Railway .....			57	00					
Canada Pacific Railway, old account .....			5,219	66					
Windsor and Annapolis Railway, new account .....			1,587	78					
Canada Southern Railway.....			0	17					
Albert Railway.....			27	86					
Great Western Railway.....			2	00					
Credit Valley Railway .....			9	00					
Canada Pacific Railway, new account.....			271	42					
St. Paul, Minnesota and Manitoba Railway.....			8	00					
Coldbrook Mills .....			1,967	41					
Halifax Rolling Mills.....			36	83					
Steamship "City St. John" .....			1,744	41					
Western Union Telegraph Co.....			2,442	52					

Montreal Telegraph Co.....	6 00
Sugar Refinery, Moncton .....	3,456 04
Nova Scotia Government.....	280 45
do Forge Co .....	1,546 64
Delaware and Hudson Canal Co.....	16 75
Extension to West's Wharf, Halifax.....	28,501 35

DEPARTMENT ACCOUNTS.

Post Office.....	24,214 41	
Militia .....	4,233 72	
Agriculture .....	641 72	
Marine and Fisheries.....	43 80	
Penitentiary, Dorchester.....	12 52	
Justice .....	810 45	
Assistant Engineer, Public Works.....	30 77	
		29,987 39
Individual accounts.....		8,584 19
		<u>534,724 86</u>

534,724 86

THOS. FOOT,  
*Accountant.*

MONCTON, N.B., 30th June, 1881.



## No. 10.—INTERCOLONIAL RAILWAY.

## COMPARATIVE STATEMENT of Averages, Year ending 30th June, 1881.

	1881.	1880.
Mileage of railway.....	840	825
Engine mileage.....	3,453,078	3,076,342
Train do .....	2,812,722	2,535,654
Cars do .....	32,201,157	28,254,065
	\$ cts	\$ cts.
Receipts per engine mile.....	50 98	48 96
do mile of railway.....	2,095 70	1,825 81
	Cents.	Cents.
Percentage of passenger earnings to gross earnings.....	30·97	32·55
do freight do do .....	63·27	60·78
do other do do .....	5·76	6·67
Expenses per engine mile—		
Drivers', Firemen's and Cleaners' wages.....	3·98	3·97
Fuel.....	5·37	5·78
Oil, tallow, waste and small stores.....	·90	·91
Repairs to engines.....	4·84	5·53
Water and tank repairs.....	·71	·77
Miscellaneous.....	1·03	·77
Total.....	16·83	17·73
Mechanical Superintendent's salary, office and travelling expenses.....	·17	·17
	17·00	17·90
Locomotive power per engine mile.....	17·00	17·90
Car expenses do .....	11·92	11·68
Maintenance of way and works do .....	11·01	12·53
Station expenses do .....	6·98	6·24
General charges do .....	3·55	3·83
	50·46	52·18
Car mileage.....	·50	·06
Total per engine mile.....	50·96	52·12
Locomotive power per train mile.....	20·86	21·71
Car expenses do .....	14·62	14·17
Maintenance of way and works do .....	13·52	15·21
Station expenses do .....	8·57	7·57
General charges do .....	4·36	4·65
	61·93	63·31
Car mileage.....	·61	·08
Total per train mile.....	62·52	63·23
Working expenses per mile of railway.....	\$2,095 06	\$1,943 55

THOS. FOOT,  
Accountant.

MONCTON, N.B., 30th June, 1881.

ENGINEER'S OFFICE,  
MONCTON, N.B., 1st August, 1881.

SIR,—I have the honor to submit my report of the working of the Engineering Department, for the year ending 30th June, 1881.

TRACK.

The mileage of the main line and branches is the same as previously reported (840 miles).

One mile of the old iron rail on the Shediac Branch has been replaced with partially worn steel rails taken out of the main line.

With the exception of the short piece of the Pictou Branch and the Shediac Branch, where the old iron rails remain, the track is in excellent condition throughout the whole line.

SLEEPERS.

During the year 75,901 sleepers have been put in track. The superior quality of sleepers used during the past few years has very much lessened the renewals.

BALLASTING.

At the end of the working season, about ten miles of the ballasting of the Rivière du Loup Branch remained to be completed. Two trains and a gang of forty men are now at work, and it will be completed in a few weeks.

During the year twenty-two miles of the Eastern, Western, and Northern Divisions have been ballasted.

Four ballast trains and a large force of men are now at work at different points south of Rivière du Loup.

SIDINGS.

Additional siding accommodation has been provided to the extent of 18,827 feet. If the traffic continues to increase at the same rate as it has during the past year, the yards at Moncton, Truro, Halifax, and many other points, will have to be very much enlarged.

FENCING AND SNOW SHEDS.

During the year there has been expended on account of fencing, \$28,990.79. On cleared parts of the line barbed wire and cedar posts are being used exclusively for fencing.

On the Amherst and Sackville marshes, where the snow drifted badly, some miles of the board and pole fences had to be taken down every winter.

The board and pole fences have now been nearly all replaced with wire. The snow will drift almost as freely through the wire as if there were no fence.

The wire fence costs 50 cents per rod, about the same price paid for spruce pole fence that lasts not more than five years.

The snow-sheds erected over the cuttings on the Folly Mountain grade in 1872, have now been all removed, with one exception, and high fences put up to protect the cuttings they covered. There was a heavier snow-fall on that part of the line last winter, than any winter for the past ten years, but no difficulty was experienced in keeping the cuttings free from snow where the sheds were removed and the fences erected.

TURN-TABLES.

Iron turn-tables have replaced the old wooden tables at Sussex and Stellarton.

Another iron turn-table for turning cars has been provided at the Deep Water Wharf, St. John.

WHARVES.

A new pile wharf, 500 feet long by 80 feet wide, has been erected at Richmond. Since its completion it has been used as a lumber wharf.

An extension of 100 feet long by 30 feet wide was made to the outside crib wharf at Richmond, to give another berth for steamers discharging sugar and loading cattle.

Heavy repairs were made to the outside crib wharf.

Necessary repairs were made to wharves at Pictou and Pictou Landing.

Dorchester Wharf received a thorough overhauling. The flooring, joists and two tiers of timber in the cribs was entirely renewed.

Some small repairs have been made to wharves at Point du Chêne, Campbellton, and Rimouski.

#### BUILDINGS.

At Richmond a shed 100 feet long by 30 feet wide was erected on the wharf extension above referred to, for the reception of raw sugar.

A second improved coal drop to facilitate the coaling of ocean steamers was erected at the south end of the crib wharf at Richmond.

A combined passenger station and dwelling was erected at the Four-Mile House.

A tank house was erected at Elmsdale about 1,000 feet south of the station.

A combined passenger station and dwelling for section foreman was erected at Johnston's Crossing.

A passenger platform, 100 feet long by 12 feet wide, was erected at Battery Hill.

At Stellarton, an engine house was built to replace the one destroyed by the sleet storm last winter.

A small oil house was erected at New Glasgow.

The roof of engine house and station building at Pictou Landing was re-shingled. The roof of freight shed was also renewed.

Repairs were made to nearly all station buildings between Truro and Amherst.

A new tank house was erected two miles west of Grenville Station.

A combined passenger station and freight house was erected at Nappan, also a freight platform 137 feet long by 12 feet wide, and a hay platform 50 feet long by 14 feet wide.

Dorchester station received two coats of paint.

A lumber shed, 300 feet long by 30 feet wide, was erected at Moncton.

It was utilized last winter for the accommodation of cattle being shipped from the west.

An iron stove was provided for the Stores' Department, and the lower flat of old stores re-arranged.

The iron roof covering of the machine shop was replaced with slates at a cost of \$1,557. Extensive repairs were also made to the roof of boiler house and engine house.

The roof of station, engine house, tank house and freight shed at Sussex, have all been newly shingled.

Bloomfield Station was newly clap-boarded and painted.

The station building at St. John received repairs, as well as nearly all the buildings at that place.

A small building was erected for the accommodation of the Wharfinger at the Deep-Water terminus.

Repairs were made to nearly all stations and platforms between Shediac and St. John.

The interior of station at Barnaby River was re-arranged.

The coal shed at Newcastle was enlarged and an incline plane built, and the necessary gear provided for hoisting the one-ton cars to dump directly into the engine tenders.

New sheds with similar gear were provided at Campbellton, St. Flavie and Rivière du Loup, so that now an engine can be loaded in three minutes at any of these points.

The interior of nearly all stations between Moncton and Campbellton have been painted and the plaster color-washed.

An extension of 15½ feet by 22 feet was made to the station at Metapedia for a ladies' waiting room and baggage room, and a bay window provided for the office.



The necessary repairs were made to Campbellton freight house, partially destroyed by fire.

Repairs and improvements were made at Mill Stream, Cedar Hall, St. Octave, St. Flavie and St. Anaclet stations.

A cattle shed 300 feet long by 25 feet wide, and a coal shed of the same dimensions, were erected at Rivière du Loup.

An addition to the Train Despatcher's office was made to provide office accommodation for the District Superintendent.

Seven new stations referred to in my report of last year have been completed, as follows :—

Lake Road .....	2nd class.
Ste. Hélène .....	2nd “
St. Denis .....	1st “
St. Pierre .....	1st “
St. François .....	1st “
St. Charles .....	1st “
St. Henri .....	1st “

New flag stations have been built at St. Andre, Elgin Road St. John Chrysostome.

Extensive repairs have been made to all stations and platforms between Rivière du Loup and Hadlow.

A high-level coal shed, with trestle approach, was built at Chaudière at a cost of \$4,500, also a tank house and well.

#### MASONRY.

A gang of masons was engaged the whole of last season in repairing and renewing the masonry of old structures between Halifax and Truro.

Two new culverts have been built between Truro and Amherst.

The foundation of the piers of the Scadouc bridge, near Shediac, were badly worn by the action of the ice and salt water. Many large blocks were taken out and replaced by a better quality of stone. The piers were then thoroughly ripped with loose stone from the bed of the river to high-water mark.

No further trouble with this structure may be anticipated.

A gang of masons was engaged all last summer in overhauling and pointing the old structures on the Rivière du Loup Branch. This work is not nearly completed yet.

#### IRON BRIDGES

Eight spans of wood, varying in length from 15 to 24 feet, have been replaced with iron structures built of old rails.

An overhead bridge of wood of 27 feet span was replaced by an iron structure (built of old rails), near Hadlow.

The close floor system with guard rails, referred to in my report of last year, has been put on the following bridges on the Eastern Division ;—

Sackville River,	4 spans of 80 feet each.
Farnham's Creek,	1 “ 50 “
Salmon River,	3 “ 100 “
North River,	2 “ 100 “
Ishgonish,	2 “ 100 “
Wilson's Brook,	1 “ 40 “
Debert River,	3 “ 100 “
Folly River,	6 “ 100 “
North Greenville,	1 “ 60 “
South Greenville,	1 “ 50 “
River Philip,	3 “ 100 “
Little Forks,	1 “ 100 “
Nappan,	1 “ 100 “

The timber used for these new floors is of the best quality of pine that could be procured in New Brunswick. It is estimated they should last from 12 to 15 years.

The floors of nearly all of the iron bridges on the Rivière du Loup Branch require renewal.

The new floor system has been put on between Rivière du Loup and St. Roch's. The timber is delivered on the ground for the remainder of them.

#### WATER SUPPLIES.

An agreement was entered into with the city authorities of Halifax, whereby the Department pay an annual amount of \$300 for a water supply at Richmond.

A stand pipe with goose neck was erected on the main line, and a 6-inch pipe laid from it to connect with the main pipe on Campbell road.

Branch pipes were also laid to supply the cattle sheds on the wharf and at the south end of the yard.

The gravitation supplies at many places have been improved by cleaning the pipes and raising the head of the reservoirs.

Steam pumps have been put in at Greenville, Carleton and L'Islet.

A water crane was put up on the main line and connected with a 6-inch pipe to a 10,000 gallon tank in the machine shop at Rivière du Loup.

Two tanks of 6,000 gallons capacity were put in the engine house at the same place.

I have the honor to be, Sir,

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

Your obedient servant,  
P. S. ARCHIBALD,  
*Engineer.*

INTERCOLONIAL RAILWAY,  
MECHANICAL SUPERINTENDENT'S OFFICE,  
MONCTON, N.B., 1st October, 1881.

DEAR SIR,—I beg to submit, for your information, the following statements shewing the operations of the Mechanical Department for the year ending 30th June, 1881:—

(a) Statement shewing the number of locomotives, and the various classes of cars.

(b) Statement shewing 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 of 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 engines were purchased and charged to working expenses.

Two hundred and twenty-eight, five-ton Hopper coal cars were condemned and taken off the register, and replaced by seventy-six Gondola, fifteen-ton cars, at the cost of working expenses.

Sixty-six other cars were rebuilt during the year at the cost of working expenses.

Six of the oldest engines which had been replaced by new ones at the cost of working expenses, were this year sold.

Twelve engines, two first-class, two second-class, two baggage and express, eighty box freight, seventy-four platform cars, three vans and one snow-plough were received on the road this year on account of Rivière du Loup Branch.

The rolling stock is in very good condition.

I am, Sir,

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

Your obedient servant,  
H. A. WHITNEY,  
*Mechanical Superintendent.*

## A.—INTERCOLONIAL RAILWAY.

STATEMENT shewing the number of Locomotives and the various classes of Cars on the 1st July, 1880, and on the 30th June, 1881.

Particulars.	Locomotives.	The Various Classes of Cars.															
		First Class Pas senger	Second Class Passenger.	Postal and Smoking.	Baggage and Express.	Vans.	Box Freight.	Cattle.	Hay.	Platform--10 Tons.	Hoppers -- 5 Tons.	Gondola--15 Tons.	Total.	Snow Ploughs.	Wing Ploughs.	Flangers.	Total.
On hand, 1st July, 1880, serviceable.....	111	46	36	15	18	35	1,050	64	33	1,042	864		3,203	27	9	4	40
do do condemned .....						1	12	2	1	4			20				
Total stock, 1st July, 1880 .....	111	46	36	15	18	36	1,062	66	34	1,046	864		3,223	27	9	4	40
Purchased and charged to working expenses.....	4																
do do Capital Account, Rivière du Loup Branch .....	12	2	2		2		80			74			1				
Built at Moncton works, for Rivière du Loup Branch .....						3											
Sold Canada Pacific Railway .....	*2																
Purchased to replace above charged to working expenses.....	2																
Sold replaced by new .....	*6																
Condemned--replaced by Gondola cars .....											228	76					
Changed from box cars to flangers.....							*12			*2						14	
do hay to box cars .....							34		*34								
Total stock, 30th June, 1881.....	121	48	38	15	20	39	1,164	66		1,118	636	76	3,220	28	9	18	55
Condemned cars in hand, 1st July, 1880.....						1	13	2		4			20				
Condemned during the year.....						3	25	3		30	228		289				
						4	38	5		34	†228		309				
LESS--Rebuilt during the year.....						4	26	5		31			294				
Condemned, 30th June, 1881 .....							12			3			15				
ADD--Serviceable and repairing .....	121	48	38	15	20	39	1,152	66		1,115	636	76	3,205				
Total stock, 30th June, 1881 .....	121	48	38	15	20	39	1,164	66		1,118	636	76	3,220	28	9	18	55

\* "Deduct."

† Replaced by 76 Gondolas.

[1881]



## B.—INTERCOLONIAL RAILWAY.

STATEMENT of Locomotive and Car Mileage for Year ending 30th June, 1881.

Months.	Locomotive Mileage.		Car Mileage.							Average.		Snow Ploughs and Flangers.
	Passenger	Freight.	1st Class Passenger.	2nd Class Passenger.	Express, Postal and Baggage.	Box, Stock and Hay.	Platform.	Hoppers.	Total.	Pas- senger.	Freight.	
1880—July .....	69,889	141,170	202,958	125,290	132,413	1,499,435	391,211	206,357	2,557,664	6·58	14·85	.....
August. ....	67,797	139,073	195,347	117,174	121,715	1,449,929	444,447	195,232	2,523,844	6·41	15·03	.....
September.....	65,381	135,897	201,331	119,757	121,062	1,502,067	354,446	128,139	2,466,802	6·75	14·60	.....
October.....	65,744	149,527	190,127	117,637	122,684	1,690,656	355,335	186,234	2,662,673	6·54	14·99	.....
November.....	66,295	157,548	168,171	118,481	123,794	1,602,034	504,690	210,199	2,727,369	6·19	14·70	3,569
December.....	67,393	180,180	169,708	122,471	129,443	1,628,841	491,407	296,601	2,841,471	6·26	13·43	8,137
1881—January .....	66,365	166,432	152,933	100,539	117,874	1,470,848	341,161	205,001	2,388,356	5·60	12·12	17,888
February.....	60,723	156,350	144,380	97,259	111,556	1,435,571	367,645	171,198	2,327,609	5·81	12·63	14,274
March.....	67,931	208,600	166,233	115,864	124,810	2,172,615	572,569	247,201	3,339,292	6·02	14·35	5,543
April.....	67,770	203,012	178,743	127,488	126,238	2,176,888	473,848	175,994	3,259,199	6·38	13·92	550
May .....	66,627	154,606	161,577	114,083	123,304	1,630,864	473,000	117,808	2,620,636	6·02	14·37	321
June.....	66,788	143,034	187,130	122,643	127,333	1,495,832	398,394	134,910	2,466,242	6·58	14·18	122
Totals.....	798,703	1,935,429	2,118,638	1,398,686	1,482,226	19,755,580	5,171,153	2,274,874	32,201,157	6·25	14·05	50,444

C.—INTERCOLONIAL RAILWAY.

ABSTRACT of Locomotive Returns for Year ending 30th June, 1881.

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 hours in Steam.	Lbs. of Coal.	Pints of Oil.	Lbs. of Tallow.	Lbs. of Waste.
1880—July.....	25,294	261,975	6,345	17,113	8,943	4,276	10·35	5,806	6·53	3·41	1·63
August.....	24,865	256,816	6,106	16,740	8,663	4,334	10·40	5,325	6·51	3·37	1·68
September.....	24,102	251,232	6,313	16,196	8,581	4,511	10·42	5,631	6·44	3·41	1·79
October.....	25,709	265,938	7,075	17,443	8,242	4,484	10·34	5,959	6·55	3·09	1·68
November.....	27,717	283,043	7,249	18,951	7,717	4,397	10·21	5,735	6·69	2·72	1·55
December.....	30,700	315,409	8,335	18,643	9,074	4,569	10·27	5,919	5·91	2·87	1·44
1881—January.....	30,014	301,308	8,281	17,518	8,810	4,421	10·03	6,156	5·81	2·92	1·46
February.....	23,230	286,199	7,347	15,622	7,892	3,987	12·32	5,750	5·45	2·75	1·39
March.....	34,293	350,825	8,356	17,561	9,700	4,723	10·23	5,335	5·05	2·76	1·34
April.....	32,130	338,713	7,741	15,995	9,214	4,790	10·54	5,119	4·72	2·72	1·41
May.....	26,663	279,466	6,024	13,631	7,836	4,230	10·48	4,828	4·80	2·80	1·51
June.....	24,824	262,154	5,752	12,806	7,496	4,038	10·56	4,914	4·88	2·85	1·54
Total.....	329,361	3,453,078	84,924	198,219	102,168	52,760	10·48	5,509	5·74	2·95	1·52

[1881]

## D.—INTERCOLONIAL RAILWAY.

STATEMENT of the cost of Locomotive power for each month, from 1st July, 1880, to 30th June, 1881.

Months.	Miles run by Engines.	Drivers and Firemen's Wages.	Fuel.	Oil, Tallow and Waste.	Repairs to Engines and Tools.	Water.	Miscellaneous, Engineer houses, Mechanical Staff.	Total.	Average cost per 100 Miles.						
									Wages.	Fuel.	Oil, Tallow and Waste.	Repairs.	Water.	Miscellaneous.	Total.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1880—July.....	261,975	11,280 45	14,163 34	2,990 47	14,046 12	1,080 46	5,376 63	48,937 47	4 30	5 41	1 14	5 36	0 42	2 05	18 68
August.....	256,816	11,920 38	14,726 22	2,816 82	14,300 06	1,863 45	2,341 93	47,968 86	4 64	5 73	1 09	5 57	0 73	0 91	18 67
September.....	251,232	11,915 63	15,600 06	2,907 61	14,044 32	2,404 53	2,303 17	49,175 32	4 74	6 21	1 16	5 59	0 95	0 92	19 57
October.....	265,938	11,531 55	16,261 37	2,634 40	15,348 04	2,624 01	3,121 33	51,520 70	4 33	6 11	0 99	5 78	0 99	1 17	19 37
November.....	283,043	10,695 37	15,560 11	2,576 11	15,073 56	2,297 42	3,867 57	50,070 14	3 78	5 49	0 91	5 32	0 81	1 37	17 69
December.....	315,409	11,563 47	19,212 15	2,968 73	16,693 64	2,165 65	3,434 78	56,038 42	3 67	6 08	0 94	5 29	0 69	1 09	17 76
1881—January.....	301,308	11,834 07	19,496 01	2,702 65	19,455 45	2,773 31	4,225 11	60,486 60	3 96	6 47	0 88	6 45	0 92	1 40	20 08
February.....	286,199	10,836 51	16,986 22	2,370 33	17,420 64	1,909 39	3,420 82	52,943 91	3 97	5 93	0 83	6 09	0 66	1 19	18 49
March.....	350,825	13,296 03	19,461 46	2,736 71	19,164 49	2,058 75	3,843 07	60,560 51	3 81	5 54	0 78	5 46	0 59	1 09	17 27
April.....	338,713	12,944 56	18,478 50	2,678 94	12,348 52	1,839 78	3,873 77	52,155 07	3 83	5 45	0 80	3 64	0 54	1 14	15 40
May.....	279,466	11,210 25	13,559 89	2,131 40	5,064 97	2,441 64	2,998 86	37,407 01	4 01	4 86	0 76	1 81	0 87	1 07	13 38
June.....	262,154	8,389 62	1,662 86	1,696 98	4,330 46	1,042 77	2,612 14	19,734 83	3 20	0 63	0 64	1 65	0 40	1 00	7 52
Total.....	3,453,078	137,417 89	185,168 19	31,211 15	167,290 27	24,492 16	41,419 18	586,998 84	3 98	5 36	0 91	4 84	0 71	1 19	16 99



## E.—INTERCOLONIAL RAILWAY.

GENERAL STATEMENT of the Expenses of the Mechanical Department, for  
the Year ending 30th June, 1881.

The miles run by trains were.....	2,813,723
do engines were.....	3,453,078
do cars were.....	32,201,157
do snow ploughs were.....	50,404
	\$    cts.
The cost of locomotive power.....	586,998 84
do repairs to cars.....	236,200 37
Oil and waste for packing.....	15,422 49
Repairs to passenger cars.....	56,983 46
do postal, express and baggage cars.....	16,003 50
do freight cars and vans.....	146,842 74
The cost of locomotive power per 100 miles run by train was.....	20 86
do do do engines.....	16 99
do do do cars.....	1 82
The cost of repairs to cars per 100 miles by train.....	8 20
do do engines.....	6 84
do do cars.....	0 73
The cost of oil and waste for packing per 100 miles by train.....	0 54
do do do engines.....	0 44
do do do cars.....	0 04
The cost of repairs to passenger cars per 100 miles run by them.....	1 69
do postal, express and baggage do.....	1 07
do freight cars and vans do.....	0 53

H. A. WHITNEY,  
*Mechanical Superintendent.*

INTERCOLONIAL  
RETURN of Accidents and Casualties which have occurred in Canada,  
31st Decem

*(This Return is made up in accordance with the Provisions of*

Date.	Time of Night or Day.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1890.						
July 28...	9.45 a.m.	.....	Special .....	H. Garnett.....	{ C. Tobin..... J. Glennon .....	{ 98 93 }
do 28...	12.55 a.m.	14	Freight.....	J. Coffey .....	F. Harris .....	108
do 29...	.....	Special..	Ballast .....	W. J. Ross.....	G. H. Feetham .....	78
Aug. 2...	10.00 a.m.	do	do .....	L. Couture.....	A. Lacroix .....	6
do 23...	9.30 a.m.	do	do .....	L. Proulx .....	J. Jones.....	36
do 28...	2.15 p.m.	30	Accommodation.	J. McLeod .....	{ C. Atkinson .....	{ 21 38 }
do 28...	.....	.....	.....	.....	{ W. Bastin.....	{ 38 }
Sept. 3...	3.50 p.m.	.....	Pilot engine .....	M. T. Marchessault.....	D. W. Sullivan.....	92
do 3...	.....	.....	Special.....	A. McPherson.....	J. I. Smith .....	8
do 6...	9.50 a.m.	12	Freight .....	J. Coffey .....	A. Donald.....	106
Sept. 15...	10.10 p.m.	.....	Special .....	Geo. J. Snyder.....	Donald McNeil.....	72
do 18...	12 noon .....	.....	Shunting engine.	.....	R. James .....	100
do 27...	4.45 a.m.	.....	Special .....	B. Walker .....	S. Jones .....	1
Oct. 7...	9.15 a.m.	.....	do .....	W. Foster.....	J. Clark .....	88

## RAILWAY.

on the Line of the Intercolonial Railway, during the Half Year ending  
ber, 1880.

*the Consolidated Railway Act of 1879, 42 Vic., cap. 9, sec. 55).*

Place of Accident.	Name of Person Injured.	Whether Passenger or Employé.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Richmond .....	Alex. McNeil.....	Neither...	Walking on track; was struck by train.	Severely injured.	
Amherst.... ..	Archie Hazlett...	Employé..	Fell from top of cattle car.	Badly hurt....	
Athol .....	— Robertson.....	Neither....	Attempting to get on cars while in motion, and fell.	Handcrushed	
St. Paschal .....	P. Lafranc.....	Employé..	While coupling cars in siding.	Hand jambed.	
St. Jean Port Joli	C. Belanger.....	Neither....	Caught between tender and cars.	Foot smashed.	
St. Flavie.....	James Reid .....	do .....	Stealing a ride between the box cars, he fell off on the rails when the train started.	Leg cut off below knee.	
St. Roch Pit.....	L. Mignault.....	Employé..	Was stooping down between the two tracks, and when he saw trains coming got up, and was run over.	Leg cut off above knee.	
Campbellton ....	Silas Steven .....	do ..	Getting on van after turning the switch.	Injured his knee.	
Amherst.....	Chas. H. Porter.	do ..	While shunting cars, got caught between the draw-bars of two box cars.	Left hand hurt	
½ mile west of St. Roch Pit switch.	Jos. S. Gagnon..	do ..	Collided with Conductor Gagnon's ballast train, damaging nine cars and both engines.	Killed .....	Accidental death.
St. John.....	Dillon Bustin.....	do ..	Cars left the track at foot of Sheffield St., throwing him from top of box car.	Right leg broken.	
L'Islet tank.....	Jos. Rémillard...	Neither....	When coming to tank for water, was run into by another train following, damaging six cars and injuring Rémillard.	Fatal .....	That Con. Chas. Gilley and Driv. Jno. Hodson did feloniously and with negligence cause the death of the aforesaid.
Stellarton.....	B. H. DeWolf....	Employé..	While shunting and in attempting to get on train slipped, the car wheel passing over his foot.	Injuring right foot.	



## 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.
1880.						
Oct. 16...	11.30 p.m. ....	.....	Special .....	J. T. McGinn .....	J. McDonald.....	54
do 16...	9.00 p.m. ....	.....	do .....	W. T. Sprange.....	C. C. Brown.....	34
do 25...	3.20 p.m. ....	G.T.R. 7 .....	.....	G.T.R. J. Tardif.....	G.T.R. G. Bryan.....	378
Oct. 26...	7.55 .....	34	Freight.....	L. H. Levasseur .....	P. Morency.....	111
do 29...	1.00 a.m. ....	14	Freight.....	J. Berry .....	G. A. Kantly.....	108
do 30...	7.10 p.m. ....	27	Express.....	M. Letarte.....	J. McDonald.....	54
Nov. 5...	5.00 p.m. ....	.....	Shunting. ....	H. N. Cannon.....	A. McCabe. ....	33
do 10...	1.05 p.m. ....	1	Express.....	Jas. E. Geldert.....	S. Trider ... ..	58
do 11...	7.45 p.m. ....	.....	Shunting. ....	.....	A. B. White.....	94
Nov. 15...	.....	.....	Wood train. ....	John Henchy.....	D. Mains.....	116

## 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.
Moncton.....	Nich. Dussault...	Employé..	When in the act of coupling engine to train.	One finger jammed.	
Chatham Junction.	J. McBeam.....	do ..	Coupling cars on siding, got his arm caught between the buffers of two box cars.	Bruising arm.	
G.T.R. 3 miles west of Point Lévis.	— Francoeur.....	Neither....	When approaching Fitch's Crossing he tried to pass in front of train, but was struck by engine.	Fatal.....	Accidental death.
½ mile west of Hadlow.	J. Lawrence.....	News Agt.	Supposed to have fallen between second class car and van; when found his head was severed from his body.	Fatal.....	Found dead on the track.
Amherst.....	H. Buchanan.....	Employé..	While coupling cars his thumb got caught between head of pin and car.	Bruised.	
St. Thomas. ....	Two persons; names not given	Passengers	When stopped on St Thomas bridge to take water, a girl and a man stepped off train supposing they were at the station; girl fell into the water and was unhurt, the man fell on the ground.	His neck slightly hurt.	
Point du Chêne.	Gaius Torrie.....	Employé..	While shunting on wharf coupling train on engine slipped from cow-catcher.	Sprained his ankle.	
Spring Hill.....	Ernest Fowler ...	Neither....	Attempting to cross track in front of train was caught by engine and run over.	Fatal. . . . .	Accidental; no blame being attached to any of the railway employées.
Moncton.....	Walter Willing..	Employé..	Coupling engine and box car together got hand caught between draw-bars.	Two fingers jammed.	
St. Alexandre....	J. Henchy .....	do ...	Eleven cars broke loose going into siding and to open switch jumped off rear car when in motion.	Hurting his knee.	

## 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.
1880.						
Nov. 18...	6.20 p.m.	30	Accommodation	J. McLeod.....	D. Sullivan.....	
do 26...	10.00 a.m.		Shunting.....		R. Jones .....	100
do 27...	2.15 p.m.		Special.....	F. Dumond.....	G. Montgomery.....	11
do 27...	9.30 p.m.		do .....	James Craigie.....	Jas. Stockall.....	35
do 28...	3.00 p.m.		do .....	J. Guay.....	A. Lacroix.....	116
Dec. 1...	7.45 p.m.	6	Freight.....	A. W. Milick.....	J. R. Moore .....	46
do 1...		36	do .....	W. Sutherland.....	T. Quinn.....	25
do 3...	3.00 p.m.		Special .....	J. Guay.....	O. McGinity.....	101
do 10...	4.15 p.m.	6	Freight.....	R. A. Rainnie.....	W. J. Hunter .....	14
do 30...	11.55 p.m.	24	do .....	C. J. Rhodes.....	G. B. Storey.....	89



## 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.
¼ mile north of Campbellton..	Octave Hudon...	Employé..	Fell from top of box cars, and the wheels of three cars passed over him.	Fatal.....	Accidental death.
St. John.....	F. Irvine. ....	do ...	While shunting in yard, had one finger of right hand caught in shackling of a coal hopper.	Flesh torn.	
Chaudière Curve	Xavier Langlois.	do ...	While coupling cars on to train, got hand caught.	One finger cut off and one jammed.	
Shubenacadie....	E. Hurley.....	do ...	Thrown over the rear end of flat cars while shunting, wheels passing over him.	Collar bone broken and legs torn and bruised.	
St. Alexandre....	P. McGee.....	do ...	While coupling cars.....	Hand jammed.	
Sussex.....	John Hipwell. ...	do ...	While drawing pin on tender of engine, got his foot caught in frog.	Hind wheel passed over foot.	
Causapscal.....	E. Jean.....	do ...	While taking water at tank, slipped off tender.	Injuring his back.	
Chaudière.....	Philippe Verret..	do ...	While coupling cars got one of his fingers smashed.	Broken in three places.	
Hampton.....	J. Dunlop .....	do ...	While shunting got jammed between buffers of cars.	Arm slightly hurt.	
Moncton.....	P. Russell .....	do ...	While engaged in coupling.	Fingers smashed.	

## INTERCOLONIAL

RETURN of Accidents and Casualties which have occurred in Canada,  
30th June,*(This Return is made up in compliance with the Provisions of*

Date.	Time of Day or Night.	Number of Train.	Description of Train.	Name of Conductor.	Name of Driver.	No. of Engine.
1881.						
Jan. 5...	3.15 a.m.	.....	Special. ....	W. T. Sprange.....	A. McCabe.....	14
do 7...	3.00 p.m.	.....	Shunting.....	.....	B. Goodwin.....	29
do 13...	3.00 p.m.	.....	do .....	.....	J. McDermott.....	99
do 17...	9.30 p.m.	15	Freight.....	Jas. McDonald.....	A. Culder .....	32
do 18...	9.10 a.m.	35	do .....	D. Hunter .....	D. Pinco .....	114
do 20...	12.15 a.m.	35	do .....	J. Lockhart.....	P. Ashe .....	114
do 21...	9.30 p.m.	.....	Special. ....	F. A. Davidson .....	Neil McLean.....	31
do 24...	11.00 p.m.	.....	do .....	W. J. Campbell.....	W. D. Martin. ....	50
do 25...	6.00 p.m.	.....	Shunting.....	.....	J. McDermott. ....	99
do 26...	7.00 p.m.	.....	Special .....	W. J. Dickson .....	J. Probert.....	78
Feb. 4...	7.25 a.m.	7	Express .....	Jas. Millican.....	{ Thos. Gammon .....	{ 73 }
					{ M. F. Jones.....	{ 53 }
do 7...	1.30 p.m.	.....	Special .....	J. Hartenstein .....	B. Goodwin.....	29
do 7...	2.30 p.m.	.....	do .....	T. C. Campbell.....	P. Ashe .....	43

## RAILWAY.

on the Line of the Intercolonial Railway, during the Half Year ending 1881.

*the Consolidated Railway Act of 1873, 42 Vic., Cap. 9, Sec. 55.)*

Place of Accident.	Name of Person Injured.	Whether Passenger or Employé.	Particulars of Accident.	Extent of Injury.	Verdict of Coroner's Jury.
Near coal branch	J. Murphy .....	Employé..	While coupling got caught between tender and cars.	Breast and loins jammed.	
Campbellton . . .	J. Hartenstein ...	do ...	While engine, with flanger, was clearing yard, struck and knocked him down.	Slightly injured.	
Moncton.....	Fred. Compton...	do ...	While uncoupling cars....	Handjammed.	
Folly Bridge.....	Augustus Rolston (colored).	Neither....	Supposed to have fallen off bridge trying to get out of the way of engine.	Fatal.....	Accidental death
Weldford. ....	J. Bushey.....	Employé..	While carrying a heavy piece of freight across track, slipped.	Wrenched his side.	
Chatham Junct'n	Geo. Needham...	do ...	When coupling engine on to some cars in siding.	Fingers jammed.	
Riversdale.....	Benj. Peterson ...	do ...	Draw bar pulled out and in running over hoppers to stop forward part of train, fell.	Hurt his leg.	
Norton .....	Gains Torrie.....	do ...	When stepping from first hopper to tender he slipped and fell off.	Right arm cut off and foot frozen.	
Moncton.....	D. Morton .....	do ...	While shunting jumped off foot board of engine and fell against switch frame.	Injured in groin.	
New Glasgow ...	Daniel Davidson.	do ...	While shifting, got jam'd between flat car and hopper.	Hips hurt.....	
Apohaqui.....	Thos. Gammon .	do ...	Engine No. 73 left track, ran down embankment, turning bottom up in the ditch, he being found lying under the engine dead.	Fatal .....	Accidental death
Campbellton .....	J. Hartenstein ...	do ...	While shunting, got struck by engine and knocked under his van.	Severely bruised.	
Londonderry.....	Walter Willing..	do ...	Went in between tender and empty hopper to couple, and got arm caught.	Strained wrist	



## 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.
1881.						
Feb. 11...	11.00 p.m.	.....	Shunting .....	.....	O. Brock .....	96
do 11...	2.00 p.m.	.....	do .....	.....	.....	.....
do 18...	4.00 p.m.	.....	Special .....	W. J. Ross.....	J. Probert .....	30
do 23...	1.00 p.m.	.....	do .....	G. McLeod.....	W. McLean .....	82
do 23...	3.30 a.m.	.....	Shunting.....	.....	J. McDermott.....	99
do 24...	4.00 p.m.	.....	.....	.....	.....	.....
Mar. 1...	11.25 a.m.	.....	Special .....	Geo. W. McCully.....	J. W. Nairn.....	107
do 3...	4.00 p.m.	.....	do .....	L. Proulx.....	P. Morency.....	111
do 4...	8.15 a.m.	23	Freight.....	J. W. Miller .....	R. Calder.....	32
do 5...	11.30 a.m.	18	Accommodation ...	J. Ahearn .....	J. Ross. ....	35
do 12...	9.00 a.m.	31	do ...	Fred. Loasby.....	{ A. Bulmer..... W. Russell.....	{ 104 115 }
do 12...	2.30 p.m.	.....	.....	.....	.....	.....
do 16...	4.10 p.m.	.....	Special .....	M. Daly .....	F. Harris.....	5
April 1...	8.00 p.m.	29	Express.....	J. B. Poulet.....	D. McNeil .....	41

## 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.
Chaudière .....	J. Lapointe.....	Employé..	When coupling cars, got caught between buffers.	Left arm hurt.	
Spring Hill .....	John Stevens (Indian).	Neither....	Got among cars while shunting was being done.	Left hand smashed.	
Truro Yard .....	John Parker.....	Employé..	In attempting to descend from auxiliary car while in motion, was struck by semaphore ladder.	Seriously hurt about the head.	
Londonderry .....	Thos. Lyons .....	do ...	While coupling the engine on to a flat car, got caught.	Squeezed across the hips.	
Moncton.....	John Hammett...	do ...	While coupling hopper to flat car, got left hand caught	Two fingers hurt.	
Truro.....	Chas. Hall.....	do ..	Fall of semaphore slipped and lever flew up, striking his face.	Face slightly hurt.	
Painsec Junction	Geo. McLeod ....	do ..	When coupling engine to train, got caught between draw bars.	Jammed in the hips.	
1 mile east of L'Islet.	François Moreau	do ..	Fell off box car, and was run over.	Fatal .....	Accidental death.
Londonderry.....	C. Graham .....	do ..	While coupling cars, got hand caught between buffers.	Three fingers hurt.	
Truro .....	George Currie ...	do ..	While passing alongside engine, lump of coal fell on him.	Head cut.....	
1 mile north of New Mills.	— McMillan .....	Neither....	Was struck by snow-plough while walking towards New Mills.	Severely bruised.	
Richmond .....	John Mullins.....	do ....	fooling with the gear of coal shoot, started the handle, which struck him and threw him over the rails on the deck of a vessel.	Skull fractured.	
New Mills .....	F. Weldon.....	Employé..	While coupling cars, got his right hand caught.	Thumb bruised.	
Between Hadlow and Point Lévis	Mr. Murphy.....	Passenger.	Felt sick and went out on platform of second class car, and fell off.	Head cut.....	

## 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.
1881.						
April 5...	12.20 a.m..	29	Express.....	Thomas Corbett.....	John Bournett .....	114
do 5...	11:00 a.m..	35	Freight.....	D. Hunter .....	R. Dunbar.....	47
do 7...	9 30 a.m..	16	do .....	J. Berry .....	N. McLean.....	124
do 15...	8.30 a.m..	.....	Special .....	T. C. Campbell.....	Joseph Probert.....	79
do 20...	10.15 p.m..	.....	do .....	J. Craigie .....	T. Hanway .....	7
do 23...	11.00 p.m..	.....	do .....	W. J. Ross.....	John McDowall.....	12
May 1...	10.15 p.m..	Mail.	do .....	J. Couturier .....	J. Murphy.....	42
do 7...	1.45 p.m..	36	Freight .....	W. J. Sprange .....	T. McManus .....	115
do 10...	5.00 p.m..	.....	Shunting.....	.....	E. S. White .....	94
do 14...	6.00 a.m.	3	Accommodation.	John McFadzen. ....	M. F. Jones .....	53
do 14...	1.00 a.m.	G.T.R. 8	.....	.....	.....	.....
do 17...	2.35 p.m.	.....	Shunting .....	.....	E. Tobin. ....	98
do 20...	5.20 p.m.	36	Freight .....	Z. Lockhart .....	J. D. McKay.....	112
do 28...	7.40 p.m.	.....	Light Engine.....	.....	S. Jones.....	24



## 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.
Berry's Mills.....	Mr. Ayers.....	Neither....	Says he jumped off train and, falling, one or more cars passed over him.	Leg cut off and face bruised	
Carleton .....	— Doucet .....	Employé..	While coupling cars.....	Hand cut .....	
$\frac{1}{4}$ mile north of Folly Bridge.	J. Berry .....	do ...	Wheel of conductor's van broke, and he was either thrown or jumped off car.	Head severely hurt.	
Sackville Grade.	Mike Poor .....	do ...	In attempting to jump off car he tripped on a sleeper.	Cut his leg....	
Bedford Grade ...	T. Lyons .....	do ...	Had to part train on grade, and when coupling together, got caught between buffers.	Arm crushed.	
Stellarton.....	J. W. Scott .....	do ...	While coupling hoppers together.	Leg hurt.....	
$\frac{1}{4}$ mile west of St. Paschal.	A. Boisvert .....	do ...	Supposed to have lost his balance and fell off train.	Fatal.....	Accidental death
Bathurst.....	W. Treen .....	do ...	When applying brake, ratchet slipped, and his arm was caught in wheel.	Arm wrenched and bruised.	
Moncton.....	Charles Porter...	do ...	While coupling engine to flat car, got caught.	Finger injured	
Pointe du Chêne	John Kerr .....	do ...	When putting on brake on top of box-car slipped and fell.	Injured leg & arm.	
Hadlow.....	.....	G.T.R. employé.	Two G.T.R. engines got off track, and turned over on their sides owing to switch being left open.	Driver scalded.	
Richmond .....	Simon Mowatt...	Employé..	While working under a van, it was moved by other cars being shunted against it and wheels passed over his leg.	Leg crushed.	
Newcastle .....	Geo. Needham...	do ...	In moving freight he lifted a large coil of rope.	His breast hurt.	
St. Valier.....	Jean Roy. ....	Neither....	Was working on track and struck by engine.	Fatal.....	Accidental death

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.
1881.						
June 2...	11.30 a.m.		Shunting.		T. O'Brien	98
do 5...	4.30 a.m.	12	Express	T. C. Hampbell	J. Sawyer	73
do 6...	7.00 p.m.	30	Accommodation.	P. Fontaine	A. Sharpe	23
do 14...	6.50 p.m.		Special	P. E. Heney	C. C. Brown	125
do 18...	9.10 p.m.		do	J. T. McGinn	F. Harris	8
do 19...	2.15 a.m.		do	J. W. King	J. McAuley	121
do 21...	9.30 p.m.		do	J. T. McGinn	S. Watson	43
do 22...	11.20 p.m.		Freight	John Berry	G. B. Story	4

## 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.
Richmond .....	Wm. Burton.....	Employé..	While coupling got caught in the chain hook.	Thumb jammed.	
Between Moncton & Memramcook.	John Noacoat (Indian).	Passenger	Died on the train.....	.....	Suffocation and excessive drink.
6 miles north of Campbellton.	L. J. Michon.....	Employé..	Fell from the top of train and smashed his skull.	Fatal.....	Accidental death
2½ miles south of Newcastle.	— Morency....	Neither....	An Indian walking on track while intoxicated got struck by the Engine.	Hurt fatally.	
1¼ mile north of Weldford.	Rich Sweetman..	Employé..	Ran into hand-car.....	Leg slightly hurt.	
Passeheag .....	W. J. McCarthy.	do ...	Body found lying in middle of track having been run over.	Fatal.....	do
Bathurst.....	John Dickie.....	do ...	While coupling got hand caught between cars.	Two fingers jammed.	
Dorchester.....	W. J. Currie.....	do ...	While shunting got hand caught between draw-bars of box and flat cars.	Fingers jammed.	



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 PRINCE EDWARD ISLAND RAILWAY.

 SUPERINTENDENTS OFFICE,  
 CHARLOTTETOWN, 26th August, 1881.

SIR,—I have the honor to submit the following report on the operation of the Prince Edward Island Railway for the year ending 30th June, 1881, and to transmit herewith the accounts for the year, comprising:—

- No. 1. Revenue Account.
- “ 2. Locomotive Power.
- “ 3. Car Expenses.
- “ 4. Maintenance of Way and Works.
- “ 5. Station Expenses.
- “ 6. General Charges.
- “ 7. Monthly Statement of Earnings.
- “ 8. Statement of General Store Account.
- “ 9. General Balance.
- “ 10. Comparative Statement of Averages.

Report and statements prepared by the Mechanical Superintendent are also enclosed.

My connection with the Prince Edward Island Railway dates from November, 1880, at which time I was transferred from the position of General Storekeeper of the Intercolonial Railway to that of Superintendent of this road.

## CAPITAL ACCOUNT.

The total expenditure on capital account to, 30th June 1880, was \$3,466,588.57, since which date there has been no additional expenditure on this account.

## REVENUE ACCOUNT.

Business generally having been more prosperous on the Island during the year the earnings of the road have increased considerably; with the exception of the year 1877-78 they were the largest in the history of the road.

The gross earnings were.....	\$131,131 43
do previous year.....	113,851 11
	17,280 32
Increase.....	17,280 32

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

1880-81—198½ miles operated.....	\$660 61
1879-80 do .....	573 56
	87 05
An increase per mile of.....	87 05
The increase in passenger traffic was.....	\$5,508 44
do freight traffic.....	11,682 94
do from other sources.....	88 94
	17,280 32
Total.....	17,280 32

The number of passengers carried in excess of previous year was 12,404; increase in tons of freight carried, 8,128.

Very considerable reductions were made in freight rates during the year, notably on potatoes and on goods ex-steamer “Northern Light,” nevertheless the earnings have shown an increase.

## OPERATING EXPENSES.

The operating expenses were \$203,122.88.

In the expenditure for the year the following items are included: 19 miles of steel rails renewals, the construction and equipment of three freight and passenger stations and the introduction of "Haggas Water" supply system. No expenditure on similar improvements was incurred during the preceding year.

The increase in tonnage, hauled over 1879-80, amounted to 12.84 per cent., while the car mileage was only increased by 11.07 per cent.

## MAINTENANCE OF WAY.

With exception of 3052 lineal feet of steel rails laid east of Royalty Junction all the above referred to was placed on the main line between Charlottetown and Summerside where the traffic is heaviest and the curves most numerous. A considerable portion of the iron rails taken up can be relaid in other portions of the line where the traffic is lighter as soon as the rails now in use require removal.

There are now  $30\frac{3}{4}$  miles of the line laid with steel, and  $167\frac{3}{4}$  miles laid with iron rail, the former weighing 50, and the latter 40 pounds, to the yard. So far no breakage of steel rail from any cause has been reported. 63,801 sleepers were renewed during the year, as against 33,694 in 1879-80. It has been found that owing to the nature of the soil the average life of sleepers on the Island is less than in other places when gravel for ballast can be obtained.

The sleepers used in renewals have been of very superior quality, and better results are expected from them, than from those with which the line was originally laid. In point of manufacture they are equal to any used in the Dominion.

## SIDINGS.

Three new sidings aggregating 1873 feet have been laid down, and five have been lengthened by 1,222 feet. Considerable additional siding accommodation will be required during the ensuing year.

## BRIDGES.

All the bridges and culverts have been very carefully examined from time to time and all are now in good order.

Repairs were made to the superstructure of the following,—“Harpers” Richmond five houses. The drawbridge over the Morell received extensive repairs, costing seventeen hundred dollars.

Seven wooden culverts were built and eighty-eight cattle guards renewed.

## BUILDINGS.

Neat and commodious freight and passenger stations have been erected at York, Bedford and Bear River.

A flag station and platform was provided at Midgell.

Repairs were made to a number of stations. Platforms were extended and cattle pens provided where required.

To comply with the statute the roof of station houses through which trains pass were altered to give the required headway. A quantity of hose was procured for the purpose of protection against fire at Charlottetown. Water can now be thrown by the stationary engine in the Machine shops on any of the outlying buildings.

## FENCING.

10,045 feet of snow fence was erected and 9,579 feet of that previously erected has been moved further back from the track to make it better serve the purpose for

which it was originally built. This necessitated the purchase of considerable land, as the original right of way was not wide enough to contain the accumulation of snow caught by the fences without blocking the track. 6,146 feet of pole fence was also built where most required.

It is in contemplation to build a quantity of barbed wire fence next year.

#### WATER SUPPLY.

The Haggas Water Elevator has been adopted at fifteen watering stations on the line, and gives excellent satisfaction. It has proved to be much superior and more economical than the system of windmills and elevated tanks formerly in use. The tanks in connection with this system being under ground below the reach of frost the Railway is relieved of the expense of keeping up tank houses, repairing windmills, furnishing fuel and attendance necessary to keep the elevated tanks from freezing in winter. Windmills are still in use at four stations, but the "Haggas Elevator" will be substituted at these places shortly, when the expense for water supply will be reduced to a minimum. The old tank houses will be taken down or otherwise disposed of to the best advantage.

#### MECHANICAL DEPARTMENT.

The want of increased locomotive power was severely felt last fall previous to the close of navigation, and also during the severe storms of last winter.

Two of the tank engines have been condemned as not being worth further repairs, and the remainder of the tank engines are of little use except for shunting purposes. Engines Nos. 11 to 18 inclusive of the ordinary American pattern have done excellent service.

Two Mason Farlie engines were received from the Kingston Works in November last, but so far have not given the satisfaction expected. They have already required and received extensive repairs. A balance of four thousand three hundred dollars on the contract price of these engines is still retained. At least two more locomotives should be procured to meet the requirements of the road.

The passenger cars are all in good order. The comfort and safety of the traveling public has been much increased by the equipment of these cars with the Miller platform and air brakes. Much needed improvements in lighting and ventilation have also been made. Four new passenger cars are needed to meet the requirements of excursion traffic in summer. These could be built in the Railway shops at Charlottetown. Six box and three platform cars were rebuilt, a larger number will require renewal next year as all the eight ton cars with which the road was originally equipped are shewing more or less signs of decay. A gain of two tons in the carrying capacity of each car rebuilt is effected. The snow ploughs, five in number, are all in good order. Another is required and will be built before next winter. They were run with great care and at a moderate speed last winter, and as a consequence only one derailment occurred.

Ten hand cars of an improved pattern were built, for the Track Department, to replace ones worn out.

#### STORES.

The stock of stores on hand June 30th, 1881, was as follows:—

Ordinary stores.....	\$33,104 05
Fuel.....	798 41
Rails and fastenings .....	31,755 62
Total.....	<u>65,658 08</u>

The purchases for the year amounted to \$69,301.58. Great care has been used to procure stores of good quality.



## CASUALTIES.

Only one accident of any kind occurred during the year. On the 25th August, 1880, when two miles east of York station, two freight and two passenger cars of a regular train ran off the track and over a slight embankment, injuring several passengers.

The Superintendent then in charge of the line, was unable to determine the cause of the derailment.

Very great difficulty was experienced in operating the line during the past winter owing to frequent and heavy snow falls. The expense of clearing the track of snow and ice was very heavy, amounting to \$11,426.22, and being obliged to run two locomotives on each train, a great deal of the time, was added materially to the working expenses, it is said to have been the worst winter for railroading since the opening of the line.

Every effort has been made to maintain the road and its equipment in a thorough state of efficiency, and it is satisfactory to be able to report that it never was in better condition than at present.

I have the honor to be, Sir,

Your obedient servant,

(Signed) L. B. ARCHIBALD,

*Superintendent.*

COLLINGWOOD SCHREIBER, Esq.,  
Chief Engineer of Government Railways,  
Ottawa.

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No. 1.—PRINCE EDWARD ISLAND RAILWAY.  
REVENUE ACCOUNT for Year ended 30th June, 1881.

Previous Year.	Expenditure.	Year ended 30th June, 1881.	Previous Year.	Earnings.	Year ended 30th June, 1881.
\$ cts.		\$ cts.	\$ cts.		\$ cts.
57,580 58	Locomotive Power, per Abstract 1.....	45,025 92	51,679 86	Passenger Traffic .....	57,188 30
26,200 14	Car Expenses do 2.....	25,823 34	53,643 19	Freight Traffic.....	65,326 13
50,858 87	Maintenance Way and Works do 3.....	98,301 59	8,528 06	Mails and Sundries.....	8,617 00
19,197 01	Station Expenses do 4.....	22,165 99			
10,803 95	General Charges do 5.....	11,806 04	113,851 11	Total Receipts .....	131,131 43
			50,789 44	Balance.....	71,991 45
164,640 55	Totals.....	203,122 88	164,640 55	Totals .....	203,122 88

THOMAS WILLIAMS,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1881.

## No. 2.—PRINCE EDWARD ISLAND RAILWAY.

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

Previous Year.	Details.	Year ended 30th June, 1881.
\$ cts.		\$ cts.
1,583 77	Mechanical Superintendent's salary, Clerks, office and travelling expenses .....	1,329 29
11,252 71	Wages of Drivers, Firemen and Cleaners .....	12,351 15
11,223 41	Fuel .....	11,909 86
1,136 84	Oil, tallow, waste and small stores .....	1,098 19
28,275 50	Repairs to engines, tenders, and engine tools .....	12,860 86
2,875 29	Water, including pump and tank repairs .....	4,364 36
1,233 06	Miscellaneous .....	1,112 21
57,580 58	Totals .....	45,025 92

THOMAS WILLIAMS,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1881.

## No. 3.—PRINCE EDWARD ISLAND RAILWAY.

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

Previous Year.		Year ended 30th June, 1881.
\$ cts.		\$ cts.
6,076 66	Repairs to passenger cars .....	6,762 00
137 50	do postal and baggage cars .....	800 51
7,381 56	do freight cars and vans .....	5,025 41
9,642 64	Wages of Conductors, Train Baggage-men and Brakesmen .....	9,725 87
718 15	Oil and waste for packing .....	643 23
1,859 82	Small stores and fuel .....	2,455 75
383 81	Miscellaneous .....	410 52
26,200 14	Totals .....	25,823 34

THOMAS WILLIAMS,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1881.



No. 4.—PRINCE EDWARD ISLAND RAILWAY.  
MAINTENANCE OF WAY AND WORKS.—(Abstract No. 3)

Previous Year.	Details.	Year ended 30th June, 1881.
\$ cts.		\$ cts.
1,379 85	Engineer's salary, Clerks, office and travelling expenses.....	688 36
29,625 95	Wages in repairing road way, fences and semaphores.....	31,976 31
2,553 74	Rails, chairs and spikes.....	24,396 12
3,356 97	Sleepers.....	15,411 79
3,570 71	Timber and lumber for repairs to bridge, cattle guards, fences, etc.....	5,029 16
1,300 70	Repairs to wharves.....	501 26
1,672 26	do buildings.....	5,513 14
2,466 00	do snow-ploughs, flangers and tools.....	3,359 23
4,932 69	Clearing ice and snow.....	11,426 22
50,858 87	Totals.....	98,301 59

THOMAS WILLIAMS,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1881.

No. 5.—PRINCE EDWARD ISLAND RAILWAY.  
STATION EXPENSES.—(Abstract No. 4.)

Previous Year.	Details.	Year ended 30th June, 1881.
\$ cts.		\$ cts.
14,756 51	Salaries and wages of Station Masters, Agents, Clerks, Telegraph Operators, Station Baggage-men, Yardmasters, Switchmen, Watchmen and Laborers.....	16,146 02
4,440 50	Fuel, oil, light, stationery, tickets and other incidental expenses.....	6,019 97
19,197 01	Totals.....	22,165 99

THOMAS WILLIAMS,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1881.

No. 6.—PRINCE EDWARD ISLAND RAILWAY.  
GENERAL CHARGES.—(Abstract No. 5.)

Previous Year.	Details.	Year ended 30th June, 1881.
\$ cts.		\$ cts.
4,250 06	Superintendent's and Train Despatcher's salaries, Clerks, office and travelling expenses .....	5,141 38
4,860 97	Accountant and Auditor's, Paymaster's and Cashier's salaries, Clerks, office and travelling expenses.....	4,872 82
675 23	Advertising .....	558 65
249 74	Damages to men, animals and goods.....	495 78
179 62	Telegraph expenses (not including pay to Operators) .....	304 13
588 33	Miscellaneous .....	433 28
10,803 95	..... Totals .....	11,806 04

THOMAS WILLIAMS,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1881.

No. 7.—PRINCE EDWARD ISLAND RAILWAY.  
MONTHLY STATEMENT OF EXPENSES.

Months.	Locomotive Power.	Car Expenses.	Maintenance Way and Works.	Station Expenses.	General Charges.	Total Expenses.
1880.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
July .....	.....	.....	.....	.....	.....	.....
August .....	.....	.....	.....	.....	.....	.....
September.....	.....	.....	.....	.....	.....	.....
October .....	.....	.....	.....	.....	.....	.....
November .....	.....	.....	.....	.....	.....	.....
December .....	.....	.....	.....	.....	.....	.....
1881.						
January.....	.....	.....	.....	.....	.....	.....
February.....	.....	.....	.....	.....	.....	.....
March .....	.....	.....	.....	.....	.....	.....
April .....	.....	.....	.....	.....	.....	.....
May .....	.....	.....	.....	.....	.....	.....
June .....	.....	.....	.....	.....	.....	.....
Totals .....	.....	.....	.....	.....	.....	.....

THOMAS WILLIAMS,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1881.

No. 8.—PRINCE EDWARD ISLAND RAILWAY.  
MONTHLY STATEMENT of Receipts.

Months.	Passenger Traffic.	Freight Traffic.	Mails and Sundries.	Total Receipts.
1880.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
July.....	6,856 11	4,572 94	709 00	12,138 05
August.....	6,579 55	6,019 19	703 00	13,302 04
September.....	4,816 47	4,953 04	725 00	10,494 51
October.....	6,343 50	6,398 78	702 00	13,444 28
November.....	5,211 75	10,056 58	726 00	15,994 33
December.....	4,222 17	8,459 95	720 00	13,402 12
1881.				
January.....	2,853 18	1,190 14	747 00	4,790 32
February.....	1,880 03	1,350 68	743 50	3,974 21
March.....	3,210 69	3,974 84	735 00	7,920 53
April.....	4,884 86	5,120 53	702 00	10,707 39
May.....	5,372 69	8,864 14	705 00	14,941 83
June.....	4,957 00	4,365 32	699 50	10,021 82
Totals.....	57,188 30	65,326 13	8,617 00	131,131 43

THOMAS WILLIAMS,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1881.



## No. 8.—PRINCE EDWARD ISLAND RAILWAY.

## STATEMENT of General Store Account, Year ended 30th June, 1881.

1880.	Dr.	\$	cts.	\$	cts.
June 30.....	To balance brought forward.....			70,617	99
1881.					
June 30.....	To Purchases during the year.....	69,301	58		
	Charges from other Departments.....	4,275	60		
	Pay-rolls.....	2,656	71		
				76,233	89
1881.	Cr.			146,851	88
June 30.....	By Issues during the year .....			81,193	80
	Balance. { Ordinary Stores.....	\$33,104	05		
	{ Fuel .....	798	41		
	{ Rails and fastenings on hand.....	31,755	62		
				65,658	08

THOMAS WILLIAMS,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1881.

DR.

## No. 9.—PRINCE EDWARD ISLAND RAILWAY.

CR.

## GENERAL BALANCE.

	\$ cts.		\$ cts.
General Stores.....	65,658 08	Dominion Account.....	64,144 87
Cash.....	1,049 33	Accident Insurance .....	2,507 68
Stations.....	989 82	New Locomotives Suspense Account.....	4,300 00
Post Office Department.....	2,016 00		
Canadian Locomotive and Engine Co.....	666 35		
Militia Department.....	218 55		
Suspense Account .....	354 42		
Total.....	70,952 55	Total.....	70,952 55

THOMAS WILLIAMS,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1881.

## No. 10.—PRINCE EDWARD ISLAND RAILWAY.

COMPARATIVE STATEMENT of Averages, for Year ended 30th June, 1881.

Details.	1881.	1880.
Mileage of railway open.....	1981 $\frac{1}{2}$	1981 $\frac{1}{2}$
Engine mileage.....	314,918	295,190
Train do .....	255,353	244,691
Car do .....	1,122,419	1,010,483
Receipts per engine mile..... Cents	41·64	38·57
do per mile of railway..... \$	660·61	573·56
Percentage of passenger earnings to gross receipts .....	43·61	45·39
do freight do do .....	49·82	47·12
do other do do .....	6·57	7·49
Expenses per engine mile:—		
Drivers', Firemen's and Cleaners' wages.....	3·92	3·81
Fuel .....	3·78	3·80
Oil, tallow, waste and small stores .....	·35	·39
Repairs to engines.....	4·09	9·58
Water and tank repairs .....	1·39	·97
Miscellaneous.....	·35	·42
Total .....	13·88	18·97
Mechanical Superintendent's salary, office and travelling expenses.....	·42	·53
Cents	14·30	19·50
Locomotive power per engine mile.....	14·30	19·50
Car expenses do .....	8·20	8·88
Maintenance way and works do .....	31·21	17·23
Station expenses do .....	7·04	6·50
General charges do .....	3·75	3·66
Total .....	64·50	55·77
Locomotive power per train mile.....	17·63	23·53
Car expenses do .....	10·11	10·71
Maintenance way and works do .....	38·50	20·78
Station expenses do .....	8·68	7·85
General charges do .....	4·62	4·41
Total .....	79·54	67·28
Working expenses per mile of railway..... \$	1,023 29	829 42

THOMAS WILLIAMS,  
*Accountant and Auditor.*

CHARLOTTETOWN, P.E.I., 30th June, 1881.



## PRINCE EDWARD ISLAND RAILWAY.

DESCRIPTIVE STATEMENT of Freight Earnings for the Year ended 30th  
June, 1881.

Description of Freight.	Quantities.		Tons.		Amount.	
	1880.	1881.	1880.	1881.	1880.	1881.
					\$ cts.	\$ cts.
Oats..... Bush.	575,441	412,526	9,787	7,029	12,422 64	8,789 02
Wheat and other grain.... "	5,082	5,353	132	151	197 10	245 73
Potatoes and Roots..... "	34,699	105,223	1,038	3,159	1,294 98	2,037 51
Flour..... Brls.	15,963	15,939	1,597	1,543	2,419 97	2,743 01
Mackerel..... "	9,188	20,387	1,378	3,059	1,584 45	3,576 23
Herring..... "	685	1,478	103	312	185 79	442 49
Cod and other fish..... "			526	608	920 56	1,373 19
Oysters..... "	1,977	1,929	198	198	253 82	280 46
Fish Barrels..... No.	10,999	24,817	227	468	532 68	1,170 45
Timber, hewn and unhewn C. ft.	222,469	75,397	5,241	2,187	4,931 37	1,767 43
Lumber, sawn..... S. ft.	1,589,444	2,901,314	2,010	3,645	1,992 13	2,980 63
Shingles..... M.	4,253	4,544	639	796	863 49	873 15
Cordwood and Tanbark... Cords	1,498	1,945	2,444	3,489	1,663 82	1,981 03
Shingle Timber, &c..... Cars.		98		925		892 30
Coal..... "	54	123	489	1,053	337 11	717 62
Lime..... Brls.	1,023	1,871	106	204	103 75	220 58
Limestone..... Cars.	46	107	407	968	226 26	370 92
Brick and Building Stone. "	22	83	188	755	117 62	465 37
Mussel Mud..... "	238	63	2,174	574	648 64	170 00
Salt.....			1,029	1,571	1,070 40	2,005 21
Live Stock..... No.	4,488	6,320	748	863	1,636 91	1,949 03
Pressed Hay.....			16	433	18 56	418 41
Fresh Beef.....			77	83	222 81	295 48
Pork in carcass.....			166	248	515 60	710 61
Pork in barrels..... Brls.	377	3,083	57	462	108 00	798 78
Butter.....			42	37	155 62	143 49
Eggs..... Pkgs.	11,253	16,369	415	607	970 02	1,583 50
Merchandise.....			5,974	9,909	17,316 86	25,486 10
Wharfage, Storage, &c.....					932 23	838 49
Total.....			37,208	45,336	53,643 19	65,326 13

### STATEMENT OF PASSENGER TRAFFIC.

	1880.	1881.
Total number carried.....	90,533	102,937
Receipts.....	\$51,679 86	\$57,188 30
Receipt for each passenger.....	57.08	55.56

L. ARCHIBALD,  
*Superintendent.*

## PRINCE EDWARD ISLAND RAILWAY.

## MECHANICAL DEPARTMENT.

CHARLOTTETOWN, 20th August, 1881.

SIR,—I beg to submit a report of the working of the Mechanical Department of the Prince Edward Island Railway, for the year ended 30th June, 1881.

Appended are the following statements:—

- A. Statement of cost of locomotive power.
- B. Statement of performance and consumption of locomotives.
- C. Monthly statement of car mileage.
- D. Statement showing number of locomotives and cars.
- E. Comparative statement of the expenses of the Mechanical Department for the years 1880, and 1881.

Two old tank engines Nos. 6 and 8, have been laid aside, not being worth further repairs. Nos. 2, 3, 4 and 5 tank engines are doing very little service. They are running the Souris Express train, which consists of two cars only. Nos. 2 and 4, will require new tubes to keep them running even this light train. No. 10, is a heavy tank engine, and is very nearly used up. No. 9, is in very fair order and is used as a "shunter." No. 7 is in the shop under repairs, and when ready, will be in good order for shunting purposes.

Nos. 11, 12, 13, 14, and 16, Tender locomotives, have each received a set of new tubes. Nos. 13, 15 and 18 have received sets of steel tires. Nos. 11, 12, 13, 14, 15 and 17, have each received new tender frames, and trucks. No. 12, has a cracked fired-box, but will render considerable service yet, by careful attention. No. 17, will soon require a set of tubes, and steel tires. No. 18, will also soon require a set of tubes, and with some light running repairs, will be good for future service.

Nos. 19 and 20 freight engines, delivered late last November, have not been as serviceable as was expected. They were more in the shops, under repairs, during winter than on the road. From what has been done to them since, better results may be expected, in the future, as the English built engines grow older more extensive repairs are required. From this and the fact that the business is increasing, the eight engines numbering from 11 to 18 inclusive, have done much hard service. Nos. 19 and 20, will be serviceable for heavy loads and slow running, but we greatly need two more of the Baldwin type for general use, as our most reliable engines are in such constant demand, that we cannot keep them in the shops long enough for necessary repairs. I would, therefore, recommend the purchase of two more engines.

The first-class cars are in good order and are being very much improved by the adoption of the Miller platforms and vacuum brakes. They have also been given better ventilation, and increased closet accommodation. Four have been equipped with Miller platforms and vacuum brakes.

The second class cars and baggage cars, are in very good order. Two have been equipped with Miller Platforms and vacuum brakes.

The Postal cars and pay cars are in good condition.

The two Postal cars have also been equipped with Miller platform and vacuum brakes.

Two express trains have been equipped with the above improvements, which greatly add to the comfort of the travelling public. The old platforms, couplers and brakes will gradually be superseded by their introduction.

In reconstructing the Passengers Car Platforms we find the floor timbers weak. It will necessary in future to remove the weak timbers and substitute stronger ones.

If allowed to build four first class cars, of larger dimensions, it would be a great boon to the travelling public on our express trains in summer, as the older cars would give us increased accommodation for excursion trains. We are very short of cars for that purpose, having on all public occasions to temporarily seat platform cars, as the demand for all kind of rolling stock is increasing, the operation of re-seating these cars so often entails considerable expense on this department.

The conductors' vans are in good order.

The 10 ton box cars are also in very good order.

The 8 ton cars are deteriorating very fast.

The additional iron fastenings put on them have done good service, but now as the wood is getting tender, we will have to renew them more rapidly than in the past. Six were rebuilt during the year of 10 tons capacity.

The 10 ton platform cars are in good order, but the eight tons are shewing signs of weakness. Their renewal will also require additional attention in future. Three were rebuilt.

The 5 large snow ploughs are in good order.

The small engine ploughs are going out of service. A new plough will be built this autumn. It will also be necessary to rebuild two flanger cars.

The adoption of the Haggas Water Elevator is a great improvement on the former system of water supply. (See water expenses.) The remaining elevated tanks where it is possible to make the change will shortly be removed and the Haggas Water Elevator substituted.

I have the honor to be, Sir,

Your obedient servant,

A. STRONACH,

*Mechanical Superintendent and Storekeeper.*

L. B. ARCHIBALD, Esquire,  
Superintendent P. E. I. Railway,  
Charlottetown.



PRINCE EDWARD ISLAND RAILWAY.

MECHANICAL DEPARTMENT.

A.—STATEMENT of the Cost of Locomotive Power, for the Year ended 30th June, 1881.

Months.	Miles run by Engines, less Ballasting.	Cost of							Average Cost per 100 Miles.						
		Engineers Wages	Fuel.	Oil, Tallow, Waste, etc.	Repairs.	Water, including Tank and Pump repairs.	Miscellaneous, including expenses of Office and Engine-houses.	Total.	Engine Men.	Fuel.	Oil, Tallow, etc.	Repairs.	Water.	Miscellaneous.	Total.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1880—July.....	31,496	1,076 88	879 59	60 96	1,127 29	126 74	156 64	3,428 10	3 42	2 79	0 19	3 58	0 40	0 50	10 88
August.....	31,358	1,073 25	951 83	74 93	583 03	196 02	164 15	2,043 21	3 42	3 04	0 24	1 86	0 62	0 52	9 70
September.....	29,169	1,023 19	775 41	60 30	774 73	546 95	160 83	3,341 41	3 50	2 66	0 21	2 65	1 87	0 56	11 45
October.....	29,341	1,025 16	856 21	52 11	796 23	339 15	156 40	3,225 26	3 49	2 92	0 18	2 71	1 16	0 53	10 99
November.....	30,884	1,077 37	1,162 73	92 59	1,179 18	3,057 72	223 10	6,792 69	3 49	3 77	0 30	3 81	9 90	0 72	21 99
December.....	25,522	1,041 78	1,165 28	106 22	1,730 43	203 89	386 60	4,634 20	4 08	4 56	0 42	6 78	0 80	1 51	18 15
1881—January.....	25,230	1,117 23	1,509 24	123 44	1,191 72	63 73	309 40	4,314 76	4 43	5 98	0 49	4 72	0 25	1 23	17 10
February.....	21,511	1,168 29	1,280 47	112 30	1,168 47	53 70	265 26	4,048 49	5 43	5 95	0 52	5 43	0 25	1 24	18 82
March.....	19,069	1,033 65	785 54	84 89	1,104 45	41 07	192 70	3,242 30	5 42	4 12	0 44	5 79	0 22	1 01	17 00
April.....	17,758	790 60	610 33	93 68	1,615 34	34 62	140 26	3,284 83	4 46	3 44	0 52	9 10	0 19	0 79	18 50
May.....	23,472	898 56	849 07	113 18	765 16	3 18	143 57	2,772 72	3 83	3 62	0 48	3 26	0 01	0 61	11 81
June.....	30,108	1,025 19	1,084 16	123 59	824 83	302 41	142 59	2,897 95	3 40	3 60	0 41	2 74	1 00	0 47	9 62
Totals.....	314,918	12,351 15	11,909 86	1,098 19	12,860 86	4,364 36	2,441 50	45,025 92	3 92	3 78	0 35	4 08	1 38	0 78	14 29

A. STRONACH,  
Mechanical Superintendent and Storekeeper.

[1881]

## PRINCE EDWARD

## MECHANICAL

## B.—STATEMENT of the Performance and Cost of

Months.	Hours in steam.	Train Mileage.				Miles run by Engines.			
		Passengers.	Freight and Mixed.	Ballasting.	Piloting.	With train.	Light.	Shunting.	Total.
1880—July.. .....	3,520	11,203	13,810	433	257	25,703	81	6,206	31,990
August. ....	3,553	10,534	13,812	284	1,072	25,702	141	5,879	31,722
September.. ..	3,673	10,680	13,151	2,283	127	26,241	370	5,220	31,831
October.....	3,748	10,828	13,105	2,699	98	26,730	208	5,547	32,485
November.....	3,747	10,522	14,428	1,100	71	26,121	308	5,778	32,207
December .....	3,270	3,339	15,667	.....	851	19,857	46	5,619	25,522
1881—January .....	3,429	56	13,318	.....	7,807	21,181	312	3,737	25,230
February.....	3,585	.....	9,722	.....	7,926	17,648	579	3,284	21,511
March .....	2,459	.....	14,293	.....	953	15,246	296	3,527	19,069
April. ....	2,267	1,034	13,087	.....	165	14,286	99	3,373	17,758
May .. .....	2,991	5,214	13,671	531	.....	19,416	69	4,543	24,028
June. ....	3,573	11,148	13,422	1,012	.....	25,582	30	5,673	31,285
<b>Totals.....</b>	<b>39,815</b>	<b>74,558</b>	<b>161,486</b>	<b>8,342</b>	<b>19,327</b>	<b>263,713</b>	<b>2,539</b>	<b>58,386</b>	<b>324,638</b>

## ISLAND RAILWAY.

## DEPARTMENT.

## Locomotives, for the Year ended 30th June, 1881.

Total Mileage of		* Average of Cars per mile run with train.	Average Mileage.		Consumption.				Consumption per 100 Miles run by Engine.			
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 oil.	Pounds of tal-low.	Pounds of waste.
111,369	.....	4.37	9.09	3.48	8,629	760	499	196	26.97	2.37	1.56	0.61
127,975	.....	5.19	8.93	4.03	9,360	880	563	213	29.50	2.77	1.77	0.67
121,230	.....	5.65	8.66	3.88	9,251	812	576	273	29.06	2.55	1.80	0.85
133,878	.....	5.02	8.67	4.12	10,551	738	571	263½	32.48	2.27	1.75	0.81
124,881	68	4.80	8.60	3.88	11,983	794	611	265	37.20	2.46	1.86	0.82
96,586	2,830	4.18	7.80	3.78	10,792	808	550	260½	42.28	3.16	2.15	1.02
51,340	11,331	3.84	7.36	2.03	13,720	944	672	239	54.38	3.74	2.66	0.94
34,206	12,651	4.52	6.00	1.59	11,619	804	668	202	54.14	3.73	3.10	0.94
71,651	3,301	5.01	7.76	3.76	7,229	642	491	212	37.91	3.36	2.57	1.11
80,630	129	5.71	7.84	4.54	6,977	564	469	218	39.23	3.17	2.64	1.22
107,746	.....	5.55	8.03	4.48	10,635	848	617	258	44.26	3.52	2.56	1.07
112,920	.....	4.41	8.48	3.61	12,572	956	867	292	40.18	3.05	2.77	0.93
1,174,412	30,310	4.80	8.15	3.61	123,318	9,550	7,154	2,892	37.98	2.94	2.20	0.89

\* Deduct piloting in making these averages.

A. STRONACH,  
*Mechanical Superintendent and Store-keeper,*



## PRINCE EDWARD ISLAND RAILWAY.

## MECHANICAL DEPARTMENT.

## C.—MONTHLY STATEMENT of Car Mileage for the Year ended 30th June, 1881

Months.	First class.	Second class.	Postal Baggage & Express.	Box, Stock and Hay.	Platform.	Total.
1880—July .....	27,850	22,841	6,797	35,198	18,683	111,369
August .....	27,666	22,382	7,213	53,950	16,764	127,975
September .....	24,673	20,418	6,451	41,237	28,451	121,230
October .....	26,367	24,186	6,469	46,154	30,702	133,878
November .....	24,348	24,353	4,486	55,983	15,711	124,881
December .....	17,833	18,204	4,195	46,870	9,484	96,586
1881—January .....	13,107	10,553	5,215	18,377	4,088	51,340
February .....	8,680	6,557	5,114	9,323	4,532	34,206
March .....	14,311	11,391	5,640	24,690	15,619	71,651
April .....	14,042	15,125	4,110	29,575	17,778	80,630
May .....	18,762	20,041	4,122	44,123	20,698	107,746
June .....	24,396	26,846	1,879	33,891	25,908	112,920
Totals .....	242,035	222,897	61,691	439,371	208,418	1,174,412
Less Ballasting .....		5,697		202	46,094	51,993
Balance .....	242,035	217,200	61,691	439,169	162,324	1,122,419

A. STRONACH,

*Mechanical Superintendent and Storekeeper.*

## PRINCE EDWARD ISLAND RAILWAY.

## MECHANICAL DEPARTMENT.

## D.—STATEMENT showing the number of Locomotives and the various classes of Cars on hand, 1st July, 1880 and 1881.

Particulars.	Locomotives.	Classification.							Total.
		1st Class.	2nd Class.	Postal, Baggage & Express	Box and Stock.	Platform.	Vans.	Pay Car.	
On hand, 1st July, 1880 .....	17	14	12	2	150	100	3	1	282
Condemned during the year .....					6	3			9
Serviceable .....	17	14	12	2	144	97	3	1	273
Purchased during the year .....	2								2
Rebuilt during the year .....					6	3			9
Total Stock, 1st July, 1881 .....	19	14	12	2	150	100	3	1	284

A. STRONACH,

*Mechanical Superintendent and Storekeeper.*

**PRINCE EDWARD ISLAND RAILWAY.**

**MECHANICAL DEPARTMENT.**

**E.—COMPARATIVE STATEMENT of the Expenses of the Mechanical Department, Year ended 30th June, 1880 and 1881.**

	1881.	1880.
The miles run by trains were.....	255,353	244,691
do engines were.....	314,918	295,190
do cars were.....	1,122,419	1,010,483
do snow ploughs were.....	30,310	22,168
	\$ cts.	\$ cts.
The cost of locomotive power was.....	45,025 92	57,580 58
do repairs to cars was.....	12,587 92	13,595 72
do labor, oil and waste for packing was.....	643 28	718 15
do repairs to passenger cars was.....	6,762 00	6,076 66
do do postal, express and baggage cars was.....	800 51	137 50
do do freight cars and vans was.....	5,025 41	7,381 56
The cost of locomotive power per 100 miles run by trains was.....	17 63	23 53
do do do engines was.....	14 29	19 50
do do do cars was.....	4 01	5 69
The cost of repairs to cars per 100 miles run by trains was.....	4 93	5 55
do do do engines was.....	3 99	4 60
do do do cars was.....	1 12	1 34
The cost of labor, oil and waste for packing per 100 miles run by trains was....	0 25	0 29
do do do engines was..	0 20	0 24
do do do cars was.....	0 05	0 07
Repairs to passenger cars per 100 miles run by trains.....	2 64	2 48
do postal, express and baggage cars.....	0 31	0 05
do freight cars and vans..	1 96	3 01

**A. STRONACH,**  
*Mechanical Superintendent and Storekeeper.*

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CANADIAN PACIFIC RAILWAY.

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ACCOUNTANT'S OFFICE,

WINNIPEG, 24th October, 1881.

DEAR SIR,—I beg to transmit herewith the accounts for the operation of the Canadian Pacific Railway, for the year ending 30th June, 1881.

I have the honor to be,

Your obedient servant,

D. S. CURRY.

COLLINGWOOD SCHREIBER, Esq.,  
Chief Engineer, Government Railways.

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CANADIAN PACIFIC RAILWAY.

DR.

No. 1.—REVENUE ACCOUNTS Ten Months of the year ending 30th June, 1881.

CR.

Five Months ending 30th June, 1880.	Expenditure.	Ten Months of the year ending 30th June, 1881.	Five Months ending 30th June, 1880.	Receipts.	Ten Months of the year ending 30th June, 1881.
\$ cts.		\$ cts.	\$ cts.		\$ cts.
30,035 75	Locomotive Power, per Abstract 1.....	85,415 91	32,530 50	Passenger Traffic....	101,749 09
10,504 23	Car Expenses do 2.....	34,186 77	64,271 66	Freight Traffic.....	164,252 32
16,449 83	Maintenance Way and Works do 3.....	55,959 22	8,173 53	Mails and Sundries.....	25,496 65
10,501 83	Station Expenses do 4.....	31,133 61			
9,052 51	General Charges do 5.....	26,422 91			
76,544 15		233,118 42			
2,347 86	Car Mileage.....	3,826 56			
78,892 01		236,944 98			
26,083 68	Balance....., .....	54,553 08			
104,975 69	Totals.....	291,498 06	104,975 69	Totals.....	291,498 06

D. S. CURRY,  
Accountant, C.P.R.

WINNIPEG, 30th June, 1881.

[1881]

## CANADIAN PACIFIC RAILWAY.

## No. 2.—LOCOMOTIVE POWER.—(Abstract No. 1.)

Five Months ending 30th June, 1880.	—	Ten Months of the year ending 30th June, 1881.
\$ cts.		\$ cts.
956 86	Mechanical Superintendent's salary, Clerks, office and travelling expenses.....	2,187 72
7,754 33	Wages of Drivers, Firemen and Cleaners.....	25,332 61
15,717 00	Fuel.....	31,506 18
521 75	Oil, tallow, waste and small stores.....	2,534 42
5,006 46	Repairs to engines, tenders and engine tools.....	12,605 09
79 35	Miscellaneous.....	1,767 67
.....	Water, including pump and tank repairs.....	9,482 22
30,035 75	Total.....	85,415 91

D. S. CURRY,  
*Accountant, C.P.R.*

WINNIPEG, 30th June, 1881.

## CANADIAN PACIFIC RAILWAY.

## No. 3.—CAR EXPENSES.—(Abstract No. 2.)

Five Months ending 30th June, 1880.	—	Ten Months of the year ending 30th June, 1881.
\$ cts.		\$ cts.
485 00	Repairs to passenger cars.....	2,541 92
225 00	Repairs to postal, express and baggage cars.....	1,635 65
3,341 42	Repairs to freight cars and vans.....	10,823 40
4,940 67	Wages of Conductors, Train Baggage Masters and Brakesmen.....	18,069 48
343 86	Oil and waste for packing.....	165 53
1,000 78	Small stores and fuel.....	596 81
167 50	Miscellaneous.....	354 00
10,504 23	Total.....	34,186 79

D. S. CURRY,  
*Accountant, C.P.R.*

WINNIPEG, 30th June, 1881.

## CANADIAN PACIFIC RAILWAY.

## No. 4.—MAINTENANCE OF WAY AND WORKS.—(Abstract No. 3.)

Five Months ending 30th June, 1880.		Ten Months of the year ending 30th June, 1881.
\$ cts.		\$ cts.
139 50	Engineer's salary, Clerks, office and travelling expenses.....	
12,094 62	Wages in repairing roadway, fences and semaphores, including new sidings laid in.....	46,176 00
	Rails and fastenings, including new sidings laid in.....	
	Sleepers.....	
	Timber, lumber, etc., for repairs to bridges, cattle guards, crossings, fences, etc.....	252 60
	Repairs to wharves—Miscellaneous.....	381 26
	do buildings and platforms, including extensions, etc.....	324 16
	do snow ploughs, flangers and tools.....	581 59
4,215 71	Clearing ice and snow.....	8,243 61
16,449 83	Total.....	55,959 22

D. S. CURRY,  
Accountant, C.P.R.

WINNIPEG, 30th June, 1881.

## CANADIAN PACIFIC RAILWAY.

## No. 5.—STATION EXPENSES.—(Abstract No. 4.)

Five Months ending 30th June, 1880.		Ten Months of the Year ending 30th June, 1881.
\$ cts.		\$ cts.
8,073 86	Salary and wages of Station-Masters, Agents, Clerks, Telegraph Operators, Station Baggage Master, Yard Masters, Switchmen, Watchmen and Laborers.....	25,395 80
2,386 11	Fuel, oil, light, stationery, tickets and other incidental expenses.....	5,638 46
41 86	Miscellaneous.....	99 35
10,501 83	Total.....	31,133 61

D. S. CURRY,  
Accountant, C.P.R.

WINNIPEG, 30th June, 1881.



## No. 6.—CANADIAN PACIFIC RAILWAY.

## GENERAL CHARGES. (Abstract No. 5.)

Five Months ending 30th June, 1881.	—	Ten Months of the year ending 30th June, 1881.
\$ cts.		\$ cts.
2,903 81	General Superintendent and Superintendent and Assistants' salaries, Train Despatchers, Clerks and Passenger and Baggage Agents and Assistant General Freight Agents, office and travelling expenses.....	6,791 80
4,641 73	Accounting Department, salaries of Accountant, Auditor, Paymasters and Cashiers, Clerks, office and travelling expenses .....	8,868 86
10 00	Damages to men, animals and goods.....	3,632 88
.....	Ferry Service .....	9 15
244 17	Telegraph expenses (not including pay to Operators) .....	888 51
1,252 80	Miscellaneous, printing, advertising, etc. ....	6,231 71
.....	Agency expenses.....	.....
9,052 51	Totals .....	26,422 91

D. S. CURRY,  
*Accountant, C.P.R.*

WINNIPEG, 30th June, 1881.

No. 7.—CANADIAN PACIFIC RAILWAY.

DR.

GENERAL STORES ACCOUNT, for ten Months of the Year ended 30th June, 1881.

CR.

1881.		\$	cts.	1881.		\$	cts.
June 30....	To Balance .....	11,028	06	June 30...	To Issues during the year .....	149,283	85
	Purchases during the year.....	97,990	10				
	Charges from other Departments.....	13,901	53				
	Pay-rolls .....	26,364	16				
	Total .....	149,283	85		Total .....	149,283	85

D. S. CURRY,  
*Accountant, C.P.R.*

WINNIPEG, 30th June, 1881.

[1881]

No. 8 -- CANADIAN PACIFIC RAILWAY.

DR.

GENERAL BALANCE, for ten Months of the Year ending 30th June, 1881.

CR.

	\$ cts.		\$ cts.
Construction Suspense Account.....	9,187 53	Dominion Account .....	116,803 03
Canadian Pacific Railway Company.....	110,415 94	Intercolonial Railway.....	3,331 20
Chicago Milwaukie St. Paul Co.....	196 11	Contract No. 15 (Whitehead & Co.).....	22 90
Vermont Central Railway.....	83 15	Michigan Central Railroad.....	
St. Boniface Junction Agent.....	24 07		
Delaware Hudson Canal Co.....	4 32		
St. Paul and Duluth Railway.....	4 34		
St. Boniface Ticket Agent.....	241 67		
<b>Total .....</b>	<b>120,157 13</b>	<b>Total.....</b>	<b>120,157 13</b>

D. S. CURRY,  
Accountant, C.P.R.

WINNIPEG, 30th June, 1881.

[1881]

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## No. 9.—CANADIAN PACIFIC RAILWAY.

COMPARATIVE STATEMENT of Averages for ten Months of the Year ending  
30th June, 1881.

	1880.	1881.
Mileage of railway open .....	160	268
Engine mileage .....	86,814	315,343
Train do .....	69,164	214,607
Car do .....	692,485	2,580,609
Receipts per engine mile .....	\$ 1·20·92	Cents. 92·4384
do mile of railway .....	656·10	1087·68
Percentage of passenger earnings to gross receipts.....	Cents. 31·00	Cents. 0·35
do freight do do .....	61·00	0·56
do other do do .....	8·00	0·09
Expenses per engine mile—		
Drivers', Firemen's and Cleaners' wages .....	8·93	8·03
Fuel .....	18·10	9·99
Oil, tallow, waste and small stores .....	0·60	0·80
Repairs to engines.....	5·77	4·00
Water and bank repairs .....		3·01
Miscellaneous.....	0·09	0·56
Total .....	33·49	26·39
Mechanical Superintendent's salary, office and travelling expenses.....	1·10	0·69
	34·59	27·08
Locomotive power, per engine mile.....	34·59	27·08
Car expenses do .....	12·10	10·84
Maintenance way and works do .....	18·95	17·75
Station expenses do .....	12·10	9·87
General charges do .....	10·43	8·38
	88·17	73·92
Car mileage.....	2·70	1·22
Total per engine mile.....	Cts. 90·87	Cts. 75·14
Locomotive, power, per train mile.....	43·43	39·80
Car expenses do .....	15·18	15·93
Maintenance way and works do .....	23·78	26·08
Station expenses do .....	15·18	14·50
General charges do .....	13·09	12·31
	110·66	108·62
Car mileage .....	3·41	1·78
Total per train mile.....	114·07	110·40
Working expenses per mile of Railway.....	493·08	884·12

D. S. CURRY,  
Accountant, C.P.R.,

WINNIPEG, 30th June, 1881.

## A.—CANADIAN PACIFIC RAILWAY.

STATEMENT shewing the number of Locomotives and the various classes of Cars for ten months of the year ending the 30th June, 1881.

Particulars.	Loco- motives.	First class Pas- senger.	2nd class Pas- senger.	Baggage and Smoking.	Baggage.	Box.	Platform.	Total.
On hand.....	10	6	.....	2	1	21	148	188

## B.—CANADIAN PACIFIC RAILWAY.

STATEMENT of Locomotive and Car Mileage for ten Months of the Year ending 30th June, 1881.

Months.	Locomo- tive Mileage.	Car Mileage.						
	Freight and Pas- senger.	First class Pas- senger.	2nd class Pas- senger.	Express and Baggage.	Box.	Plat- form.	Total.	Average, Passenger and Freight.
1880—July.....	12,412	9,858	200	9,212	45,146	155,995	220,411	.....
August.....	11,955	10,668	.....	8,490	55,155	184,054	258,367	.....
September....	12,132	10,595	.....	8,627	67,494	191,460	278,176	.....
October.....	14,386	14,301	.....	10,609	62,198	198,867	285,975	.....
November.....	12,813	10,430	.....	8,147	60,995	102,057	181,629	.....
December.....	21,568	15,221	.....	8,328	103,613	86,206	213,368	.....
1881—January.....	21,093	12,759	.....	9,367	103,148	109,785	235,059	.....
February.....	23,610	12,040	.....	11,381	70,517	132,068	226,006	.....
March.....	29,573	18,624	.....	15,459	134,742	201,070	369,895	.....
April.....	24,290	21,615	.....	12,765	95,932	181,441	311,753	.....
May.....	.....	.....	.....	.....	.....	.....	.....	.....
June.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals.....	183,852	136,111	200	102,385	798,940	1,543,003	2,580,639	.....

C.—CANADIAN PACIFIC RAILWAY.

ABSTRACT of Locomotive Returns for ten Months of the Year ending 30th June, 1881.

Months.	Consumption.						Average Consumption per 100 miles.				
	Hours in Steam.	Locomotive Mileage.	Cords of Wood.	Pints of Oil.	Pounds of Tallow.	Pounds of Waste.	Miles to Hours in Steam.	Cords of Wood.	Pints of Oil.	Pounds of Tallow.	Pounds of Waste.
1880—July .....	3,091	23,390	600	1,003	413	188	7·56	2·56	4·28	1·72	0·80
August.....	3,087	24,473	713	1,013	421	241	7·82	2·91	4·13	1·72	0·98
September .....	3,404	25,675	744½	1,293	695	448	7·54	2·89	5·03	2·70	1·74
October.....	3,778	28,326	1,031	1,460	574	388	7·49	3·63	5·15	2·02	1·36
November .....	3,202	23,663	1,033	1,160	399	289	7·39	4·36	4·90	1·64	1·22
December .....	4,710	35,884	1,600	1,861	478	311	7·61	4·45	5·10	1·33	0·86
1881—January.....	4,333	33,211	1,230	1,869	505	472	7·66	3·70	5·62	1·52	1·42
February.....	4,976	37,517	1,332	1,633	422	452	7·53	3·55	4·35	1·12	1·20
March .....	5,628	45,471	1,400	2,354	489	496	8·07	3·07	5·17	1·07	1·09
April.....	4,691	37,733	1,281	1,786	483	627	8·04	3·39	4·73	1·28	1·66
Totals.....	40,900	315,343	10,964½	15,432	4,879	3,912	7·71	3·47	4·89	1·54	1·24

[1881]



## D.—CANADIAN PACIFIC RAILWAY.

STATEMENT of the cost of Locomotive Power for each Month, from July, 1880, to April, 1881.

Months.	Miles run by Engines.	Engineers' Wages.	Fuel.	Oil, Tallow and Waste.	Repairs to Engines, Tenders and Tools.	Mis- cellaneous, Engine- house, Mechanical Staff.	Total.	Average cost per 100 Miles.					
								Wages.	Fuel.	Oil, Tallow and Waste.	Repairs.	Miscellane- ous.	Total.
		\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1880—July. ....	23,390	1,511 64	2,340 00	298 60	865 64	493 54	5,509 42	6 46	10 00	1 27	3 70	2 11	23 55
August .....	24,473	1,735 57	2,796 86	199 53	759 51	416 21	5,907 68	7 09	11 42	0 81	3 10	1 70	24 13
September.....	25,675	1,870 75	2,885 65	280 14	791 85	417 67	6,246 06	7 48	11 23	1 09	3 08	1 62	24 33
October....	28,326	2,134 05	3,883 50	273 38	1,005 13	737 95	8,034 01	7 53	13 71	0 96	3 54	2 60	28 36
November..	23,663	1,923 04	4,056 00	216 52	1,082 16	636 25	7,914 41	8 12	17 14	0 91	4 57	2 68	33 44
December..	35,884	2,971 29	6,020 00	392 67	1,187 89	1,090 40	11,662 25	8 28	16 77	1 09	3 31	3 03	32 49
1881—January.....	33,211	2,888 02	4,589 00	439 20	1,927 40	1,952 28	11,795 90	8 69	13 81	1 32	5 80	5 87	35 51
February.....	37,517	3,306 51	4,948 00	376 45	1,713 01	1,054 27	11,398 24	8 81	13 18	1 00	4 56	2 81	30 38
March. ....	45,471	3,251 02	4,769 17	413 53	1,534 88	1,505 56	11,474 16	7 14	10 48	0 90	3 37	3 31	25 23
April.....	37,733	3,740 72	4,424 00	384 87	1,737 18	561 48	10,848 25	9 91	11 72	1 02	4 60	1 48	28 75
	315,343	25,332 61	40,712 18	3,274 89	12,605 09	8,865 61	90,790 38	8 03	12 91	1 03	3 99	2 81	28 79
ADD--Engine hire(White- head's account) .....						4,572 00	4,572 00						
LESS--Transfer of stores balance and C.P.R. Co Valuation.....			9,206 00	740 47			95,362 38						
			9,206 00	740 47			9,946 47						
Total, .....	315,343	25,332 61	31,506 18	2,534 42	12,605 09	13,437 61	85,415 91	8 03	9 99	0 80	3 99	4 26	27 08

## CANADIAN PACIFIC RAILWAY.

GENERAL EXPENSES of the Mechanical Department, for ten Months of  
the Year ending 30th June, 1881.

The miles run by trains were.....	214,607
do engines were.....	315,343
do cars were.....	2,580,639
	\$ cts.
The cost of locomotive power was.....	85,415 91
do repairs to cars was.....	15,000 97
do oil and waste for packing was.....	165 53
do repairs to passenger cars was.....	2,541 92
do do postal, express and baggage cars was.....	1,635 65
do do freight cars, etc., was.....	10,823 40
	-----
The cost of locomotive power per 100 miles by train was.....	3 98
do do do engines was.....	2 71
do do do cars was.....	3 30
	-----
The cost of repairs to cars per 100 miles by train was.....	6 99
do do do engines was.....	4 75
do do do cars was.....	0 58
	-----
The cost of oil and waste for packing per 100 miles by train was.....	0 07
do do do engines was.....	0 05
do do do cars was.....	0 00
	-----
Repairs to passenger cars per 100 miles run by them.....	1 86
do express and baggage cars do.....	1 59
do freight cars and vans do.....	0 46

D. S. CURRY,  
*Accountant.*

WINNIPEG, 30th June, 1881.

## WINDSOR BRANCH RAILWAY.

RAILWAY OFFICE,  
MONCTON, N. B., 20th October, 1881.

SIR,—I have the honor to transmit the following accounts showing the working of the Windsor Branch Railway during the year which ended 30th June, 1881 :

No. 1. Revenue Account.

“ 2. Maintenance of way and works.

“ 3. General Balance.

“ 4. Statement of monthly earnings.

I also send you the Engineer's report 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 heavy repairs and improvements commenced during the period covered by my last year's report were continued, and the new station house and the new freight shed at Windsor were completed, and other stations were repaired.

The masonry of bridges and culverts received extensive repairs, and the wood work of bridges was also repaired and renewed where necessary.

A portion of the main track, where the iron rails were considerably worn, was relaid with steel rails, and this work will be continued each year as it may be needed.

A large number of new sleepers were put into the track, and it is now in good running order.

I have the honor to be, Sir,

Your obedient servant,

D. POTTINGER.

COLLINGWOOD SCHREIBER, Esq.,  
Chief Engineer, Government Railways,  
Ottawa.



WINDSOR BRANCH RAILWAY.  
REVENUE ACCOUNT, year ending 30th June, 1881.

Expenditure.	Amount.	Receipts $\frac{1}{3}$ earnings.	Amount.
	\$ cts.		\$ cts.
Maintenance, Way and Works— Abstract No. 1.....	20,502 26	Passenger Traffic.....	7,065 64
		Freight Traffic.....	13,191 02
		Mails .....	959 87
			21,216 53
		Deduct between Halifax and Wind- sor Junction for 7 months ending 30th June 1880, over credit in previous year.....	3,753 69
		Balance.....	17,462 84
	20,502 26		3,039 42
			20,502 26

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

MONCTON, N.B., 30th June, 1881.

WINDSOR BRANCH RAILWAY.  
Maintenance of Way and Works.

Particulars.	Amount.
	\$ cts.
Accountant office and expenses.....	1,125 96
Repairs of track.....	6,355 15
Rails and fastenings.....	1,969 37
Sleepers.....	2,496 80
Switch Locks.....	7 15
Bridges.....	1,442 21
Signals.....	6 14
Culverts and Cattle Guards.....	539 51
Buildings and platforms.....	5,287 51
Fences.....	338 07
Hand Cars and Trolleys.....	134 96
Tools and repairs.....	161 53
Removing snow and ice.....	508 90
Miscellaneous.....	129 00
	20,502 26

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

MONCTON, N.B., 30th June, 1881.

## WINDSOR BRANCH RAILWAY.

DR.		GENERAL BALANCE.		CR.	
1881.		\$ cts.	1881.		\$ cts.
June 30.	Windsor and Annapolis Railway.....	1,978 74	June 30.	Dominion account.....	6,886 37
	Intercolonial Railway .....	1,369 84			
	Stores.....	3,537 79			
	Total .....	6,886 37		Total .....	6,886 37

R. B. BOGGS,  
Accountant, W.B.Ry.

MONCTON, N.B., 30th June, 1881.

## WINDSOR BRANCH RAILWAY.

MONTHLY STATEMENT of Receipts  $\frac{1}{2}$  Earnings.

Months.	Passengers.	Freight.	Mails, &c.	Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
1880—July .....	826 75	1,110 00	80 76	2,017 51
August.....	781 01	909 06	80 76	1,770 83
September .....	993 59	1,489 25	80 75	2,563 59
October .....	631 26	1,466 71	80 75	2,178 72
November .....	588 80	1,710 08	80 76	2,379 64
December .....	569 46	1,226 11	80 76	1,876 33
1881—January.....	328 85	731 86	78 71	1,139 42
February.....	322 18	963 66	78 71	1,364 55
March.....	438 46	982 47	78 71	1,499 64
April.....	456 75	1,039 63	79 74	1,576 12
May.....	494 11	741 51	79 73	1,315 35
June .....	634 42	820 68	79 73	1,534 83
Total.....	7,065 64	13,191 02	959 87	21,216 53
Deduct between Halifax and Windsor Junction for 7 months ending 30th June, 1880, over-credited in previous year.....				3,753 69
				17,462 84

R. B. BOGGS,  
Accountant, W.B.Ry.

MONCTON, N.B., 30th June, 1881.

ENGINEER'S OFFICE,  
MONCTON, N.B., August 1st, 1881.

SIR,—I have the honor to submit the following report on the maintenance of the Windsor Branch for the year ending 30th June, 1881:—

This branch is 32 miles in length.

For reasons stated in my report of 1880, the expenses of maintenance for the past year have been large.

With the exception of one mile of steel rails, put down during the past year, the main track and sidings are laid with iron rails. They are six years old and many of them are badly worn.

It will be necessary to renew 4 or 5 miles every year with steel until the iron is replaced.

12,854 new sleepers were put in track during the past year.

A gang of carpenters was engaged the whole working season renewing cattle guards, culverts, and bridge timbers.

Next year the renewals under this head will not be nearly so heavy.

Improvements costing about \$5,000, were made at Windsor.

A passenger station with commodious dwelling apartments in the second flat, for the agent, was erected, also a freight shed 120 feet long by 35 feet wide.

The sidings of the yard were entirely rearranged and made much more convenient for the handling of traffic.

A platform 250 feet long by 12 feet wide was built.

The approaches to the new station and freight shed were graded and ballasted.

New cattle pens and approaches were provided at the south end of the yard.

An addition was made to the station at Beaver Bank to provide additional freight accommodation.

Necessary repairs were made to the stations and platforms at Elmshouse, Newport, and Mount Uniacke.

A gang of masons was engaged the whole of the working season in overhauling and pointing the masonry of bridges and culverts throughout the line.

The track scale at Windsor was so badly worn that it had to be taken up for repairs, and rebuilt.

The foundation of masonry had also to be renewed.

The track is in good working order.

As far as I can ascertain there has not been a wheel off the track during the year.

I have the honor to be, Sir,

Your obedient servant,

P. S. ARCHIBALD,

*Engineer.*

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



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## APPENDIX No. 4.

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DEPARTMENT OF RAILWAYS AND CANALS.  
 SUPERINTENDING ENGINEER'S OFFICE,  
 MONTREAL, 19th October, 1881.

SIR,—I have the honor to submit the following annual report on the works under my charge, for the fiscal year ended on 30th June, 1881.

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

They have been maintained in an efficient state, and no accident occurred on them during the year.

F. BRAUN, Esq., Secretary,  
 Department of Railways and Canals,  
 Ottawa.

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### LACHINE CANAL.

This canal was closed by ice on the 27th November, 1880, and opened again for traffic on 1st of May, 1881.

There was an interruption to the navigation for the first five days of the fiscal year caused by an accident on the 29th of June, which displaced the gates of locks one and two, and which was fully reported upon in last year's report. No other interruption to traffic occurred during the remainder of the year.

From the 7th of July, until the close of the season, the staff of men employed on repairs were engaged in repairing the damaged lock gates, and other works injured by the accident above mentioned, building a large lifting scow, and doing the necessary repairs on the line of the canal.

The water was drawn out of the canal, on the 14th and 15th April, and was let in again, on the 27th.

### REPAIRS.

The principal repairs made during the year were as follows :—

#### *Lock No. 1, at lower entrance.*

This lock, which is overflowed by the winter and spring flood of the St. Lawrence, was dismantled as usual at close of navigation.

All the rigging was stripped from the gates, lockmen's shanty removed, and gates bolted back to lock walls, to prevent displacement by ice shoves during the winter. In the spring new iron rollers in oak frames were placed in the chain wells of lower gates. The gates received several new mullions, and all the iron was overhauled and repaired where necessary.

#### *Lock No. 2.*

One of the pair of framed spare gates placed in the lower end of this lock at the time of the accident having shown signs of weakness before it had been a month in use, was removed and replaced by a pair of solid built gates. The framed gates,

however, have since been thoroughly repaired and strengthened and are now serviceable. New chain roller frames were placed in the lower wells and new working chains and screws were furnished.

*Lock No. 3, St. Gabriel.*

A leak under the lower mitre sill was stopped by taking up the flooring above the sill, and filling underneath with concrete, after which the floor was relaid, caulked and pitched. New working chains and screw brasses were furnished for the lower gates, and the mitre sill straps were renewed.

*Lock No. 4, Côte St. Paul.*

This lock bottom was thoroughly cleaned, the lower mitre sill was repaired, and a new set of mitre sill straps put on. One new anchor timber for suspension gear was furnished to the lower gate on north side. Some working screw brasses were also furnished, and the hand rails and stanchions straightened.

*Lock No. 5.*

No repairs were required except straightening the hand rails and stanchions, which was done.

WEIRS.

There are six weirs on this canal, two of them situated at Basin No. 2, one at each of the locks Nos. 3 and 4, and the two supply weirs at Lachine.

*Weir No. 2.*

This weir is situated on south side of Basin No. 2, near Tates Dry Dock. It received three new lifting gates, new working screws and brasses.

*Weir No. 3 at Lock No. 3.*

Although this is a new weir, it was found, when the water was drawn off, to be in a leaky condition. A leak had found its way under the sheet piling, passed under the breast wall and raised some of the flooring of the tail race. The plank floor above the breast wall was taken up, the spaces between the timbers well filled with concrete, flooring relaid, and joints caulked and pitched.

*Weir No. 4 at Lock No. 4, Côte St. Paul.*

When the water was drawn off, last spring, it was found that serious damage had been caused by a leak from the head race to the mills, which are on the south side adjoining the weir. The whole of the flooring of the tail race had to be renewed, and underneath and between the timbers filled with concrete, as all the old filling had been washed out. A double floor of three inch and two-inch plank was then laid down, and the principal part of the side sheeting renewed. The working machinery of the weir gates was repaired and put in good order.

*Weirs Nos. 5 and 6 at Lachine.*

These weirs required but trifling repairs. A few head castings, staples, &c., were renewed.

*Bridges Nos. 1 and 2.*

Bridge No. 1 at Mill Street crossing, which is a swing bridge spanning the upper entrances of the new and old locks No. 2, had its upper course of two-inch oak

flooring renewed. Bridge No. 2, at Wellington Street and the two stationary bridges connected with it, had also the top flooring of 2-in. oak plank renewed.

*Bridge No. 3, at St. Gabriel's Locks.*

This is a new swing bridge covering the two locks, erected last spring by contract, and required no ordinary repairs. But on the 1st of June, a slight injury was done to it by a barge striking it and bending the two bottom chords near the south-east end. The cost of the repairs, amounting to \$39.00, was paid by the owner of the barge.

*Bridge No. 4, or Brewster's Bridge.*

The swing bridge, as well as the two stationary bridges, received new flooring.

*Bridge No. 5, at Cote St. Paul.*

This bridge, and the two stationary bridges connected with it, were newly planked, and some trifling repairs were done to the working machinery.

*Bridge No. 6, at Lachine.*

The swing bridge over the old lock, and five stationary bridges were all floored anew.

*Flour sheds and wharves.*

Five of these sheds situated on Basin No. 2, had their flooring thoroughly repaired. The sheet iron roof covering of No. 2 shed was renewed throughout and painted, and the boarded roofs of sheds 3, 4 and 5, were thoroughly repaired. The water spouts and conductors of the two sheds at St. Gabriel Basin were also repaired.

The wharves have been kept in good order, over 5,000 pieces of 3" deals, and 2,000 lineal feet of sleepers being used for their repair.

*Dwelling houses, fences, &c.*

The houses belonging to the Department, in which a number of the canal staff reside who are entitled to lodgings, have been kept in tenable condition, although the buildings being old the repairs were expensive.

The fence, between the old canal and Front street in the town of Lachine, three fourths of a mile long, was repaired and painted.

A new fence was built round the tail race of the weir at Mill Street bridge, and the lower part of the raceway was covered with plank on cedar sleepers to prevent accidents.

*Dock Walls and Head Races.*

The wall in front of the mills, south side of Basin No. 2, was pointed with cement last spring where necessary. On this basin the Government are bound to keep the flumes in repair across the reserve of ten feet wide between the buildings and face of the Dock Wall. When the water was drawn off last spring a bad leak was found under the basin wall, which had forced up the flooring of the flume leading to Gould's Mill.

This was repaired by renewing the sheet piles, and filling up the space washed out, in front of the wall, and in the flume, with concrete.

*Banks, Towing Path, &c.]*

The light rip-rap wall facing the banks on sections 6, 7 and 8 were repaired in many places where they had been displaced. The banks, towing path and water



tables were put in good order for their whole length. Two hundred and sixty mooring posts were renewed, of which about one half were new, and the remainder, having been displaced, were taken up and reset.

The off-take drains leading from the canal lands to the River St. Pierre were cleaned, and the River St. Pierre, where it passes through the Lachine Swamp, was also cleaned, so that this swamp has been kept free from water, and is now almost dry.

#### *Piers and Booms.*

The guide piers and booms and the supporting piers and cross booms in the Timber Basin at Lachine received a large amount of repairs, and are now in good order.

#### *Scows.*

There were but two small flat scows for repairs belonging to this canal. At the time of the break in June, 1880, the want of a large scow to handle lock gates was very much felt. The small scows were put in good order, and a large lifting scow has been built. This scow is furnished with three powerful derricks and two heavy winches. With this apparatus and the aid of a diver the men belonging to the lock where it may be required can handle the gates without any extra help.

#### *Telephone.*

By an arrangement with the "Bell Telephone Company" a line of telephones has been established on this canal, by which the locks are connected with the Canal Office and the Superintendent's residence. It is found to be very useful in the management of the canal, and has given general satisfaction.

### NEW WORKS OF ENLARGEMENT.

#### *Sections Nos. 1 and 2.*

The works on these sections for which James Worthington and Co., were the contractors, were completed in November, 1879. They consisted in the construction of the two lower locks, with an intervening basin surrounded by a dock wall: deepening of basin No. 2, to 19 feet, and the construction of Wellington Basin with dock walls and wharves.

The final estimates were forwarded to the Chief Engineer in September, 1880, and the contractors have been settled with in full.

#### *Section No. 3.*

Messrs. McNamee, Gaherty and Frechette, were contractors for this Section, which included the masonry of the St. Gabriel locks, weir and bridge, also of two bridges of the Wellington Street crossing, one for the Grand Trunk Railway and the other for the street traffic, and dock and side wall, together with the widening and deepening of the prism of canal.

The only work remaining to be done at date of last report was a portion of the masonry for the swing bridge at the St. Gabriel Locks. This masonry could not be built until the Department was prepared to proceed with the superstructure, which could only be erected when the navigation was closed. The final estimate was prepared and a settlement made with the contractors in August, 1881.

#### *Swing Bridge.*

During the months of March and April the masonry remaining to be built for this bridge was completed by day's work as well as the approaches, by Mr. Superin-

tendent Conway. At the same time the superstructure was being prepared by Mr. John McDougall, who had it erected complete and in use on the 7th of May.

*Sections Nos. 4 and 5.*

These sections were completed and final settlement made with the contractors previously to date of last report.

*Sections Nos. 6, 7, 8, 9, and 10.*

All the works under these contracts were completed previously to last report. The final estimates have been closed and forwarded to the Chief Engineer, but in consequence of various claims presented by the contractors no settlement has yet been arrived at.

*Section No. 11.*

This is the only section which is not completed. The work on it consists in the construction of a new entrance channel and harbour at Lachine on the South-East side of the present entrance. This harbour is separated from the river by a pier 6,200 feet in length.

For about half its length from the shore, this pier is formed of a double range of crib work, the space between which is lined with sheet piling and filled with puddle. Cross dams being built from this, formed two water tight basins, the lower one of which has been unwatered for three seasons and the excavation of the channel proceeded with.

Work in the bottom having been suspended during the winter of 1879-80, and necessary repairs made to the dams, the pumps were started on 16th July 1880, and in three days afterwards the excavation was commenced in bottom, and carried on till 20th November when the pumps were stopped for the season, as the leakage had increased to such an extent owing to a rise in the river that it was impossible to keep the pit dry.

From that time up to the close of the fiscal year (30th June), nothing had been done save getting the pumps into working order and building cement walls on cribs above the coffer dam. But in August the coffer dam was repaired, by driving long piles down through the puddle, after which the pumps were again started, and during the month of September, most of the remaining excavation has been removed up to the lower cross dam.

The contractors are now preparing to remove their pumps and other plant to the next and last division of the coffer dam.

*Lock gates, etc.*

Timber for gates for the new locks having already been provided by the Department a contract for their construction was entered into with Messrs. O'Brien, Gordon and Bergin in July 1880, under which four pairs have been built and placed in the two lower locks, and the remainder are well advanced towards completion.

Preparatory to erecting these gates the bottom of lock No. 1. was cleaned by aid of a steam dredge and divers, hollow quoins trimmed; oak roller frames placed in the wells, for the working chains, and oak snubbing posts placed at Locks Nos. 2, 3 and 4. These works which were not included in any contract were done by Mr. Conway the Superintendent.

BEAUHARNOIS CANAL.

This canal was closed by ice on the 28th of November, 1880, and reopened for navigation on 25th April, 1881. There was no interruption to the traffic during the open period of the fiscal year, which was 217 days.

*Locks and Lock Gates.*

Six pairs of old and damaged gates were hauled out at the workshops, of which four pairs were taken apart and such of the material, as was fit for the purpose, saved for building or repairing other gates. During the first part of the fiscal year two pairs of gates which had been commenced were finished and placed in Lock No. 8. During the present summer two other pairs have been rebuilt. One pair of these were placed in Lock No. 6, and the other pair were put in the lower end of Lock No. 13.

The model upon which the gates on this canal are built is, I consider, the most perfect of all those adopted up to this day on our canals. Planned according to the latest improvements it offers an advantage not to be met elsewhere. The width of the mitre on the upper portion of the gate measures over 30 inches. This disposition lately prevented a serious accident when a boat struck the gates but did not unmitre them completely.

*Lock No. 6.*

This is the lower lock on this canal. The upper gates were repaired and a waling piece was put on one of the lower gates. Two fender timbers and one bumping post were placed. Two valve chambers and one crab were renewed and one valve rod repaired.

*Lock No. 7.*

Lower gates were raised and adjusted; two chain rollers were renewed and one new bumping post supplied.

*Lock No. 8.*

The lower gates were raised and adjusted.

*Lock No. 9.*

One new crab was furnished and one repaired. Some slight repairs were made to the upper gates. One new bumping post was set up and another repaired.

*Lock No. 10.*

All the gates were raised and adjusted. Three new crabs were supplied, two straps on lower gates repaired, and two chain rollers renewed.

*Lock No. 11.*

The lock bottom was cleaned of dirt, and stones, and slight repairs were made to the gates. One new bumping post and two fenders were placed.

*Lock No. 12.*

The four gates were raised and adjusted. All the working chains and one crab and one fender were renewed.

*Lock No. 13.*

Upper gates raised and adjusted. One crab, two fenders and one chain roller were renewed, and one chain roller repaired.

*Lock No. 14 or Guard Lock.*

Ordinary repairs were made at this lock. The bottom and mitre sills were examined by the diver, who reports a leak under the upper sill, but as the foundation



is solid rock it is not dangerous. A leak showed itself at the same place six years ago when it was staunched with gravel. To make a thorough job a coffer dam must be built above the lock which may then be unwatered and the leak stopped with concrete and grout.

### *Bridges.*

The swing bridge at Lock No. 7, was furnished with a new guard timber, and the flooring was renewed. A new fixed bridge was built over the waste weir, and the floor and railing of road bridge over tail race was renewed. At Lock No. 8, a new guard timber was supplied to the swing bridge, a new pivot put under it and part of track renewed. Both approaches were also rebuilt, and a stationary bridge was built over the waste weir. Swing bridge at Lock No. 9, was raised and pivot renewed. A large fixed bridge was also built over raceway of weir. The swing bridge at Lock No. 10, was raised and rollers renewed, a guard timber was put up and approaches repaired. Swing bridge at Lock No. 11, had suspension cables taken off, and repaired, a new pivot beam supplied, bottom girders strengthened, the flooring renewed and new approaches built. New approaches were also built to the bridge at Lock No. 12; and at Lock No. 13, the bridge was raised and track renewed. At St. Timothy bridge, the north east corner of timber abutment was rebuilt above water line and the other piers repaired. Swing bridge at Lock No. 14, received only slight repairs as it must be renewed before next summer.

There are 120 farm bridges over back ditches. Six of these were renewed, and all the others examined and repaired where necessary.

A scow was built for Ferry No. 1, and another for the canal repairs.

### *Buildings and Fences.*

All the Government buildings were kept in good repair. The lockmaster's house at lock No. 9 was entirely renewed except walls and roof. Porches, double doors and windows were supplied to a number of the houses of lockmasters and lockmen, and slight repairs were made to the Superintendent's house. New fences were built around the lockmasters houses at locks No. 6 and 7.

### *Banks, Towing Path, &c.*

Seventy-five new snubbling posts were placed on the banks and a large number of old posts were taken up and reset. The towing path, canal banks, dams and dykes have been maintained in good order.

The banks at locks No. 7, 8, 9 and 11 were raised with gravel and improved between locks No. 7 and 9, and below lock No. 14.

The side ditches, off-take drains and discharges have been thoroughly cleaned and kept in good order.

Public roads where they pass on the canal banks or dams were properly repaired, and the weeds were mowed on canal lands.

## CHAMBLY CANAL.

The navigation of this canal was closed by ice on the 25th November, 1880, and it was reopened on 2nd May, 1881. No interruption to the trade occurred during the fiscal year.

The following is a detail of the principal repairs, and other works on this canal during the year.

### *Lock No. 2.*

The mitre sill at upper gates was renewed.

*Lock No. 3.*

The south wing wall at lower entrance was partly taken down and rebuilt; a French drain was made, and new fenders placed.

*Lock No. 4.*

Wing wall at lower entrance on north side was partly taken down and rebuilt. A new mitre sill was placed at lower end, and a new balance beam and new fenders supplied. A French drain was also made in the bank.

*Lock No. 5.*

Mitre sill at upper gates was repaired and new fenders put on.

*Lock No. 6.*

Upper mitre sill repaired and new fenders put on.

*Lock No. 9.*

The face of the east wall at upper end including hollow quoin was taken down and rebuilt partly with cut stone and partly with timber and concrete. The upper mitre sill was repaired and two new balance beams and one top bar placed on gates.

The superstructure of the old portion of mooring pier below this lock was rebuilt and raised to the height of the new portion which was two feet higher than the old one. The road leading to it was raised and its outer slope protected by a dry stone wall.

The walls of all the locks were pointed with cement, except those of No. 1, which were pointed in the spring of 1880. All the lock gates were overhauled and ordinary repairs were given to them and to their valves and other iron work.

*Bridges.*

Swing bridges Nos. 1, 2, 3, 4 and 7, were repaired, and received new fenders. A new abutment was built at bridge No. 2. Bridges Nos. 5 and 6 were rebuilt, the pivot piers renewed and the north abutment of No. 5 repaired.

The road bridge over the outlet of the Iroquois River and three farm bridges over back ditches were rebuilt.

In the spring the prism of the canal was widened and deepened between bridge No. 1 and lock No. 2, at narrow places, and many large boulders were removed by blasting.

The side walls were repaired where necessary, and 230 lineal yards of new wall built on St. Therese Island. The banks and towing paths have been raised and widened in many places between bridge No. 6 and lock No. 2, for a total length of 2,700 feet and for 800 feet on the south side between bridges No. 5 and 6. The culverts and ditches were cleaned and a number of new ditches made where required.

Two scows were built for the use of the dredge, and one belonging to the canal repaired. Ordinary repairs were made to the dwelling houses provided for the lockmasters, and bridge keepers, to the Canal Office building, and to the fences.

*Steam Dredge No. 1.*

This dredge which wintered in the Chambly Canal was thoroughly refitted in April last. The widening and deepening of the canal bottom which had been commenced by hand labour on the sides, when the water was out of the canal, was continued by the dredge after the 5th of May. At the close of the fiscal year (30th June,) this dredge had made a cut of 20 feet wide for about one mile in length and

giving 8 feet draught of water on the west side of the canal. The excavated material was utilized to widen and raise the towing path on the river side.

The work proceeded slowly at first for want of a sufficient number of scows, two of which were built for this purpose, as mentioned above.

#### SURVEYS.

A surveying party was organized to make an accurate plan of the Chambly Canal and Government property; to replace missing boundary stones, cross-section the canal, and assist generally in the progress of the works. This party commenced operations on the 10th of May.

#### ST. OURS LOCK AND DAM.

The navigation at this lock was closed by ice on 22nd November 1880, and re-opened on the 11th April 1881. No interruption to the trade occurred during the open period of 226 days.

The lock walls were pointed with cement, valves renewed, and gate chains repaired. Four pulleys were placed on the lock walls, to assist vessels in entering and leaving the lock. The piers above and below the lock were repaired; the end of the lower pier was taken down and rebuilt, and the landing stage at end of upper pier was removed in December and replaced in June. In the spring the ice was cut away from both ends of the lock and from the dam. Six toises of stones were used for protection of the east end of the dam, and ten toises are held in reserve for the same purpose. In consequence of the very low water last fall, the crest of the dam was temporarily raised, which proved very beneficial to navigation without causing any damage.

The Collector's office which was damaged by fire in December last, was repaired, and the Superintendent's house, outbuilding and fences received such repairs as were necessary.

Fifteen snubbing posts were placed in the banks above and below the lock. Nothing has been done towards providing spare gates for this lock as was recommended in last year's report, and which are much required as a precautionary measure in case of serious accident to those now in use.

Statements of the amounts collected for fines and damages, &c., with monthly returns of the highest and lowest water on each canal are enclosed.

I have the honor to be, Sir,

Your obedient servant,

E. H. PARENT,

*Superintending-Engineer.*



## LACHINE CANAL.

STATEMENT shewing 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, 1881. (From Lockmaster's Returns.)

Months.	Lock No. 1—Lower Sill.		Lock No. 5—Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
1880.	Ft. in.	Ft. in.	Ft. in.	Ft. in.
July.....	19 11	18 4	12 7	11 5
August.....	18 4	16 10	11 5	10 5
September.....	17 1	16 4	10 7	10 2
October.....	17 2	16 3	10 10	10 0
November.....	19 1	16 8	11 9	10 3
December.....	31 5	17 7	11 11	10 4
1881.				
January.....	30 5	24 3	11 7	9 3
February.....	26 0	24 0	10 6	9 1
March.....	28 6	24 9	12 0	9 2
April.....	30 2	17 4	11 10	10 6
May.....	22 8	19 2	13 9	12 1
June.....	21 3	18 2	12 10	11 2

## LACHINE CANAL.

STATEMENT of amounts collected for Wood Rent and Wintering Vessels during Fiscal Year ended 30th June, 1881.

Date.	Items.	Number.	Rates.	Amounts.
1880-81.			\$ cts	\$ cts.
	Firewood.....			1,226 38
	Wintering Vessels.....			910 75
	Total.....			2,137 13

JOHN O'NEIL,  
Collector.

COLLECTOR'S OFFICE,  
MONTREAL, July, 1881.

## LACHINE CANAL.

STATEMENT of Basin, Firewood, Fines and Bank dues collected at Lachine,  
for the Fiscal Year ended 30th June, 1881.

Date.	Items.	Amount.	Remarks.
1880-81.		\$ cts.	
	Basin dues.....	372 77	
	Firewood dues.....	89 13	
	Bank do .....	16 00	
	Fines do .....	22 00	
	Total.....	499 90	

J. S. DYDE,  
Collector.

COLLECTOR'S OFFICE,  
LACHINE, July, 1881.

## LACHINE CANAL.

STATEMENT of Fines and Damages collected during the Fiscal Year  
ended 30th June, 1881.

Date.	Name of Vessel.	Name of Owner.	Fines.	Damages.	Totals.
1880.			\$ cts.	\$ cts.	\$ cts.
July 8	Barge Nelson.....	Prudhomme.....	4 00	.....	.....
do 8	Barge Concord.....	Ayotte.....	4 00	.....	.....
do 26	Steamer B. Welshman.....	Little.....	20 00	.....	.....
Aug. 4	Steamer Cantin.....	Woods.....	20 00	.....	.....
do 17	Propellor Zealand.....	Zealand.....	80 00	.....	.....
do 18	Propellor California.....	Hannay.....	4 00	.....	.....
Sept. 17	Barge Virginie.....	Boutin.....	.....	8 00	.....
Oct. 19	Barge Cowan.....	Delois.....	10 00	.....	.....
do 19	Tug Messenger.....	Tate.....	4 00	.....	.....
do 22	Steamer B. Adventure.....	Devany.....	20 00	.....	.....
1881.					
May 14	Steamer Gatineau.....	Eligh.....	4 00	.....	.....
June 13	Barge Annie.....	Labranche.....	4 00	.....	.....
		Total.....	174 00	8 00	182 00

M. CONWAY,  
Superintendent.

LACHINE CANAL OFFICE,  
MONTREAL, July, 1881.

## BEAUHARNOIS CANAL.

STATEMENT showing the depth of river water on the mitre sills of Lock No. 6, at lower entrance, and Lock No. 14, at upper entrance, during the Fiscal Year ended 30th June, 1881. (From Lock-master's returns.)

Months.	Lock No. 6—Lower Sill.		Lock No. 14—Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
1880.	Ft. in.	Ft. in.	Ft. in.	Ft. in.
July .....	12 0	11 0	12 3	11 11
August .....	11 0	10 2	11 11	11 3
September.....	10 2	9 8	11 10	10 11
October .....	10 0	9 8	11 5	10 10
November .....	12 0	9 9	13 0	11 1
December.....	14 0	12 0	12 4	10 10
1881.				
January .....	15 2	14 0	12 0	10 4
February .....	17 6	12 0	11 6	9 11
March .....	14 0	11 10	12 2	10 9
April .....	11 10	10 5	12 2	11 5
May .....	12 9	11 3	12 2	11 6
June .....	12 5	10 10	12 1	11 9

## BEAUHARNOIS CANAL.

STATEMENT of Fines and Damages collected during the Fiscal Year ending 30th June, 1881.

Date.	Names of Vessels.	Master or Owner.	Damages.	Fines.	Totals.
1880.			\$ cts.	\$ cts.	\$ cts.
July 16	Schooner Mowbray.....		1 00		
" 23	Barge Lorne.....	Latour.....		3 00	
Aug. 5		James Ewart.....	5 00		
Sept. 7	Reine des Anges.....	Hamelin.....	7 00		
" 7	Steamer Spartan.....	Bailey.....	12 00		
" 14	do St. Francis.....	Rankin.....	6 00		
" 15	Tug Joe Mac.....	McGrath.....		4 00	
Nov. 19	Schooner St. Lawrence.....	Phelps.....	10 00		
1881.					
May 23	Steamer Como.....	McLaurin.....	12 00		
June 27	Steam Barge Georgian.....	Horns.....	6 00		
			59 00	7 00	66 00

J. F. BÉIQUE,  
Superintendent.

CANAL OFFICE,  
MELOCHEVILLE, July, 1881.



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, 1881. (From Lock-master's returns.)

Months.	Lock No. 9—Lower Sill.		Lock No. 1—Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
1880.	Ft. In.	Ft. In.	Ft. In.	Ft. In.
July.....	9 11	8 7	8 11	7 7
August.....	8 7	7 8	8 3	6 7
September.....	8 3	7 6	7 6	6 5
October.....	8 8	7 4	7 10	6 4
November.....	14 10	9 4	8 10	7 7
December.....	12 8	9 7	8 5	7 10
1881.				
January.....	14 0	11 9	8 1	7 7
February.....	13 7	11 4	8 9	7 7
March.....	17 0	11 10	9 11	8 5
April.....	14 5	12 7	10 5	9 3
May.....	15 0	13 0	10 10	10 2
June.....	14 0	10 9	10 3	8 7

CHAMBLY CANAL.

STATEMENT of amounts collected for Wharfage and Hydraulic rent during Fiscal Year ended 30th June, 1881.

Date.	Items.	Amounts.
1880-81.	Wharfage.....	\$ 35 70
	Hydraulic Rent.....	120 00
		155 70

A. P. JODOIN,  
Collector.

COLLECTOR'S OFFICE,  
CHAMBLY, July, 1881.

## CHAMBLY CANAL.

STATEMENT of amounts collected for Fines and Damages, for the Fiscal Year ending 30th June, 1881.

Date.	Name of Vessel.	Name of Owner.	Fines.	Damages.	Total.
1880.				\$ cts	\$ cts.
Nov. 4	Boat L. M. Dill.....	J. Reilly.....		10 00	
" 18	" J. O. Souner.....	P. Cooke.....		2 50	
" 20	Barge Donat.....	L. Lemire.....		8 00	
1881.					
May 11	Barge Fabo.....	Tate.....		1 00	
June 21	" Minnie-ha-ha.....	J. Heldrith.....		6 00	
" 24	New Liverpool.....	A. Morin.....		6 00	
					33 50

C. ULRIC,  
Superintendent.

CHAMBLY CANAL OFFICE,  
CHAMBLY, July, 1881.

## ST. OURS' LOCK.

STATEMENT showing the depth of river water on the mitre sills of St. Ours' Lock during the Fiscal Year ended 30th June, 1881. (From Superintendent's return).

Months.	Lower Sill.		Upper Sill.	
	Highest.	Lowest.	Highest.	Lowest.
	Ft.	in.	Ft.	in.
1880.				
July.....	10	7	9	1
August.....	8	9½	7	7
September.....	8	5	7	0
October.....	8	7	6	11
November.....	11	0	8	5
December.....	13	3	9	4
1881.				
January.....	11	2	9	0
February.....	11	10	9	6
March.....	17	0	12	2
April.....	15	11	11	1
May.....	16	0	12	6
June.....	13	2	9	5

## ST. OURS' LOCK.

STATEMENT of Fines and Damages collected during the Fiscal Year ended 30th June, 1881.

Date.	Name of Vessel.	Name of Owner.	Fines.	Damages.	Total.
1880.				\$ cts.	\$ cts.
July 25	Steamer Star.....	Sincennes et McNaughton.....		0 75	
1881.					
June 16	Tug Joy.....	John Whelan.....		4 00	
				4 75	4 75

LÉVI LARUE,  
Superintendent.

ST. OURS' LOCK OFFICE,  
July, 1881.



ST. ANNE, 9th Sept., 1881.

SIR,—With this, I have the honor to hand you a report upon the various Canals under my charge for the fiscal year ending the 30th June, 1881.

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

D. STARK,  
*Suptg. Engr., O. R. C.*

F. BRAUN, Esq.,  
Secretary, Dept. Railways and Canals.

## REPORT FOR FISCAL YEAR ENDING 30TH JUNE, 1881, ON THE OTTAWA RIVER CANALS.

### MAINTENANCE.

#### ST. ANNE.

Navigation closed here on the 24th November, 1880, and was reopened on the 18th April, 1881.

An extension wing was repaired in the month of July, 1880, and booms constructed and moored between the guide piers above the lock.

The lock walls have been thoroughly pointed with cement, which they badly needed, and the ordinary repairs made to the lock gates.

No interruption to traffic has taken place throughout the year, but to secure this it was found necessary during the high water of last spring to erect a stationary engine below the locks to assist vessels up the rapids into which they were driven out of an eddy they had previously taken advantage of, by the works of the new canal.

An old engine, in charge of the Lachine Canal Superintendent, was obtained for this purpose, and with the help of some machinery manufactured at the works of Mr. John Macdougall, of Montreal, did the work required satisfactorily. This machinery will be kept in position till next spring, when it will again, and for the last time be needed for the same purpose.

#### CARILLON, CHUTE À BLONDEAU AND GRENVILLE CANALS.

*Carillon Canal.*—The locks on this canal are nearly worn out, and called for incessant repairs during the year. The immense amount of leakage through their walls has caused them for years to be slow in filling, and this had so increased last spring as to render their being pointed a necessity. The gates had also to be strengthened by inserting additional bars, and the crabs, sluices, and sluice castings called this year for more than ordinary repair.

Before the opening of navigation the canal prism, which had in many places been greatly silted up, received thorough cleaning out.

The North River dam has demanded the usual amount of attention and labour spent upon it, and this, which is a very considerable tax, will in the course of next year, it is hoped, be entirely done away with by the completion of the new canal.

This canal was closed on the 23rd November 1880, and opened on the 29th April, 1881.

*Chute à Blondeau Canal.* This was also closed on the 23rd November 1880 and opened on the 29th April 1881, its locks received the usual average amount of repair. The completion of the Carillon dam, which it is confidently expected will occur this fall, will render this canal of no further service, by doing away with its necessity.

*Grenville Canal.*—A considerable expenditure has been demanded here owing to the extremely dilapidated state of the old locks and their belongings. This was found

to be particularly the case at Greece's Point, where the close proximity of the new works rendered their defects more especially discernible.

To show the condition to which these locks were reduced, I may just mention that the concrete walls and cofferdams erected to keep dry the new works alongside of them, had the effect of rendering the time of passing vessels through them very little more than half what it formerly was in consequence of the great amount of water which formerly escaped through their masonry into the river being stopped by these dams and held back for their use.

Between this point and Grenville there is nothing particular to notice; the new locks are working well and beyond a few trifling repairs to their machinery have called for little attention. I may remark that some detention was caused here at the beginning of the season, owing to the unavoidably short time that existed, between the close of winter and the opening of navigation, for enabling the concreting in the various retaining walls to properly set. This gave some trouble after the navigation had begun; but the whole stoppage did not involve a longer period than 10 to 12 hours.

The large amount of detention was caused by the forwarders themselves, who would persist in loading their vessels too deeply, so causing delay in entering and leaving the different locks, owing to their having to unload before going into them and reload them to such an extent as would enable them to pass over the mitre sills, and this of course had to be repeated at every lock they came to.

It is, however, to be hoped that the completion of the new canal and the dam at Carillon will next year obviate, in so far as this reach of the river is concerned, all necessity for such proceedings.

The Grenville Canal was closed on the 28th November 1880, and re-opened on the 2nd May, 1881.

#### CULBUTE CANAL.

Here there are a bridge-keeper and lock-master employed whose present duties chiefly consist in looking after and protecting the property. Until such time as the dams at the Rocher Fendu and the Grand Calumet are completed, little or no traffic through this canal can be looked for.

I have the honour to be, Sir,

Your obedient servant,

D. STARK,  
Suptg. Engr., O. R. C.

F. BRAUN, Esq., Secretary,  
Department Railways and Canals, Ottawa.

CORNWALL, 25th July, 1881.

SIR,—I have the honor to submit my annual report, on the Cornwall Canal, for the fiscal year ending 30th June, 1881.

The canal was kept in good working order, from the 1st of July, 1880, to the 6th of December, when it was closed for the winter months. It was opened again on the 26th of April, 1881, and kept in good working order to the 30th of June last.

The works in progress during the past year will come under the head of construction and repairs.

Building new bridge across canal at Cornwall; rebuilding one pair of lower gates. General repairs, to all gates, supply weirs and sluices. Putting in three new valves. Repairing segments, pointing lock walls, raising embankment, and cleaning side-drains and culverts.

I have the honor to be, Sir,

Your obedient servant,

D. A. McDONELL, Supt.

F. BRAUN, Esq., Secretary,  
Railways and Canals, Ottawa.

## CORNWALL CANAL.

STATEMENT shewing 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, 1881.

Months.	Lock No. 15—Lower Sill.				Lock No. 21—Upper Sill.			
	Highest.		Lowest.		Highest.		Lowest.	
1880.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
July .....	10	10	10	6	10	10	10	4
August.....	10	6	10	1	10	8	9	6
September.....	10	6	9	6	10	3	9	5
October.....	10	0	9	3½	10	2	8	9
November.....	10	1	9	5	10	6	9	2
December.....	16	1	9	5	10	7	8	8
1881.								
January.....	23	4	15	11	9	6	6	9
February.....	21	2	17	0	7	11	6	0
March.....	18	1	10	9	9	9	7	11
April.....	10	8	9	10	10	0	9	7
May.....	11	1	10	2	10	4	9	0
June.....	10	5	10	2	10	6	9	10

## WILLIAMSBURG CANALS.

MORRISBURGH, 13th July, 1881.

SIR,—I have the honor to submit my report, on the condition and working of the Williamsburg Canals (embracing the Farran's Point, Rapide Plat, Point Iroquois Junction and Galops Canals) under my charge, for the fiscal year ending 30th June, 1881.

These canals were closed for the winter season on the 11th December, 1880, and reopened for traffic on the 27th April, 1881, no interruption or delay from any accident to these Canals, occurred during the season of navigation.

## FARRAN'S POINT CANAL.

Repairs were done to the lock gates, sheaves and rollers were placed in chain holes to replace some broken, additional snubbing posts planted, stone in pier at entrance levelled. The portion of the pier and ice breaker at the head of this canal, destroyed by fire as reported in my letter of the 13th October, 1880, was rebuilt last fall; the banks are in good repair.

## RAPID PLAT CANAL.

The repairs on this canal consisted in repairs to lock gates, repairing and renewing covering of the pier at the entrance of the canal, and stoning the banks.

The upper gates at Locks 23 and 24, will require to be further repaired during the winter. This canal requires dredging in several places.

## POINT IROQUOIS JUNCTION AND GALOPS CANAL.

Repairs were made on the several lock gates on these canals, the wing wall at Lock No. 27 was rebuilt, and stone work at entrance of lock repaired; the swing



bridge over Lock No. 25, which was becoming decayed, was repaired and repainted, and some repairs were also done to the swing bridge at Lock No. 26; the lower gates at Lock No. 27 will require repair during the winter.

The banks on these canals are well protected with stone, the booms at Point Iroquois Canal were thoroughly repaired this Spring.

The buoys under my charge, from Johnstown to Dickenson's Landing, have been replaced this spring.

From the lowness of the water of the St. Lawrence, and consequent decrease in the canals the following detention of vessels occurred.

*In October 1880.*

At Lock No. 22	One vessel detained 4 hours.
“ 23	One vessel “ 7 “
“ “	One vessel “ 12 “
“ 24	A vessel had to unload portion of her cargo.

*In May 1881.*

Lock 24—Vessel detained 11 hours in lock, and had to unload portion of her cargo, detaining two tugs with the tows part of the time.

The water has risen since first of June and no difficulty now occurs in passing vessels through.

I annex a statement shewing the extremes of depth of water on the mitre sills of the locks, during the season of navigation of the fiscal year ending the 30th day of June, 1881.

All of which is respectfully submitted.

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

A. G. MACDONELL,  
*Superintendent, Williamsburg Canals.*

The Secretary,  
Department of Railways & Canals,  
Ottawa.

WILLIAMSBURG CANALS.

STATEMENTS showing the extreme of depth of water on the mitre sills of the several Locks during the season of navigation of fiscal year ending 30th June, 1881.

	Month.	Highest.		Lowest	
		Ft.	In.	Ft.	In.
Farran's Point Canal, lower sill, Lock 22 :—	July 1880,	10	9	9	2
	August “	9	6	8	9
	Sept. “	9	3	8	4
	October “	9	0	8	3
	Nov. “	11	0	8	5
	May 1881,	9	2	8	4
Rapide Plat Canal, lower sills Lock 23 :—	June “	9	3	8	10
	July “	10	2	9	6
	August “	9	10	8	4
	Sept. “	9	7	8	0
	October “	9	3	7	9
	Nov. “	11	1	8	0
	May 1881,	9	5	8	9
June “	9	9	8	9	

Rapide Plat, upper sill, Lock 24 :—	July 1880,	10 4	9 6
	August "	9 10	8 6
	Sept. "	9 6	8 0
	October "	9 0	7 9
	Nov. "	11 0	7 9
	May 1881,	9 5	8 0
	June "	9 6	8 9
Point Iroquois, lower sill, Lock 25 :—	July 1880,	12 10	11 11
	August "	12 6	10 8
	Sept. "	11 11	11 0
	October "	11 11	9 10
	Nov. "	14 3	10 0
	May 1881,	12 0	10 6
	June "	12 4	11 5
Galops Canal, upper sill, Lock 27 :—	July 1880,	10 6	9 10
	August "	10 1	9 2
	Sept. "	10 3	8 1
	October "	9 10	8 8
	Nov. "	11 6	8 10
	May 1881,	10 0	8 10
	June "	10 2	9 2

A. G. MACDONELL,

*Superintendent,*

*Williamsburg Canals.*

Morrisburgh, 13th July, 1881.

SUPERINTENDENT'S OFFICE,

WELLAND CANAL,

ST. CATHARINES, 22nd Aug., 1881.

SIR,—Accompanying this you will receive my annual reports of the works done under my charge on the Welland and Burlington Bay Canals, for the year ending 30th June last.

Yours obedient servant,

WILLIAM ELLIS,

*Superintendent.*

A. P. BRADLEY, Esq.,  
Acting Secretary,  
Department Railways and Canals.

WELLAND CANAL,

SUPERINTENDENT'S OFFICE,

ST. CATHARINES, 23rd Aug., 1881.

SIR,—I have the honor to submit my annual reports on the condition and working of the Welland Canal, for the year ending 30th June, 1881.

The Canal was closed on the 30th day of November last and opened the 29th day of April *via* the Feeder and Port Maitland, and through to Port Colborne on the 2nd day of May, 1881.

During the winter the portion of the canal from Ramey's Bend to Port Colborne had to be again unwatered to allow the contractors to proceed with the deepening and enlargement works.

Water was again let in at the end of April. The water in the Feeder was maintained at a uniform level of seven feet above Lake Erie, and the supply has been abundant for all purposes throughout the season.

A very large amount of work has been performed on the Canal since the date of my last report, in extensive repairs and renewals; much remains yet to be done to avoid disasters, and I hope next spring to be able to keep the water out of canal long enough to complete the worst and dangerous parts requiring attention.

Navigation has been uninterrupted by serious accident throughout the whole of this charge.

In my last year's report I drew attention to the dangerous condition of the tow-paths along the Deep Cut and other parts of the canal where it has been widened and deepened, and I again wish to disavow all responsibility for the continuance of the same condition of things up to this date, that portion of the work not having yet been turned over to my charge by the Chief Engineer or the Department. In many places the banks have been scoured and gullied out to such a serious extent as to make them impassable for horses towing, and I may again repeat the language my last year's report: "The remedy or cure for these serious washings and wearings away in the Deep Cut and other places will be increasingly costly the longer they are neglected."

The Government scows have been fully employed in hauling stone and gravel to face up and raise the banks throughout where they had become very greatly in need of it.

At the foot of the aprons of nearly the whole of the waste weirs, a large quantity of stone will have to be placed without delay to prevent their becoming undermined, as I find very deep holes, below bottom of sheet piling, have been worn out in numerous instances by the many years wear they have been subjected to. An unusual number of new gates and balance beams have been hung since my last report, the old ones have been towed to gate yard and stripped and worked up as far as possible.

I purpose putting in some more dwarf stone dams in hydraulic race to prevent scour to banks.

I was unable to take down and rebuild the Hydraulic Race Aqueduct during the limited time (only three weeks) that the water was drawn out of the canal last spring, because all the mechanics I could engage were employed at other works. I shall put in new stone foundations and abutments for it this season, and have everything in readiness to put up the new one in spring.

On unwatering the canal, I discovered very dangerously deep holes at the foot of the aprons at locks No. 10 and No. 21 reaching, in some cases, below the bottom of the sheet piling, and the foundations of the wing walls on each side of these two lock entrances, had been entirely scoured or washed out, leaving the walls *without anything to stand upon* except a sill and a couple of cross bearers hanging out. How these walls remained standing so long was a mystery to me and the Chief Engineer, to whom I showed their very dangerous condition. I fear there are others in almost as bad a state. I shall, of course, make a thorough examination when the water is again drawn off. We have a fair supply of new gates on hand, and are engaged in making more.

The canal is working satisfactorily throughout.

The usual expensive work of cutting all thistles growing on Government property has been attended to.

I took down the wing walls of four of the large dilapidated waste weirs, that I considered the most dangerous, and rebuilt them while the water was out; there are several others the rebuilding of which cannot safely be deferred later than next spring.

The repairs and renewals made during the year may be generally indicated as follows:---

#### No. 1 DIVISION, PORT DALHOUSIE.

In front of collector's office and lock tender's house 264 feet of new fence has been built and painted,



Interior of collector's offices repaired, painted and papered, also one lock tender's house.

*Lock and Level No. 1.*

Two new lock gates have been put in, and a new way laid over the old ones, at Mill Pond.

Lock gates twice raised, two old steps taken out and new ones and brasses put in.

Forty-five piles, driven and capped with 345 feet heavy capping, have been put in along floats where vessels had displaced them.

*Lock, No. 2 Bridge and Level.*

Bridge-tender's house repaired, partitions put up &c. Double house for lock-tenders, furred, plastered, painted and refitted. Retaining fence 150 feet long 5 feet high built at Shickluna's dry dock yard, gate made and hung and fence adjoining twelve Mile Creek bridge built. Box drain at same place 12 x 12, 48 feet long, made and put in. Bridge at Axe Factory repaired and replanked, eighteen hitching posts put up, and foot of Lock No. 3 railed, floats repaired. Axe Factory bridge of and bridge over lock blocked up for winter; these were again removed in spring. Bridge over lock replanked, storm door on kitchen made and put up. Waling placed along piles, new bents and rack placed under weir bridges and waling altered. Centre stones of upper and lower weirs shifted. New centre blocks put under bridges. Approaches to Axe Factory bridge strengthened. All valves to weir overhauled and renewed.

Boat house and boat repaired.

*St. Paul St. Bridge.*

Bridge and approaches replanked at various times, new iron cannon hangers put on, bridge covered and blocked up for winter, and blocks stripped and removed in spring.

*Lock and Level No. 3.*

Construction of high retaining wall finished up to wing of lock, the same coped, and new lock gate put in.

Long length of box drain from street opposite Canal Office to Race made and put in.

Oak casings to lock coping put on and timber renewed, at upper end of lock furred.

*Canal Office, Custom House, Inland Revenue, and, Weights & Measures Building,  
St. Catharines.*

Falling plaster and laths removed from ceilings in 4 rooms, and the same sheeted with narrow buttons and thrice oiled: also three front and rear walls drilled and bored through and 6 long rods inserted through the building, with long wrought iron vertical plates outside of each end and the same screwed up to prevent building from spreading.

Stables and barn repaired and roof reshingled.

Sundry repairs executed and new case for papers put in.

House for lock tender furred, plastered, painted and refitted.

*Lock No. 4, Bridge and Level.*

Bridge over lock, repaired sundry times; bridge blocked up for the winter, and removed in the spring; new cellar and storm doors made and hung.

Shutes repaired and plank put along to allow men to cut away ice.

Bulkhead at head of Race, below Neelon's Mill, rebuilt.  
 Mitre sill of lock pieced and new frog put on.  
 Slush boards hung at Riordon's fence.  
 New bent placed under heel path bridge, opposite Neelon's Mill and superstructure strengthened; floats overhauled and repaired. Swinging gear for bridge put up.  
 Spill way between upper and lower Race, jacked up and repaired.  
 New house for Lock Master, built.  
 One new balance beam put on.

*Lock 5, Bridge and Level.*

Heel path bridge repaired, bridge over lock raised on pivot, and new toe roller put on.  
 Bridge blocked up in winter and removed in the spring. Outside doors put on dwelling house.

*Lock and Level No. 6.*

Bridge repaired; 240 ft. of fence prepared and put up around garden, also box drain, and plank walk,  
 Outside door placed on dwelling house.  
 Area walls partly built and trap doors made and put on, also frames and sash.  
 New balance beam put on. four pieces of pine filling in lock gate, framed and put in. Lock tender's house furred, plastered, painted and re-fitted.

*Hydraulic Race and Aqueduct.*

Two dwarf stone dams put in to check scouring of banks.  
 Bottom renewed and sides of aqueduct flume repaired and recaulked.  
 Supporting bents and frame of flume pieced out and repaired. Ice kept clear, night and day, from Aqueduct to Red Mill.  
 Seventy five ft. of dry stone retaining walls built on each side of Thorold road bridge.  
 Stone abutment of aqueduct repaired, portable float made for repairing uses.  
 Stringers of farm crossing bridge  $35.0 \times 12.0$  renewed and newly planked. New bridge built at head of aqueduct  $65.0 \times 12.0$ .  
 Barbed wire fence and iron posts put up in parts of Race to keep off cattle.

*Gate Yard and Shop at Thorold.*

Sundry old gates hauled to gate yard from various parts of canal,—available irons taken out and worked over, and snubbing posts made of all sound girts. One hundred and forty snubbing posts made out of the old ones and iron caps put on a portion of them. Store house and blacksmith shop  $18 \times 24$ , 16 ft. high, framed, raised and completed, and forge, bellows, shelves &c., placed in it. Barrows repaired throughout. Numerous pike poles and rake handles made. Sixty mile posts squared up, cut off, and iron caps put on. 7 balance beams framed. Sundry patterns made. Carts and wagons for quarry works repaired.

Four new lock gates framed and put together, built, launched and conveyed to store ponds.

One derrick, complete for quarry. One strong ladder and one chest for suit, made for diver.

Scrap house  $12.0 \times 12.0 \times 8.0$  built. One hundred and sixty-five feet of fence and gates built to enclose Yard.

Long derrick rebuilt. Sundry stone boats for quarry and masons made. Floating pile driver overhauled, caulked and repaired.

Numerous box drains made for road crossings. Cattle treading-ways in sides of race, made and sets of 5 steps erected for pedestrians to cross over fence.

*Lock No. 7, Bridge and Level.*

100 feet of protection railing posts built and framed to prevent teams going over bank.

Balance box of bridge renewed. Bridge blocked up in the winter and removed in the spring. One new lock gate hung. New valve pin put in gate.

*Lock and Level No. 8.*

One new lock gate put in. Two new balance beams put on. Heel path bridge repaired.

*Lock and Level No. 9.*

Piles driven to hold floats in position.

*Lock and Level No. 10.*

Two new balance beams put on lock gates and one piece of new filling in one gate. Floats repaired and piles driven to hold floats in place.

New bridge built over weir  $65.0 \times 12.0$  and strong railing on each side. Also a new bridge on heel path side  $45.0 \times 12.0$ . Mitre sill of lock repaired and new frog put in. New apron put down at foot of Lock. Bridge over weir rebuilt.

The deep washout at foot of lock filled in and levelled up with stone and between wing walls paved across with stone paving on edge. Both wing walls unpaved with heavy courses of stone.

*Lock and Level No. 11.*

Aprons and floats repaired, and piles driven to hold floats in place. Wing walls of waste weir taken down and rebuilt. Lock and weir walls raked out, jointed and pointed.

*Lock and Level No. 12.*

Floats and aprons repaired, and piles driven to hold floats in place. One bumping crib partly rebuilt, not yet finished. Wing walls of waste weir taken down and rebuilt. Joints raked out and lock and weir walls pointed.

*Lock and Level No. 13.*

New timbers put under crabs. Piles driven to hold floats in place and floats repaired. Lock copings cased with thick oak plank. Two bumping cribs rebuilt. Joints raked out and lock and weir walls pointed.

*Lock and Level No. 14.*

Piles driven to hold floats in place. Floats and aprons repaired. Three bumping cribs rebuilt. Wing walls of waste weir taken down and rebuilt. Joints raked out and lock and weir walls pointed.

*Lock No. 15, Bridge and Level.*

New balance beam put on lock gate. Manhole and cover for cistern in lock-master's house made. Floats and aprons repaired. Old caps removed and new ones put on gallows frame of bridge. Piles driven to hold floats in place. Bridge blocked up for winter and blocks removed in spring. New thick oak plank casing put on copings of lock walls.



Two bumping cribs rebuilt. Swinging gear put up for bridge. Long ditch cut along roadside.

Double house for lock tenders, furred, plastered, painted and refitted. Joints raked out and lock walls pointed.

*Lock and Level No. 16.*

Piles driven to hold floats in place. Quarrymen's house repaired.

New thick oak plank casings put on lock copings. Fence across race raised and rebuilt. Wing walls of waste weir taken down and rebuilt.

New privy built at quarry. Lock walls raked out and pointed.

*Lock and Level No. 17.*

Valves of lock gate repaired. Old gate conveyed to No. 10 Pond. Floats and aprons repaired.

Old lock gate taken out and new one hung. Three hundred and ninety-six feet of dry stone retaining wall, 4 feet high, built.

*Lock and Level No. 18.*

New steps and handrail made and put up slope to house. New thick oak plank casings put on lock copings. Floats and aprons repaired. Stop block put on heel posts.

New fender, 200 feet long, placed along rock slope. Old lock gates taken out and new ones hung. Six hundred and twenty feet dry stone retaining wall, 3½ feet high, built.

*Lock and Level No. 19.*

Three doors made and hung, new outside steps, and lock tenders house repaired. Lock house removed and frame storehouse built under the same.

New thick oak plank casing put on lock copings. Stop block put on heel post. New coping timbers put on head of lock. New fender 340 ft. long placed along rock. Heel path bridge repaired.

Dry stone retaining wall 50 ft. long, 10 feet high, 3 feet wide—built. Dry stone retaining wall 58 feet long, 3 feet high—built.

Two lock-masters houses, furred, lathed, plastered, papered and repaired.

DIVISION No. 2,—LOCK 20 TO FEEDER JUNCTION.

*Lock and Level No. 20.*

Old lock gate taken out and one new one hung. Two new balance beams put in. New thick oak plank casings put on lock copings. New bridge built over wash weir. One old crab repaired, and one new one put up.

Forty lineal feet of dry stone retaining wall built 3 feet high. Three hundred and nine lineal feet of dry stone retaining wall built 4 ft. high. Sixteen feet of 6-in. drain pipe laid under tow-path. Joints raked out and walls of waste weirs pointed in cement.

*Lock and Level No. 21.*

Copings of lock cased with thick oak plank. New balance beam put on gate. Laid in 3 pipe drains 18 ft. long and 1 of 20ft. stone culvert. Built 334 lineal ft. of dry retaining wall 4 feet high. 996 lineal ft. of soft tow-path raised and macadamized.

The deep washout at foot of Lock No. 22 filled in and levelled up, with stone paving on edge put in between wing walls; both wing walls underpinned with heavy courses of stone. The bank of wash weir race at Dobbies stoned and willows planted.

Joints raked out and walls of wash weirs pointed.

*Lock and Level No. 22.*

Copings of lock cased with thick plank. One new gate hung and one new balance beam put on. Two new iron crab locks put in. Four new iron valves put over collar holes of gates.

New bridge 60 ft. x 12 ft. built over waste weir. New crab rollers and chains put on to slush boards. Top of bumping crib raised 2' x 36'. Two platforms laid down. New foot boards and irons put on to head gates. Forty-two feet lineal pile and timber frontage built next Dobbies wharf and backed up with stone and earth. Wing wall of waste weir taken down and rebuilt and wall backed up with puddle. Joints of lock and waste weir walls raked out and pointed. New float bridge 100 ft. x 12 ft. built across race. Eighty lineal feet retaining wall, 3 ft. high, built of cement. Three lock-masters houses furred, lathed, plastered, papered and repaired.

*Lock and Level, No. 23.*

Coping of lock walls cased with thick oak plank. One new gate crab, and four new crab blocks, caps and sheaves put in. Four new iron valves put over gate collar poles. New footboard and irons to head gates. Tow platforms laid down. Both sides of lock raised,—broken stone put on tow path side. New bridge built across flume at Band's Mill. Tow path leading to Spinks Mill raised. Roadway formed and broken stone put on. New float bridge built 40 x 12 feet. Joints raked out and pointed in all waste weirs and lock walls.

*Lock No. 24 Bridge Level.*

Coping of lock wall, west side cased with thick oak plank. New street bridge built over race 18.0 x 24.0. Seventy-five feet pile and timber approach to lock built and backed up with earth. Seventy feet of lineal dry retaining wall, 4 feet high, built. Two hundred and nineteen feet lineal dry retaining wall, 9 feet high, built. Heel path over old lock at back of Lawsons raised 63 feet with 3 courses of timber. All joints in weirs and locks raked out and pointed with cement.

*Lock No. 25 and Three mile Level.*

Copings of lock walls cased with thick oak plank.

Three new iron crab blocks, caps and sheaves put on. Top of bumping crib raised 2' x 72' both sides of canal. New footboards and irons put across head gates. Both sides of lock raised and broken stones put on tow path side. New bulkhead built in cement to the waste flume of mill pond, 36 feet long and backed up with 12 yards of puddle. New set of head gates, at the upper bulkhead to above pond put in and new screw gear to work them. New iron rack put in above the waste weir gates 66 feet long and 10 feet high. All the joints of waste weirs and lock raked out and repointed with cement. Old abutments and canal approaches at west side of O'Neils Bridge taken down, and throughout rebuilt in solid crib work. Slopes, &c., graded and sodded. Old plank bottoms of Beaver dam and double culverts taken up and the same relaid with 6696 feet new plank. Ditch alongside of highway cleaned out and deepened, and 200 feet lineal, 16 inch stoneware pipes laid in—the same covered up and canal banks strengthened at this point with 500 cubic yards of earth, and willows planted along the bank. Removed by blasting a considerable amount of projecting rock along little deep cuts. Swinging gear put to Marlatt's Bridge.

*Guard Lock, Allanburg.*

The gates and the floor track on which they should run at this important lock have become so much displaced and out of order that two additional men have to be employed night and day to work them.



During the close of navigation I intend to put in a dam at the head, and to have these gates and the track put in proper order.

*Port Robinson.*

Scows collected and moored into position for temporary bridge across canal, timber and plank approaches made to same, cleared away in the spring and Ferry put in until new bridge was put up.

*Quaker Road and Ferry.*

Bridge similar to that above mentioned, &c., was built, cleared away in spring, and ferry put on. Ferry approaches were filled in after new bridge was opened.

*Welland.*

Hauled material and filled in sunken part of highway where old canal formerly ran. Four steps put in new lock ready for hanging new gates. New protection fence built along east approach to Welland Bridge.

Four old gates removed to lay-by at Port Robinson.

*Feeder Junction*

Scows collected and moored into position for temporary bridge across canal, timber and plank approaches made to same, cleared away in spring, and put on ferry until new bridge was opened.

No. 3 DIVISION.—FEEDER JUNCTION TO PORT COLBORNE.

Back ditches, both sides of canal and outlet ditch to lake, cleaned out. New connecting ditch dug in village, stone culvert built across street, and the same planked.

Temporary bridge built across canal at Humberstone, and the same removed after the water was let into the canal in spring. Ice broken with dredges and tugs. Floats and ferry scows removed into finished part of canal, before water was pumped out by contractors. Floats repaired and replaced in spring all along rock cuts, including building 615 feet lineal new floats, to replace those broken up. Float built and put in place to protect new wall of Port Colborne Lock. Port Colborne Lock gates overhauled and repaired, and part of contractors dam removed. Diver assisted. Bridge across back ditch, used for hauling stone across, &c., was taken down and removed.

Raised purchased lock masters house; built new cellar under same, and cistern and cemented floor. Roof reshingled, new chimneys built; plastering &c., repaired. Ditches excavated from lock master's cellar to back ditches, and stone drain built for same. Foundation of harbor master's house raised and levelled; cellar floor cemented, kitchen roof raised; new eavestrough all around, roof reshingled. Earth dug out and foundation built of stone for store, tool house and carpenters shop. Ice broken from Port Colborne to Welland with Tug to keep open navigation. Scoured stone and deep washouts filled in at mouth of box drains along slope after enlargements. Old box drains taken out and new ones put in across street at Port Colborne. Seven inch tube put in and old crib curbed well, that had rotted out, filled up.

No. 4 DIVISION.—FEEDER JUNCTION TO DUNNVILLE AND PORT MAITLAND.

From Dunnville to Stromness and Port Maitland, distance  $6\frac{1}{2}$  miles, there are 2 locks, 3 swing bridges, 3 waste weirs, 1 very long dam across Grand River, 5 culverts, 1 lock house, 2 lock tenders' houses, 1 bridge house, 12 stationary bridges, 1000 feet boom, 1,400 feet of dam embankments, 2 piers and harbor with a depth of water,



from Lake Erie to outlet of canal, of 19 feet, and thence to lock an average of 10 feet at low water line. From Stromness to Boulton ditch, Marshville and Junction, 16½ miles, 1 lock, 3 swing bridges, 2 stationary bridges, 1 sluice way, 3 culverts and 2 back ditches partly filled up. The supply of water has been greater than for many previous years and sufficient to permit the mills and manufacturers along the line to run with full supply to the end of the year.

#### *Rebuilding Toll Bridge, Dunnville.*

A temporary roadway had to be constructed below the toll bridge and across all the aprons of dam to permit teams, &c., to pass during the removal and renewal of the superstructure of the old bridge, which has been done in a much more substantial manner than heretofore. The bridge and dam have also been much strengthened by the erection of new and additional bents between each pair of the piers. During the heavy spring freshets of previous years, when the river was filled to its utmost capacity and the water nearly overflowing its banks, very large quantities of ice, logs, stumps, irons and rubbish of every description came rushing down with almost irresistible force, they frequently struck against the superstructure of bridge and piers, seriously racking the whole structure, causing leaks underneath and becoming jammed within the gates and threatening the entire destruction of the bridge. In the removal of the works I deemed it advisable to raise the piers and the entire roadway two feet higher, which will now allow these obstructions to pass harmlessly through. The new bridge and roadway is also 20 inches wider than the old one, and affords superior facilities for general traffic.

The old approaches at the end of the bridge built some 25 years ago had become so dilapidated that it became necessary to remove them.

The new approaches are built up with 12 x 12 timber and filled in with stone and gravel. The new bridge has been painted three coats and the piers and bottom structure have had three coats of whitewash.

As the roadway at each end of the bridge was scarcely wide enough to admit teams to pass, 20 feet has been added to its width, which affords ample room for all purposes.

The toll-keeper's house has been removed back, thoroughly repaired and painted; also piles driven in the rear, backed up with timber and filled with stone and gravel to protect foundation of house from the wash of the river, freshets, and ice, in the spring.

#### *Stromness Swing Bridge.*

The old swing bridge at Stromness with its approaches built in the year 1859, has been taken down, and replaced by a new bridge, on an improved plan; it is a substantial structure and can be turned by a pressure of 30 lbs. New piles have been driven in to support the new approaches and protect the bridge.

#### *Grand Trunk Railway Bridge.*

The Grand Trunk Railway Co. have had the Feeder channel dredged out between the approaches of their bridge to cause the channel at that point to be of uniform depth with the feeder above and below the bridge, they have also at my request considerably widened and deepened the culvert under their track connecting our back ditches.

#### *Boulton Ditch Bridge.*

One of our swing bridges, no longer required on the line of the main canal, I shipped to the Boulton Ditch road, where a few piles were driven and capped to receive it, also a few piles were driven to form a toe approach, and backed with timber and filled in with stone to make a landing approach, all of which was executed at a small outlay and supplied a want long solicited by the people in that section.

*Back ditches, canal bank, culverts, &c.*

There have been 18,000 yards of earth removed out of the back ditches between Boulton Ditch and Grand Trunk Railway Bridge on each side of the feeder, and on the north side of the feeder, south of Mr. E. Leo's mill for a distance of nearly  $\frac{1}{2}$  mile, the bank had become so much settled that it stood only a few inches above the canal level and was in danger of breaking and giving away. It was therefore deemed necessary to raise and strengthen the bank at this place.

There have been about 8,000 yards excavated out of back ditch and placed on the bank at said place. The culverts along the division have all been cleaned out and the rubbish burned.

The mitre sills of the Guard Lock at Dunnville, as well as that of Port Maitland Lock has been cleaned. Canada thistles and all obnoxious weeds have been cut on Government land. The pile driver has been repaired and placed in good working order. All the stationary bridges on the division have been kept in a good state of repair, the swing bridges have been raised on their pivots and properly balanced; nearly all the waste weirs and other works on the south side of river have been white-washed and otherwise properly repaired.

*Port Maitland.*

The contractor for the renewal of the east pier at Port Maitland, has commenced work and it is progressing as rapidly as is practicable.

GENERALLY.

Crabs, chains, valve pins, screws, lift rods, gate irons, fenders, face planking, flooring and aprons of locks and waste weirs have been repaired throughout.

Floors, etc., of Government scows repaired and partly renewed from time to time. Snubbing posts, balance beams, fences, interior of shops, &c., whitewashed throughout.

All slush boards of waste weirs have been repaired, and regulated throughout for winter and spring.

A very large number of willows have been planted, also tree slips along various exposed and slipping banks.

A large amount of mud and other deposits has been wheeled out from the bottom of various levels where it was too high to clear keels of vessels.

A considerable amount of new ditching has been cut in various places and old ones cleaned out and deepened.

A very large number of old snubbing posts have been replaced by new ones, and numerous new ones put down in other places.

FINES, DAMAGES, &c.

I have collected during the year from masters and owners of vessels the sum of \$180 in fines for violation of canal regulations and for damages to works, which amount I have handed H. H. Collier, collector of 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 on mitre sills at Port Colborne and Port Dalhousie locks in each month during the year, also a comparative statement of the average depth for the months of June 1880 and 1881, which shows that the water has been higher by 5 inches at Port Dalhousie and 1 inch lower at Port Colborne than for the same month in the year 1880.

Your obedient servant,

WILLIAM ELLIS,

*Superintendent.*

**A.**

**STATEMENT of Fines and Damages collected from Vessels Contravening Canal Regulations for fiscal year ended 30th June, 1881.**

Dates.	Name of Vessels.	Fine.	Damages.	Total.
1880.		\$ cts.	\$ cts.	\$ cts.
June 30 .....	Schr. Wanannosh.....	10 00		
Aug. 30 .....	Raft. Lyons & Son.....	10 00		
Sept. 1 .....	Propellor Prussia.....		120 00	
1881.				
May 17 .....	Barge Pride of America.....	10 00		
do 20 .....	Schr. Bismark.....	20 00		
June 13 .....	do Mystic Star.....	10 00		
	Totals.....	60 00	120 00*	180 00

\*Handed H. H. Collier, Esq., Collector, St. Catharines.

**B.**

**STATEMENT showing the depth of water on the Lower Sill of Lock No. 1, Welland Canal, Port Dalhousie, for the fiscal year ended 30th June, 1881.**

Months.	Lower Sill.				Months.	Lower Sill.			
	Highest.		Lowest.			Highest.		Lowest.	
1880.	Ft.	In.	Ft.	In.	1881.	Ft.	In.	Ft.	In.
July.....	13	5	12	11	January .....	11	10	11	2
August.....	13	2	12	5	February.....	12	1	11	1
September .....	12	9	12	0	March.....	12	6	11	10
October.....	12	1	11	5	April.....	12	10	11	11
November .....	12	2	11	3	May.....	12	11	12	1
December.....	12	1	11	6	June.....	13	2	12	8

Average depth, June, 1880..... 13 4  
 " " " 1881..... 13 9



STATEMENT showing the depth of water on the Upper Sill of Lock No. 27, Welland Canal, Port Colborne, for the fiscal year ended 30th June, 1881.

Months.	Upper Sill.				Months.	Upper Sill.			
	Highest.		Lowest.			Highest.		Lowest.	
1880.	Ft.	In.	Ft.	In.	1881.	Ft.	In.	Ft.	In.
July.....	13	10	12	4	January.....	11	9	10	7
August.....	13	0	11	6	February.....	11	11	9	6
September.....	14	1	11	7	March.....	12	5	10	6
October.....	14	2	10	11	April.....	13	2	11	7
November.....	14	10	11	1	May.....	12	9	11	11
December.....	13	8	11	0	June.....	13	1	11	9

Average depth, June, 1880..... 12 8  
 " " " 1881..... 12 7

### BURLINGTON BAY CANAL.

SUPERINTENDENT'S OFFICE,  
 ST. CATHARINES, 23rd August, 1881.

SIR,—I have the honor herewith to transmit my report of the working and condition of the Burlington Bay Canal, for the year ending the 30th June, 1881.

The canal was closed on the 9th day of December last and opened on the 18th day of April, 1881.

No interruption to the passage of vessels occurred during the year.

In the early part of the season I had to employ a powerful tug and diver from Port Dalhousie with proper apparatus, to remove out of the centre of the channel into the lake a sunken scow that had been removed out of its berth in the Bay by a severe storm and deposited it there.

The progress in the reconstruction of the piers on both sides of the canal has been satisfactory, and so continues.

The steamboat passenger traffic to the Beach seems to be on the increase, as does also the ferry traffic across the canal.

The outlay for repairs has been very light.

I have the honor to be,

Your obedient servant,

WILLIAM ELLIS,

*Superintendent.*

F. BRAUN, Esq.,  
 Secretary, Department Railways & Canals.

## RIDEAU CANAL.

RIDEAU CANAL OFFICE,  
OTTAWA, August 13th, 1881.

SIR,—I have the honor to submit my annual report on the works under my charge, during the fiscal year ending 30th June, 1881.

Navigation closed at Kingston Mills and Ottawa on the 17th and 24th November, 1880, respectively, and opened at Kingston Mills and Ottawa on the second of May, 1881.

Owing to dry weather, increase of lockages, and the want of reserves, the water on the descending reaches, towards Kingston, fell below navigation height early in the fall, more especially on the level between Lower Brewers and Kingston Mills when, on the 14th October, it was one foot five inches below navigation height.

Our summit level (Little Rideau Lake) fell by the close of navigation to one foot three inches below navigation height.

On the reaches descending to Ottawa the twenty-seven mile reach fell to five inches below navigation.

Every year's experience tends to confirm me in the opinion that to maintain navigation until its close during an ordinary season, the different levels must be maintained as long as possible, at their spring height, and that water cannot be spared for water power except where it is necessary to pass the water on to fill up levels below. As traffic increases the mill interest will have to be curtailed as there is not a sufficient supply for both.

Traffic, notwithstanding the lowness of some of the reaches, was continued until the close of navigation, but of course with lighter loads.

The navigation opened this year with a good supply of water on all the reaches, and there is every prospect of good water being maintained until the close.

To prevent waste of water considerable expenditure will be necessary next year, at Kingston Mills and the narrows Station. At both stations there are heavy leaks through the wing walls and under the sills.

Coffer dams will be necessary at both places.

An attempt was made last fall to come to some arrangement with the person whose land was alleged to be drowned by the dam forcibly destroyed at the foot of Mud Lake, in July 1876, (commonly called Chaffey's Dam) with a view to its re-erection.

The agent employed reported after carefully going over the whole ground, that the claims put forth by the several parties being so unreasonable he saw no chance of an amicable settlement being arrived at.

If the Government therefore desire to retain the reserve waters formerly held back by this dam, the only course will be to rebuild, and arbitrate on the alleged damages. If this had been done in 1876, there would have been no trouble.

The principal repairs executed at the different stations were as follows :

*Kingston Mills.*

Repairs to lock gates, and 100 yards of gravel delivered on the dam.

*Brewer's Lower Mills.*

Repairs to lower gates, bulkhead renewed. Swing bridge re-planked.

*Brewer's Upper Mills.*

Bulkhead renewed and two pairs of sluice frames put in.

*Jones Falls.*

Pair of new gates framed and put in upper lock. Timber delivered for renewing another pair.

*Davis'.*

Planked bridge over bulkhead.

*Newboro.*

High bridge painted. Flanges in lock gates repaired.

*Narrows.*

Three hundred yards of gravel and stone put on dam. Block House painted.'

*Smith's Falls.*

Lock house shingled and Eastern Bulkhead rebuilt.

*Old Slys.*

Lock house shingled.

*Merrickville.*

New foot platform attached to swing bridge,—repairs to two pairs of lock gates,—100 yds. of gravel put on Dam,—Timber supplied for renewing two pairs of lock gates, and two new swing beams put on.

*Clowe's Quarry.*

New stone house erected and 100 yds. of gravel put on dam.

*Nicholson's.*

Swing bridge painted and 100 yds. of gravel on dam.

*Burritts Rapids.*

Repairs to lock house, 200 yds. of gravel on dam.

*Manotick.*

One hundred fifty yds. of gravel on bulkhead, and repairs to swing bridge.

*Black Rapids.*

Eastern bulkhead renewed, 2 new swing beams and repairs to sluices.

*Hogsback.*

One hundred yards of gravel on dam. Apron of bulkhead repaired.

*Ottawa.*

One pair of lock gates renewed and painted. Pier of lock taken down and rebuilt and general repairs to sluices. Repairs to wharf round basin.

The works generally are in good working order. Traffic is increasing both in freight and passengers, two new passenger steamers being placed on the route this season.

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

FRED. A. WISE,  
*Superintending Engineer.*



TRENT CANAL WORKS,  
ENGINEER'S OFFICE,  
PETERBORO, November, 1881.

SIR,—I have the honor to submit my annual report on the works under my charge, for the fiscal year ended June 30th, 1881.

From July 1st to the close of navigation, November 10th, 1880 the water in the several canals along the line of navigation, was maintained at the standard level, viz: 5' 0" on the mitre sills of locks.

The greatest number of lockages made at any single lock, during the season of navigation, was 864, composed of 644 barges, and 220 steamers. The total number of lockages made on the several canals, was 1,420, conveying a tonnage of about 42,000 tons, consisting of products of the forest, products of animals, agricultural and mineral products, and merchandize.

Comparing the season 1880–81, with that of 1879–80, it shews an increase in the transportation of "products of the forest," and "agricultural products" but a decline in mineral products, the cause of this decline is in consequence of the iron mines at Marmora not being worked as extensively as in the previous year.

No break of any consequence occurred at any of the works and navigation continued uninterrupted, except at Hastings Station, when it was necessary to suspend it in the month of September, in order to execute certain urgent repairs, it closed November 8th, and opened April 26th following.

The quantity of timber that passed the slides for the past year, amounted to the following, viz:—

Saw logs.....	741,520
Square .....	7,957
Boom timber.....	9,220
Cedar .....	7,000
Shingle Bulls.....	780

The nature and object of the works along the line of navigation having been fully described by me in detail, in former reports, I shall confine myself to laying before you as briefly as possible, a description of the necessary repairs executed at the several stations, during the past fiscal year, together with those required.

*Lindsay.*

A new fish pass was constructed here, as called for, by the Department of Marine and Fisheries.

*Scugog River.*

This is a branch of the main line of navigation in a south-westerly direction to Port Perry at the head of Lake Scugog. A number of sunken logs and snags, that had accumulated in the bed of the river and impeded steamboat navigation were removed. Also a beacon was erected at the mouth of the river to direct boats approaching from lake Sturgeon, it is necessary that a light should be placed on this beacon, and a lighthouse keeper appointed.

*Fenelon Falls.*

The timber slide which was damaged to such an extent, as to impede the passage of timber, received the necessary repairs.

A line of piers is required above the throat of the slide to direct the running of timber thereto, and the cribwork forming the north side wall requires three new top courses.

*Bobcaygeon.*

The repairs executed here consisted in renewing berm bank of canal, fixing new braces and sheeting a portion of the dam, repairing swing bridge and constructing side walk thereto, repairing Lock Master's office, constructing a new wharf at head of canal and removing boulders from channel approaching the lock.

Timber is being delivered for new lock gates, which will be constructed this winter, so as to be ready for the opening of navigation.

The western dam being much decayed, requires more than ordinary care and expenditure from year to year to keep it from being carried away by the freshets, the result of such accident (if such it can be called now) would be, to run down the level of Lake Sturgeon, on which there are 10 steamers engaged, some in conveying passengers, and others in towing lumber grain, rafts &c., and cause a cessation of this trade. I would therefore urge the necessity of constructing a new dam here.

*Buckhorn.*

At this station the boom piers weir repaired, the waste weir renewed and wing dam re-planked.

The dam is undergoing extensive repairs, such being found necessary to ensure its safety, new guide booms are being fixed and boulders below slide removed.

The parties who were so anxious to obtain a grant of the surplus water at this station for running a grist mill, have as yet neglected to sign the departmental form of lease.

*Burleigh.*

The works, here, were erected almost exclusively for the benefit of the lumber trade, and now require repairs, which I have already reported on, and in accordance with instructions I have addressed several of the lumbermen who yearly make use of the works, on the subject of what toll they would be agreeable to pay, provided the Department made all the improvements required; up to the present I have not received a definite reply, but hope to be able to transmit their views in a short time.

*Lakefield.*

On the stretch between this station and Burleigh, there is a considerable trade springing up in transportation of railway ties, cedar posts, cord wood, shingles &c., and the channel in several places is obstructed by boulders; these are being removed by a "Stone lifter," and when completed, an extra depth of a foot will be obtained, giving a total depth for navigation, when water is level with the apex of dam, of 4' 8."

If the dam were under Departmental control, it would be a great benefit to all parties interested, both in the navigation, lumber and milling interests. At present it is a constant subject for dispute and contention, the water levels not being regulated satisfactorily.

*Peterborough.*

The saw-dust banks formed in the river have become such a nuisance as not alone to obstruct navigation, but to cause sickness in the surrounding locality. Having been requested by Mr. Perley, Chief Engineer, Public Works, to prepare a detailed report on this matter. I am doing so, and in order to shew the positions of the several saw-dust banks, and the depth of the accumulation on the bed of the river, I am making an accurate survey of the river and lake adjoining the John, to accompany the report.

*Little Lake.*

A new boom pier was constructed and others repaired, and the booms strengthened and fixed.

### *Whitlows Rapids.*

The repairs at this station consisted of deepening approach to lock and removing boulders, some masonry repairs to lock, fixing new chains to lock gates, strengthening wing dam, painting and strengthening lock gates. A shoal, that existed a short distance below the cross dam and directed the current into the entrance to canal below lock, was removed. The guide booms were overhauled and fixed.

The upper mitre sill of lock is being repaired, and the sluice area in gates enlarged.

The lock requires new lower gates, the wing dam, entire renewal.

### *Otonabee River.*

The shoals at the following places, viz.: Yankee Bonnet, Dangerfield, Robinsons Island,—have been removed and there is now 3 inches water more on these shallows, than on the lower mitre sill of lock at Whitlaw's Rapids.

### *Hastings.*

In accordance with instructions contained in letter No. 3623 the repairs to the dam at this station were satisfactorily carried out. They consisted in stopping the leak under the dam which necessitated, the construction of a coffer dam across the river at a place known as the "flat rock;" great difficulties were encountered in getting the coffer dam "water tight," and on several occasions it gave out, causing great annoyance and loss of time, but ultimately it got its "set" and the main dam was laid bare; it was found that between the sills and the bed of the river there was a space of 1' 6" through which the water flowed for one half the length (126' 0") of the dam, this was closed up with 3-inch plank and concrete, and the dam gravelled. The throat of the slide which also leaked badly was repaired and some masonry repairs to wing wall of lock executed. The beneficial result of these repairs is now apparent, Rice Lake being higher (notwithstanding the continued drought) than has ever registered for the last forty years according to the Lock Master's returns. New chains and gearing for working the lock gates have been fixed, and the Lock Master's house cleaned and painted; new fences around lock grounds were also erected.

The repairs required consist in repairing lower mitre sill of lock, and constructing lower gates, and the south half of the dams should receive similar repairs to those executed on the north half.

About  $\frac{3}{4}$  of a mile above the lock, the river is spanned by a bridge constructed by the Grand Junction Railway Company, in which there is a swing. This swing in its present shape is totally inadequate for the requirements of navigation, inasmuch as the piers of the bridge are set obliquely to the direction of the current, and there are no approaches whatever constructed to the swing.

I submitted a detailed report on this matter to the Department, but I regret, and those interested in the navigation of these waters regret, that the details therein submitted, were not carried out. There is now, I am informed, an injunction in Chancery issued, prohibiting the railway from crossing the bridge in its present shape, and demanding that necessary improvements be made to the swing.

### *Heely's Falls.*

The dam has been gravelled and repaired and the throat of the slide above the stop logs replanked. To do this it was necessary to construct a cofferdam which was satisfactorily accomplished and remained staunch and tight.

The present guide boom should be extended about 180 feet, so as to direct drift wood into the slide and prevent it from going over the dam. The side walls of the slide require renewal and must be attended to this coming season.



*Middle Falls.*

Instructions having been given to construct a flat dam at the head of the rapids, a survey of the rapids is about being made for that purpose.

The lower slides having been for a number of years disused, it is now the intention of the lumberers, instead of running the rapid after running the upper slide, to run the lower slide, it will therefore require to be put in working order.

*Campbellford.*

The pier and guide-booms have received a general overhauling and fixing.

*Ranney's Falls.*

The works erected here by the late Joseph Keeler, Esq., for the purpose of conveying water to the Pulp factory which is just completed and in running order, are of the best description and very creditable.

The factory is capable of running up to 600 H.P.

*Chisholm's Rapids.*

The works carried out at this station consisted in cleaning out and deepening the canal, constructing open lock gates, gravelling and repairing dam. In order to hang the lock gates it is necessary that the lock should be pumped out and the chamber cleaned, as at present there is over 3 feet of debris and mud on its floor.

The boulders below the canal require removal, and a head gate constructed at considerable expense and delay.

Application for a water power has been made by Mr. Clement Armstrong who has purchased all the land through which the canal passes, and who has divided it up into village lots and erected several houses thereon, and as the gentleman evidently means business and is possessed of energy and enterprise, I beg respectfully to advise that, as he would be a worthy recipient, it would be well to give him a grant of the surplus water according to Departmental form of lease.

He has already excavated his race-way and constructed his head gates, and according to his own statement is only waiting to receive a lease, to build a "large factory."

Before concluding, I beg to state that owing to the unsatisfactory manner in which the water was regulated on the Feeders during the present season, I have found it necessary to place a man in charge for a month or two in the year of the dams erected thereon, so as to regulate the supply. This course I have found it absolutely necessary to pursue as the lower levels are dependent on the feeder.

I have the honor to be, Sir,

Your obedient servant,

THOMAS D. BELCHER,

*Superintending Engineer.*

F. BRAUN, Esq.,  
Secretary,  
Dept. of Railways and Canals,  
Ottawa.

## TRENT VALLEY NAVIGATION.

OFFICIAL REPORT of Steam Vessels inspected last year on the waters included in the proposed Trent Valley Navigation.

Name.	Tonnage.	Remarks.
Carriola.....	35	Screw, Passenger and Freight. Lake Couchiching.
Victoria.....	63	Screw Tug. Lakes Simcoe and Couchiching.
Emily May.....	362	Paddle, Passenger. Lake Simcoe.
Mary Ellen .....	81	Paddle Tug. Lindsay Lakes.
Anglo Saxon .....	47	do do
Samson .....	129	do do
Lady Ida.....	27	do do
Beaubocage .....	129	do do
Victoria.....	191	do do
Vanderbilt.....	286	Sturgeon Point, Paddle, Passenger. Lindsay and Bobcaygeon.
Maple Leaf.....	29	Bobcaygeon, Screw, Passenger. Bridgeworth and Bobcaygeon.
Coboconk .....	103	Fenelon Falls, Paddle, Passenger. Fenelon Falls and Coboconk.
Fairy .....	23	Harwood, Screw, Passenger. Rice Lake and Otonabee River.
Arlington.....	33	do do do
Maggie Summerville.....	11	do do do
Golden Eye.....	61	Harwood, Paddle, Passenger. Rice Lake and Otonabee River.
Aln.....	35	Peterboro, Paddle Tug. Rice Lake and Otonabee River.
Col. Strickland.....	57	Lakefield, Paddle, Passenger. Clear and Stoney Lake.
Cruiser .....	31	do Screw, do do
Whistle Wing .....	87	Harwood, Paddle, Passenger. Rice Lake and Otonabee River.

The following Steam Vessels are reported as not being inspected last year, but several of them were in course of construction or repair:—

Name.	Tonnage.	Remarks.
Commodore .....	174	Lindsay, Paddle Tug. Lindsay Waters. Sunk.
Ontario .....	80	Port Perry, Paddle Tug and Freight. Lindsay Waters.
Isaac Butts.....	239	Harwood, Paddle, Passenger. Rice Lake and Otonabee River.
Forest City.....	104	Harwood, Paddle Tug. On Rice Lake.
Alert .....	6	Harwood, Screw, Passenger. Rice Lake and Otonabee River.
Tiger .....	3	Lakefield, Screw, Passenger. Clear and Stoney Lake.

## ST. PETER'S CANAL.

OTTAWA, 17th October, 1881.

SIR,—I have to report that the works of enlarging the Saint Peter's Canal were to be brought to a conclusion in December last. As stated in my report of last year, traffic commenced in October, and I have now to add that it closed on 26th December. This spring the canal opened for navigation on the 23rd April, and the following is a statement of the number and tonnage of Vessels, which passed through it between the 6th October, 1880, and 30th June, 1881.

Month.	No. of Vessels bound north.	Tonnage.	Amount collected for Tolls.	No. of Vessels bound south.	Tonnage.	Amount collected for Tolls.
1880.			\$ cts.			\$ cts.
October.....	36	1,512	39 12	25	930	25 18
November.....	36	1,348	42 10	28	1,455	43 00
December.....	16	910	17 82	12	1,001	17 82
1881.						
April.....	5	168	5 00	4	115	4 00
May.....	44	2,355	59 37	30	1,759	35 15
June.....	60	7,259	40 31	58	5,344	42 34
Total.....	197	13,552	203 72	157	10,604	167 49

## RECAPITULATION.

Total Number of Vessels.....	354
Total Tonnage.....	24,156
Total Collected.....	\$371 21

I have the honor to be, Sir,

Your obedient servant,

HENRY F. PERLEY,

*Engineer in charge.*

F. BRAUN, Esq., Secretary,  
Department of Railways and Canals.



## APPENDIX No. 5.

## GENERAL STATEMENT SHEWING:

- 1st. Water Power and other Public Property leased on Canals and Railways, during the Fiscal Year ending 30th June, 1881.
- 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, 1881.

## GENERAL STATE

## 1st. Water Power and other Public Property leased on Canals

Date.	Term of Lease.	Lessors.	Property leased.	For what purpose used.
Jan. 3, 1881	Pleasure of Government.	Henry Merrick.....	<i>Rideau Canal.</i> Lot near Swing Bridge, & leakage water at Merrickville.	.....
Oct. 16, 1880	do	J. C. Pierce & Son...	<i>Chambly Canal.</i> Part of Canal Reserve on wharf near Partition street, St. John's, P.Q., at Canal entrance.	Offices.....
Aug. 24, 1881	do	The City of Montreal	<i>Lachine Canal.</i> Land between Wellington, St. Patrick and St. Columban streets and Canal banks, and south of Wellington street Bridge, Montreal.	Park.....
Aug. 16, 1880	21 years, re-newable.	Montreal Transportation Co.	Island No. 5, between old and new canals above St. Gabriel Lock and below Brewster's Bridge.	Ship yard and supply station.
July 21, 1880	Pleasure of Government.	Silfrid Delisle.....	To place a floating bath in Canal, on North-east side of Brewster's Bridge.	Floating Bath.....
Dec. 2, 1880	do	Dominion Telegraph Co.	<i>Cornwall Canal.</i> To erect a telegraph office, near Lock 16, at Cornwall.	Telegraph Office...
July 26, 1881	do	Sydney Shaver.....	<i>Point Iroquois Canal.</i> Part of W. $\frac{3}{4}$ of W $\frac{1}{2}$ of lot No. 32, 1st concession, Matilda.	Orchard .....
Nov. 10, 1881	do	St. Catharines Street Railway Co.	<i>Welland Canal.</i> Part of lots Nos. 14 in 6th and 14 in 7th concessions, Grantham, at St. Catharines Lock No. 5.	Street railway .....
Aug. 3, 1880	do	Alex. Lattimore.....	Part of lots 18 and 19 in 4th conc., Wainfleet, near Marshville.	Brick yard.....
Sept. 5, 1880	do	Grand Trunk Railway Co.	Part of lot 27, in 1st conc., Humbertstone, near Port-Colborne.	Temporary track...
Oct. 6, 1880	Pleasure of Government.	Todd & Nicholson....	<i>Beauharnois Canal.</i> Lot for wharf and shed on Canal Basin, Valleyfield.....	Wharf and storehouse.
Oct. 12, 1880	do	Alex. McFee & Co ...	do do do	do
April 22, 1881	do	O. P. Dennie.....	Cadastral lots 747-748 above guard lock, Valleyfield	Dwellings, &c.....
do	do	O. Longton.....	do 746 do	do .....
May 13, 1881	do	Estate A. Hodge .....	do 745 do	do .....
April 13, 1881	do	A. Cockburn.....	do 744 do	do .....
June 1, 1881	do	Montreal Cotton Co.	do 846 on road to Grande-Isle.	.....

MENT SHOWING :

and Railways, during the Fiscal Year ending 30th June, 1881.

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	
.....	acres 0.42	Date of lease.	\$ cts. 5 00	5 00	January 1.....	Jan. 1, 1881	
.....	feet. 45x28	July 1, 1880	50 00	50 00	July 1.....	July 1, 1880	
.....	.....	do	1 00	1 00	do .....	On delivery of lease.	
.....	.....	do	100 00	100 00	do .....	July 1, 1881	
.....	.....	Aug. 1, 1880	1 00	1 00	August 1.....	On delivery of lease.	
.....	feet. 8x8	July 1, 1880	5 00	5 00	July 1.....	do ...	
.....	feet. 490x $\frac{1}{2}$	May 1, 1881	10 00	10 00	May 1.....	do ...	
.....	.....	Oct. 1, 1879	5 00	5 00	October 1.....	Oct. 1, 1879	
.....	acres. 6.84	July 1, 1880	10 00	10 00	July 1.....	On delivery of lease.	
.....	.....	Sept. 5, 1880	Free.....	.....	.....	.....	By Order in Council, no lease executed.
.....	feet. 150x30	Oct. 1, 1880	20 00	20 00	Oct. 1, 1880....	On delivery of lease.	
.....	150x30	do	20 00	20 00	do ...	do ...	A. McFee is sole partner.
.....	80x43	Dec. 1, 1880	20 00	20 00	Dec. 1, 1880....	do	} Part of land leased in 1875 to widow Edw. McKenzie.
.....	40x43	do	10 00	10 00	do ...	do	
.....	60x43	do	15 00	15 00	do ...	do	
.....	57x43	do	14 00	14 00	do ...	do	
.....	3,000 ft.	May 1, 1881	20 00	20 00	May 1.....	do	



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, 1881.

Date of Signature.	Vendors.	Purchasers.	Property purchased or sold.	For what purpose used.	Area of land.	Price of sale.	Remarks.
Oct. 8, 1880	Heirs Abr. Marsh.....	Her Majesty.	Order of Court of Chancery, <i>re</i> lots 26 and W $\frac{1}{2}$ 25, 1st Concession Cornwall.....	Cornwall Canal....	A. R. P. 42 1 21	\$ cts. 263 50	Payable to Heirs Abr. Marsh.
Nov. 23, 1880	do .....	do ...	Order of the Court of Chancery, on further directions, <i>re</i> lots 26 and W $\frac{1}{2}$ 25, 1st Concession, Cornwall.....	do ....	do	169 00	Payable to 34 parties named in list.
April 6, 1881	do .....	do ...	Report of Master in Chancery, to pay for <i>re</i> lots 26 and W $\frac{1}{2}$ 25, 1st Concession, Cornwall.....	do ....	do	168 68	Payable to solicitor J. Leitch.
Aug. 31, 1880	Hon. B. Botsford (Judge) <i>et ux</i> .....	do ...	Part of lot No. 9, Mountain Road, Moncton....	Intercolonial R'y..	0.7 $\frac{3}{10}$ acre.	601 18 150 00	In all.
July 21, 1880	Chr. Milner <i>et ux</i> , & W. C. Milner. ....	do ...	Part of Easterbrook's lot, Sackville .....	do ...	3.1 $\frac{9}{10}$ do	3,580 50	
Oct. 25, 1880	Pre. Cantin.....	Grand Trunk R'y Co.	Receipt for principal (\$1,000) of a constituted rent of \$60 on lot No. 649, St. Lawrence Ward, town of Lévis, on Rivière du Loup Branch....	do .....		1,000 00	Now owned by Government under deed No. 5,898, of 17th July, 1879, from Grand Trunk Railway Co.
Oct. 18, 1880	Jos. Rielle, P.L.S....	.....	Procès-verbal of boundary between Grand Trunk Railway lands, and Intercolonial Railway property, at Chaudière Curve and Junction and at Hadlow, P. Q., on Rivière du Loup Branch.....	do .....			
Feb. 23, 1881	Widow Benj. Lemieux	Grand Trunk R'y Co.	Receipt for principal (\$358.33 $\frac{1}{2}$ ) of 3 ground rents mentioned in following deeds, Pointe Lévis.....	do .....		358 34	
May 19, 1853	David Langlois, to...	Quebec and Richmond R'y Co.	Lot at Pointe Lévis, on farm of B. Lévis, from Road to River .....	do ...	2x7 $\frac{1}{2}$ perch.	91 66 $\frac{2}{3}$	\$5.50 for rent.
Nov. 15, 1852	Louis Langlois, to....	do ...	Lot at Pointe Lévis, on farm of B. Lévis, along beach.....	do ...	5x3 do	133 33 $\frac{1}{3}$	\$8.00 do
do	F. Lemieux, to.....	do ...	Lot at Pointe Lévis, in 1st Concession, from Road to foot of Cape.....	do ...	4 per front	133 33 $\frac{1}{3}$	\$8.00 do
Dec. 3, 1880	Her Majesty, to. ....	Geo. Stephen	Lots at Assametguagan, and part of lot No. 42, Metapedia .....	do ...	{ 2a. 52p..... 0.55 $\frac{5}{100}$ acre.	300 00 600 00	At Assametguagan. At Metapedia.
Nov. 9, 1880	Inhabitants of Portage Laprairie, to..	Her Majesty.	Bond, for difference of cost by diverting the Canadian Pacific Railway, <i>via</i> Portage Laprairie, instead of as at present laid down...	Canadian Pacific Railway .....		10,000 00	

Mar. 22, 1880	W.N. Fairbanks <i>et ux.</i>	do	Lot 6, block 2, Emerson, Windmill for water service, County of Provencher.	Pembina Branch, C. P. R.....	33×33 feet.	1 00	
July 10 1877	Archbishop, St. Boniface (Trustee).....	do	Along S.E. ¼ section 7. in Township 10 Range 4 East, near and at St. Boniface.....	do	80.42 acres.	.....	Right of Way and Stations.
April 6, 1881	L. Streeter.....	do	Lot 6, block 11, Emerson, County of Provencher.	do	0.12 do	44 97	
Mar. 1, 1881	Wm. Robertson.....	do	9, do 45, do do	do	.....	40 00	
Feb. 23, 1881	Thos. White.....	do	46, Parish of St. John, County of Selkirk....	do	2.40 acres.	12 00	
April 1, 1881	N. Campbell.....	do	91, Kildonan, do	do	1.51 do	9 95	
Jan. 18, 1881	Robt. Munro.....	do	93, 92, 78, 89, do do	do	5.16 do	42 33	
Jan. 15, 1881	G. E. Fulthorpe.....	do	88, do do	do	1.06 do	10 89	
Jan. 28, 1881	J. H. Bell.....	do	84, do do	do	1.54 do	19 78	
Mar. 19, 1881	J. Matheson.....	do	83, do do	do	0.51 do	5 24	
Mar. 7, 1881	S. Matheson.....	do	82, do do	do	0.51 do	2 62	
Mar. 4, 1881	Hugh Polson.....	do	76, do do	do	0.51 do	2 62	
April 4, 1881	Wm. Fraser.....	do	69, do do	do	1.03 do	5 29	
Mar. 10, 1881	M. McLeod.....	do	67, do do	do	1.03 do	5 29	
Jan. 5, 1881	A. Matheson.....	do	60, 65, do do	do	{ 1.03 } do	49 10	
do	P. Kauffman.....	do	64, do do	do	{ 1.06 } do	20 05	
Jan. 14, 1881	R. Gunn.....	do	62, do do	do	1.54 do	22 54	
Jan. 20, 1881	J. Gunn.....	do	61, do do	do	1.17 do	17 73	
Dec. 22, 1880	Wm. Matheson.....	do	52, do do	do	0.92 do	72 30	
Mar. 2, 1881	Janet Pritchard.....	do	47, do do	do	2.23 do	23 25	
Mar. 29, 1881	J. G. McRae.....	do	40, do do	do	1.51 do	4 85	
Oct 26, 1880	J. Andrews and R. J. Short.	do	42, do do	do	1.26 do	62 80	
Jan. 18, 1881	Hon. Jos. E. Cauchon & R. Lagimodière.	do	71, St. Boniface, do	do	1.51 do	{ 58 21 } 0 20	
Apr. 21, 1881	C. McDougall.....	do	67, do do	do	2.18 do	42 11	
Feb. 2, 1881	Mary Inkster.....	do	85, Kildonan, do	do	0.52 do	5 34	
April 4, 1881	W. F. Alloway.....	do	72, do do	do	0.51 do	2 62	
Feb. 1, 1881	C. Inkster.....	do	70, do do	do	1.03 do	5 29	
Jan. 5, 1881	Jas. McKay.....	do	68, do do	do	1.04 do	5 30	
Mar. 3, 1881	Wm. M. Good.....	do	119, St. Paul, do	do	1.55 do	15 50	
Mar. 14, 1881	Wm. Thomas <i>et al.</i> ....	do	113, do do	do	3.90 do	{ 39 00 } 19 27	Lots. Off-take drains.
May 2, 1881	W. D. Lane.....	do	100, do do	do	3.52 do	10 56	
Mar. 25, 1881	Margt. Stewart.....	do	{ 96, } { do } do	do	{ 1.15 } do	{ 11 50 } 6 69	
Apr. 14, 1881	Thomas Slater.....	do	{ 99, } { do } do	do	{ 2.23 } do	20 40	
Apr. 20, 1881	Wm. Kirkness.....	do	94, do do	do	2.04 do	12 33	
Apr. 20, 1881	D. McLeod.....	do	Lot S.E. ¼, Sect. 8, Township 13, R. 5, E., St. Andrews, County of Lisgar.	do	2.40 do	40 40	
Feb. 25, 1881	C. S. Cody.....	do	Park Lot U, St. Clement, outer 2 miles, County of Lisgar.	do	0.88 do	1 00	
Mar. 2, 1881	Wm. Kilby.....	do	Lot 5, Block 26, Emerson, County of Provencher	do	0.002 do	20 00	
Mar. 1, 1881	Jane E. Robertson <i>et vir.</i>	do	4, " 40, do do	do	0.06 do	6 58	
		do	S.E. ¼ Sect. 5, Tp. 2, R. 3 E. do	do	5.13 do		

[1881]

2nd.—PROPERTY purchased or sold by the Department of Railways and Canals, &c.—Continued.

Date of signature.	Vendors.	Purchaser.	Property purchased or sold.	For what purpose used.	Area of land.	Price of sale.	Remarks.
Mar. 1, 1881	D. G. Dick.....	Her Majesty.	Lot S. W. $\frac{1}{4}$ Sect. 17, Tp. 3, R. 3, E., County of Provencher	Pembina Branch, C.P.R.....	0.69 do	\$ cts. 0 69	
do	Wm. Grant.....	do	{ 43 } Ste. Agathe, do	do ...	{ 2.92 } do	{ 43 80	
Nov. 4, 1880	P. B. Douglas.....	do	18, do do	do ...	2.96 do	49 80	
Feb. 23, 1881	R. Yerrot.....	do	8, Block 31, Emerson, do	do ...	0.16 do	57 03	
			Sect. 34, Tp. 3, R. 3, E. do	do ...	{ 4.56 } 12.56 }	22 26	
May 23, 1881	Hon. D. B. Smith....	do	do 9, do do	do ...	{ 5.98 } 0.06 } 0.35 } 6.33 } 6.34 } 5.19 }	41 32	
Mar. 16, 1881	James Bedford.....	do	S.E. $\frac{1}{4}$ , Sect. 17, Tp. 2, R. 3, E. do	do ...	5.30 do	5 30	
Mar. 1, 1881	R. Scott.....	do	N.E. $\frac{1}{4}$ 5 and N.W. $\frac{1}{4}$ 5, do do	do ...	5.93 do	1 13	
April 20, 1881	J. Clouston.....	do	Lot N.E. $\frac{1}{4}$ , Sect. 6, Tp. 13, R. 5, E., St. Andrews, County of Lisgar.....	do ...	3.28 do	27 49	
Jan. 5, 1881	J. Mathewson.....	do	Lot 92, St. Paul, County of Selkirk.....	do ...	1.51 do	19 77	
Mar. 24, 1881	E. Thomas.....	do	113, do do	do ...	1.30 do	13 00	
Mar. 22, 1881	Executors of C. J. Bird.....	do	101, do do	do ...	6.44 do	49 65	
Mar. 4, 1881	S. Wynne <i>et vir</i> .....	do	S.W. $\frac{1}{4}$ , Sect. 20, Tp. 2, R. 3, E., County of Provencher.	do ...	.....	1 00	
Mar. 1, 1881	T. Coulter.....	do	S.E. $\frac{1}{4}$ , do do do	do ...	7.10 do	7 10	
do	C. Coulter <i>et vir</i> .....	do	S.W. $\frac{1}{4}$ , do do do	do ...	2.45 do	2 45	
do	A. McLean.....	do	N.E. $\frac{1}{4}$ , do 17, do do	do ...	5.41 do	5 41	
Mar. 5, 1881	J. Waddell <i>et vir</i> .....	do	do do 20, do do	do ...	10.25 do	10 25	
Feb. 23, 1881	W. H. Nash.....	do	Lot 52, 425, 426, Emerson, of Parish lot 2, Ste. Agathe, County of Provencher.....	do ...	.....	12 00	
Mar. 3, 1881	D. Carmichael.....	do	Lot S.W. $\frac{1}{4}$ , Sect. 32, Tp. 1, R. 3, E., County of Provencher.	do ...	6.29 do	6 28	
Mar. 5, 1881	W. Nelson.....	do	S.E. $\frac{1}{4}$ , do do do	do ...	6.37 do	6 37	
Mar. 10, 1881	D. Murray.....	do	{ 57, Kildonan } 109, St. Paul } 97, do }	County of Selkirk.....	{ 1.03 } 88 } 1.12 }	{ 13 22 } 11 30 } 14 39 }	



8  
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Date	Party	do	Description	Branch	Area	Value
Jan. 27, 1881	J. & M. Harper	do	Lot 74, Kildonan, County of Selkirk	Pembina	0.51 acres	\$ 2 62
Mar. 7, 1881	Cath. & Jtte. Polson	do	81, do do	C.P.R.	1.03 do	5 29
Feb. 22, 1881	W. H. Nash & A. Stewart	do	20, Ste. Agathe, County of Provencher	do	3.26 do	62 83
May 13, 1881	Cath. M. Nash <i>et vir</i>	do	S.E. Sect. 22, do do	do	1.78 do	34 30
Mar. 14, 1881	Cath. Thompson <i>et vir</i>	do	53, Kildonan, County of Selkirk	do	1.29 do	55 12
June 15, 1881	Wm. Bredin	do	96, do do	do	2.07 do	32 57
Nov. 19, 1879	Geo. Casselman <i>et ux</i>	do	Part lot No. 16, in 4th Conc., Mariatown, Rapide Plat Canal	Williamsburg Canal		100 00
Nov. 2, 1880	do	do	Order of Court of Chancery, vesting part of lot No. 16, in 4th Con., Mariatown, Rapide Plat Canal, in Government	do		
Nov. 29, 1880	J. Nicholson	do	Release damages. S.E. Part lot A, Dunnville, Main street.	Welland Canal		317 50
Aug. 13, 1880	Jos. Upper <i>et ux</i>	do	Lot No. 1, Allanburg, between North street and Holland Road, being part of 96, Thorold.	do	0.28 do	500 00
Aug. 16, 1880	S. D. Woodruff	do	Release for flooding, part lots 20 and 21 in 5th and 6th concessions, Grantham.	do		350 00
Aug. 24, 1880	Thomas Nihan	do	Part of Lot 19 in 3rd concession, Grantham	do	2.21 do	468 66
Aug. 10, 1880	E. McArdle	do	Part of Lots 5, 6, 7 and 8, Port Dalhousie, North of James street being part of Lot 21 in 1st concession, Grantham, on Christie Estate.	do	0.55 do	1,200 00
Oct. 18, 1880	B. Anderson	do	Part of lots 4 and 5, Allanburg, west of Centre street, or 119, Thorold township.	do	0.12 do	1,500 00
Sept. 2, 1880	Widow C. Morrison	do	Part of lot C, Port Colborne, or 27 in 1st conc., Humberstone, with privilege to the Govt to cut a back ditch across lot, repair it, &c	do		2,100 00
Nov. 6, 1880	Wm. Mellanby	do	Part of lot E, Port Colborne, do do	do	0.003 do	200 00
Nov. 27, 1880	Thomas Rae <i>et al</i>	do	do D, do do do	do		200 00
Dec. 3, 1880	J. W. Johnson <i>et ux</i>	do	do 21 and 22 in 4th conc., Grantham	do		930 00
Dec. 20, 1880	E. F. Liedy <i>et ux</i> & J. Liedy.	do	do 25, in 3rd conc, Humberstone	do	2.50 do	30 00
Dec. 27, 1880	L. McCallum	do	do 27, in 1st do E. Port Colborne	do	0.17 do	200 00
Jan. 21, 1881	O. Upper <i>et ux</i>	do	do 4, Allanburg, west of Centre street, or 119, Thorold.	do	0.69 do	1,000 00
Aug. 26, 1880	Revd. N. H. Martin <i>et al</i>	do	Release for damages to lot 26, Thorold	do	3.00 do	115 00
Feb. 26, 1881	B. F. Reynolds	do	do do 22 and 23, in 1st Conc., Grantham	do	23.00 do	2,650 00
April 8, 1881	J. McDonagh	do	do do 49, Thorold	do		237 46

With release, damages.

Revd. J. J. McArthur refused to accept valuation.

E. & H. Neelon, mortgagees, are parties to deed.

[1881]

2nd.—PROPERTY purchased or sold by the Department of Railways and Canals, &c.—Continued.

Date of Signature.	Vendors.	Purchaser.	Property purchased or sold.	For what purpose used.	Area of land.	Price of sale.	Remarks.
April 6, 1881	James Clark <i>et ux</i> ...	Her Majesty.	Part of lot 19 and 20, and road allowance in 2nd Concession, Grantham.	Welland Canal.....	{ 0.66 } do { 4.66 }	2,136 00	Quit claim deed by J. A. Miller <i>et ux</i> to Government of mortgage, \$1.
May 17, 1881	T. & J. Conlon.....	do	Part of Lot 203, Thorold, or an Island at Port Robinson, and release for damages and loss of business. Bond if any loss by mortgage by J. R. & J. E. Abbey.	do .....	1.00 do	8,693 00	The J. & J. Abbey lot.
June 1, 1881	Stephen Beatty.....	do	Release, cost of cleaning old canal at Port Robinson, loss of water.	do .....	.....	926 50	<i>In re</i> lease 2518.
June 2, 1881	J. McGillivray <i>et ux</i> .	do	Part of Lot 28 in 2nd Conc., Humberstone, or 8522, Port Co borne.	do .....	4.22 do	2,140 00	
June 22, 1881	G. W. Millar.....	do	Release, flooding lots 1 and 2, Gore of Thorold, by dam at Lock 24, giving way.	do .....	11.00 do	75 00	

OTTAWA, November 12, 1881.

H. A. FISSIAULT,

APPENDIX No. 6,  

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DEPARTMENT OF RAILWAYS AND CANALS,

OTTAWA, 26th October, 1881.

SIR,—I beg to transmit herewith a statement of the 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, 1880.

I am, Sir,

Your obedient servant,

CHS. THIBAULT,

*Sec. to the Official Arbitrators.*

F. BRAUN, Esq., Secretary,

Department of Railways and Canals,

Ottawa.



**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, 1881.**

Claimant.	Nature of Claim.	When referred.	Whether referred to one or more Arbitrators.	Whether referred for award under Act 31 Vict., c. 12, or for report under Act 41 Vict., c. 8.	Amount claimed.	Amount awarded or recommended to be paid.	Date of award or report.	Remarks.
		1880.			\$ cts.	\$ cts.		
Thadée Anctil.....	Intercolonial Railway—land taken.	July 16...	One arbitrator.	Report..	.....	81 00 and for each arp. of land taken	Sept 6, '80 Oct. 23, '80	With use of water when canal completed.
John McDonagh.....	Welland Canal—damage by water..	July 19...	do	do ..	275 00	209 00		
Phelps Bros. ....	do detriment to their mill .....	July 20...	do	do ..	2,500 00	1,500 00	Sept. 22, '80	
Joseph Boudreau.....	Intercolonial R'y—damage by water	July 31...	do	do ..	.....	20 00	Nov. 18, '80	
Cyprien Thériault.....	do bull killed.....	Sept. 11...	do	do ..	25 00	25 00	do	
Rufus Brown.....	do cow killed.....	Dec. 15...	do	do ..	50 00	50 00	Feb. 12, '81	
Lucien Morin.....	do land taken for temporary ballast line.	July 16...	do	do ..	Not stated	\$100 p. arp. \$30 for w'k and \$2 for ann'l rent.	Sept. 2, '80	
Joseph Levesque.....	do do	do ...	do	do ..	do ...	8 00	do	
Eugène Robichaud.....	do do	do ...	do	do ..	do ...	12 00	do	
Mrs. Widow Charrois..	do do	do ...	do	do ..	do ...	.....	do	
Germain Pelletier.....	do do	do ...	do	do ..	do ...	.....	do	
Origene Pelletier.....	do do	do ...	do	do ..	Claimed amount not stat'd	22 50 and 100 00 p. arpent....	Sept. 2, '80	
J. B. Castonguay.....	do do	do ...	do	do ..	do	100 00 ann'l rent	do	
W. A. Doherty.....	do horse killed.....	Dec. 15...	do	do ..	25 00	25 00	Sept. 6, '81	
H. M. Hamilton .....	do damage, contract not carried out by Government .....	Sept. 16...	do	do ..	1,000 00	Nil.	Feb. 18, '81	Claimant should refund \$142.91 to Government.

Name	Description	Date	Authority	Report	Amount	Interest	Date
Hon. R. Boak	Intercolonial R'y—land expropriat'd	Sept. 18...	Whole Board.	Award..	Not stated	1,300 00	July 14,'81
Charles Pelletier	do damages to crops	do	do	do	do	& interest.	do
	by fire	do	One arbitrator.	Report..	90 00	Nil.	Nov.18,'80
Hezekiah Davis	Welland Canal—Refund of moneys						
	paid by him for a						
	Grist Mill.	Sept. 20...	do	do	200 00		
A. W. Thompson	do damage by over-						
	flow of land caused by the Dun-						
	ville dam.	Sept. 21...	do	do			
D. A. Fradenburg	do do	do	do	do			
C. Rittenhouse	do do	do	do	do			
O. Burnham	do do	do	do	do			
Walter Carnes	do do	do	do	do			
E. W. Evans	do do	do	do	do			
J. Evans	do do	do	do	do			
P. Nasbinder	do do	do	do	do			
R. C. Lymburner	do do	do	do	do			
G. A. Gibson	do do	do	do	do			
G. A. Windecker	do do	do	do	do			
G. Sixsmith	do do	do	do	do			
J. Sutor	do do	do	do	do			
A. Neville	do do	do	do	do			
J. D. Rae	do do	do	do	do			
R. H. Bruce	do do	do	do	do			
F. Morgan	do do	do	do	do			
D. Reid	do do	do	do	do			
J. Smith	do do	do	do	do			
E. Beamsley	do do	do	do	do			
J. Sweet	do do	do	do	do			
R. Reid	do do	do	do	do			
J. Baker	do do	do	do	do			
R. Gibson	do do	do	do	do			
J. Granger	do do	do	do	do			
W. Burham	do do	do	do	do			
Merritt Estate	do do	do	do	do			
W. part of Ind. Reserve,	do do	do	do	do			
township of Canboro	do do	do	do	do			
C. Burnham	do do	do	do	do			
Joseph Rae	do do	do	do	do			
John Brown Estate	do do	do	do	do			
— McFarlane	do do	do	do	do			
— Martin	do do	do	do	do			
— McGibson	do do	do	do	do			
— Canans	do do	do	do	do			
— Stevens	do do	do	do	do			
Jas. Bradshaw	do do	do	do	do			
— Ware	do do	do	do	do			
Great Western Railway	do do	do	do	do			
Co	do do	do	do	do			

N. B. — Claims from A. W. Thompson to U. Burnham are  
 for an aggregate amount of \$8,000.00

Not stated

STATEMENT of claims referred to and arbitrated or reported upon by the Official Arbitrators, &c.—Continued.

Claimant.	Nature of Claim.	When referred.	Whether referred to one or more arbitrators.	Whether referred for award under Act 31 Vict., c. 12, or for report under Act 41 Vict., c. 8.	Amount claimed.	Amount awarded or re-commanded to be paid.	Date of award or report.	Remarks.
W. pt. of N. pt. of 2nd con., N. of Dover Road Township of Dunn...	Welland Canal—damage by overflow of land caused by the Dunville dam.....	1880.					1880.	
J. C. Lilois.....	Intercolonial R'y—shed burned.....	Sept. 21...	One arbitrator.	Report..	Not stated	.....	Nov. 18...	
D. D'Everardo.....	Welland Canal—land taken.....	Oct. 8...	do	do ..	200 00	.....	.....	
Ed. Côté.....	Intercolonial R'y—land taken.....	Oct. 12...	do	do ..	Not stated	.....	.....	
		Oct. 15...	do	do ..	140 00	.....	.....	This claim was settled by Railways authorities at Moncton, and withdrawn.
P. J. Hackey.....	do sheep killed.....	Oct. 20...	do	do ..	.....	.....	.....	do do
G. Lemieux.....	do land expropriated	Oct. 22...	Whole Board..	Award..	Not stated	.....	.....	Case settled with Government and withdrawn.
Alex. Madore.....	Lachine Canal—damages by water.	Oct. 26...	One arbitrator.	Report..	do ..	.....	.....	
James S. Evans .....	do damages by construction of Canal	Oct. 29...	do	do ..	do ..	.....	.....	
		1881.					1881.	
Oliver A. Felch.....	Intercolonial R'y—horse killed.....	Nov. 4...	do	do ..	\$200 00	\$200 00	July 16...	
R. Balgour.....	Welland Canal—damages by enlargement of Canal .....	do ..	do	do ..	Not stated	.....	.....	
Joseph White.....	Intercolonial R'y—Damages to property by water	Jan. 5...	do	do ..	\$120 00	\$100 00	Sept. 12...	
Felix Vetican .....	do damages for bordering pits.....	Jan. 29...	do	do ..	100 00	5 00	do ..	
Mrs. H. Chouinard.....	do damages by fire...	Feb. 4...	do	do ..	Not stated	Nil.	Aug. 10...	
J. Caron.....	do do	do ..	do	do ..	.....	do	do ..	
John McGillivray.....	Welland Canal—land taken .....	Feb. 12...	Full Board.....	Award ..	.....	.....	.....	Claim settled with Government and withdrawn.
Richard Colburn.....	Intercolonial R'y—horse killed.....	Feb. 18...	One arbitrator.	Report..	Not stated	Nil.	Mar. 19...	
Joseph Bullock.....	do loss of silverware	do ..	do	do ..	\$ 180 25	.....	do ..	Report recommends to submit this claim to the Minister of Justice.



Z. A. & M. A. Jones....	do	loss by fire.....	Feb. 25...	do	do ...	6,914 50	6,884 50	Feb. 25...	do	do
Charles Gallagher.....	do	horse killed.....	Mar. 11...	do	do ...	100 00	Nil.	Aug. 10...		
G. C. Tunstall.....	St. Anne's Canal—	land taken.....	Mar. 19...	Full Board....	Award .	Not stated	43 50	July 14...		
J. O. Chèvrefils.....	do	do .....	do ...	do .....	do ...	do ...	71 75	do ...		
David Madore.....	do	do .....	do ...	do .....	do ...	do ...	1 50	do ...		
C. P. Snider.....	Dunnville Dam—	damage by water .	Mar. 28...	One arbitrator.	Report .	do ...	.....	.....		
John Fitzgerald.....	Carillon Canal—	damages by water.	do ...	do	do ...	.....	300 00	Aug. 10...		
John W. Prote.....	Welland Canal—	land taken. ....	Mar. 30...	Whole Board..	Award .	.....	Nil.	July 14...		
Auguste Pelletier .....	Intercolonial R'y—	damage by one locomotive....	April 1...	One arbitrator.	Report..	\$ 18 00	21 00	Aug. 10...		
Robert Cockran.....	do	damage to ship material burned at Moncton .....	May 25...	do	do ...	1,341 50	Nil.	Sept. 24...	do	do
Mathew Orr .....	Cornwall Canal—	land taken.....	June 4...	Full Board....	Award .	450 p. acre	746 00	July 14...		
William Mattice.....	do	do .....	June 13...	do .....	do ...	450 do	250 00	July 13...		

CHAS. THIBAUT,  
Secretary to the Official Arbitrators.

OTTAWA, 26th October, 1881.

[1881]

# APPENDIX No 7.

## STATEMENT of Contracts entered into between 1st July, 1880, and 30th June, 1881.

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 of Contract.
Canadian Pacific Railway.....	72	O. in C. No. 23,301.	Ontario Car Co.....	July 7, 1880	To supply and deliver 50 Flat cars.
do do .....	73	Deed No. 6,151.....	Toronto Bridge Co.....	Oct. 9, 1880	To supply and erect superstructure for bridges for Joe Creek, Rousseau and Seine Rivers.
do do .....	74	do 6,172.....	W. Gooderham, jun.....	Aug. 14, 1880	To supply water service on the Haggas system.
do do .....	75	do 6,161.....	Pillow, Hersey & Co.....	Aug. 16, 1880	To supply and deliver at Montreal 100 tons of spikes.
do do .....	76	do 6,163.....	Cooper, Fairman & Co.....	Sept. 13, 1880	To supply 100 tons of spikes.
do do .....	77	do 6,169.....	Stubbs & Co.....	Aug. 17, 1880	To construct 200 miles of wire fencing, Pembina Branch and Main Line.
do do .....	.....	O. in C. No. 23,725.	John Irving.....	Aug. 10, 1880	To complete the transport of rails from Vancouver to New Westminster.
do do .....	78	Deed No. 6,176.....	Skead & Haycock.....	Sept. 3, 1880	To construct 200 miles wire fencing, Pembina Branch and Main Lines.
do do .....	79	O. in C. No. 24,106.	The Truro Patent Frog Co....	Sept. 18, 1880	To supply and deliver on Cars at Truro, 50 Railway frogs and switch gear.
do do .....	80	Deed No. 6,190.....	James Crossen.....	Sept. 22, 1880	To construct and deliver at Emerson 6 Flanger Cars.
do do .....	81	do 6,192.....	Dunlop & Rainnie.....	Sept. 23, 1880	do do 6 Snow Ploughs.
do do .....	82	do 6,197.....	Ontario Car Co.....	Sept. 22, 1880	do do 6 Wing do
do do .....	83	O. in C. No. 24,247.	James Crossen.....	Oct. 7, 1880	To construct and deliver at Cobourg, 15 platform cars.
do do .....	84	do	Ontario Car Co.....	Oct. 5, 1880	To construct and deliver at London 20 platform cars.
do do .....	85	Deed No. 6,218.....	Nobles & Follis.....	Sept. 24, 1880	To erect freight transfer shed at Emerson.
do do .....	86	O. in C. No. 24,250.	Fairbanks, Morse & Co.....	Oct. 5, 1880	To supply 15 windmills, towers and tanks for water supply.
do do .....	87	do 24,608.	James Crossen.....	Nov. 15, 1880	To supply and deliver at Cobourg 2 snow ploughs.

The above Contracts were also published in the Report of last year.

Canadian Pacific Railway.....	Deed No. 6411.....	Canadian Pacific Railway Co	Oct. 21, 1881	
do do ..... 88	do 6471.....	Walter Oliver.....	June 1, 1881	Construction of a combined freight and passenger station and out-houses at Rat Portage, C.P.R.
Intercolonial Railway..... } *	do 6136 .....	J. Harris & Co.....	July 16, 1880	To construct 80 box cars.
do ..... }	do 6138 .....	Robt. Cochran.....	June 6, 1880	do do
do .....	do 6154 .....	Halifax Coal Co.....		To supply 30,000 tons gross of round coal for Dist. No. 1.
do .....	do 6436 .....	Geo. Fleming & Sons.....	April 26, 1881	To construct 7 passenger locomotive engines, 4.8½ guage, made to burn bituminous coal. for Intercolonial Railway, delivered at St. John, N.B., personal Bond only.
do .....	do 6437 .....	J. Harris & Co.....	April 22, 1881	To construct 20 box cars, for Intercolonial Railway, personal Bond only, delivered at St. John, N.B.
do .....	do 6438 .....	do .....	do	To construct 24 platform cars, for Intercolonial Railway, personal Bond only, delivered at St. John, N.B.
do .....	do 6149 .....	James Crossen.....	May 2, 1881	To construct 75 gondola cars, for Intercolonial Railway, personal Bond only, delivered at Chaudiere Station.
do .....	do 6464 .....	J. Harris & Co.....	June 17, 1881	To construct 50 gondola cars, for Intercolonial Railway, personal Bond only, delivered at St. John, N.B.
Prince Edward Island R'y. } .....	do 6118 .....	William Gooderham, jr.....	Aug. 9, 1880	To furnish at places "Haggas Patent Water Elevator for Locomotives."
do do ..... }	O. in C., No. 23,595	Isaac Brown.....	July 31, 1880	To supply 110 tons of Anthracite coal.
do do ..... }	Deed No. 6200.....	Intercolonial Coal Mining Co	Sept. 16, 1880	To supply 4,500 gross tons mixed round steam coal.
Welland Canal..... }	do 6009.....	George Gibson.....	July 7, 1880	To supply forged iron blacksmithing, for 1 year or more.
do .....	do 6143.....	O'Brien, Gordon & Bergin....	July 21, 1880	To construct 19 road-bridges.
do .....	do 6148.....	Thos. B. Townsend.....	July 18, 1880	To construct all lock-gates and spare-gates required.
do .....	do 6214.....	R. F. Latimore.....	Nov. 6, 1880	To rebuild superstructure of East Pier at Port Maitland.
do .....	do 6244.....	James Wilson.....	Jan. 22, 1881	To supply iron work for the sluice gates of 8 weirs.
do .....	do 6245.....	A. Dobbie.....	do do 15 do	do do do 15 do
do .....	do 6246.....	Walter H. Brown.....	Jan. 29, 1881	To supply timber for lock gates, Welland and Carillon Canals.
do .....	do 6247.....	Toronto Bridge Co.....	Feb. 2, 1881	To construct 2 steel iron bridges over Welland Canal, one at N. E. end of St. Catharines, the other at Marlatt's Pond to the south of Thorold.
do .....	do 6249.....	Dawson, Hart & Morrison....	Feb. 9, 1881	To supply timber, &c , &c., to construct service bridges at weirs, towing path bridges and mud pockets on new line of Welland Canal or between Port Dalhousie Lock south of Thorold.
do .....	do 6250.....	R. Fowlie.....	do	Mooring and snubbing posts on new line of Welland Canal.
Lachine Canal.....	do 6145.....	O'Brien, Gordon & Bergin....	July 21, 1881	To construct all lock gates, spare gates required.
Grenville Canal.....	do 6140.....	Henry Stewart & Co.....	July 30, 1881	To enlarge lower entrance at Greece's Point, River Ottawa.

\* These contracts were also published in last year's Report.



## APPENDIX No. 8.

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.	23	Sifton & Ward.
2	Richard Fuller.	24	Oliver, Davidson & Co.
3	F. J. Barnard.	25	Purcell & Ryan.
4	Oliver, Davidson & Co.	26	James Isbester.
5	Joseph Whitehead.	27	Merchants Lake and River Steamship Co.
5a	Joseph Whitehead.	28	Red River Transportation Co.
6	Guest & Co.	29	Cooper, Fairman & Co.
7	Ebbw Vale Steel, Iron and Coal Co.	30	Robb & Co.
8	Mersey Steel and Iron Co.	31	Patent Bolt and Nut Co.
9	West Cumberland Iron and Steel Co.	32	Cooper, Fairman & Co.
10	West Cumberland Iron and Steel Co.	32a	LeMay & Blair.
11	Naylor, Benzon & Co.	33	Kavanagh, Murphy & Upper.
12	Hon. A. B. Foster.	34	North West Transportation Co.
13	Sifton & Ward. Purcell & Ryan.	35	Cooper, Fairman & Co.
		36	William Robinson.
14	Sifton & Ward. Jos. Whitehead (completing contract No. 14).	37	Heney, Charlebois & Flood.
		38	Edmond Ingalls.
15	Joseph Whitehead.	39	John Irving.
16	Canada Central Railway Co.	40	Gouin, Murphy & Upper.
17	Anderson, Anderson & Co.	41	Purcell & Co.
18	Red River Transportation Co.	42	Manning, Macdonald, McLaren & Co.
19	Moses Chevrette.	43	Joseph Upper & Co.
20	Merchants Lake and River Steamship Co.	44	West Cumberland Iron and Steel Co.
21	Patrick Kenny.	45	Barrow Hæmatite Steel Co.
22	Holcomb & Stewart.	46	Ebbw Vale Steel, Iron and Coal Co.

LIST of Contracts, &c.—*Continued.*

No. of Contract.	Name of Contractors.	No. of Contract.	Name of Contractors.
47	Patent Bolt and Nut Co.	66	Bowie & McNaughton.
48	John Ryan.	67	Moncton Car Co.
49	Richard Dickson.	68	Ontario Car Co.
50	Miller Brothers & Mitchell.	69	North-West Transportation Co.
51	Dominion Bolt Co.	70	Wm. Gooderham, Jr.
52	North-West Transportation Co.	71	Pillow, Hersey & Co.
53	Barrow Hæmatite Steel Co.	72	Cooper, Fairman & Co.
54	Guest & Co.	73	Stubbs & Co.
55	West Cumberland Iron and Steel Co.	74	Skead & Haycock.
56	The Kellogg Bridge Co.	75	The Truro Patent Frog Co.
57	The Truro Patent Frog Co.	76	James Crossen.
58	W. Hazelhurst.	77	Dunlop & Rannie.
59	Whitehead, Ruttan & Ryan.	78	Ontario Car Co.
60	D. O. Mills.	79	James Crossen.
61	D. O. Mills.	80	Ontario Car Co.
62	D. O. Mills.	81	Nobles & Follis.
63	D. O. Mills.	82	Fairbanks, Morse & Co.
64	Ryan, Whitehead & Ruttan.	83	James Crossen.
65	James Crossen.	84	Walter Oliver.

APPENDIX No. 9.

TABLE of distances of stations between the Cities of Ottawa and Kingston:—

No. of station.	Name of Station.	Distances from Ottawa.	Locks.		Dams.			Length of Artificial Canal at each Station, in miles.	
			No.	Lift at Low Water.	No.	Length.	Height.		
				Ft.					In.
		Miles.		Rise					
				Ft.					
				In.					
1	Ottawa.....	0	8	82	0	3	230 1,320 1,616	18 33 14	4.00
2	Hartwell's.....	4½	2	22	0	.....	100	28	
3	Hogsback.....	5½	2	13	6	1	320	60	
4	Black Rapids.....	9½	1	10	0	1	300	12	0.18
5	Long Island.....	14¾	3	27	0	3	850	68	0.13
6	Burritt's.....	40¾	1	10	6	1	240	14	1.50
7	Nicholson.....	43¾	2	15	2	1	500	9	0.50
8	Clowes.....	44½	1	10	6	1	481	16	0.05
9	Merrickville.....	46¾	3	25	0	1	150	6	0.38
10	Maitland.....	55	1	4	9	1	270	8	0.13
11	Edmunds.....	59½	1	10	10	1	343	8	0.06
12	Old Slys.....	60½	2	15	6	1	250	20	0.25
13	Smith's Falls.....	61½	4	33	9	2	600	24	0.13
14	First Rapids or Poonamalie.....	64	1	7	9	1	260	5	1.25
15	Narrows.....	83½	1	4	0	1	600	9	0.08
	Total rise at low water.....			292	3				
				Fall.					
16	Isthmus.....	87½	1	4	0	.....			1.25
17	Chaffey's.....	92	1	12	6	.....			0.13
18	Davis.....	94¼	1	9	0	1	300	15	0.06
19	Jones' Falls.....	97¼	4	60	0	1	300	60	0.25
20	Brewer's Upper Mills.....	108¼	2	19	0	1	200	20	1.75
21	do Lower Mills.....	110	1	14	2	1	200	12	4.25
22	Kingston Mills.....	120¼	4	46	8	1	6,042	14	0.25
23	Kingston.....	126¼							
	Total fall at low water.....			165	4				
	Total.....		47			24	15,472		16.46



## APPENDIX No. 10.

TABLE showing the dates of the closing of the Canals in the Autumn of 1880 and of the opening in the Spring of 1881.

Canals.	Closing.	Opening.
Lachine Canal.....	November 27th, 1880.	May 1st, 1881.
Beauharnois Canal.....	do 28th	April 25th
Cornwall Canal.....	December 6th	do 26th
Williamsburg Canals .....	do 11th	do 27th
Welland Canal—		
Port Maitland to Port Dalhousie .....	November 30th	do 29th
Welland Junction to Port Colborne .....	do 30th	May 2nd
Burlington Bay Canal .....	December 9th	April 18th
St. Anne's Lock and Dam.....	November 24th	do 18th
Carillon Canal.....	do 23rd	do 29th
Grenville Canal.....	do 28th	May 2nd
Culbute Lock and Dam .....		
Chute à Blondeau Canal.....	November 23rd	April 20th
Rideau { Kingston Mills .....	do 17th	May 2nd
{ Ottawa .....	do 24th	do 2nd
St. Our's Lock .....	do 22nd	April 11th
Chambly Canal .....	do 25th	May 2nd
Erie Canal (New-York).....	December 21st	do 17th
St. Peter's Canal (Cape Breton).....	do 26th	April 23rd
Trent Canal Works.....	November 10th,	do 26th

## APPENDIX No. 11,

## 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 $\frac{1}{2}$
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....	$\frac{3}{4}$	1,071
Upper end Croyle's Island.	Williamsburg or Morris- burg.....	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 $\frac{3}{8}$	1,095 $\frac{3}{8}$
Point Cardinal .....	Head of Galops Rapids.....	Galops Canal .....	2	1,097 $\frac{3}{8}$
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.....	27	1,361
Port Colborne .....	Amherstburg .....	Lake Erie .....	232	1,593
Amherstburg .....	Windsor.....	River Detroit.....	18	1,611
Windsor.....	Foot of St. Mary's Island...	Lake St. Clair.....	25	1,636
Foot of St. Mary's Island...	Sarnia.....	River St. Clair.....	33	1,669
Sarnia .....	Foot of St. Joseph's Island..	Lake Huron.....	270	1,969
Foot of St. Joseph's Island.	Foot of Sault St. Mary.....	River St. Mary.....	47	1,986
Sault St. Mary .....	Head of Sault St. Mary.....	Sault St. Mary Canal....	1	1,987
Head of Sault St. Mary.....	Pointe aux Pins.....	River St. Mary.....	7	1,994
Pointe aux Pins.....	Duluth .....	Lake Superior.....	390	2,384
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 2,385 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 2,231 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.

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STATEMENT SHOWING THE AMOUNT EXPENDED ON THE  
CONSTRUCTION AND ENLARGEMENT OF THE  
CANALS OF THE DOMINION OF CANADA,  
UP TO 30<sup>TH</sup> JUNE, 1881.

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## APPENDIX

STATEMENT showing the amount expended on the construction and enlarge-

*(Repairs not*

By whom Expenditure Incurred.	Year ending 30th June.	Lachine Canal.	Beauharnois Canal.
		\$ cts.	\$ cts.
Imperial Government.....	} Up to June 30, 1867. {	40,000 00	.....
Provincial Government.....		2,547,532 85	1,611,424 11
Dominion Government.....	1868	1,852 70	7,008 00
do .....	1869	2,000 00	55 00
do .....	1870	.....	587 50
do .....	1871	12,231 40	187 00
do .....	1872	36,708 15	27 50
do .....	1873	42,982 49	5,280 90
do .....	1874	158,618 35	26 00
do .....	1875	197,420 52	36 00
do .....	1876	327,769 39	.....
do .....	1877	1,439,375 73	.....
do .....	1878	1,484,619 63	.....
do .....	1879	958,053 30	.....
do .....	1880	369,566 74	.....
do .....	1881	292,165 51	.....
Total .....	.....	7,910,896 76	1,624,632 01

No. 12.

ment of the Canals of the Dominion of Canada, up to 30th June, 1881.  
*included.)*

Cornwall Canal.	St. Lawrence Canals. — Not apportioned.	Williamsburg Canals.	St. Lawrence. — Chain Vessel and Improvement of Navigation.	Surveys, St. Lawrence and Canals.	Welland Canal.
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
					222,220 00
1,933,152 69	116,821 31	1,320,655 54			7,416,019 83
2,786 00					12,097 84
10,692 04					43,486 36
17,780 05					24,173 72
7 50					47,869 10
10,000 21		1,077 00			59,702 76
1,011 75				35,326 44	130,158 47
				26,541 30	746,420 61
1,780 00				22,611 36	1,046,714 91
			28,500 00	21,715 47	1,570,178 19
49,211 37			28,064 67	19,312 64	2,199,962 61
145,015 45			1,623 76	3,946 70	2,138,392 99
143,092 05		4,580 00		4,685 77	1,552,697 41
109,454 95			623 52	8,591 04	1,252,924 75
53,948 14			6,927 96		1,242,943 37
2,477,932 20	116,821 31	1,326,312 54	65,739 91	142,730 72	19,705,962 92

## APPENDIX

STATEMENT showing the amount expended on the construction and  
(Repairs not

By whom Expenditure Incurred.	Year ending 30th June.	Ste. Anne's Lock.	Carillon and Grenville Canals.
		\$ cts.	\$ cts.
Imperial Government.....	} Up to June 30, 1867. {	.....	(*)
Provincial Government .....		134,456 51	63,053 64
Dominion Government .....	1868	.....	19,817 22
do .....	1869	.....	.....
do .....	1870	.....	4,167 96
do .....	1871	.....	23,119 37
do .....	1872	1,939 46	165,257 28
do .....	1873	540 11	136,250 48
do .....	1874	12,753 27	245,258 38
do .....	1875	32,627 71	339,864 76
do .....	1876	24,935 85	326,203 16
do .....	1877	30,003 08	245,738 04
do .....	1878	14,618 85	22,676 20
do .....	1879	22,113 02	243,141 24
do .....	1880	3,054 68	281,514 27
do .....	1881	69,042 76	336,707 53
Total.....	.....	346,085 30	2,452,769 53

(\*) Expenditure not given.



No. 12—*Concluded.*enlargement of the Canals of the Dominion of Canada, &c.—*Concluded*  
*included.*)

Culbute Locks.	Rideau Canal.	Chambly Canal.	St. Peter's Canal.	Survey, Baie Verte Canal.	Total.
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
	3,911,701 47				4,173,921 47
	153,062 60	643,711 76	88,949 39		16,028,840 23
	7,593 67		21,519 72		72,675 15
			70,719 80		126,953 20
			46,193 57		92,902 80
	11,732 88	2,872 85			98,020 10
	4,967 50	1,906 40			281,586 26
	18,070 97	759 00		4,877 83	375,258 44
38,388 99	5,793 16			4,018 90	1,237,818 96
63,659 29	9,310 85	2,415 00	20 97	443 00	1,716,904 37
76,842 44	2,163 96		11,125 00	110 75	2,389,544 21
56,081 87	214 11	80 00	63,330 18	22 30	4,131,396 60
5,933 53			26,511 51		3,843,338 62
20,694 19	7,703 88		107,337 75		3,064,098 61
16,688 20	355 05		80,120 54		2,122,893 74
4,721 62			69,434 76	520 00	2,076,411 65
283,010 13	4,132,670 10	651,745 01	585,263 19	9,992 78	41,832,564 41

J. BAINE,  
*Accountant.*

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## APPENDIX No. 13.

### CANADIAN PACIFIC RAILWAY.

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*List of Documents connected with the Contract between the Government of Canada and the Canadian Pacific Railway Company.*

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1. **CONTRACT.**—A contract dated 21st October, 1880, entered into between Her Majesty the Queen and certain contractors, for the construction of the Eastern and Central Sections, and for the maintenance and operation of the whole line of the Canadian Pacific Railway.  
 [This contract is copied in full in the Act 44 Vict., cap. 1, 1881, and is embodied in the charter granted to the Company. See page 159 of this Appendix.]
2. **APPROVAL OF PARLIAMENT.**—An Act (44 Vict., cap. 1, 1881,) approving the contract, and authorizing His Excellency the Governor General to grant a charter to the persons named in the contract, and others associated with them, when organized as a company. (For this Act, see Statutes of Canada, 1881, page 3 )
3. **DEPOSIT BY COMPANY.**—On the 16th February, 1881, the Company deposited with the Minister of Finance, \$1,000,000.
4. **FORM OF CHARTER.**—An Order in Council dated 16th February, 1881, approving the form of charter or Letters Patent to be granted to the Company. (See Supplement to the *Canada Gazette*, dated 16th February, 1881.)  
 This Order in Council embodies in the 20th clause of the schedule attached to the contract (said 20th clause having reference to the limit of reduction of tolls by Parliament), the following words: "As such capital may be defined by an Act of our Parliament of Canada to be passed during the present Session thereof."  
 An Act (44 Vict., cap. 24, of 1881,) defines the meaning of the word *capital*, as above referred to. (For this Act, see Statutes of Canada, 1881, page 120.)
5. **CHARTER OR LETTERS PATENT.**—Granting to the Canadian Pacific Railway Company the powers necessary to enable them to carry out the contract.  
 This charter is printed in full at page 165 of this Appendix. It embodies the contract, with the *addition* referred to in the Order in Council of the 16th February, 1881, above-mentioned.
6. **STANDARD.**—Letter from the contractors to the Secretary of State, dated the 16th of December, 1880, in further reference to the standard whereby the quality and the character of the railway and equipment is to be regulated. (This letter is printed in full, at page 176 of this Appendix.)
7. **RUNNING POWERS.**—An extract from the minutes of the first meeting of the Directors of the Company, held at Montreal, on the 17th of February, 1881, in reference to running powers to be granted to other railway companies. (This extract is printed in full, at page 177 of this Appendix.)

LETTERS PATENT INCORPORATING THE CANADIAN PACIFIC  
RAILWAY COMPANY, DATED 16TH FEBRUARY, 1881.

LORNE.

CANADA.

*VICTORIA, by the Grace of God of the United Kingdom of Great Britain and Ireland,  
Queen Defender of the Faith, etc., etc.*

To all to whom these presents shall come, or whom the same may in anywise concern,—

GREETING :

WHEREAS, George Stephen, of the City of Montreal, in the Province of Quebec, and Dominion of Canada, Esquire; Duncan McIntyre, of the same place, Merchant; John S. Kennedy, of the City of New York, in the State of New York, one of the United States of America; Richard B. Angus, of the City of St. Paul, in the State of Minnesota, one of the United States of America; and James J. Hill, of the same place; the firm of Morton, Rose and Company, of the City of London, in England, Merchants, and the firm of Kohn, Reinach and Company, of the City of Paris, in France, Bankers, on or about the twenty-first day of October, in the year of Our Lord one thousand eight hundred and eighty, duly entered into a contract and agreement with Us represented and acting by the Honorable Sir Charles Tupper, K.C.M.G., our Minister of Railways and Canals of Canada, which contract and agreement is in the words and figures following, viz. :

THIS CONTRACT AND AGREEMENT MADE BETWEEN HER MAJESTY THE QUEEN, acting in respect of the Dominion of Canada, and herein represented and acting by the Honorable SIR CHARLES TUPPER, K.C.M.G, Minister of Railways and Canals, and George Stephen and Duncan McIntyre, of Montreal, in Canada, John S. Kennedy of New York, in the State of New York, Richard B. Angus and James J. Hill, of St. Paul, in the State of Minnesota, Morton, Rose & Co., of London, England, and Kohn, Reinach & Co., of Paris, France,

Witnesses: That the parties hereto have contracted and agreed with each other as follows, namely :—

1. For the better interpretation of this contract, it is hereby declared that the portion of Railway hereinafter called the Eastern section, shall comprise that part of the Canadian Pacific Railway to be constructed, extending from the Western terminus of the Canada Central Railway, near the East end of Lake Nipissing, known as Callander Station, to a point of junction with that portion of the said Canadian Pacific Railway now in course of construction extending from Lake Superior to Selkirk on the East side of Red River; which latter portion is hereinafter called the Lake Superior section. That the portion of said Railway, now partially in course of construction, extending from Selkirk to Kamloops, is hereinafter called the Central section; and the portion of said Railway now in course of construction, extending from Kamloops to Port Moody, is hereinafter called the Western section. And that the words "the Canadian Pacific Railway," are intended to mean the entire Railway, as described in the Act 37th Victoria, cap. 14. The individual parties hereto, are hereinafter described as the Company; and the Government of Canada is hereinafter called the Government.

2. The contractors immediately after the organization of the said Company, shall deposit with the Government \$1,000,000 in cash or approved securities, as a security for the construction of the Railway hereby contracted for. The Government



shall pay to the company interest on the cash deposited at the rate of four per cent. per annum, half-yearly, and shall pay over to the Company the interest received upon securities deposited, the whole until default in the performance of the conditions hereof, or until the repayment of the deposit, and shall return the deposit to the Company on the completion of the Railway, according to the terms hereof, with any interest accrued thereon.

3. The Company shall lay out, construct and equip the said Eastern section, and the said Central section, of a uniform gauge of 4 feet 8½ inches; and in order to establish an approximate standard whereby the quality and the character of the Railway and of the material used in the construction thereof, and of the equipment thereof may be regulated, the Union Pacific Railway of the United States as the same was when first constructed, is hereby selected and fixed as such standard. And if the Government and the Company should be unable to agree as to whether or not any work done or materials furnished under this contract are in fair conformity with such standard, or as to any other question of fact, excluding questions of law, the subject of disagreement shall be from time to time referred to the determination of three referees, one of whom shall be chosen by the Government, one by the Company, and one by the two referees so chosen, and such referees shall decide as to the party by whom the expense of such reference shall be defrayed. And if such two referees should be unable to agree upon a third referee, he shall be appointed at the instance of either party hereto, after notice to the other, by the Chief Justice of the Supreme Court of Canada. And the decision of such referees, or of the majority of them, shall be final.

4. The work of construction shall be commenced at the eastern extremity of the Eastern section not later than the first day of July next, and the work upon the Central section shall be commenced by the Company at such point towards the Eastern end thereof on the portion of the line now under construction as shall be found convenient and as shall be approved by the Government, at a date not later than the 1st May next. And the work upon the Eastern and Central sections shall be vigorously and continuously carried on at such rate of annual progress on each section as shall enable the Company to complete and equip the same and each of them, in running order, on or before the first day of May, 1891, by which date the Company hereby agree to complete and equip the said sections in conformity with this contract, unless prevented by the act of God, the Queen's enemies, intestine disturbances, epidemics, floods, or other causes beyond the control of the Company. And in case of the interruption or obstruction of the work of construction from any of the said causes, the time fixed for the completion of the railway shall be extended for a corresponding period.

5. The Company shall pay to the Government the cost, according to the contract, of the portion of Railway, 100 miles in length, extending from the city of Winnipeg westward, up to the time at which the work was taken out of the hands of the contractor and the expenses since incurred by the Government in the work of construction, but shall have the right to assume the said work at any time and complete the same, paying the cost of construction as aforesaid so far as the same shall then have been incurred by the Government.

6. Unless prevented by the Act of God, the Queen's enemies, intestine disturbances, epidemics, floods or other causes beyond the control of the Government, the Government shall cause to be completed the said Lake Superior section, by the dates fixed by the existing contracts for the construction thereof; and shall also cause to be completed the portion of the said Western section now under contract, namely, from Kamloops to Yale, within the period fixed by the contracts therefor, namely, by the thirtieth day of June, 1885; and shall also cause to be completed, on or before the first day of May, 1891, the remaining portion of the said Western section, lying between Yale and Port Moody, which shall be constructed of equally good quality in every respect with the standard hereby created for the portion hereby contracted for. And the said Lake Superior section, and the portions of the said Western section now under contract, shall be completed as nearly as practical according to the specifica-

tions and conditions of the contracts therefor, except in so far as the same have been modified by the Government prior to this contract.

7. The Railway constructed under the terms hereof shall be the property of the Company; and pending the completion of the Eastern and Central sections, the Government shall transfer to the Company the possession and right to work and run the several portions of the Canadian Pacific Railway already constructed or as the same shall be completed. And upon the completion of the Eastern and Central sections, the Government shall convey to the Company, with a suitable number of station buildings and with water service (but without equipment), those portions of the Canadian Pacific Railway constructed or to be constructed by the Government which shall then be completed; and upon completion of the remainder of the portion of railway to be constructed by the Government, that portion shall also be conveyed to the Company, and the Canadian Pacific Railway shall become and be thereafter the absolute property of the Company. And the Company shall thereafter and forever efficiently maintain, work and run the Canadian Pacific Railway.

8. Upon the reception from the Government of the possession of each of the respective portions of the Canadian Pacific Railway, the Company shall equip the same in conformity with the standard herein established for the equipment of the sections hereby contracted for, and shall thereafter maintain and efficiently operate the same.

9. In consideration of the premises, the Government agree to grant to the Company a subsidy in money of \$25,000,000, and in land of 25,000,000 acres, for which subsidies the construction of the Canadian Pacific Railway shall be completed, and the same shall be equipped, maintained and operated, the said subsidies respectively to be paid and granted as the work of construction shall proceed, in manner and upon the conditions following, that is to say:—

a. The said subsidy in money is hereby divided and appropriated as follows, namely:—

CENTRAL SECTION.

Assumed at 1,350 miles,—		
1st.—900 miles, at \$10,000 per mile.....	\$ 9,000,000	
2nd.—450 “ “ 13,333 “ “ .....	6,000,000	
	<u>15,000,000</u>	\$15,000,000

EASTERN SECTION.

Assumed at 650 miles, subsidy equal to \$15,384.61 per mile.....	10,000,000	
	<u>25,000,000</u>	\$25,000,000

And the said subsidy in land is hereby divided and appropriated as follows, subject to the reserve hereinafter provided for:—

CENTRAL SECTION.

1st.—900 miles, at 12,500 acres per mile .....	11,250,000	
2nd.—450 “ “ 16,666.66 “ “ .....	7,500,000	
	<u>18,750,000</u>	18,750,000

EASTERN SECTION.

Assumed at 650 miles, subsidy equal to 9,615.35 acres per mile .....	6,250,000	
	<u>25,000,000</u>	25,000,000

b. 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, according to the division and appropriation thereof made as hereinbefore provided; the Company having the option of receiving in lieu of cash, terminable bonds of the Government, bearing such rate of interest, for such period and nominal amount as may be arranged, and which may be equivalent according to actuarial calculation to the corresponding cash pay-



ment, the Government allowing four per cent. interest on moneys deposited with them.

c. If at any time the Company shall cause to be delivered on or near the line of the said Railway at a place satisfactory to the Government, steel rails and fastenings to be used in the construction of the Railway, but in advance of the requirements for such construction, the Government, on the requisition of the Company, shall, upon such terms and conditions as shall be determined by the Government, advance thereon three-fourths of the value thereof at the place of delivery. And a proportion of the amount so advanced shall be deducted according to such terms and conditions from the subsidy to be thereafter paid, upon the settlement for each section of 20 miles of Railway, which proportion shall correspond with the proportion of such rails and fastenings which have been used in the construction of such sections.

d. Until the first day of January, 1882, the Company shall have the option, instead of issuing land grant bonds as hereinafter provided, of substituting the payment by the Government of the interest (or part of the interest) on bonds of the Company mortgaging the Railway and the lands to be granted by the Government, running over such term of years as may be approved by the Governor in Council, in lieu of the cash subsidy hereby agreed to be granted to the Company or any part thereof; such payments of interest to be equivalent according to actuarial calculation to the corresponding cash payment, the Government allowing four per cent. interest on moneys deposited with them; and the coupons representing the interest on such bonds shall be guaranteed by the Government to the extent of such equivalent. And the proceeds of the sale of such bonds to the extent of not more than \$25,000,000, shall be deposited with the Government, and the balance of such proceeds shall be placed elsewhere by the Company, to the satisfaction and under the exclusive control of the Government; failing which last condition the bonds in excess of those sold shall remain in the hands of the Government. And from time to time as the work proceeds, the Government shall pay over to the Company: firstly, out of the amount so to be placed by the Company,—and, after the expenditure of that amount, out of the amount deposited with the Government,—sums of money bearing the same proportion to the mileage cash subsidy hereby agreed upon, which the net proceeds of such sale (if the whole of such bonds are sold upon the issue thereof) or, if such bonds be not all then sold, the net proceeds of the issue, calculated at the rate at which the sale of part of them shall have been made, shall bear to the sum of \$25,000,000. But if only a portion of the bond issue be sold, the amount earned by the Company according to the proportion aforesaid, shall be paid to the Company, partly out of the bonds in the hands of the Government, and partly out of the cash deposited with the Government, in similar proportions to the amount of such bonds sold and remaining unsold respectively; and the Company shall receive the bonds so paid as cash at the rate at which the said partial sale thereof shall have been made. And the Government will receive and hold such sum of money towards the creation of a sinking fund for the redemption of such bonds, and upon such terms and conditions, as shall be agreed upon between the Government and the Company.

e. If the Company avail themselves of the option granted by clause d, the sum of \$2,000 per mile for the first eight hundred miles of the Central section shall be deducted *pro rata* from the amount payable to the Company in respect of the said eight hundred miles, and shall be appropriated to increase the mileage cash subsidy appropriated to the remainder of the said Central section.

10. In further consideration of the premises, the Government shall also grant to the Company the lands required for the road bed of the Railway, and for its stations, station grounds, workshops, dock ground and water frontage at the termini on navigable waters, buildings, yards, and other appurtenances required for the convenient and effectual construction and working of the Railway, in so far as such land shall be vested in the Government. And the Government shall also permit the admission free of duty, of all steel rails, fish plates and other fastenings, spikes, bolts and nuts, wire, timber and all material for bridges, to be used in the original construction of the Railway, and of a telegraph line in connection therewith, and all telegraphic



apparatus required for the first equipment of such telegraph line ; and will convey to the Company, at cost price, with interest, all rails and fastenings bought in or since the year 1879, and other materials for construction in the possession of or purchased by the Government, at a valuation ; such rails, fastenings and materials not being required by it for the construction of the said Lake Superior and Western sections.

11. The grant of land hereby agreed to be made to the Company, shall be so made in alternate sections of 640 acres each, extending back 24 miles deep, on each side of the Railway, from Winnipeg to Jasper House, in so far as such lands shall be vested in the Government, the Company receiving the sections bearing uneven numbers. But should any of such sections consist in a material degree of land not fairly fit for settlement, the Company shall not be obliged to receive them as part of such grant, and the deficiency thereby caused and any further deficiency which may arise from the insufficient quantity of land along the said portion of Railway, to complete the said 25,000,000 acres, or from the prevalence of lakes and water stretches in the sections granted (which lakes and water stretches shall not be computed in the acreage of such sections), shall be made up from other portions in the tract known as the fertile belt, that is to say, the land lying between parallels 49 and 57 degrees of north latitude, or elsewhere at the option of the Company, by the grant therein of similar alternate sections extending back 24 miles deep on each side of any branch line or lines of railway to be located by the Company, and to be shown on a map or plan thereof deposited with the Minister of Railways ; or of any common front line or lines agreed upon between the Government and the Company, the conditions hereinbefore stated as to lands not fairly fit for settlement to be applicable to such additional grants. And the Company may with the consent of the Government, select in the North-West Territories any tract or tracts of land not taken up as a means of supplying or partially supplying such deficiency. But such grants shall be made only from lands remaining vested in the Government.

12. The Government shall extinguish the Indian title affecting the lands herein appropriated, and to be hereafter granted in aid of the Railway.

13. The Company shall have the right subject to the approval of the Governor in Council, to lay out and locate the line of the Railway hereby contracted for, as they may see fit, preserving the following terminal points, namely ; from Callander station to the point of junction with the Lake Superior section ; and from Selkirk to the junction with the western section at Kamloops by way of the Yellow Head Pass.

14. The Company shall have the right, from time to time, to lay out, construct, equip, maintain and work branch lines of railway from any point or points along their main line of Railway, to any point or points within the territory of the Dominion. Provided always, that before commencing any branch they shall first deposit a map and plan of such branch in the Department of Railways. And the Government shall grant to the Company the lands required for the road-bed of such branches, and for the stations, station grounds, buildings, workshops, yards and other appurtenances requisite for the efficient construction and working of such branches, in so far as such lands are vested in the Government.

15. For 20 years from the date hereof, no line of railway shall be authorized by the Dominion Parliament to be constructed South of the Canadian Pacific Railway, from any point at or near the Canadian Pacific Railway except such line as shall run South-West, or to the Westward of South-West : nor to within fifteen miles of Latitude 49. And in the establishment of any new Province in the North-West Territories, provision shall be made for continuing such prohibition after such establishment until the expiration of the said period.

16. The Canadian Pacific Railway, and all stations and station grounds, workshops, buildings, yards and other property, rolling stock and appurtenances required and used for the construction and working thereof, and the capital stock of the Company, shall be forever free from taxation by the Dominion, or by any Province hereafter to be established or by any Municipal Corporation therein ; and the lands of the Company, in the North-West Territories, until they are either sold or occupied,

shall also be free from such taxation for 20 years after the grant thereof from the Crown.

17. The Company shall be authorized by their Act of incorporation to issue bonds, secured upon the land granted and to be granted to the Company, containing provisions for the use of such bonds in the acquisition of lands, and such other conditions as the Company shall see fit, such issue to be for \$25,000,000. And should the Company make such issue of land grant bonds, then they shall deposit them in the hands of the Government; and the Government shall retain and hold one-fifth of such bonds as security for the due performance of the present contract in respect of the maintenance and continuous working of the Railway by the Company, as herein agreed, for ten years after the completion thereof, and the remaining \$20,000,000 of such bonds shall be dealt with as hereinafter provided. And as to the said one-fifth of the said bonds, so long as no default shall occur in the maintenance and working of the said Canadian Pacific Railway, the Government shall not present or demand payment of the coupons of such bonds, nor require payment of any interest thereon. And if any of such bonds so to be retained by the Government shall be paid off in the manner to be provided for the extinction of the whole issue thereof, the Government shall hold the amount received in payment thereof as security for the same purposes as the bonds so paid off, paying interest thereon at four per cent. per annum so long as default is not made by the Company in the performance of the conditions hereof. And at the end of the said period of ten years from the completion of the said railway, if no default shall then have occurred in such maintenance and working thereof, the said bonds, or if any of them shall then have been paid off, the remainder of said bonds and the money received for those paid off, with accrued interest, shall be delivered back by the Government to the Company with all the coupons attached to such bonds. But if such default should occur, the Government may thereafter require payment of interest on the bonds so held, and shall not be obliged to continue to pay interest on the money representing bonds paid off; and while the Government shall retain the right to hold the said portion of the said land grant bonds, other securities satisfactory to the Government may be substituted for them by the Company by agreement with the Government.

18. If the Company shall find it necessary or expedient to sell the remaining \$20,000,000 of the land grant bonds or a larger portion thereof than in the proportion of one dollar for each acre of land then earned by the Company, they shall be allowed to do so, but the proceeds thereof, over and above the amount to which the Company shall be entitled as herein provided, shall be deposited with the Government. And the Government shall pay interest upon such deposit half-yearly, at the rate of four per cent. per annum, and shall pay over the amount of such deposit to the Company from time to time as the work proceeds, in the same proportions, and at the same times and upon the same conditions as the land grant—that is to say: the Company shall be entitled to receive from the Government out of the proceeds of the said land grant bonds, the same number of dollars as the number of acres of the land subsidy which shall then have been earned by them, less one-fifth thereof, that is to say, if the bonds are sold at par, but if they are sold at less than par, then a deduction shall be made therefrom corresponding to the discount at which such bonds are sold. And such land grant shall be conveyed to them by the Government, subject to the charge created as security for the said land grant bonds, and shall remain subject to such charge till relieved thereof in such manner as shall be provided for at the time of the issue of such bonds.

19. The company shall pay any expenses which shall be incurred by the Government in carrying out the provisions of the two last preceding clauses of this contract.

20. If the Company should not issue such land grant bonds, then the Government shall retain from out of each grant to be made from time to time, every fifth section of the lands hereby agreed to be granted, such lands to be so retained as security for the purposes, and for the length of time, mentioned in section eighteen hereof. And such lands may be sold in such manner and at such prices as shall be agreed upon between the Government and the Company, and in that case the price



thereof shall be paid to, and held by the Government for the same period, and for the same purposes as the land itself, the Government paying four per cent. per annum interest thereon. And other securities satisfactory to the Government may be substituted for such lands or money by agreement with the Government.

21. The company to be incorporated, with sufficient powers to enable them to carry out the foregoing contract, and this contract shall only be binding in the event of an Act of incorporation being granted to the Company in the form hereto appended as Schedule A.

22. The Railway Act of 1879, in so far as the provisions of the same are applicable to the undertaking referred to in this contract, and in so far as they are not inconsistent herewith or inconsistent with or contrary to the provisions of the Act of incorporation to be granted to the Company, shall apply to the Canadian Pacific Railway.

In witness whereof the parties hereto have executed these presents at the City of Ottawa, this twenty-first day of October, 1880.

(Signed)

CHARLES TUPPER,  
Minister of Railways and Canals.

“

GEO. STEPHEN,  
DUNCAN McINTYRE,

“

J. S. KENNEDY,

“

R. B. ANGUS,

“

J. J. HILL.

Per pro. GEO. STEPHEN.

“

MORTON, ROSE & Co.,

“

KOHN, REINACH & Co.,

By P. DU P. GRENFELL.

Signed in presence of F. BRAUN, and Seal of the Department hereto affixed by Sir CHARLES TUPPER, in presence of

(Signed)

F. BRAUN.

And whereas the Schedule A to the said contract, is set out in an Act of our Parliament of Canada, passed on the FIFTEENTH day of FEBRUARY, in the year of Our Lord one thousand eight hundred and eighty-one, and in the forty-fourth year of our reign, intituled: “An Act respecting the Canadian Pacific Railway;” and whereas by the said Act after reciting as follows, viz.:

“Whereas by the terms and conditions of the admission of British Columbia into Union with the Dominion of Canada, the Government of the Dominion has assumed the obligation of causing a Railway to be constructed, connecting the seaboard of British Columbia with the Railway system of Canada;

“And whereas the Parliament of Canada has repeatedly declared a preference for the construction and operation of such Railway by means of an incorporated Company aided by grants of money and land, rather than by the Government, and certain Statutes have been passed to enable that course to be followed, but the enactments therein contained have not been effectual for that purpose;

“And whereas certain sections of the said Railway have been constructed by the Government and others are in course of construction, but the greater portion of the main line thereof has not yet been commenced or placed under contract, and it is necessary for the development of the North-West Territory, and for the preservation of the good faith of the Government in the performance of its obligations, that immediate steps should be taken to complete and operate the whole of the said Railway;

“And whereas, in conformity with the expressed desire of Parliament, a contract has been entered into for the construction of the said portion of the main line



“ of the said Railway, and for the permanent working of the whole line thereof,  
 “ which contract with the schedule annexed has been laid before Parliament for its  
 “ approval and a copy thereof is appended hereto, and it is expedient to approve and  
 “ ratify the said contract, and to make provision for the carrying out of the same;”  
 the said contract and agreement with the said Schedule A thereto was approved and  
 ratified, and WE were authorized to perform and carry out the conditions thereof  
 according to their purport; and for the purpose of incorporating the persons men-  
 tioned in the said contract, and those who shall be associated with them in the under-  
 taking and of granting to them the powers necessary to enable them to carry out  
 the said contract according to the terms thereof, it was enacted that our Govern-  
 or-General of Canada might grant to them, in conformity with the said contract under  
 the corporate name of the Canadian Pacific Railway Company, a charter conferring  
 upon them the franchises, privileges and powers embodied in the said schedule to  
 the said contract; and that such charter being published in the *Canada Gazette* with  
 any Order or Orders in Council relating to it should have force and effect as if it were  
 an Act of our Parliament of Canada, and should be and be held to be an Act of incor-  
 poration within the meaning of the said contract;

And whereas the said persons have prayed for a charter for the purpose afore-  
 said;

1. Now KNOW YE, that, by and with the advice of our Privy Council for Canada,  
 and under the authority of the hereinbefore in part recited Act, and of any other  
 power and authority whatsoever in Us vested in this behalf, WE Do, by these our  
 Letters Patent, grant, order, declare and provide that the said George Stephen,  
 Duncan McIntyre, John S. Kennedy, Richard B. Angus, James J. Hill, the firm of  
 Morton, Rose and Company, and the firm of Kohn, Reinach and Company;  
 with all such other persons and corporations as shall become shareholders  
 in the Company hereby incorporated, shall be and they are hereby constituted a body  
 corporate and politic, by the name of the “ Canadian Pacific Railway Company.”

2. The capital stock of the Company shall be twenty-five million dollars divided  
 into shares of one hundred dollars each, which shares shall be transferable in such  
 manner and upon such conditions as shall be provided by the by-laws of the Company;  
 and such shares, or any part thereof, may be granted and issued as paid-up shares for  
 value *bonâ fide* received by the Company, either in money at par or at such price and  
 upon such conditions as the board of directors may fix; or as part of the consideration  
 of any contract made by the Company.

3. As soon as five million dollars of the stock of the Company have been  
 subscribed, and thirty per centum thereof paid up, and upon the deposit with Our  
 Minister of Finance of Canada of one million dollars in money or in securities  
 approved by Our Governor General in Council, for the purpose and upon the condi-  
 tions in the said contract provided, the said contract shall become and be transferred  
 to the Company, without the execution of any deed or instrument in that behalf; and  
 the Company shall, thereupon, become and be vested with all the rights of the con-  
 tractors named in the said contract, and shall be subject to, and liable for, all their  
 duties and obligations, to the same extent and in the same manner as if the  
 said contract had been executed by the said Company instead of by the said  
 contractors; and thereupon the said contractors, as individuals, shall cease to have  
 any right or interest in the said contract, and shall not be subject to any liability or  
 responsibility under the terms thereof otherwise than as members of the corporation  
 hereby created. And upon the performance of the said conditions respecting the  
 subscription of stock, the partial payment thereof, and the deposit of one million  
 dollars to the satisfaction of Our Governor General in Council, the publication by  
 Our Secretary of State of Canada in the *Canada Gazette*, of a notice that the transfer  
 of the contract to the Company has been effected and completed shall be conclusive  
 proof of the fact. And the Company shall cause to be paid up, on or before the first  
 day of May next, a further instalment of twenty per centum upon the said first  
 subscription of five million dollars, of which call thirty days notice by circular mailed  
 to each shareholder shall be sufficient. And the Company shall call in, and cause to

be paid up, on or before the 31st day of December, 1882, the remainder of the said first subscription of five million dollars.

4. All the franchises and powers necessary or useful to the Company to enable them to carry out, perform, enforce, use, and avail themselves of, every condition, stipulation, obligation, duty, right, remedy, privilege, and advantage agreed upon contained or described in the said contract, are hereby conferred upon the Company. And the enactment of the special provisions hereinafter contained shall not be held to impair or derogate from the generality of the franchises and powers so hereby conferred upon them.

#### DIRECTORS.

5. The said George Stephen, Duncan McIntyre, John S. Kennedy, Richard B. Angus, James J. Hill, Henry Stafford Northcote, of London, aforesaid, Esquires, Pascoe du P. Grenfell, of London, aforesaid, Merchant, Charles Day Rose, of London, aforesaid, Merchant, and Baron J. de Reinach, of Paris, aforesaid, Banker, are hereby constituted the first directors of the Company, with power to add to their number, but so that the directors shall not in all exceed fifteen in number; and the majority of the directors, of whom the President shall be one, shall be British subjects. And the Board of Directors so constituted shall have all the powers hereby conferred upon the directors of the Company, and they shall hold office until the first annual meeting of the shareholders of the Company.

6. Each of the directors of the Company, hereby appointed, or hereafter appointed or elected, shall hold at least two hundred and fifty shares of the stock of the Company. But the number of directors to be hereafter elected by the shareholders shall be such, not exceeding fifteen, as shall be fixed by by-law, and subject to the same conditions as the directors appointed by, or under the authority of, the last preceding section; the number thereof may be hereafter altered from time to time in like manner. The votes for their election shall be by ballot.

7. A majority of the directors shall form a quorum of the board; and until otherwise provided by by-law, directors may vote and act by proxy, such proxy to be held by a director only; but no director shall hold more than two proxies, and no meeting of directors shall be competent to transact business unless at least three directors are present thereat in person, the remaining number of directors required to form a quorum being represented by proxies.

8. The Board of Directors may appoint from out of their number an Executive Committee, composed of at least three directors, for the transaction of the ordinary business of the Company, with such powers and duties as shall be fixed by the by-laws; and the President shall be *ex officio* a member of such Committee.

9. The chief place of business of the Company shall be at the City of Montreal, but the Company may from time to time, by by-law, appoint and fix other places within or beyond the limits of Canada at which the business of the Company may be transacted, and at which the directors or shareholders may meet, when called as shall be determined by the by-laws. And the Company shall appoint and fix by by-law, at least one place in each Province or Territory through which the Railway shall pass, where service of process may be made upon the Company, in respect of any cause of action arising within such Province or Territory, and may afterwards, from time to time, change such place by by-law. And a copy of any by-law fixing or changing any such place, duly authenticated as herein provided, shall be deposited by the Company in the office, at the seat of Government of the Province or Territory to which such by-law shall apply, of the Clerk or Prothonotary of the highest, or one of the highest, courts of civil jurisdiction of such Province or Territory. And if any cause of action shall arise against the Company within any Province or Territory, and any writ or process be issued against the Company thereon out of any court in such Province or Territory, service of such process may be validly made upon the Company at the place within such Province or Territory so appointed and fixed; but if the Company fail to appoint and fix such place, or to deposit, as hereinbefore



provided, the by-law made in that behalf, any such process may be validly served upon the Company, at any of the stations of the said Railway within such Province or Territory.

#### SHAREHOLDERS.

10. The first annual meeting of the shareholders of the Company, for the appointment of directors, shall be held on the second Wednesday in May, 1882, at the principal office of the Company, in Montreal; and the annual general meeting of shareholders, for the election of directors and the transaction of business generally, shall be held on the same day in each year thereafter at the same place unless otherwise provided by the by-laws. And notice of each of such meetings shall be given by the publication thereof in the *Canada Gazette* for four weeks, and by such further means as shall from time to time be directed by the by-laws.

11. Special general meetings of the shareholders may be convened in such manner as shall be provided by the by-laws. And except as hereinafter provided, notice of such meetings shall be given in the same manner as notices of annual general meetings, the purpose for which such meeting is called being mentioned in the notices thereof; and, except as hereinafter provided, all such meetings shall be held at the chief place of business of the Company.

12. If at any time before the first annual meeting of the shareholders of the Company, it should become expedient that a meeting of the directors of the Company, or a special general meeting of the shareholders of the Company should be held, before such meeting can conveniently be called, and notice thereof given in the manner provided by this Act, or by the by-laws, or before by-laws in that behalf have been passed, and at a place other than at the chief place of business of the Company in Montreal before the enactment of a by-law authorizing the holding of such meeting elsewhere; it shall be lawful for the President or for any three of the directors of the Company to call special meetings either of directors or of shareholders, or of both, to be held at the city of London in England, at times and places respectively to be stated in the notices to be given of such meetings respectively. And notices of such meetings may be validly given by a circular mailed to the ordinary address of each director or shareholder as the case may be, in time to enable him to attend such meeting, stating in general terms the purpose of the intended meeting. And in the case of a meeting of shareholders, the proceedings of such meeting shall be held to be valid and sufficient, and to be binding on the Company in all respects, if every shareholder of the Company be present thereat in person or by proxy, notwithstanding that notice of such meeting shall not have been given in the manner required by this Act.

13. No shareholder holding shares upon which any call is overdue and unpaid shall vote at any meeting of shareholders. And unless otherwise provided by the by-laws, the person holding the proxy of a shareholder shall be himself a shareholder.

14. No call upon unpaid shares shall be made for more than twenty per centum upon the amount thereof.

#### RAILWAY AND TELEGRAPH LINE.

15. The Company may lay out, construct, acquire, equip, maintain and work a continuous line of Railway, of the gauge of four feet eight and one-half inches; which Railway shall extend from the terminus of the Canada Central Railway near Lake Nipissing, known as Callander Station, to Port Moody in the Province of British Columbia; and also, a branch line of railway from some point on the main line of Railway to Fort William on Thunder Bay; and also the existing branch line of Railway from Selkirk in the Province of Manitoba to Pembina in the said Province; and also other branches to be located by the Company from time to time as provided by the said contract; the said branches to be of the gauge aforesaid; and the said main line of Railway, and the said branch lines of railway, shall be commenced and



completed as provided by the said contract; and together with such other branch lines as shall be hereafter constructed by the said Company, and any extension of the said main line of railway that shall hereafter be constructed or acquired by the Company, shall constitute the line of Railway hereinafter called THE CANADIAN PACIFIC RAILWAY.

16. The Company may construct, maintain and work a continuous telegraph line and telephone lines throughout and along the whole line of the Canadian Pacific Railway, or any part thereof, and may also construct or acquire by purchase, lease or otherwise, any other line or lines of telegraph connecting with the line so to be constructed along the line of the said Railway, and may undertake the transmission of messages for the public by any such line or lines of telegraph or telephone, and collect tolls for so doing; or may lease such line or lines of telegraph or telephone, or any portion thereof; and, if they think proper to undertake the transmission of messages for hire, they shall be subject to the provisions of the fourteenth, fifteenth and sixteenth sections of chapter sixty-seven of the Consolidated Statutes of Canada. And they may use any improvement that may hereafter be invented (subject to the rights of patentees) for telegraphing or telephoning, and any other means of communication that may be deemed expedient by the Company at any time hereafter.

#### POWERS.

17. "The Consolidated Railway Act, 1879," in so far as the provisions of the same are applicable to the undertaking authorized by this charter, and in so far as they are not inconsistent with or contrary to the provisions hereof, and save and except as hereinafter provided, is hereby incorporated herewith.

18. As respects the said Railway, the seventh section of "The Consolidated Railway Act, 1879," relating to POWERS, and the eighth section thereof relating to PLANS AND SURVEYS, shall be subject to the following provisions:—

a. The Company shall have the right to take, use and hold the beach and land below high water mark, in any stream, lake, navigable water, gulf or sea, in so far as the same shall be vested in Us and shall not be required by Us, to such extent as shall be required by the Company for its Railway and other works, and as shall be exhibited by a map or plan thereof deposited in the office of the Minister of Railways. But the provisions of this sub-section shall not apply to any beach or land lying East of Lake Nipissing except with the approval of our Governor-General in Council.

b. It shall be sufficient that the map or plan and book of reference for any portion of the line of the Railway not being within any district or county for which there is a Clerk of the Peace, be deposited in the office of our Minister of Railways and Canals of Canada; and any omission, mis-statement or erroneous description of any lands therein may be corrected by the Company, with the consent of the Minister and certified by him; and the Company may then make the railway in accordance with such certified correction.

c. The eleventh sub-section of the said eighth section of the Railway Act shall not apply to any portion of the Railway passing over ungranted lands of Us, or lands not within any surveyed township in any Province; and in such places, deviations not exceeding five miles from the line shown on the map or plan as aforesaid, deposited by the Company, shall be allowed, without any formal correction or certificate; and any further deviation that may be found expedient may be authorized by order of our Governor-General in Council, and the Company may then make their railway in accordance with such authorized deviation.

d. The map or plan and book of reference of any part of the main line of the Canadian Pacific Railway made and deposited in accordance with this section, after approval by Our Governor-General in Council, and of any branch of such railway hereafter to be located by the said Company in respect of which the approval of our Governor-General in Council shall not be necessary, shall avail as if made and deposited as required by the said "Consolidated Railway Act, 1879," for all the purposes of the said Act, and of this Act; and any copy of, or extract therefrom, certified by Our

said Minister or his deputy, shall be received as evidence in any court of law in Canada.

e. It shall be sufficient that a map or profile of any part of the completed railway which shall not lie within any county or district, having a registry office, be filed in the office of Our Minister of Railways and Canals of Canada.

19. It shall be lawful for the Company to take from any public lands adjacent to or near the line of the said Railway, all stone, timber, gravel and other materials which may be necessary or useful for the construction of the Railway; and also to lay out and appropriate to the use of the Company, a greater extent of lands, whether public or private, for stations, depots, workshops, buildings, side-tracks, wharves, harbors and road-way, and for establishing screens against snow, than the breadth and the quantity mentioned in "*The Consolidated Railway Act, 1879*," such greater extent taken, in any case, being allowed by Our Governor-General in Council, and shown on the maps or plans deposited with Our Minister of Railways and Canals of Canada.

20. The limit to the reduction of tolls by our Parliament of Canada provided for by the eleventh sub-section of the 17th section of "*The Consolidated Railway Act, 1879*," respecting TOLLS, is hereby extended, so that such reduction may be to such an extent that such tolls when reduced shall not produce less than ten per cent. per annum profit on the capital actually expended in the construction of the Railway, as such capital may be defined by an Act of Our Parliament of Canada to be passed during the present session thereof, instead of not less than fifteen per cent per annum profit, as provided by the said sub-section; and so also that such reduction shall not be made unless the net income of the company, ascertained as described in said sub-section, shall have exceeded ten per cent. per annum instead of fifteen per cent. per annum as provided by the said sub-section. And the exercise by Our Governor-General in Council of the power of reducing the tolls of the Company as provided by the tenth sub-section of said section seventeen is hereby limited to the same extent with relation to the profit of the Company, and to its net revenue, as that to which the power of Parliament to reduce tolls is limited by said sub-section eleven as hereby amended.

21. The first and second sub-sections of section 22, of "*The Consolidated Railway Act, 1879*," shall not apply to the Canadian Pacific Railway Company; the transfer of shares in the undertaking shall be made only upon the books of the Company in person or by attorney, and shall not be valid unless so made; and the form and mode of transfer shall be such as shall be from time to time regulated by the by-laws of the Company. And the funds of the company shall not be used in any advance upon the security of any of the shares or stock of the Company.

22. The third and fourth sub-sections of said section 22 of "*The Consolidated Railway Act, 1879*," shall be subject to the following provisions, namely, that if before the completion of the Railway and works under the said contract, any transfer should purport to be made of any stock or share in the company, or any transmission of any share should be effected under the provisions of said sub-section four, to a person not already a shareholder in the Company, and if in the opinion of the Board it should not be expedient that the person (not being already a shareholder) to whom such transfer or transmission shall be made or effected should be accepted as a shareholder, the Directors may by resolution veto such transfer or transmission; and thereafter, and until after the completion of the said Railway and works under the said contract, such person shall not be, or be recognized as a shareholder in the Company; and the original shareholder, or his estate, as the case may be, shall remain subject to all the obligations of a shareholder in the Company with all the rights conferred upon a shareholder under this Charter. But any firm holding paid-up shares in the Company may transfer the whole or any of such shares to any partner in such firm having already an interest as such partner in such shares, without being subject to such veto. And in the event of such veto being exercised, a note shall be taken of the transfer or transmission so vetoed in order that it may be recorded in the books of the Company after the completion of the Railway and works as aforesaid; but until such completion,



the transfer or transmission so vetoed shall not confer any rights, nor have any effect of any nature or kind whatever as respects the Company.

23. Sub-section sixteen of section nineteen, relating to PRESIDENT AND DIRECTORS, THEIR ELECTION AND DUTIES; sub-section two of section twenty-four, relating to BY-LAWS, NOTICES, &c., sub-sections five and six of section twenty-eight, relating to GENERAL PROVISIONS, and section ninety-seven, relating to RAILWAY FUND, of "The Consolidated Railway Act, 1879." shall not, nor shall any of them apply to the Canadian Pacific Railway or to the Company hereby incorporated.

24. The said Company shall afford all reasonable facilities to the Ontario Pacific Junction Railway Company, when their Railway shall be completed to a point of junction with the Canadian Pacific Railway; and to the Canada Central Railway Company, for the receiving, forwarding and delivering of traffic upon and from the railways of the said Companies, respectively, and for the return of carriages, trucks and other vehicles; and no one of the said Companies shall give or continue any preference or advantage to, or in favor of either of the others, or of any particular description of traffic, in any respect whatsoever; nor shall any one of the said Companies subject any other thereof, or any particular description of traffic, to any prejudice or disadvantage in any respect whatsoever; and any one of the said Companies which shall have any terminus or station near any terminus or station of either of the others, shall afford all reasonable facilities for receiving and forwarding all the traffic arriving by either of the others, without any unreasonable delay, and without any preference or advantage, or prejudice or disadvantage, and so that no obstruction may be offered in the using of such railway as a continuous line of communication, and so that all reasonable accommodation may at all times, by the means aforesaid, be mutually afforded by and to the said several railway companies; and the said Canadian Pacific Railway Company shall receive and carry all freight and passenger traffic shipped to or from any point on the railway of either of the said above named railway companies passing over the Canadian Pacific Railway or any part thereof, at the same mileage rate and subject to the same charges for similar services, without granting or allowing any preference or advantage to the traffic coming from or going upon one of such railways over such traffic coming from or going upon the other of them, reserving, however, to the said Canadian Pacific Railway Company the right of making special rates for purchasers of land, or for emigrants or intending emigrants, which special rates shall not govern or affect the rates of passenger traffic, as between the said Company and the said two above named Companies, or either of them. And any agreement made between any two of the said companies contrary to the foregoing provisions, shall be unlawful, null and void.

25. The Company, under the authority of a special general meeting of the shareholders thereof, and as an extension of the railway hereby authorized to be constructed, may purchase or acquire by lease or otherwise and hold and operate, the Canada Central Railway, or may amalgamate therewith, and may purchase or acquire by lease or otherwise and hold and operate a line or lines of railway from the city of Ottawa to any point at navigable water on the Atlantic seaboard or to any intermediate point, or may acquire running powers over any railway now constructed between Ottawa and any such point or intermediate point. And the Company may purchase or acquire any such railway subject to such existing mortgages, charges or liens thereon as shall be agreed upon, and shall possess with regard to any lines of railway so purchased, or acquired, and becoming the property of the Company, the same powers as to the issue of bonds thereon, or on any of them, to an amount not exceeding twenty thousand dollars per mile; and as to the security for such bonds, as are conferred upon the Company by the *twenty-eighth* section hereof, in respect of bonds to be issued upon the Canadian Pacific Railway. But such issue of bonds shall not affect the right of any holder of mortgages or other charges already existing upon any line of railway so purchased or acquired; and the amount of bonds hereby authorized to be issued upon such line of railway shall be diminished by the amount of such existing mortgages or charges thereon.



26. The Company shall have power and authority to erect and maintain docks, dockyards, wharves, slips and piers at any point on or in connection with the said Canadian Pacific Railway, and at all the termini thereof on navigable water, for the convenience and accommodation of vessels and elevators; and also to acquire and work elevators and to acquire, own, hold, charter, work, and run, steam and other vessels for cargo and passengers upon any navigable water, which the Canadian Pacific Railway may reach or connect with.

#### BY-LAWS.

27. The by-laws of the Company may provide for the remuneration of the president and directors of the Company, and of any executive committee of such directors; and for the transfer of stock and shares; the registration and inscription of stock, shares and bonds, and the transfer of registered bonds; and the payment of dividends and interest at any place or places within or beyond the limits of Canada; and for all other matters required by the said contract or by this Act to be regulated by by-laws; but the by-laws of the Company made as provided by law shall in no case have any force or effect after the next general meeting of shareholders, which shall be held after the passage of such by-laws, unless they are approved by such meeting.

#### BONDS.

28. The Company under the authority of a special general meeting of the shareholders called for the purpose, may issue mortgage bonds to the extent of ten thousand dollars per mile of the Canadian Pacific Railway for the purposes of the undertaking authorized by the present Charter; which issue shall constitute a first mortgage and privilege upon the said railway, constructed or acquired, and to be thereafter constructed, or acquired, and upon its property, real and personal, acquired and to be thereafter acquired including rolling stock, and plant, and upon its tolls and revenues (after deduction from such tolls and revenues of working expenses), and upon the franchises of the Company; the whole as shall be declared and described as so mortgaged in any deed of mortgage as hereinafter provided. Provided always, however, that if the Company shall have issued, or shall intend to issue land grant bonds under the provisions of the thirtieth section hereof, the lands granted and to be granted by Us to the Company may be excluded from the operation of such mortgage and privilege; and provided also that such mortgage and privilege shall not attach upon any property which the Company are hereby, or by the said contract, authorized to acquire or receive from Us until the same shall have been conveyed by Us to the Company, attach upon such property, if so declared in such deed, but shall as soon as the same shall be conveyed to the Company. And such mortgage and privilege may be evidenced by a deed or deeds of mortgage executed by the Company, with the authority of its shareholders expressed by a resolution passed at such special general meeting; and any such deed may contain such description of the property mortgaged by such deed, and such conditions respecting the payment of the bonds secured thereby and of the interest thereon, and the remedies which shall be enjoyed by the holders of such bonds or by any trustee or trustees for them in default of such payment, and the enforcement of such remedies, and may provide for such forfeitures and penalties, in default of such payment, as may be approved by such meeting; and may also contain, with the approval aforesaid, authority to the trustee or trustees, upon such default, as one of such remedies, to take possession of the Railway and property mortgaged, and to hold and run the same for the benefit of the bondholders thereof for a time to be limited by such deed, or to sell the said Railway and property, after such delay, and upon such terms and conditions as may be stated in such deed; and with like approval any such deed may contain provisions to the effect that upon such default and upon such other conditions as shall be described in such deed, the right of voting possessed by

the shareholders of the Company, and by the holders of preferred stock therein, or by either of them, shall cease and determine, and shall thereafter appertain to the bondholders, or to them and to the holders of the whole or of any part of the preferred stock of the Company, as shall be declared by such deed; and such deed may also provide for the conditional or absolute cancellation after such sale of any or all of the shares so deprived of voting power; or of any or all of the preferred stock of the Company, or both; and may also, either directly by its terms, or indirectly by reference to the by-laws of the Company, provide for the mode of enforcing and exercising the powers and authority to be conferred and defined by such deed, under the provisions hereof. And such deed, and the provisions thereof made under the authority hereof, and such other provisions thereof as shall purport (with like approval) to grant such further and other powers and privileges to such trustee or trustees and to such bondholders, as are not contrary to law or to the provisions of this charter, shall be valid and binding. But if any change in the ownership or possession of the said Railway and property shall at any time take place under the provisions hereof; or of any such deed, or in any other manner, the said Railway and property shall continue to be held and operated under the provisions hereof, and of "*The Consolidated Railway Act, 1879,*" as hereby modified. And if the Company does not avail itself of the power of issuing bonds secured upon the land grant alone as hereinafter provided, the issue of bonds hereby authorized may be increased to any amount not exceeding twenty thousand dollars per mile of the said Canadian Pacific Railway.

29. If any bond issue be made by the Company under the last preceding section before the said Railway is completed according to the said Contract, a proportion of the proceeds of such bonds, or a proportion of such bonds if they be not sold, corresponding to the proportion of the work contracted for then remaining incomplete, shall be received by Us, and shall be held, dealt with and, from time to time, paid over by Us to the Company upon the same conditions, in the same manner and according to the same proportions as the proceeds of the bonds, the issue of which is contemplated by sub-section *d*, of Clause 9 of the said Contract, and by the thirty-first section hereof.

30. The Company may also issue mortgage bonds to the extent of twenty-five million dollars upon the lands granted in aid of the said Railway and of the undertaking authorized by this Charter; such issue to be made only upon similar authority to that required by this Charter for the issue of bonds upon the Railway; and when so made such bonds shall constitute a first mortgage upon such lands, and shall attach upon them when they shall be granted, if they are not actually granted at the time of the issue of such bonds. And such mortgage may be evidenced by a deed or deeds of mortgage to be executed under like authority to the deed securing the issue of bonds on the Railway; and such deed or deeds under like authority may contain similar conditions and may confer upon the trustee or trustees named thereunder and upon the holders of the bonds secured thereby, remedies, authority, power and privileges and may provide for forfeitures and penalties, similar to those which may be inserted and provided for under the provisions of this Charter in any deed securing the issue of bonds on the Railway, together with such other provisions and conditions, not inconsistent with law or with this Charter as shall be so authorized. And such bonds may be styled Land Grant Bonds, and they and the proceeds thereof shall be dealt with in the manner provided in the said Contract.

31. The Company may in the place and stead of the said land grant bonds, issue bonds under the twenty-eighth section hereof, to such amount as they shall agree with Us to issue, with the interest guaranteed by Us as provided for in the said contract; such bonds to constitute a mortgage upon the property of the Company and its franchises acquired and to be thereafter acquired—including the main line of the Canadian Pacific Railway, and the branches thereof hereinbefore described, with the plant and rolling stock thereof acquired and to be thereafter acquired, but exclusive of such other branches thereof and of such personal property as shall be excluded by the deed of mortgage to be executed as security for



such issue. And the provisions of the said twenty-eighth section shall apply to such issue of bonds, and to the security which may be given for the payment thereof, and they and the proceeds thereof shall be dealt with as hereby and by the said contract provided.

32. It shall not be necessary to affix the seal of the Company to any mortgage bond issued under the authority of this Act; and every such bond issued without such seal shall have the same force and effect, and be held, treated and dealt with by all courts of law and of equity as if it were sealed with the seal of the Company. And if it is provided by the mortgage deed executed to secure the issue of any bonds, that any of the signatures to such bonds or to the coupons thereto appended may be engraved, stamped or lithographed thereon, such engraved, stamped or lithographed signatures shall be valid and binding on the Company.

33. The phrase "working expenses" shall mean and include all expenses of maintenance of the railway, and of the stations, buildings, works and conveniences belonging thereto, and of the rolling and other stock and moveable plant used in the working thereof, and also all such tolls, rents or annual sums as may be paid in respect of the hire of engines, carriages or waggons let to the Company; also, all rent, charges, or interest on the purchase money of lands belonging to the Company, purchased but not paid for, or not fully paid for; and also all expenses of and incidental to, working the railway and the traffic thereon, including stores and consumable articles; also rates, taxes, insurance and compensation for accidents or losses; also all salaries and wages of persons employed in and about the working of the railway and traffic and all office and management expenses, including directors' fees, agency, legal and other like expenses.

34. The bonds authorized by this Charter to be issued upon the railway or upon the lands to be granted to the Company, or both, may be so issued in whole or in part in the denomination of dollars, pounds sterling, or francs, or in any or all of them, and the coupons may be for payment in denominations similar to those of the bonds to which they are attached. And the whole or any of such bonds, may be pledged, negotiated or sold upon such conditions and at such price as the Board of Directors shall from time to time determine. And provision may be made by the by-laws of the Company, that after the issue of any bond, the same may be surrendered to the Company by the holder thereof, and the Company may, in exchange therefor, issue to such holder inscribed stock of the Company, which inscribed stock may be registered or inscribed at the chief place of business of the Company or elsewhere, in such manner, with such rights, liens, privileges and preferences, at such place, and upon such conditions, as shall be provided by the by-laws of the Company.

35. It shall not be necessary, in order to preserve the priority, lien, charge, mortgage or privilege, purporting to appertain to or be created by any bond issued or mortgage deed executed under the provisions of this Charter, that such bond or deed should be enregistered in any manner, or in any place whatever. But every such mortgage deed shall be deposited in the office of Our Secretary of State of Canada, of which deposit notice shall be given in the *Canada Gazette*. And in like manner any agreement entered into by the Company, under section thirty-six of this Charter, shall also be deposited in the said office. And a copy of any such mortgage deed, or agreement, certified to be a true copy by Our said Secretary of State or his Under-Secretary or Deputy, shall be received as *prima facie* evidence of the original in all courts of justice, without proof of the signatures or seal upon such original.

36. If, at any time, any agreement be made by the Company with any persons intending to become bondholders of the Company, or be contained in any mortgage deed executed under the authority of this Charter, restricting the issue of bonds by the Company, under the powers conferred by this Charter, or defining or limiting the mode of exercising such powers, the Company, after the deposit thereof with Our said Secretary of State as hereinbefore provided, shall not act upon such powers otherwise than as defined, restricted and limited by such agreement. And no bond thereafter issued by the Company, and no order, resolution or proceeding thereafter made,



passed or had by the Company, or by the Board of Directors, contrary to the terms of such agreement, shall be valid or effectual.

37. The Company may, from time to time, issue guaranteed or preferred stock, at such price, to such amount, not exceeding ten thousand dollars per mile, and upon such conditions as to the preferences and privileges appertaining thereto, or to different issues or classes thereof, and otherwise, as shall be authorized by the majority in value of the shareholders present in person or represented by proxy at any annual meeting or at any special general meeting thereof called for the purpose, notice of the intention to propose such issue at such meeting being given in the notice calling such meeting. But the guarantee or preference accorded to such stock shall not interfere with the lien, mortgage and privilege attaching to bonds issued under the authority of this Act. And the holders of such preferred stock shall have such power of voting at meeting of shareholders, as shall be conferred upon them by the by-laws of the Company.

#### EXECUTION OF AGREEMENTS.

38. Every contract, agreement, engagement, scrip certificate or bargain made, and every bill of exchange drawn, accepted or endorsed, and every promissory note and cheque made, drawn or endorsed on behalf of the Company, by any agent, officer or servant of the Company, in general accordance with his powers as such under the by-laws of the Company, shall be binding upon the Company; and in no case shall it be necessary to have the seal of the Company affixed to any such bill, note, cheque, contract, agreement, engagement, bargain, or scrip certificate, or to prove that the same was made, drawn, accepted or endorsed, as the case may be, in pursuance of any by-law or special vote or order; nor shall the party so acting as agent, officer or servant of the Company be subjected individually to any liability, whatsoever, to any third party therefor; Provided always, that nothing in this Charter shall be construed to authorize the Company to issue any note payable to the bearer thereof, or any promissory note intended to be circulated as money, or as the note of a bank, or to engage in the business of banking or insurance.

#### GENERAL PROVISIONS.

39. The Company shall, from time to time, furnish such reports of the progress of the work, with such details and plans of the work, as Our Governor-General in Council may require.

40. As respects places not within any Province, any notice required by "The Consolidated Railway Act, 1879," to be given in the "Official Gazette" of a Province, may be given in the *Canada Gazette*.

41. Deeds and conveyances of lands to the Company for the purposes of this Charter, (not being letters patent from Us) may, in so far as circumstances will admit, be in the form following, that is to say:—

"Know all men by these presents, that I, A. B., in consideration of paid to me by the Canadian Pacific Railway Company, the receipt whereof is hereby acknowledged, grant, bargain, sell and convey unto the said The Canadian Pacific Railway Company, their successors and assigns, all that tract or parcel of land (*describe the land*) to have and to hold the said land and premises unto the said Company, their successors and assigns for ever.

"Witness my hand and seal, this                      day of                      one thousand  
eight hundred and

"Signed, sealed and delivered }  
in presence of

A.B. [L.S.]

"C. D.

"E. F."

or in any other form to the like effect. And every deed made in accordance herewith shall be held and construed to impose upon the vendor executing the same the obligation of guaranteeing the Company and its assigns against all dower and claim for dower and against all hypothecs and mortgages and against all liens and charges whatsoever and also that he has a good, valid and transferable title thereto.

In TESTIMONY WHEREOF, We have caused these Our Letters to be made Patent, and the Great Seal of Canada to be hereunto affixed. WITNESS, Our Right Trusty and Well-Beloved Councillor, SIR JOHN DOUGLAS SUTHERLAND CAMPBELL (commonly called the Marquis of Lorne), Knight of Our Most Ancient and Most Noble Order of the Thistle, Knight Grand Cross of Our Most Distinguished Order of St. Michael and St. George, Governor-General of Canada and Vice-Admiral of the same, &c., &c., &c.

At Our Government House, in Our CITY of OTTAWA, this sixteenth day of February, in the Year of Our Lord one thousand eight hundred and eighty-one, and in the forty-fourth year of Our Reign.

By Command,

(Signed) JOHN O'CONNOR,  
*Secretary of State of Canada.*

(Signed) JAS. McDONALD, Esq.,  
Attorney-General of Canada.

(Copy of No. 26858.)

OTTAWA, 16th December, 1880.

SIR,—With reference to the objections that have been raised to the description in the 3rd clause of the Pacific Railway contract of the approximate standard named in that clause, we beg to state, that when the contract was framed, it was not considered that there was any difference of importance between the time of the original construction of the Union Pacific Railway and the date of the Allan contract.

We are therefore prepared to agree, on behalf of the Syndicate, that the description of the *Standard* shall be construed as applying to the Union Pacific Railway as it was in February, 1873, so that the obligations of the Company will virtually be the same as if that date were substituted in the clause in question, for the words "as the same was when first constructed."

We have no hesitation in agreeing to this construction, as it is obvious that our own interest will lead us to construct the Railway in a substantial manner, with steel rails and efficient equipment. And our reason for desiring that a standard should be named was not in any degree to enable us to construct an inferior railway, but merely to protect us from captious or arbitrary criticism.

We have the honor to be, Sir,

Your obedient servants,

(Signed) . DUNCAN McINTYRE,  
" JOHN S. KENNEDY,  
" R. B. ANGUS,  
on behalf of the Pacific Railway Syndicate.

The Honorable  
The Secretary of State for Canada,  
Ottawa.



(Copy of No. 25604.)

CANADIAN PACIFIC RAILWAY COMPANY,  
 SECRETARY'S OFFICE,  
 MONTREAL, February 25th, 1881.

SIR,—At the request of the Hon. J. J. C. Abbott, the Counsel of this Company, I beg to transmit herewith, duly certified and sealed with the corporate seal of the Company, an extract from the minutes of the first meeting of the Directors, held on the 17th inst., having reference to the proposed agreement to be entered into between the Government and the Company on the subject of running powers to be granted under circumstances over a portion of the Canadian Pacific Railway to Callander Station, &c.

Mr. Abbott desired me to say that this Extract is forwarded to you and the Hon. Sir Alexander Campbell as the resolutions embodied in it were passed by the Directors at your joint request.

I have the honor to be, Sir,

Your obedient servant,

(Signed)

C. DRINKWATER,

Secretary.

The Hon. SIR CHAS. TUPPER, K.C.B.,  
 Minister of Railways,  
 Ottawa.

### THE CANADIAN PACIFIC RAILWAY COMPANY.

Extracts from the minutes of the first meeting of the Directors of the Canadian Pacific Railway Company, held at the Company's office in Montreal, on Thursday, the 17th day of February, 1881.

And whereas in the course of the debate upon the Canadian Pacific Railway Act, certain questions arose which the contractors present at Ottawa deemed it expedient to meet by agreeing that this Company would enter into certain undertakings with the Government of Canada, so soon as it should be organized, and it is expedient to provide for entering into such arrangements, therefore it is unanimously

*Resolved*,—That this Company is prepared to enter into an agreement with the Dominion Government to the effect following, that is to say:

If any Company other than the Canada Central Railway Company builds a line from any point on the Canadian Pacific Railway, at or about the Wahnapiit River, to any point on Lake Huron, or Lake Superior, or on the River Ste. Marie, such Company shall have running powers over the Canadian Pacific Railway from the point of junction to Callander Station, on condition that such Company shall grant to the Canadian Pacific Railway Company similar and reciprocal running powers over its Railway west of such point of junction.

In the event of the Company purchasing, acquiring, amalgamating with, leasing or holding and operating the Canada Central Railway, the said Callander Station shall continue to be a neutral or receiving and distributing point, common to the Canada Central Railway, and any Railway in the Province of Ontario running southward from said Callander Station, and in that case all traffic to or from any point in the West or North-West coming from, or destined for any such Ontario Railway, shall be carried to or from Callander Station at the same mileage rate as similar traffic to or from such point coming from or destined for the said Canada Central Railway. And such mileage rate shall not be greater than the average rate per mile charged for similar traffic from the point of shipment on the Canadian Pacific Railway to the point of destination on the Canada Central Railway, or from the point of shipment on the said Canada Central Railway to the point of destination on the Canadian Pacific Railway as the case may be.



And for the purposes of this section the word "traffic" includes not only passengers and their baggage, goods, animals and things conveyed by railway, but also cars, trucks and vehicles of any description adapted for running over any railway, if offered for carriage as freight, but this agreement shall not be construed as consenting to any running powers by any railway over the Canadian Pacific Railway.

This agreement to be subject to the conditions as to special rates for the purchasers of land, or for emigrants or intending emigrants, which are contained in the twenty-fourth section of the charter of this Company.

If at any time the Canada Central Railway should be purchased, acquired, leased in perpetuity by or amalgamated with this Company, such amalgamation, acquisition, purchase or lease shall be made subject to the existing legal obligations of that Company created by its charter or any amendment thereof, in respect of running powers or traffic arrangements, as well as in respect of the matters and things referred to in the letters patent incorporating this Company.

A true extract.

(Signed)

C. DRINKWATER,

*Secretary.*

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