DOMINION OF CANADA

ANNUAL REPORT

OF THE

DEPARTMENT OF RAILWAYS AND CANALS

For the Fiscal Year from April 1, 1922,
to March 31, 1923

Submitted in accordance with the provisions of the Revised Statutes of Canada, Chapter 35, Section 33

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OTTAWA
F. A. ACLAND
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1923

To General His Excellency the Right Honourable Lord Byng of Vimy, G.C.B., G.C.M.G., M.V.O., Governor General and Commander in Chief of the Dominion of Canada.

MAY IT PLEASE YOUR EXCELLENCY:

The undersigned has the honour to present to Your Excellency the Annual Report of the Department of Railways and Canals, of the Dominion of Canada, for the fiscal year ending March 31, 1923.

GEORGE P. GRAHAM,
Minister of Railways and Canals.

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REPORT

OF THE

DEPUTY MINISTER OF RAILWAYS AND CANALS

FOR THE YEAR ENDING MARCH 31, 1923

To the Hon. Geo. P. Graham,
Minister of Railways and Canals.

Sir.—I have the honour to submit herewith the annual report of the Department of Railways and Canals. For the railways, it covers the calendar year 1922; for the canals, highways, etc., the fiscal year ended March 31, last.

The operated mileage of the Canadian National System, all lines, on December 31, 1922, was:—

Canadian Government Railways—		
Intercolonial Railway (including Branch Lines)	2,283·44	
National Transcontinental Railway Eastern Lines	1,415·74	
National Transcontinental Railway Western Lines (including Lake Superior Branch)	582·14	
St. John & Quebec Railway	171·80	
Hudson Bay Railway	214·00	
		4,667·12
Canadian Northern Railway System—		
Canadian Northern Railway Eastern Lines (including Halifax & South Western Ry.)	2,892·28	
Canadian Northern Railway Western Lines, including (Duluth, Winnipeg & Pacific Ry)	6,976·38	
Niagara, St. Catharines & Toronto Ry. & Toronto Suburban Ry. (Electric Lines)	126·13	
		9,994·79
Grand Trunk Pacific Railway	2,710 50	
		2,710·50
Grand Trunk Railway System—		
Grand Trunk Railway Canadian Lines	3,611 87	
Grand Trunk Railway Western Lines	991·69	
Grand Trunk Railway New England Lines	172 21	
	4,775 77	
Central Vermont Railway	532 50	
		5,308 27
		22,680 68

Average Mileage Operated

Canadian National Railways	17,351 43	
Grand Trunk Railway System (Including Central Vermont Ry)	5,314 08	
		22,665 51

The gross operating revenue of the combined and consolidated system was $234,111,090.01, two millions less than the previous year, and the operating expenses, $229,917,540.98, as compared with $247,947,842.48 in 1921. The net revenue from railway operation was $4,193,549.03, and the total revenue before fixed charges was $2,202,782.82, compared with a deficit of $12,638,778.88 in 1921.

The fixed charges, all lines, were $62,454,627.95, of which $24,649,513.45 was due the Government and $37,805,114.50 due the public. The grand total deficit was $60,251,845.13, an improvement of $12,410,433.03 for the year.

CANADIAN NATIONAL RAILWAYS—(All Lines)

Income Account

Years ending December 31, 1922 and 1921

—	1922		1921	
	$	cts.	$	cts.
Gross Operating Revenue				
Canadian National Railways	120,135,956	71	127,002,466	64
Grand Trunk Railway System	106,348,507	11	101,961,804	52
Central Vermont Railway	7,626,626	19	7,135,753	06
	234,111,090	01	236,110,024	22
Operating Expenses				
Canadian National Railways	129,872,274	75	143,222,802	55
Grand Trunk Railway System	93,525,165	61	97,412,480	45
Central Vermont Railway	6,520,100	62	7,312,559	48
	229,917,540	98	247,947,842	48
Net Revenue from Railway Operations				
Canadian National Railway	Def. 9,736,318	04	Def. 16,220,335	91
Grand Trunk Railway System	12,823,341	50	4,549,324	07
Central Vermont Railway	1,106,525	57	Def. 176,806	42
	4,193,549	04	Def. 11,847,818	26
Tax Accruals				
Canadian National Railways	1,348,763	29	1,585,029	25
Grand Trunk Railway System	2,523,538	57	2,412,912	92
Central Vermont Railway	223,375	59	237,032	08
	4,095,677	45	4,234,974	25
Total Operating Income				
Canadian National Railways	Def. 11,085,081	33	Def. 17,805,365	16
Grand Trunk Railway System	10,299,802	93	2,136,411	15
Central Vermont Railway	883,149	98	Def. 413,838	50
	97,871	58	Def. 16,082,792	51
Non-Operating Income				
Canadian National Railways	5,644,217	22	4,662,112	85
Grand Trunk Railway System	9,970,724	38	11,293,066	61
Central Vermont Railway	137,554	88	154,544	19
	15,752,496	48	16,109,723	65
Deduction from Gross Income				
Canadian National Railways	4,421,180	49	3,068,810	91
Grand Trunk Railway System	8,151,262	50	8,924,206	72
Central Vermont Railway	1,075,142	25	672,692	39
	13,647,585	24	12,665,710	02
Total Revenue before Fixed Charges				
Canadian National Railways	Def. 9,862,044	60	Def. 16,212,063	22
Grand Trunk Railway System	12,119,264	81	4,505,271	04
Central Vermont Railway	Def. 54,437	39	Def. 931,986	70
	2,202,782	82	Def. 12,638,778	88

CANADIAN NATIONAL RAILWAYS—(All Lines)—*Concluded*

INCOME ACCOUNT

Year ending December 31, 1922 and 1921

——	1922	1921
	$ cts.	$ cts.
FIXED CHARGES		
Interest Due Dominion Government—		
Canadian National Railways	19,903,750 84	16,462,569 13
Grand Trunk Railway System	4,745,762 61	3,107,420 66
	24,649,513 45	19,669,989 79
Interest Due Public—		
*Canadian National Railway	21,337,501 47	24,315,346 47
†Grand Trunk Railway System	15,785,236 23	15,462,292 74
‡Central Vermont Railway	682,376 80	675,870 28
	37,805,114 50	40,453,509 49
Total Fixed Charges	62,454,627 95	60,023,499 28
GRAND TOTAL DEFICIT.		
Canadian National Railways	51,103,296 91	56,989,978 82
Grand Trunk Railway System	8,411,734 03	14,064,442 36
Central Vermont Railway	736,814 19	1,607,856 98
	60,251,845 13	72,662,278 16
NOTE—		
*Includes interest due G.T. Ry. Co	2,081,060 25	2,642,191 60
†Includes interest due G.T. Ry. Co	1,365,997 99	1,413,371 06
‡Includes interest due G.T. Ry. Co	206,173 33	205,615 00
	3,653,231 57	4,361,177 66

The Canadian National System (exclusive of the Grand Trunk, which was merged with the National System only on Oct. 4, 1922) consisted of the original Canadian Government Railways, the Canadian Northern Railway and the Grand Trunk Pacific and branch lines. During 1922 the gross operating revenue of these roads was $120,135,956.71, as against $127,002,466.64 in 1921; the operating expenses $129,872,274.75, as against $143,222,802.55; leaving a net deficit from railway operation of $9,736,318.04, as compared with $16,220,335.91 for the previous year.

Tax accruals brought the total operating deficit for 1922 up to $11,085,-081.33, as against $17,805,365.16 for 1921. Non-operating income—car rentals, rental of joint facilities, express, mails, elevators, etc.—amounting to $5,644,-217.22, was offset by the usual deductions from gross income—hire of equipment, joint facilities, etc.—amounting to $4,421,180.49, leaving the total deficit before charges $9,862,044.60, as compared with $16,212,063.22 in 1921.

The fixed charges amounted, in 1922, to $41,241,252.31, of which $32,-711,546.22 pertain to the Canadian Northern, and $8,529,706.09 to the Grand Trunk Pacific. These fixed charges swell the total Canadian National deficit to $51,103,296.91 as compared with $56,989,978.82 in 1921.

CANADIAN NATIONAL RAILWAYS (Exclusive of Grand Trunk)

Income Account

Years ending December 31, 1922 and 1921

—	1922	1921
	$ cts.	$ cts.
Gross Operating Revenue		
Canadian Northern Railway System	60,679,033 37	69,088,474 16
Canadian Government Railways	40,939,945 76	14,275,314 84
Grand Trunk Pacific Railway	18,516,977 58	16,638,677 64
Canadian National Railways	120,135,956 71	127,002,466 64
Operating Expenses		
Canadian Northern Railway System	63,625,763 09	75,564,385 30
Canadian Government Railways	43,436,667 67	46,990,047 74
Grand Trunk Pacific Railway	22,809,843 99	20,668,369 51
Canadian National Railways	129,872,274 75	143,222,802 55
Net Deficit from Railway Operations		
Canadian Northern Railway System	2,946,729 72	6,475,911 14
Canadian Government Railways	2,496,721 91	5,714,732 90
Grand Trunk Pacific Railway	4,292,866 41	4,029,691 87
Canadian National Railways	9,736,318 04	16,220,335 91
Tax Accruals		
Canadian Northern Railway System	1,077,433 16	1,191,890 84
Canadian Government Railways	23,426 91	35,743 87
Grand Trunk Pacific Railway	247,903 22	357,394 54
Canadian National Railways	1,348,763 29	1,585,029 25
Total Operating Deficit		
Canadian Northern Railway System	4,024,162 88	7,667,801 98
Canadian Government Railways	2,520,148 82	5,750,476 77
Grand Trunk Pacific Railway	4,540,769 63	4,387,086 41
Canadian National Railways	11,085,081 33	17,805,365 16
Non-operating Income		
Canadian Northern Railway System	3,777,512 86	3,119,349 72
Canadian Government Railways	1,074,548 74	679,577 30
Grand Trunk Pacific Railway	792,155 62	863,185 83
	5,644,217 22	4,662,112 85
Deductions from Gross Income		
Canadian Northern Railway System	1,352,376 43	1,011,242 14
Canadian Government Railways	1,465,057 85	1,255,901 00
Grand Trunk Pacific Railway	1,603,746 21	801,667 77
Canadian National Railways	4,421,180 49	3,068,810 91
Total Deficit before Fixed Charges		
Canadian Northern Railway System	1,599,026 45	5,559,694 40
Canadian Government Railways	2,910,657 93	6,326,800 47
Grand Trunk Pacific Railway	5,352,360 22	4,325,568 35
Canadian National Railways	9,862,044 60	16,212,063 22

CANADIAN NATIONAL RAILWAYS (Exclusive of Grand Trunk)—*Concluded*

INCOME ACCOUNT

Years ending December 31, 1922 and 1921

	1922	1921
	$ cts.	$ cts.
FIXED CHARGES		
Canadian Northern Railway System—		
Interest due public	16,915,174 26	17,595,707 51
Interest due Government	15,796,371 96	13,224,208 27
	32,711,546 22	30,819,915 78
Grand Trunk Pacific Railway—		
Interest due public	2,341,266 96	3,977,447 36
Interest due Government	2,200,131 74	1,535,474 22
Interest of Receiver's Certificates	1,907,247 13	1,702,886 64
Interest due Grand Trunk Railway	2,081,060 25	2,742,191 60
	8,529,706 09	9,957,999 82
Canadian National Railways	41,241,252 31	40,777,915 60
TOTAL DEFICIT		
Canadian Northern Railway System	34,310,572 67	36,379,610 18
Canadian Government Railways	2,910,657 93	6,326,800 47
Grand Trunk Pacific Railway	13,882,066 31	14,203,558 17
Canadian National Railways	51,103,296 91	56,989,978 82

ANALYSIS OF NET OPERATING DEFICIT

The net operating deficit of the Canadian National System (exclusive of Grand Trunk) was $9,736,318.04, compared with $16,220,335.91 in 1921. The net operating deficit of the Canadian Government Railways was $2,496,721.91, as against $5,714,732.90 in 1921. Of this, the Intercolonial and branch lines were responsible for $2,302,703.36, compared with $4,457,035.75 in 1921; the Prince Edward Island District, $634,588.66, as against $617,158.93 the previous year; the Transcontinental—lines east of Armstrong—$875,233.02, as against $1,964,730.89 in 1921; Transcontinental lines—west of Armstrong and east of Winnipeg, including the Grand Trunk Pacific Lake Superior Branch—an operating surplus of $1,488,833, as against an operating surplus of $1,523,547.90 in 1921; the St. John and Quebec Railway, a deficit of $148,078.67 compared with $127,434.15 the previous year; Hudson Bay Railway, $24,951.43 as against $71,921.08 in 1921.

The Canadian Northern operating deficit was reduced from $6,475,911.14 in 1921 to $2,946,729.72 in 1922, but the operating deficit of the Grand Trunk Pacific increased from $4,029,691.87 to $4,292,866.41 during the same period.

OPERATING RATIO

The operating ration for the year was 108·10, as compared with 112·77 in 1921 and 129·32 in 1920. The operating ratios of the component parts of the National System were as follows:

	1922	1921
Canadian Northern	104·85	109·37
Canadian Government	106·10	113·85
Grand Trunk Pacific	123·18	124·21

The ratio of 108·10 for 1922 is divided as follows: Labour, 60·74, as against 65·02; fuel, 14·01, as against 16·84; and other expenditures 33·35, as against 30·91.

Traffic Results

The National lines carried 11,331,226 passengers during 1922, or 606,923 less than in 1921. The average haul per passenger was 60·84 miles, compared with 59·87 miles in the previous year, and the passenger earnings were $17,919,602.17, a decrease of $2,289,218.02 compared with 1921.

The system handled 22,426,402 tons of revenue freight, an increase of 1,164,803 tons. The average haul also increased from 423·19 miles to 449·97 miles, but the freight revenue, which was $89,726,925.51, fell off $3,901,611.86 because of lower rates.

The average earnings per traffic train mile were $3.52 which was 8 cents less than in 1921, and the operating expenses $3.82, which was 25 cents less than the previous year. The average operating revenue per mile of road was $6,885.33, which was $438.16 less than in 1921, and the average operating expenses per mile of road was $7,466.23, a decrease of $817.30. The average load per freight train increased from 482·66 tons to 548·34 tons.

Analysis of Operating Expenses

Out of each dollar spent by the National Railways on operating account during 1922, the following expenditures were made: 24·13 cents for maintenance of way and structures; 23·53 cents for maintenance of equipment; 2·23 cents for traffic expenses—soliciting, etc.—46·57 cents for rail line transportation—enginemen, trainmen, yardmen, station employees, etc.—1·42 cents for miscellaneous operations—dining and buffet, hotels restaurants, etc.—2·79 cents for general expenses— general offices, clerical and legal staff, etc.—and 0·67 for transportation for investment—*i.e.*, the movement of materials entering into the property.

The distribution of operation expenses is shown also in another form: labour, 56·19; fuel—loccmotive—12·96; other expenses, 30·85, total 100.

Labour

Out of gross earnings of $120,135,956.71, the management paid out $82,390,245.42 in wages, including betterments, about six and a half million dollars less than the 1921 total pay-roll. Operating labour cost $72,969,378.48, or almost 10 millions less than the previous year. The ratio of operating labour costs to gross earnings was 60·74 for the system, as against 65·02 in 1921. The average number of employees in 1922 was 58,398 compared with 60,315 in 1921, a decrease of almost two thousand.

GRAND TRUNK RAILWAY SYSTEM (Including Central Vermont Railway)

Income Account

Results of Operation—Years 1922 and 1921

	1922	1921
Railway Operating Revenues	$ cts.	$ cts.
Canadian Lines	77,700,019 23	76,858,032 27
Western Lines	25,525,304 98	22,195,256 82
New England Lines	3,123,182 90	2,910,515 43
Central Vermont	7,626,626 19	7,135,753 06
	113,975,133 30	109,097,557 58
Railway Operating Expenses		
Canadian Lines	70,317,813 45	71,179,292 80
Western Lines	20,027,078 78	22,641,181 93
New England Lines	3,180,273 38	3,592,005 72
Central Vermont	6,520,100 62	7,312,559 48
	100,045,266 23	104,725,039 93

GRAND TRUNK RAILWAY SYSTEM (Including Central Vermont Railway)—*Concluded*

Income Account

Results of Operations—Years 1922 and 1921

	1922		1921	
Net Revenue from Railway Operations	$	cts.	$	cts.
Canadian Lines	7,382,205	78	5,678,739	47
Western Lines	5,498,226	20	Def. 447,925	11
New England Lines	Def. 57,090	48	Def. 681,490	29
Central Vermont	1,106,525	57	Def. 176,806	42
	13,929,867	07	4,372,517	65
Taxes, Uncollectable Railway Revenues, Hire of Equipment and Joint Facility Rents—Net—				
Canadian Lines	Cr. 1,883,645	51	Cr. 1,149,574	46
Western Lines	Dr. 4,472,129	58	Dr. 3,640,721	22
New England Lines	Dr. 895,340	50	Dr. 673,594	82
Central Vermont	Dr. 705,749	57	Dr. 469,122	45
	Dr. 4,189,574	14	Dr. 3,633,864	03
Net Operating Income or Loss				
Canadian Lines	9,265,851	29	6,828,313	93
Western Lines	1,026,096	62	Def. 4,088,646	33
New England Lines	Def. 952,430	98	Def. 1,355,085	11
Central Vermont	400,776	00	Def. 645,928	87
	9,740,292	93	738,635	62
Difference—Increase			9,001,639	31
Other Income net				
Canadian Lines	Cr. 3,516,652	19	Cr. 2,278,129	80
Western Lines	Dr. 290,734	94	Cr. 1,368,567	48
New England Lines	Dr. 446,169	37	Dr. 526,008	73
Central Vermont	Dr. 455,213	39	Dr. 286,057	83
	Cr. 2,324,534	49	Cr. 2,834,630	72
Difference—Decrease			510,096	23
Net Income before Fixed Charges				
Canadian Lines	12,782,503	48	9,106,443	73
Western Lines	735,361	68	Def. 2,720,078	85
New England Lines	Def. 1,398,600	35	Def. 1,881,093	84
Central Vermont	Def. 54,437	39	Def. 931,986	70
	12,064,827	42	3,573,284	34
Fixed Charges—Interest on Funded Debt	$	cts.	$	cts.
Payable to Dominion Government Canadian Lines	4,745,762	61	3,107,420	66
Payable to Others				
Canadian Lines	13,772,127	35	13,385,194	04
Western Lines	2,013,108	88	2,077,098	70
New England Lines				
Central Vermont	682,376	80	675,870	28
	16,467,613	03	16,138,163	02
Net Income or Loss				
Canadian Lines	Def. 5,735,386	48	Def. 7,386,170	97
Western Lines	Def. 1,277,747	20	Def. 4,797,177	55
New England Lines	Def. 1,398,660	35	Def. 1,881,093	84
Central Vermont	Def. 736,814	19	Def. 1,607,856	98
	Def. 9,148,548	22	15,672,299	34
Difference—Decrease			6,523,751	12

Grand Trunk Net Deficit

As will be seen from the foregoing, the operating revenues, all lines, were $113,975,133.30 last year as against $109,097,557.58 in 1921; the operating expenses $100,045,266.23 as compared with $104,725,039.93 the previous year.

After deducting taxes, hire of equipment, joint facility rents, etc., expenditures which affect the western lines somewhat heavily, income other than from operation brought the net income before fixed charges up to $12.064,827.42.

Fixed charges amount to $21,213,375.64. Of this sum $4,745,762.61 is due the government and $16,467,613,03 payable to others. Taking into consideration these fixed charges the Grand Trunk net deficit, all lines, was $9,148,548.22, as compared with $15,672,299.34 in 1921, a decrease of $6,523,751.12. The net deficit was apportioned as follows:

	1922	1921
	$ cts.	$ cts.
Canadian Lines	5,735,386 48	7,386,170 97
Western Lines	1,277,747 20	4,797,177 55
New England Lines	1,398,600 35	1,881,093 84
Central Vermont	736,814 19	1,607,299 34
Total	9,148,548 22	15,672,299 34

The net deficit of $9,148,548.22 was distributed as follows:

	$ cts.
Grand Trunk Canadian Lines	5,620,814 37
Otttawa Terminals Railway	113,769 09
Canada Atlantic Transit Company	82,454 25
St. Clair Tunnel Company	231,852 26
Toronto Terminals Railway	203,091 48
Terminal Warehouse Reg. (Cr.)	250,000 00
Canadian Express Company (Cr.)	266,594 97
Grand Trunk Western Lines	1,277,747 20
Grand Trunk New England Lines	1,398,600 35
Central Vermont Railway	736,814 19
Total	9,148,548 22

Grand Trunk Traffic

The operating revenue of the Grand Trunk System, exclusive of the Central Vermont, was $106,348,507.11, an increase of $4,386,702.59. Of this amount $17,566,692.55 was on passenger account, a falling off of $1,668,459.55. Freight revenue was $79,716,164.68, an increase of $5,712,983.97; other revenue—mail express, etc.—$9,065,649.88 showed a slight increase.

Operating expenses were $93,525,165.61, a decrease of $3,887,314.84. This decrease was common to maintenance of way and structures, transportation, miscellaneous, and general offices. Maintenance of equipment cost more than in 1921, as also did the traffic department.

Operating ratio was 87·94 per cent as compared with 95·53 in 1921.

Tons of freight carried were 29,942,949, an increase of 2,688,163, though the average ton mile revenue fell off 4 per cent. Passengers carried numbered 12,401,927, a decrease of 1,124,181. There was a decrease of 5 per cent also in the average revenue per passenger mile.

Separately Operated Companies

A number of separately operated subsidiary companies are controlled by the Grand Trunk, the net surplus of which is not taken into the Grand Trunk income statement. These include the Chicago, New York and Boston Regrigerator Company, International Bridge Company, Montreal Warehousing Company, Limited, Terminal Warehousing Company, Limited, Oshawa Railway, Rail and River Coal Company, Thousand Islands Railway, Montreal and Southern Counties Railway and the Central Vermont Transportation Company.

The net income of separately operated companies was $712,123.24, as against $381,439.05 in 1921. These separately operated companies paid to the Grand Trunk in dividends in 1922, $576,300 compared with $127,000 in 1921. and the undistributed surplus at December 31, last was $151,671.16 compared with $40,429.07 at the end of 1921.

Employees and Compensation

The average number of employees Grand Trunk System was 38,359 in 1922, compared with 39,234 in 1921, and corresponding figures for Central Vermont were 2,763 and 2,859. The average wage, Grand Trunk, was $1,507.96 and Central Vermont $1,566.91, a decrease of 5·49 per cent and 1·93 per cent respectively. The pay-roll expense of the Grand Trunk was $54,016,242.75, or 57·76 per cent of the total operating expense. The pay-roll of the Central Vermont was $4,109,420.19, or 63·03 per cent of the total operating expense. The ratio of pay-roll to operating expense decreased 2·83 per cent in the case of the Grand Trunk, but increased 6·81 per cent in the case of the Central Vermont.

Of each dollar spent by the Grand Trunk 57¾ cents went in wages, 15½ cents in fuel for locomotives and 26¾ cents in other operating expenses

Report of Departmental Accountant

The total departmental expenditure for the year was $21,213,373.80, divided as follows: Railways, $5,113,072.30; Canals, $7,548,024.80; general, $8,552,276.70.

The grand total expenditure of the Department to Mar. 31, 1923, was $1,304,620,743.28, of which $1,064,250,248.19 was on railway account (including Quebec Bridge); $202,165,744.41 on Canals, and $38,204,750.68 general.

The principal expenditures during the fiscal year included $5,695,669.05, operating deficits Canadian Government Railways; $2,315,805.79, miscellaneous railway equipment; $5,854,395.81, Canada Highways Commission; $4,776,-393.84, Welland Ship Canal, and $2,551,603.87, expenditure connected with the Canal system in operation.

The grand total revenue received to Mar. 31, 1923, amounted to $452,477,-264.64, of which $432,654,337.45 was on account of railways and $19,822,927.19 on account of Canals. The revenue from Canals was $742,410.46 for the year compared with $804,518.58 the previous year. No tolls have been charged on the canals since 1903, and the revenue referred to is from hydraulic and other rents, wharfage and elevator charges. From the Port Colborne elevator the revenue received was $356,740.43, an increase of $62,181.92.

Advances to the Railways by the Government

Total advances by the Government of the Canadian Northern Railway, to December 31, 1922, amounted to $298,799,591.72, on which interest amounting to $51,333,156.66 had accrued. These advances were devoted to the following uses by the railway: construction and betterments, $89,569,804.59; equipment, $38,081,827.85; repayment of loans, including equipment trust obligations, $49,364,435.04; operating deficits, $21,093,292.27; fixed charges, $100,690,231.97.

Total advances to the Grand Trunk Pacific Railway, to the same date, were $90,538,034.75, on which interest amounting to $20,924,521.32 had accrued. The advances have been applied to the following purposes; construction and betterments, $31,512,074.66; equipment, $6,417,729.83; operating deficits, $25,985,065; fixed charges, $26,623,165.26.

Total advances to the Grand Trunk Railway System, to the same date, amounted to $84,560,342.60, and accrued interest $7,967,405.29. The advances were required for the following purposes; construction and betterments $3,755,063.42; equipment, $7,246,195.98; repayment of loans, including equipment trust obligations, $33,858,440.15; operating deficits, $21,786,516.09, fixed charges, $17,913,886.96.

Steps in the Reorganization

The reorganized National Railway Board was appointed on Oct. 4, 1922 as follows:—

Major General Sir Henry Worth Thornton, K.B.E.	London, Eng.
John H. Sinclair, K.C.	New Glasgow, N.S.
Richard P. Gough	Toronto.
James Stewart	Winnipeg.
Ernest R. Décary	Montreal.
Frederick G. Dawson	Prince Rupert, B.C.
Tom Moore	Ottawa.
Graham A. Bell, C.M.G.	Ottawa.
Gerard G. Ruel	Toronto (now of Montreal)

On Feb. 12, 1923, Col. A. E. Talbot, of the City of Quebec, was also appointed a Director.

On Jan. 19, 1923, the whole of the Preference and Common Stock of the Grand Trunk Railway Company was, by Order-in-Council, vested in the Minister of Finance in trust for His Majesty.

Under date of Jan. 20, 1923, an Order-in-Council was passed handing over to the new Canadian National Railway Board the Management and operation of the Canadian Government Railways, designated specifically as:

The Intercolonial Railway.
The National Transcontinental Railway.
The Lake Superior Branch, leased from the Grand Trunk Pacific Railway Company.
The Prince Edward Island Railway.
The Hudson Bay Railway.

and all other railways and branch lines vested in His Majesty, and comprising what had been known as the Canadian Government Railways. This Order-in-Council superseded and cancelled the Order-in-Council of Nov. 20, 1918, which had appointed the Canadian Northern Board to operate and manage these railways.

The unification of the Grand Trunk and Canadian National Railways was provided for by Order-in-Council of Jan. 30, 1923. The same Order brought into effect the Act to incorporate the Canadian National Railway Company and respecting Canadian National Railways (Chap. 13, 1919). This was followed on Feb. 5, 1923, by an Order-in-Council establishing the head office of the Canadian National Railways at Montreal, Que.

After due consideration the new Management divided the combined and reorganized National Railway System into three regions for operating purposes:

Atlantic Region:—All lines in the Maritime Provinces as far west as, and including, Rivière du Loup, on the Intercolonial, and as far as, but not including Monk on the Transcontinental; headquarters, Moncton.

Central Region:—All lines from Rivière du Loup and Monk, Que., to Current Junction, on the Canadian Northern, 2 miles east of Port Arthur, and to Superior Junction, on the National Transcontinental, and including the Portland line and the lines west of the Detroit River; headquarters, Toronto.

Western Region:—All lines from Current Junction and Superior Junction, Ont., to the Pacific Coast, including Vancouver Island; headquarters, Winnipeg.

The Central Vermont, for the present, is being operated as a separate entity, with headquarters at St. Albans, Vt.

As to reorganization, Sir Henry Thornton, Chairman of the Board and President of the Canadian National Railways, stated, in a communication which the Minister of Railways made to Parliament on Mar. 27, 1923, that, when the new Management took charge, about Dec. 1, 1922, there had been three primary problems which demanded immediate attention:

1. The determination of the kind of an organization which was to be employed in the administration of the property;

2. The determination of the regions into which the property was to be divided for operating purposes and the location of regional and general headquarters;

3. The selection of officers for the various posts involved in the organization.

The organization which had been decided upon was what might be called a strengthened divisional organization as distinguished from a departmental organization. The executive officers consist of a chairman and president, assisted by five vice-presidents, as follows:

1. Vice-President in charge of operation, maintenance and construction.
2. Vice-President in charge of financial affairs.
3. Vice-President in charge of insurance, immigration, development, lands, express and telegraphs.
4. Vice-President in charge of legal affairs.
5. Vice-President in charge of traffic.

The above executive officers represent the minimum with which, in Sir Henry Thornton's judgment, it would be possible to operate such a property as the Canadian National Railways: indeed, as time goes on and traffic increases, it would, he stated, probably be necessary to add another vice-president. The list above given, however, represented a considerable economy.

Sir Henry Thornton added that, in dividing the railway into three regions for operating purposes, the principle followed had been to give to each operating region as much autonomy and local control in the actual operation of the property as consistent with efficient principles of administration. Every effort would be made to confine the functions of the vice-presidents and the executive officers to policies, leaving to general managers, general superintendents and superintendents the responsibility of carrying out details. He felt that in the administration of such a large property as is represented by the Canadian National Railways no other theory of organization could be successful.

Canadian National Railways

Statement of equipment on hand Dec. 31, 1922.

—	Canadian Northern Canadian Government and Grand Trunk Pacific	Grand Trunk System (Including Central Vermont)
Locomotives—		
Passenger	1,709	328
Freight	.....	901
Switching	229	260
Electric locomotives	13	6
Total locomotives	1,951	1,495
Passenger Equipment—		
First class cars	468	582
Second class cars	221	
Combination cars	191	102
Emigrant cars	338	
Dining cars	72	24
Parlour cars	76	32
Sleeping cars	218	
Postal	57	42
Baggage and Express cars	561	377
Business and Pay cars	63	34
Other cars in passenger service	92	49
Total	2,357	1,242
Freight Equipment—		
Box cars	54,659	31,637
Flat cars	8,988	3,819
Stock cars	3,803	1,503
Coal cars	8,464	7,023
Tank cars	68	100
Refrigerator cars	1,786	1,389
Other cars in Freight service	1,627	
Total	79,395	45,471
Work Equipment—		
Gravel cars	478	599
Derrick cars	179	47
Caboose cars	1,019	717
Other Road cars	4,054	1,857
Total	5,730	3,220

Totals for Combined Consolidated System

Locomotives	3,446
Passenger equipment	3,599
Freight equipment	124,866
Work equipment	8,950

The Canals

Although coal traffic during the 1922 season of navigation was considerably less than usual on the St. Lawrence canals, the season proved an unusually busy one, notwithstanding which there was comparative freedom from accidents involving interruption to traffic.

The volume of traffic on the Welland canal was somewhat in excess of the previous year. The total freight tonnage carried was 3,319,419, an increase of about 10 per cent, and in volume exceeded only by the record years of 1913 and 1914. Wheat shipments amounted to 58,415,300 bushels, the heaviest ever recorded.

The Government grain elevator at Port Colborne received 53,349,811 bushels of grain during the fiscal year, an increase over the receipts of the previous year of about 10 per cent, and over those of 1914 of about 35 per cent. The net earnings for the year were $210,395.29.

Consistent progress was made on the construction of the Welland ship canal. For purposes of construction, the canal is divided into nine sections, or contracts, numbering from the lake Ontario end. During the past year, work has been carried on on Sections 1, 2, 3, 4, and 5, progress on which may be summarized as follows:—

	Sections				
	1	2	3	4	5
	%	%	%	%	%
Rock excavation	94	57	70	.....	78
Earth excavation	86	76	64	30	95
Water-tight embankments	67	75	71	.....	.....
Concrete of all classes	82	49	19	2	.....

On account of strikes and various labour troubles, construction work on this canal was considerably retarded for some years after the resumption of work at the close of the war. Conditions in this respect have, however, improved materially during the past two years.

There was a falling off of traffic through the Canadian canal at the Soo, due apparently to the fact that on account of the greater depth, a large number of Canadian vessels prefer to make use of the American canals at that point.

For a number of years the question of the ultimate enlargement of the St. Lawrence Canal System between lake Ontario and Montreal has been studied by the engineers of this department, and much data relating thereto has been obtained. During recent years, the work of completing definite plans for such an undertaking became necessary in order to enable the department to deal intelligently with proposals by private corporations for the development of isolated water powers which might seriously conflict with the future development of the navigation and water power potentialities of the river as a whole. Under this impetus, plans have been evolved for a comprehensive development of the upper section of the river.

Report of Chief Commissioner of Highways

The number of highway projects under agreement between the provinces and the Dominion, under the term of the Canada Highways Act of 1919, is 289. The Act provided for Dominion subsidies to road construction in the various provinces to the extent of $20,000,000. Of this amount, $9,788,404.98 has been earned on 2,490·30 miles of completed highway and 2,135·10 miles under improvement. The total mileage embraced in the projects under agreement is 5,994·59. The subsidizable cost of this work is $37,974,910.24, and the estimated Dominion aid (40 per cent) of actual reasonable and necessary cost, $15,189,964.15.

The five years permitted the Provinces to earn the $20,000,000 of federal subsidies expiring in April, 1924, Parliament, at its recent session, extended the time during which this Federal aid might be earned by two years. The only province which has failed to qualify for aid under the Act is Alberta.

The year 1922 was exceptionally favourable for work of highway construction and improvement and steady progress was made in all the provinces which have undertaken highway improvement programmes. In certain of the provinces not only was the programme of construction as originally planned completed, but a considerable amount of additional work was also undertaken and carried out. This consistent progress was due to exceptionally favourable weather, more efficient and more available labour at lower rates, and an adequate supply of materials, also at lower rates. The letting of contracts in winter also enabled contractors to familiarize themselves with the layout of their season's work and plan it to better advantage. Costs, which had been very high during 1920 and

1921, have receded somewhat and are now more nearly on a par with 1919, but are, roughly, still 50 per cent above the pre-war basis. The present has come to be accepted more or less as the new standard of road costs.

During the year under review, 112 projects were agreed to, covering 1,206·94 miles, at a total cost of $9,265,055.27, towards which the Dominion's contribution would be $3,706,022.11. The average cost per mile, as a whole, was $7,676.43, but the average cost per mile in the several provinces varied greatly with the character of construction. Ontario's projects were the most costly, averaging $34,252.39 per mile; British Columbia, $23,918; Quebec, $10,840.58; Nova Scotia, $5,730.15; Manitoba, $3,895; Prince Edward Island, $2,719.49; and Saskatchewan, $2,199.16.

The average user of an improved highway often has little conception of what a highway costs to construct. In new and wooded country, the clearing may cost from $200 to $4,000 per mile. Cost of grading also varies with the nature of the country, and may range from $500 to $30,000 per mile. Bridges may cost from $500 to $500,000. (Federal aid is not applicable to bridges.) Culverts cost from $500 to $10,000 per mile of road; fencing right-of-way from $500 to $1,500; planting of shade trees, $250 per mile; erecti n of crossing, danger and direction signs, guard rails, snow fences, etc., as required, $200 per mile.

The above summary does not include construction of actual pavement, of which there are six general types:—

(1) Cement concrete—Average cost per mile for this pavement 20 feet in width, $35,300.
(2) Bituminous concrete pavement—from $33,400 to $52,900 per mile depending upon character and thickness of base.
(3) Bituminous macadam penetration—from $22,000 to $28,200 per mile, depending upon depth of base.
(4) Water-bound macadam—from $14,800 to $17,400 per mile. Oil treatment from $800 to $1,300 per mile in addition.
(5) Gravel roadway, $4,700 per mile.
(6) Improved earth, from $1,000 to $4,000 per mile.

There were procured during the year, twelve models of road culvert and bridge construction to be used as an educative exhibit, showing desirable features of design of modern roads. The types illustrated include sand-clay, gravel, waterbound macadam, bituminous surface treated macadam, bituminous macadam, penetration method, cement concrete, brick, cement concrete pipe culvert, iron pipe culvert, cement concrete box culvert, cement concrete arch culvert, and a T-beam cement concrete bridge. The size of the models is 30 inches by 18 inches, scale half inch to the foot, except the T-beam bridge which is 36 inches by 30 inches in dimension.

Educational literature as to the economic, social and national values of good roads was published during the year. A first edition of 1,500 copies of Bulletin No. 1, entitled "Canadian Highways and Roads," was soon exhausted and 1,000 additional copies as well as 500 in French were necessary. To promote interest in the activities in highway construction being conducted in the different provinces, and to give a national perspective to a national work 3,000 copies of the Highway Section of our last annual report were also published in bulletin form.

Circular No. 3, entitled "Motor Vehicle Registrations, Licenses, Revenues, Fees, etc., and Statistics of Entries into Canada for Touring purposes during 1921", also met with an appreciative reception, and had an influence in truing up motor vehicle legislation in two or three provinces.

Your obedient servant,

G. A. BELL,

October 2, 1923. *Deputy Minister of Railways and Canals.*

SESSIONAL PAPER No. 32

CANADIAN NATIONAL RAILWAYS

(Exclusive of Grand Trunk)

ANNUAL REPORT FOR YEAR ENDED DECEMBER 31, 1922

Introductory

The present board was appointed in October and was therefore in office for less than three months of the year under review. It has been considered desirable to include in this report only the operations of those lines which were generally recognized as constituting the Canadian National Railways during the year. The three groups then so designated were the Canadian Government Railways, The Canadian Northern Railway Lines and The Grand Trunk Pacific Railway. Separate reports will be prepared for the Grand Trunk Lines.

The results of operation are those of what may be termed the fourth year of the Canadian National Railways—that collective title having been authorized for use in December, 1918.

Digest of Operations

Operations for the year show an improvement of $6,484,017.87, the operating deficit being reduced by that amount as compared with 1921—and being an improvement of over twenty-seven million dollars compared with 1920.

The improvement in the net situation (or reduction of deficit) referred to, as compared with 1921 was achieved in the face of a reduction in gross revenue brought about by reduced passenger and freight rates and also in the face of a greater tonnage movement which, while requiring a considerably greater operating performance produced no increase in gross returns.

Earnings and expenses compare with the two preceding years as follows:—

—	1922	1921	1920
	$ cts.	$ cts.	$ cts.
Gross Earnings—			
Canadian Northern Railway	60,679,033 37	69,088,474 16	66,695,398 80
Canadian Government Railways	40,939,945 76	41,275,314 84	44,803,045 84
Grand Trunk Pacific Railway	18,516,977 58	16,638,677 64	14,408,549 66
Total	120,135,956 71	127,002,466 64	125,906,994 30
Operating Expenses—			
Canadian Northern Railway	63,625,763 09	75,564,385 30	82,953,978 60
Canadian Government Railways	43,436,667 67	46,990,047 74	55,445,651 29
Grand Trunk Pacific Railway	22,809,843 99	20,668,369 51	24,543,063 60
Total	129,872,274 75	143,222,802 55	162,942,693 49
Operating Deficit—			
Canadian Northern Railway	2,946,729 72	6,475,911 14	16,258,579 80
Canadian Government Railways	2,496,721 91	5,714,732 90	10,642,605 45
Grand Trunk Pacific Railway	4,292,866 41	4,029,691 87	10,134,513 94
Total	9,736,318 04	16,220,335 91	37,035,699 19

Note.—In considering comparative statistical data for the last three years it should be remembered that as regards traffic conditions on Canadian railways as a whole 1920 was an exceptionally good year and 1921 an exceptionally bad one. The improvement over 1921 which 1922 shows should therefore not be regarded as an advance, but merely as indicating that recovery is under way. Failure of 1922 traffic figures to equal those of 1920 is not of itself significant on account of the extraordinary conditions of 1920 which made that an exceptional year.

Earnings

Gross earnings for the year 1922 decreased by $6,866,509.93. Freight, passenger and express earnings were all less than in 1921.

As the loss in revenue due to the Crowsnest Pass Agreement Rates is estimated to be six and a half million dollars, that reduction stands out as the most important railway event of the year. Notwithstanding the reduction referred to, freight revenue increased its percentage to total revenue providing *76* per cent in 1922 as against *74* per cent in 1921.

The decrease in passenger traffic is discouraging, particularly as the quality of service given has improved and because the rate for passenger travel in Canada is relatively low being generally, slightly below the prevailing rates in United States. A good year was expected, but the traffic did not materialize. Passenger revenue declined 11 $\frac{1}{3}$ per cent and passenger travel measured by "passenger miles" declined 3.55 per cent.

Operating Expenses and Performance

The results for the year show that working expenditures were well controlled, as there were reductions in expenses in the maintenance and transportation accounts. The condition of the physical properties was improved during the year, and yet maintenance-of-way expenses were reduced by $2,656,340.92 and maintenance of equipment expenses by $1,225,612.86. As already pointed out, more business was moved and yet $11,299,471.65 less, in addition to the maintenance saving, was spent to move it.

There were small reductions in pay for certain classes of employees, and reduced cost of material had its effect in bringing about this result, but in the main the advance may be credited to greater efficiency of operation. The *average freight train load* of the System increased by 65·68 tons or by 13·61 per cent, whereas on a mile of road basis the increase in density of freight traffic was only 9·43 per cent. This average increase in train load was accomplished by obtaining in every month a substantial increase over the corresponding in the previous year, 22·4 tons being the lowest recorded, and the highest increase in any one month was over 100 tons. Other measures of increased efficiency may be mentioned, such as more miles obtained per car per day and a small increase in load per car mile. The cost of yard operation was also considerably reduced, measured on the basis of the number of cars handled.

Mileage

The operated mileage as at December 31, 1922, was made up as follows:—

	Miles
Canadian Northern Railway System	9,752·86
Canadian Government Railways	4,649·44
Grand Trunk Pacific Railway	2,695·61
Total railway—Steam operated	17,097·91
Electric Lines of Canadian Northern Railway System	126·13
Total mileage operated	17,224·04

The following main line mileage was put into operation during the year:—

	Miles
In Manitoba—	
From Amaranth to Alonza	17·84
In Saskatchewan—	
From Lintlaw to Kelvington	13·84
" Turtleford to St. Walburg	22·10
" Melfort to Ridgedale	22·69
" Demain to Beechy	6·11
" Gravelburg to West of Hodgeville	28·99
In Alberta—	
From Red Deer Jct. to Red Deer	6·10
In British Columbia—	
From Victoria to Koksilah	52·50
Total	170·17

Finance

During the year, an issue of $11,000,000 Canadian Northern Railway Company 5 per cent three year notes, guaranteed by the Dominion Government, was disposed of at 99·03 per cent. The proceeds, together with accred interest and New York Exchange amounting to $10,953,290.52, were used to retire maturing obligations, as follows: $5,651,000 Canadian Northern Railway 6 per cent 2½ year collateral trust notes which matured on February 1, 1922; $4,601,789.76 to purchase sterling exchange to retire $5,109,027.67, Canadian Northern Railway 5 per cent Dominion Guaranteed Series "C" notes, which matured in London on April 5, 1922. The balance of $700,500.76 was applied in reduction of the loan made by the Dominion Government under authority of War Measures Act and Order in Council dated July 5, 1918. The saving in exchange covering the retiring of the securities in London, amounted to $507,236.91.

On June 1, 1922, $1,250,000 Canadian Northern Railway 5½ per cent three-year secured notes, maturing at Toronto on that date, were retired from an advance from the Dominion Government, provided for in the appropriations.

$6,000,000 Canadian Northern Railway ½ per cent three-year notes were paid off on December 1, 1922, from an advance made by the Dominion Government.

On December 1, 1922, $7,099,493.34 Canadian Northern Railway 5 per cent land mortgage debentures held by the public, were called for redemption in London, England. It was thought advisable to redeem these securities on that date rather than wait until the date of maturity, namely June 1, 1923, in view of the rising sterling exchange rates. This step has been justified, as the exchange rate on December 1, was $4.52, where as today (March 9, 1923) the rate is $4.79. The funds necessary to retire these securities were advanced by the Dominion Government.

Betterments

During the year extensive improvements were undertaken which have materially benefited the railways included in the system. 444·25 miles of new 85 pound rail were laid on important lines which permitted rail conditions on other sections to be improved. Tie-plates were provided for many sections; over a thousand miles of line were ballasted, 50 new water stations were completed, 342·4 miles of fencing were built, new structures erected included 41 new stations, 64 dwelling for employees; a number of additions were made to station buildings; 32 new bridges were built; 406 new culverts, and 163 bridges and trestles were filled. The programme of work included construction of farm and highway crossings, road-ways, ashpits, drop-pits, loading platforms, ditching and wells for station water supply, and the installation of track scales, turntables, inter-locking plants, machinery in shops and roundhouses, and the heating and lighting of stations, freight sheds, etc.

A most important group of improvements includes the extension of sidings and other yard and station trackage, 315 such improvements were undertaken aggregating 408,928 feet of track.

Construction

The work under this head was largely confined to ballasting and surfacing branch lines in the Prairie provinces. No grading or track-laying on new lines was undertaken. Fencing and telegraph lines were built and stations and other structures required for new lines. The mileage turned over for operation is shown on page 20.

Co-ordination

The betterment work undertaken during the year included a number of track connections and re-arrangement of facilities to enable the properties under consolidated management to be co-ordinated. This work will be continued as plans for the complete co-ordination of the various lines are developed.

Under this head reference may be made to the improvement known as the Long Lake Cut Off, a connection between the National Transcontinental and Canadian Northern Main lines east of Long lake, Ontario (north of lake Superior). This line had been under consideration for some time. Your present directors convinced of its value to the National System could see no justification for delaying action in the matter, and a contract for grading, bridging and culverts was let on December 30, 1922. The work is progressing favourably. The line will be 29·5 miles in length, but reduces the mileage between Toronto and other eastern points and Winnipeg by 102 miles as compared with the shortest route now available to the National System not involving use of other railways. Besides reducing mileage, it has many economic advantages.

Rolling Stock

The detailed statement of rolling stock appearing on page appendix 9 shows the following deliveries during the year 1922:—2 locomotives, 26 passenger train cars, 561 freight cars, 874 cars for road and other work.

Wages

During the year 1922 wage adjustments were affected with various groups of employees which brought the general level slightly down. There were no strikes among the railway employees in Canada.

Lands

Land sales for the year ending December 31, 1920, 1921 and 1922 were as shown in the following table. This table also shows the sales which had previously been entered into and which were, by mutual arrangement, cancelled during corresponding periods.—

Year	Actual Sales		Average
1920	84,002·172 acres	$1,738,801 46	$20 70
1921	17,031·15 "	321,042 08	18 85
1922	9,025·53 "	150,531 14	16 67

Year	Cancellations		Average
1920	31,188·76 acres	$ 412,557 19	$13 22
1921	17,032·08 "	273,720 56	16 07
1922	114,056·663 "	1,599,278 69	14 02

It will be seen that the actual sales for 1922 were considerably less than the sale for 1921 and that the acreage cancelled during the same period was greatly in excess of the cancellations for the previous year. This is a reflection of the very unsatisfactory conditions which prevailed during the year resulting in a large number of purchasers quit claiming their lands back to the company.

During the year it was also necessary to adjust some wholesale deals which had previously been entered into.

As at December 31, 1922, there remained unsold 825,008 acres, the increase being caused by the cancellations previously referred to. It was considered advisable in view of the lower prices being realized for the company's lands, to reduce the value at which these unsold lands are carried in the balance sheet, and this has been done.

Conclusion

Due to the consolidation of the Grand Trunk System with these lines there will not be published any additional reports grouping only the operation of those lines which are covered by this report. The report of the previous board of directors for the year 1921 was in the nature of a three year survey of the operations and development of these lines as a Government-owned System. 1922 completes the four-year period of unified management of the former Canadian Government Railways and the Canadian Northern Railway System. The operations of the Grand Trunk Pacific while only under complete co-ordination since October, 1920, or $2\frac{1}{4}$ years, have been included for the full period for comparative purposes.

During the period the Government has provided large sums of money for the physical improvement of these properties, for-co-ordination facilities, for additional rolling stock and for branch line construction.

On behalf of the board, I would like to state that after inspection of the main arteries of the System, we find that the work undertakenhas been well performed, and that the expenditures have been well applied. While the demands for capital expenditure on a system of such extent in a growing country, as the former board stated, are never ending, yet it may now be said that the three groups of lines, until recently the Canadian National Railways, enter the consolidation in excellent physical condition and operating at a high mark of efficiency as regards actual performance or movement of traffic and other factors controllable by management. Apart from certain well known cases of duplication the lines are well located and in exceptional position to successfully perform the transportation demands of the country. The problem as far as the lines covered by the report is concerned, is how sufficient traffic may be developed to carry the overhead and maintenance expenses. As far as transportation costs go, an economical performance is being made. Under these circumstances the margin for improvement with the present light volume of traffic is largely dependent on circumstances beyond the control of the management.

On some of the older sections there are still improvements that should be undertaken. but in the main the lines are modern in character and were built or have been brought up to standards which are ahead of actual traffic requirements, except under stress of seasonal movements.

The success of the National System in respect to these three groups is not entirely to be obtained by methods generally applied to railways which are not producing returns, viz:—improving the physical condition and operating methods—it is a matter of building up the country to support the railways.

On acccount of the situation outlined with reference to the lines previously comprising the Canadian National Railways, and to the fact that some time will necessarily be required to develop plans for improving the situation as it is now affected by the inclusion of the Grand Trunk Lines, and having in mind other conditions which the reorganization of so vast a system involves, your directors feel it necessary to warn the owners of the system that the present year is not likely to show any great advance in operating performance, except as the situation may be improved by increased traffic, and while there may be an improvement in the traffic returns in the months prior to the crop movement, it is rather optimistic to expect a greater seasonal movement that took place in the last quarter of 1922. As the rates over the entire year will be at a lower level, expectations of improved net are not likely to be realized. The present year then is to be regarded as one of transition in which the new machine will get down to its bearings and be ready for the greater effort which it is hoped

traffic will demand of it in future years. The organization is new. Officers have been re-arranged and have much new territory and new conditions to consider. This, however, is expected to prove a feature of value inasmuch as experienced Railway men will view situations from new angles.

The whole reorganization has been accomplished with the best of good feeling generally prevailing, and I feel sure that the splendid loyalty which I found existing among the employees of the various lines now brought together is being rapidly transferred to the new administration and that the enthusiastic and constant team work will be forthcoming from the great army of men on the System's employ.

For the Directors,

H. W. THORNTON,
President and Chairman.

MONTREAL, April, 1923.

CANADIAN NATIONAL RAILWAYS

APPENDICES

1. *Canadian Northern Railway*—
   - (*a*) Balance Sheet.
   - (*b*) Income Statement.
   - (*c*) Profit and Loss Statement.
   - (*d*) Funded Debt.
   - (*e*) Advances from Dominion Government.

2. *Grand Trunk Pacific Railway*—
   - (*a*) Balance Sheet.
   - (*b*) Income Statement.
   - (*c*) Profit and Loss Statement.
   - (*d*) Funded Debt.
   - (*e*) Advances from Dominion Government.

3. *Canadian Government Railways*—
   - (*a*) Balance Sheet.
   - (*b*) Income Statement.

Canadian National Railways

4. Operating Revenue, Operating Expenses and Net Earnings.
5. Combined Income Statement.
6. Operating Revenue and Proportion Paid in Labour.
7. Passenger, Freight and Miscellaneous Statistics.
8. Description of Freight Carried.
9. Summary of Equipment.
10. Mileage Statement.

CANADIAN NATIONAL RAILWAYS

CANADIAN NORTHERN RAILWAY SYSTEM

Consolidated Balance Sheet at December 31, 1922

ASSETS

Investments—		
Property investments—		
Investment in road and equipment including portion of discount on funded debt	$608,415,843 23	
Acquired securities	48,177,801 09	
		$656,593,644 32
Cash and securities at cost in trust accounts held in respect of construction work, sinking funds and other special accounts—		
Dominion Government	1,412,951 94	
Province of Manitoba	59,025 46	
Province of Saskatchewan	1,202,825 24	
Province of Alberta	1,270,148 71	
Province of Ontario	105,943 07	
Province of British Columbia	166,981 45	
National Trust Company	1,859,957 96	
British Empire Trust Company	43,988 29	
Central Union Trust Company	20,649 78	
Trusts and Guarantee Company	480 08	
Sinking Funds	2,601,164 06	
C. N. Express Trust	30,121 84	
		8,774,237 88
Lands unsold		17,628,748 88
Other investments at cost		3,170,933 66
		686,167,564 74
Current Assets—		
Cash in bank		6,573,045 20
Balance due from agents, station balances, etc. Net		954,980 32
Miscellaneous accounts receivable		10,534,999 10
Deferred payments on account of land sales and account interest		6,104,863 41
Material and supplies on hand as per books		19,174,194 97
		43,342,083 00
Deferred Charges—		
Insurance premiums unexpired		62,407 45
Unadjusted debts—Net balance		2,249,703 67
		2,312,111 12
Advances by the Canadian Northern Railway Company to Affiliated Companies per Contra		13,060,223 89
Profit and Loss Account—Balance		120,346,777 37
		$865,228,760 12

Note.—The Ontario Government questions the title of the Canadian Northern Ontario Railway to the lands granted in respect of construction of lines in Ontario which are valued by the company at $6,000,000.00.

LIABILITIES

Stock—		
Capital stock—Common		$ 100,000,600 00
Capital stock—Affiliated companies	$ 77,192,400 00	
Less—Held in treasury	74,295,200 00	2,897,200 00
		102,897,800 00
Long Term Funded Debt—		
Funded debt—Canadian Northern Railway	$ 167,359,495 52	
Funded debt—Affiliated companies	126,339,778 01	
	$ 293,699,273 53	
Five per cent income charge convertible debenture stock	24,140,174 02	
Equipment trust obligations	32,519,000 00	
		350,358,447 55
Short Term Notes		21,349,000 00
Dominion of Canada		350,032,748 38
Current Liabilities—		
Audited vouchers and other floating liabilities	15,736,776 03	
Pay rolls	2,326,831 67	
Interest and equipment obligations matured	5,209,977 20	
Accrued interest on bonds, loans and equipment securities	2,381,400 17	
Taxes accrued	727,133 87	
		26,382,118 94
Reserves—		
Insurance fund	648,421 36	
Portion of profit on exchange reserved	500,000 00	
		1,148,421 36
Advances to affiliated companies by Canadian Northern Railway Company per contra		13,060,223 89
		$ 865,228,760 12

AUDITORS' CERTIFICATE

We have examined the Books and Records of the Canadian Northern Railway System for the twelve months ended 31st December, 1922, and we certify that in our opinion the above Balance Sheet is properly drawn up so as to exhibit a true and correct view of the affairs of the System at the 31st December, 1922, and is in accordance with the books and the explanations and information given us.

GEORGE A. TOUCHE & Co.,
Chartered Accountants,
Auditors.

TORONTO, ONT., April 5, 1923.

CANADIAN NORTHERN RAILWAY SYSTEM

INCOME ACCOUNT FOR FISCAL YEAR DECEMBER 31, 1922

Railway operating revenues		$ 60,679,033 37
Railway operating expenses		63,625,763 09
Net deficit on operation		$ 2,946,729 72
(Operating ratio 104·86)		
Railway tax accruals		1,077,433 16
Total operating deficit		$ 4,024,162 88
Non-operating income		3,700,934 41
Gross loss		$ 323,228 47
Deductions from gross income		1,275,797 98
		$ 1,599,026 45
Fixed Charges—		
Interest on funded debt—		
Canadian Northern Railway	$ 11,942,325 39	
Affiliated companies	4,968,614 00	
Interest on unfunded debt—		
Dominion Government	15,796,371 96	
Other interest (net balance)	4,234 87	32,711,546 22
Deficit carried to profit and loss statement		$ 34,310,572 67

CANADIAN NORTHERN RAILWAY SYSTEM

PROFIT AND LOSS STATEMENT AT DECEMBER 31, 1922

Deficit on income account for the year		$ 34,310,572 67
Adjustment in value of western lands		2,125,104 12
Discount, etc. on funded debt		924,853 15
		$ 37,360,529 94
Less:		
Delayed income debits and credits—		
Credit balance	$ 1,662 93	
Transfer from reserve for profits on exchange	2,179,849 93	2,181,512 88
		$ 35,179,017 69
Deficit brought forward at December 31, 1921		85,167,760 29
Deficit at December 31, 1922, carried to balance sheet		$ 120,346,777 37

CANADIAN NORTHERN RAILWAY SYSTEM

FUNDED DEBT

Guaranteed as to Principal and Interest by Dominion of Canada

		Sterling	Currency
3 %	1st mortgage Dominion guarantee debenture stock	£ 1,923,287	$ 9,359,996 72
3¼%	1st mortgage Dominion guarantee debenture stock	1,622,586	7,896,588 26
4 %	Guaranteed debenture stock		17,060,333 33
7 %	20 year sinking fund debenture bonds		24,793,000 00
6½%	25 year sinking fund debenture bonds		25,000,000 00

Guaranteed by Government of Manitoba

4 %	Consolidated debenture bonds	£ 2,215,900	10,784,046 65
	Underlying bonds—		
	4% Sifton branch bonds	233,700	1,137,340 00
	4% Gilbert Plains branch bonds	500	2,433 33
	4% Manitoba and S.E. bonds	105,300	512,460 00
4 %	Ontario division bonds		5,675,506 67
4½%	Ontario division bonds		69,106 66
4 %	Winnipeg terminal bonds	616,438	3,000,000 00
4 %	1st mortgage debenture stock	587,671	2,859,998 87

GUARANTEED BY GOVERNMENT OF SASKATCHEWAN

4 %	1st mortgage debenture stock.....	1,650,000	8,029,999 99

GUARANTEED BY GOVERNMENT OF ALBERTA

4 %	1st mortgage debenture stock.....	1,147,945	5,586,665 64
4 %	Perpetual consolidated debenture stock.....	9,234,867	44,943,019 40
4½%	Prince Albert branch bonds.....		300,000 00
4 %	Minnesota and Manitoba bonds.....		349,000 00
			$ 167,359,495 52

CANADIAN NORTHERN RAILWAY SYSTEM

FUNDED DEBT AFFILIATED COMPANIES

	Sterling	Currency
Th Canadian Northern Alberta Railway Company		
Guaranteed by Dominion Government		
3½% 1st mortgage debenture stock..... £	647,260.0.0	$ 3,149,998 66
Canadian Northern Western Railway Company		
Guaranteed by Government of Alberta		
4½% 1st mortgage debenture bonds (1943).....	575,342.0.0	2,799,997 73
4½% 1st mortgage debenture stock (1942).....	1,320,000.0.0	6,424,000 00
Canadian Northern Pacific Railway Company		
Guaranteed by Government of British Columbia		
4 % 1st mortgage debenture stock.....	3,372,329.0.0	16,412,001 13
4½% terminal debenture stock.....	1,770,000.0.0	8,614,000 00
Canadian Northern Ontario Railway Company		
Guaranteed by Dominion Government		
3½% 1st mortgage debenture stock.....	7,033,561.0.0	34,229,996 87
Guaranteed by Government of Ontario		
3½% 1st mortgage debenture stock.....	1,615,068.0.0	7,859,997 59
4 % perpetual consolidated debenture stock.....		8,724,113 20
Central Ontario Railway		
5 % 1st mortgage bonds.....		805,433 38
The Bay of Quinte Railway Company		
5 % 1st mortgage bonds.....		730,000 00
Canadian Northern Quebec Railway Company		
4 % perpetual consolidated debenture stock.....	1,078,843.0.0	5,250,369 26
Great Northern Railway of Canada		
4 % 1st mortgage gold bonds.....		3,510,250 00
Quebec and Lake St. John Railway Company		
4 % 1st mortgage perpetual debenture stock.....		4,252,503 06
Duluth, Winnipeg and Pacific Railway Company		
4 % 1st mortgage debenture stock.....		7,004,997 27
Halifax and South Western Railway Company		
3½% 1st mortgage bonds.....		4,447,000 00
Niagara, St. Catharines and Toronto Railway Company		
5 % 1st mortgage bonds.....		1,098,000 00
The Qu'Appelle, Long Lake and Saskatchewan Railroad and Steamboat Company		
4 % 1st mortgage guaranteed debenture stock.....	1,031,412.6.0	5,019,539 86
Mount Royal Tunnel and Terminal Company, Limited		
5 % 1st mortgage rent charge bonds.....		2,004,580 00
Toronto Suburban Railway Company		
4½% 1st mortgage debenture stock.....	540,000.0.0	2,628,000 00
Canadian Northern Coal and Ore Dock Company, Limited		
5 % 1st mortgage bonds.....		1,375,000 00
		$ 126,339,775 01

CANADIAN NORTHERN RAILWAY SYSTEM

LOANS FROM DOMINION OF CANADA

Summary

Loans and advances	$298,799,591 72
Interest	51,233,156 66
	$350,032,748 38

Loans

Loan	Security	Amount Outstanding
Advances under 1911 legislation	Mortgage dated October 4, 1911	$ 2,396,099 68
Advances under 1914 legislation	Mortgage dated July 14, 1914	5,294,000 02
Advances under 1915 legislation	$12,500,000 C.N.R. 4% Dom. gtd. stock under mortgage July 15, 1914	10,000,000 00
Advances under 1916 legislation	Mortgage dated June 23, 1916	15,000,000 00
Advances under 1917 legislation	Mortgage dated November 16, 1917	25,000,000 00
Advances under 1918 legislation	Mortgage dated November 16, 1917	25,000,000 00
Advances under 1918 War Measure Act	£733,561 C.N. Alberta Rly. 3½% gtd. stock. £316,439 C.N. Ontario Rly. 3½ %gtd. stock. £406,000 C.N. Rly. 4% Saskatchewan bonds. £417,000 C.N. Pacific Rly. 4½% branch lines stock	1,887,821 16
Equipment loans under Chapter No. 38, 1918	Notes of the Canadian Northern Railway Company.	13,951,328 28
Advances under 1919 Appropriation Act	Mortgage dated November 16, 1917	35,000,000 00
Advances under Vote No. 96, 1919	Notes of the Canadian Northern Railway Company.	23,362,212 73
Advances under 1920 Appropriation Act, Vote No. 127	Mortgage dated November 16, 1917	48,611,077 00
Advances under 1920 Appropriation Act, Vote No. 115	Notes of the Canadian Northern Railway Company.	15,503,426 34
Advances under 1921 Appropriation Act, Vote No. 113	Notes of the Canadian Northern Railway Company,	1,725,723 30
Advances under 1921 legislation, Note No. 126	Notes of the Canadian Northern Railway Company.	24,750,000 00
Advances under 1921–1922 Appropriation, Vote No. 126, G.T.P	Notes of Canadian Northern Railway Company.	12,501,960 37
Advances under 1921–1922 Appropriation, Vote No. 126, G.T.R	Notes of the Canadian Northern Railway Company.	8,186,181 15
Advances under 1922–1923 Appropriation, Vote No. 136	Notes of the Canadian Northern Railway Company.	29,845,010 59
Advances under 1922–1923 Appropriation, Vote No. 115	Notes of the Canadian Northern Railway Company.	784,751 10
		$298,799,591 72

Interest

	Loan or Advance	Interest
Advances under 1911 legislation	$ 2,396,099 68	$ 121,544 61
" 1914 "	5,294,000 02	494,300 05
" 1915 "	10,000,000 00	2,085,616 44
" 1916 "	15,000,000 00	5,867,753 41
" 1916 War Measures Act Repaid 15-1-21		42,940 66
" 1917 legislation	25,000,000 00	7,571,122 58
" 1918 "	25,000,000 00	6,472,644 02
" 1918 War Measures Act	1,887,821 16	1,240,875 26
" 1919 legislation	35,000,000 00	6,974,271 70
" 1920 "	48,611,077 00	6,837,786 26
" 1921 legislation, Vote 126	24,750,000 00	1,932,355 03
" 1921 legislation, G.T.P. Vote 126	12,501,960 37	596,898 26
" 1921 " , G.T.R. Vote 126	8,186,181 15	562,427 21
" 1922 " , Vote 136	29,845,010 59	430,439 95
Equipment Loans under Chap. 38, 1918	13,951,328 28	3,203,706 66
" " 1919 Vote 96	23,362,212 73	4,630,152 57
" " 1920 Vote 115	15,503,426 34	2,045,739 04
" " 1921 Vote 113	1,725,723 30	105,317 76
" " 1922 Vote 115	784,751 10	17,265 19
		$ 51,233,156 66

SESSIONAL PAPER No. 32

CANADIAN NATIONAL RAILWAYS
GRAND TRUNK PACIFIC RAILWAY SYSTEM
(IN RECEIVERSHIP)

CONSOLIDATED BALANCE SHEET AT DECEMBER 31, 1922

Incorporating accounts of Grand Trunk Pacific Branch Lines Company; Grand Trunk Pacific Saskatchewan Railway; Grand Trunk Pacific Development Company; Grand Trunk Pacific Terminal Company and Grand Trunk Pacific Telegraph Company.

ASSETS

Fixed Assets—		
Investment in road and equipment (including cost of guarantee of bonds), steamships, docks, wharves, hotels, etc	$ 258,281,586 22	
Terminal and other properties	658,400 56	
Other investments	383,300 00	
		$ 259,323,286 78
Current Assets—		
Cash in bank and on hand	1,826,683 93	
Balance due from agents and conductors	47,320 39	
Miscellaneous accounts receivable	2,946,135 00	
Material and supplies on hand as per books	711,415 99	
		5,531,555 31
Deferred Charges—		
Insurance premiums unexpired	48,685 83	
Unadjusted debits and credits	1,503,673 10	1,552,358 93
Profit and loss account		76,636,809 59
Total		$ 343,044,010 61

LIABILITIES

Capital Stock—		
Authorized—450,000 shares of $100.00 each of which has been issued 249,420 shares and on which has been paid		$ 24,905,400 00
Long Term Funded Debt—		
Grand Trunk Pacific Railway	$ 139,083,027 54	
Grand Trunk Pacific Branch Lines	13,457,826 00	
		152,540,853 54
Receiver's certificates		44,079,195 97
Dominion of Canada		55,595,640 10
Grand Trunk Railway		59,753,240 15
Current Liabilities—		
Audited vouchers and other floating liabilities	2,402,471 05	
Interest obligations matured (since paid)	703,621 08	
Interest on funded debt past due and accrued	2,693,948 71	
		5,800,040 84
Reserve—		
Insurance account	26,927 82	
Taxes accrued	342,712 19	
		369,640 01
Total		$ 343,044,010 61

AUDITOR'S CERTIFICATE

We have examined the foregoing Consolidated Balance Sheet of the Grand Trunk Pacific Railway Company, the Grand Trunk Pacific Branch Lines Company, the Grand Trunk Pacific Saskatchewan Railway Company, the Grand Trunk Pacific Development Company, Limited, the Grand Trunk Pacific Terminal Elevator Company, Limited, and the Grand Trunk Pacific Telegraph Company, as at December 31, 1922, and having compared it with the books and accounts of the companies, certify that in our opinion it is properly drawn up so as to exhibit a true and correct view of the state of the affairs of the combined companies at that date, according to the best of our information, the explanations given us and as shown by the books of the companies.

(Signed) MARWICK, MITCHELL & Co.,
Chartered Accountants.

Toronto, Ont., April 19, 1923.

GRAND TRUNK PACIFIC RAILWAY

INCOME STATEMENT FOR FISCAL YEAR ENDED DECEMBER 31, 1922

Railway operating revenue		$ 18,516,977 58
Railway operating expenses		22,809,843 99
Net deficit from operation (operating ratio, 123·183).		$ 4,292,866 41
Railway tax accruals		247,903 22
Total operating deficit		4,540,769 63
Non-operating income		792,155 62
Gross loss		$ 3,748,614 01
Deductions from gross income		1,603,746 21
		$ 5,352,360 22
Fixed charges—		
Interest on funded debt—		
Grand Trunk Pacific Railway	$ 1,802,953 92	
Grand Trunk Pacific branch lines	538,313 04	
Interest on unfunded debt—		
Dominion Government	4,107,378 88	
Grand Trunk Railway	2,081,060 25	
		8,529,706 09
Deficit carried to profit and loss statement		$ 13,882,066 31

GRAND TRUNK PACIFIC RAILWAY

PROFIT AND LOSS STATEMENT AT DECEMBER 31, 1922

Deficit on income account for year	$ 13,882,066 31
Delayed income Drs. and Crs.—Debit balance	704,806 00
Deficit brought forward at December 31, 1921	66,096,606 46
	$ 80,683,478 77
Less:—	
Miscellaneous credits	4,046,669 18
Deficit at December 31, 1922, carried to balance sheet	$ 76,636,809 59

GRAND TRUNK PACIFIC RAILWAY

FUNDED DEBT

Guaranteed as to Principal and Interest by the Dominion of Canada

3 %	1st mortgage bonds (prairie)	$ 11,908,000 00	
(a) 3 %	1st mortgage bonds (mountain)	56,132,000 00	
4 %	Sterling bonds due, 1962	8,440,848 00	

Guaranteed by the Grand Trunk Railway Company of Canada

4 %	1st mortgage prairie section "A" bonds	10,206,000 00	
4 %	1st mortgage mountain section "B" bonds	9,963,000 00	
4 %	1st mortgage Lake Superior branch bonds	7,533,000 00	
(b) 4 %	Perpetual debenture stock (conditionally guaranteed)	34,879,252 86	
(c) 5 %	Secured sterling notes	20,926 68	
			$ 139,083,027 54

(a) Interest payable by Dominion of Canada.
(b) Interest not paid since March 1, 1919.
(c) Matured March 2, 1921. Amount still in hands of public.

GRAND TRUNK PACIFIC BRANCH LINES

Guaranteed by Province of Saskatchewan

4 %	1st mortgage sterling bonds	$ 11,309,706 00	
(d)	Held by Grand Trunk Railway	1,435,644 00	
			$ 9,874,062 00
4½%	Sterling terminal bonds	$ 1,881,792 00	
(d)	Held by Grand Trunk Railway	1,881,792 00	

GUARANTEED BY PROVINCE OF ALBERTA

4 %	1st mortgage sterling bonds		1,153,764 00
4 %	1st mortgage sterling bonds		2,430,000 00
	GRAND TRUNK PACIFIC TERMINAL ELEVATOR COMPANY		
5 %	1st mortgage sterling bonds	$ 1,862,352 00	
(d)	Held by Grand Trunk Railway	1,862,352 00	
			13,457,826 00
			$ 152,540,853 54

(d) These securities are owned by the Grand Trunk Railway.

GRAND TRUNK PACIFIC RAILWAY

LOANS FROM DOMINION OF CANADA

SUMMARY

Loans and advances	$ 51,105,558 97
Interest on loans and advances	4,490,081 13
	$ 55,595,640 10

LOANS

Loan	Security	Amount Outstanding
Grand Trunk Pacific Loan Act, 1909	$ 10,000,000 00 G.T.P. Ry.	
Grand Trunk Pacific Loan Act, 1913	15,000,000 00 4% Debs. due Jan. 1, 23.	$ 15,000,000 00
Appropriation Act, 1916		7,081,783 45
Appropriation Act, 1917		5,038,053 72
Appropriation Act, 1918		7,471,399 93
Orders in Council Sept. 5, 26, Oct. 24, and Nov. 20, 1914	7,499,952 00 G.T.P. Ry. 4% sterling bonds guaranteed by Dom. Govt...	6,000,000 00
Interest paid by Dominion of Canada on bonds guaranteed by Province of Saskatchewan, Province of Alberta and Dominion of Canada		10,514,321 87
		$ 51,105,558 97

INTEREST

	Loan or Advance	Interest
Grand Trunk Pacific Loan Act, 1909, prairie section	$ 10,000,000 00	$ 2,964,657 53
Grand Trunk Pacific Loan Act, 1913	15,000 000 00	4,800,000 00
Appropriation Act, 1916	7,081,783 45	2,550,224 85
Appropriation Act, 1917	5,038,053 72	1,511,476 90
Appropriation Act, 1918	7,471,399 93	1,871,441 85
Orders in Council Sept. 5, 26, Oct. 24, and Nov. 20, 1914	6,000,000 00	2,580,000 00
		$ 16,277,801 13
Less:— Interest on $56,132,000 Grand Trunk Pacific 3% 1st mortgage bonds, Mountain Division, payable by Dominion of Canada under chapter 71.3, Edward VII		11,787,720 00
		$ 4,490,081 13

GRAND TRUNK PACIFIC RAILWAY

RECEIVERS' CERTIFICATES

Certificates		$ 39,432,475 78
Grand Trunk Pacific Railway Company	$ 39,227,994 88	
Grand Trunk Pacific Development Company	175,219 71	
Grand Trunk Pacific Telegraph Company	29,261 19	
Accrued interest on certificates		4,646,720 19
		$ 44,079,195 97

CANADIAN NATIONAL RAILWAYS
CANADIAN GOVERNMENT RAILWAYS

Balance Sheet at December 31, 1922

ASSETS

Investments—		
Investment in road and equipment	$414,786,302 31	
Miscellaneous physical property—		
Rail loan account	97,798 15	
Other investments—		
(Victory Bonds, par value $29,900)	21,812 01	$414,905,912 47
Current Assets—		
Cash	$ 3,272,363 30	
Traffic, car service and miscellaneous accounts receivable—Net	11,156,214 92	
Net balance receivable from agents and conductors	513,659 98	
Material and supplies—as per books	6,752,841 38	
Interest receivable	48,509 47	
Rents receivable	56,986 06	$ 21,800,575 11
Deferred Assets—		
Working fund advances	$ 10,603 56	
Other deferred assets comprising miscellaneous uncollectable and doubtful accounts receivable, subject to partial appropriation through profit and loss account during the year 1923	375,844 93	$ 386,448 49
Unadjusted Debits—		
Other unadjusted debits		304,917 59
Profit and loss—Balance		12,022,469 52
Receiver General: Provident fund—as per contra		503,106 06
		$449,923,429 24

LIABILITIES

Long Term Debt—		
Dominion of Canada—		
Advances for road and equipment	$413,688,186 91	
Other advances	28,374,384 54	
Balance of purchase price of branch lines acquired	132,828 77	$442,195,400 22
Current Liabilities—		
Audited accounts and wages payable	$ 3,169,622 78	
Miscellaneous accounts payable	1,827,825 20	
Unmatured rents accrued	79,389 59	$ 5,076,837 57
Unadjusted Credits—		
Operating reserves	$ 1,248,063 84	
Other unadjusted credits	900,021 55	$ 2,148,085 39
Employees Provident Fund—as per contra		503,106 06
		$449,923,429 24

AUDITORS' CERTIFICATE

We have examined the books and records of the Canadian Government Railways at Moncton for the twelve months ended December 31, 1922, and we certify that in our opinion the above balance sheet is properly drawn up so as to exhibit a true and correct view of the affairs of the Canadian Government Railways at December 31, 1922 and is in accordance with the books and the information and explanations given us.

George A. Touche & Co.,
Chartered Accountants, Auditors.

Dated at Toronto, April 27, 1923.

CANADIAN GOVERNMENT RAILWAYS

INCOME STATEMENT FOR FISCAL YEAR ENDED DECEMBER 31, 1922

Railway operating revenues		$40,939,945 76
Railway operating expenses		43,436,667 67
Net deficit on operations (operating ratio 106·10%)		$ 2,496,721 91
Railway tax accruals	$ 23,426 91	
Uncollectable railway revenues	6,317 11	29,744 02
Total operating deficit		$ 2,526,465 93
Non-operating income	$1,674,548 74	1,074,548 74
Gross loss		$ 1,451,917 19
Deductions from gross income	$1,458,740 74	1,458,740 74
Deficit carried to profit and loss statement		$ 2,910,657 93

CANADIAN NATIONAL RAILWAYS

COMPARATIVE SUMMARY OF OPERATING RESULTS—TWELVE MONTHS ENDED DECEMBER 31, 1922, 1921 AND 1920

Gross Earnings

	1922	1921	1920
Canadian Northern Ry	$ 60,679,033 37	$ 69,088,474 16	$ 66,695,398 80
Canadian Government Ry	40,939,945 76	41,275,314 84	44,803,045 84
Grand Trunk Pacific Ry	18,516,977 58	16,638,677 64	14,408,549 66
Total	$ 120,135,956 71	$ 127,002,466 64	$ 125,906,994 30

Distribution

Freight	$ 90,092,296 22	$ 93,995,807 96	$ 91,118,130 38
Passenger	18,726,207 02	21,200,196 85	23,671,588 51
Sleeping car	1,566,298 99	1,740,506 05	1,414,009 24
Mail	2,093,918 83	2,028,131 81	1,091,300 05
Express	3,433,612 28	3,664,424 20	3,420,974 40
Miscellaneous	4,223,623 37	4,373,399 77	5,190,991 72

Operating Expenses

Canadian Northern Ry	$ 63,625,763 09	$ 75,564,385 30	$ 82,953,978 60
Canadian Government Ry	43,436,667 67	46,990,047 74	55,445,651 29
Grand Trunk Pacific Ry	22,809,843 99	20,668,369 51	24,543,063 60
Total	$ 129,872,274 75	$ 143,222,802 55	$ 162,942,693 49

Distribution

Maintenance of way and structures	$ 31,276,388 08	$ 33,932,729 00	$ 43,171,049 62
Maintenance of equipment	30,460,919 55	31,686,532 41	34,860,165 63
Traffic	2,882,449 17	2,557,949 95	2,460,061 28
Transportation—Rail	60,470,754 33	71,770,225 98	76,856,894 48
Transportation—Water	122,341 46	120,970 66	350,135 79
Miscellaneous	1,856,999 29	2,063,096 85	2,564,663 07
General	3,662,344 53	3,078,841 15	3,382,766 56
Transportation for Investment—Cr.	859,921 66	1,987,543 45	703,042 94

Operating Deficit

Canadian Northern Ry	$ 2,946,729 72	$ 6,475,911 14	$ 16,258,579 80
Canadian Government Ry	2,496,721 91	5,714,732 90	10,642,605 45
Grand Trunk Pacific Ry	4,292,866 41	4,029,691 87	10,134,513 94
Total	$ 9,736,318 04	$ 16,220,335 91	$ 37,035,699 19

Operating Ratios

Canadian Northern Ry	104·85	109·37	124·38
Canadian Government Ry	106·10	113·84	123·75
Grand Trunk Pacific Ry	123·18	124·21	170·34
Total	108·10	112·77	129·41

CANADIAN NATIONAL RAILWAYS

INCOME ACCOUNT FOR YEARS ENDED DECEMBER 31, 1922, AND 1921

Gross Operating Revenue

	1922	1921
Canadian Northern Railway System	$ 60,679,033 37	$ 69,088,474 16
Canadian Government Railways	40,939,945 76	41,275,314 84
Grand Trunk Pacific Railway	18,516,977 58	16,638,677 64
Canadian National Railways	$ 120,135,956 71	$ 127,002,466 64

Operating Expenses

Canadian Northern Railway System	$ 63,625,763 09	$ 75,564,385 30
Canadian Government Railways	43,436,667 67	46,990,047 74
Grand Trunk Pacific Railway	22,809,843 99	20,668,369 51
Canadian National Railways	$ 129,872,274 75	$ 143,222,802 55

Net Deficit from Railway Operations

Canadian Northern Railway System	$ 2,946,729 72	$ 6,475,911 14
Canadian Government Railways	2,496,721 91	5,714,732 90
Grand Trunk Pacific Railway	4,292,866 41	4,029,691 87
Canadian National Railways	$ 9,736,318 04	$ 16,220,335 91

Total Accruals

Canadian Northern Railway System	$ 1,077,433 16	$ 1,191,890 84
Canadian Government Railways	23,426 91	35,743 87
Grand Trunk Pacific Railway	247,903 22	357,394 54
Canadian National Railways	$ 1,348,763 29	$ 1,585,029 25

Total Operating Deficit

Canadian Northern Railway System	$ 4,024,162 88	$ 7,667,801 98
Canadian Government Railways	2,520,148 82	5,750,476 77
Grand Trunk Pacific Railway	4,540,769 63	4,387,086 41
Canadian National Railways	$ 11,085,081 33	$ 17,805,365 16

Non-Operating Income

Canadian Northern Railway System	$ 3,700,934 41	$ 3,119,349 72
Canadian Government Railways	1,074,548 74	679,577 30
Grand Trunk Pacific Railway	792,155 62	863,185 83
Canadian National Railways	$ 5,567,638 77	$ 4,662,112 85

Deductions from Gross Income

Canadian Northern Railway System	$ 1,275,797 98	$ 1,011,242 14
Canadian Government Railways	1,465,057 85	1,255,901 00
Grand Trunk Pacific Railway	1,603,746 21	801,667 77
Canadian National Railways	$ 4,344,602 04	$ 3,068,810 91

Total Deficit Before Fixed Charges

Canadian Northern Railway System	$ 1,599,026 45	$ 5,559,694 40
Canadian Government Railways	2,910,657 93	6,326,800 47
Grand Trunk Pacific Railway	5,352,360 22	4,325,568 35
Canadian National Railways	$ 9,862,044 60	$ 16,212,063 22

INCOME ACCOUNT—*Continued*

FIXED CHARGES

Canadian Northern Railway System—		
Interest due public	$ 16,915,174 26	$ 17,595,707 51
Interest due Government	15,796,371 96	13,224,208 27
	$ 32,711,546 22	$ 30,819,915 78
Grand Trunk Pacific Railway—		
Interest due public	$ 2,341,266 96	$ 3,977,447 36
Interest due Government	2,200,131 75	1,535,474 22
Interest due receiver's certificates	1,907,247 13	1,702,886 64
Interest due Grand Trunk Railway	2,081,060 25	2,742,191 60
	$ 8,529,706 09	$ 9,957,999 82
Canadian National Railways	$ 41,241,252 31	$ 40,777,915 60

TOTAL DEFICIT

Canadian Northern Railway System	$ 34,310,572 67	$ 36,379,610 18
Canadian Government Railways	2,910,657 93	6,326,800 47
Grand Trunk Pacific Railway	13,882,066 31	14,283,568 17
Canadian National Railways	$ 51,203,296 91	$ 56,989,978 82

CANADIAN NATIONAL RAILWAYS

STATEMENT SHOWING OPERATING REVENUE PAID IN LABOUR AND AVERAGE NUMBER OF EMPLOYEES—YEARS 1922 AND 1921

GROSS EARNINGS

	1922	1921	Increase or Decrease	Inc. or Dec. %
Can. Nor. Ry.	$ 60,679,033 37	$ 69,088,474 16	D. 8,409,440 79	D. 12 17
Can. Gov't. Ry.	40,939,945 76	41,275,314 84	D. 335,369 08	D. 0·81
Grand Trunk Pac.	18,516,977 58	16,638,677 64	I. 1,878,299 94	I. 11·29
System	$ 120,135,956 71	$ 127,002,466 64	D. 6,866,509 93	D. 5·41

OPERATING LABOR

Can. Nor. Ry.	$ 36,209,864 10	$ 42,233,504 97	D. 6,023,640 87	D. 14·26
Can. Gov't. Ry.	23,715,240 30	28,842,633 11	D. 5,127,392 81	D. 17·78
Grand Trunk Pac.	13,044,274 08	11,498,120 09	I. 1,546,153 99	I. 13·45
System	$ 72,969,378 48	$ 82,574,258 17	D. 9,604,879 69	D. 11·63

RATIO OF LABOUR TO GROSS EARNINGS

Can. Nor. Ry.	59·67	61·13	D. 1·46	D. 2·39
Can. Gov't. Ry.	57·92	69·88	D. 11·96	D. 17·12
Grand Trunk Pac.	70·44	69·10	I. 1·34	I. 1·94
System	60·74	65·02	D. 4·28	D. 6·58

COMPARISON OF PAYROLL (INCLUDING BETTERMENTS)

Can. Nat. Rys.	$ 82,390,245 42	$ 88,948,031 14	D. 6,557,785 72	D. 7·37

AVERAGE NUMBER OF EMPLOYEES

	1922	1921	Inc. or Dec.	%
Can. Northern and Grand Trunk Pac. Rys.	37,888	39,480	D. 1,592	4·03
Canadian Government Railway	20,510	20,835	D. 325	1·56
Canadian National Railways	58,398	60,315	D. 1,917	3·18

CANADIAN NATIONAL RAILWAYS

TRAIN TRAFFIC STATISTICS—FOR TWELVE MONTHS ENDED DECEMBER 31, 1922, 1921 AND 1920

—	1922	1921	1920
Train Mileage			
Passenger trains	12,237,746	12,701,319	13,322,587
Freight trains	18,472,628	18,649,988	20,988,345
Mixed trains	2,945,234	3,317,850	3,496,965
Total Train miles (excluding special train miles)	33,655,608	34,669,157	37,807,897
Car Mileage			
Passenger—			
Coaches, Parlor, Sleeping and Dining Cars	60,110,284	58,736,090	55,744,463
Baggage, Mail, Express, etc	32,406,622	34,306,139	38,149,446
Total passenger train car miles	92,516,906	93,042,229	93,893,909
Freight—			
Loaded freight car miles	424,635,893	389,521,482	420,074,960
Empty freight car miles	219,857,824	211,428,758	168,809,115
Caboose miles	19,682,500	20,584,200	21,224,990
Total freight train car miles	664,176,217	621,534,440	610,109,065
Passenger cars per passenger traffic train mile	7·26	7·05	5·58
Freight Cars per freight traffic train mile	31·75	28·81	24·92
Passenger Traffic			
Passengers carried (earning revenue)	11,331,226	11,938,149	13,572,245
Passengers carried (earning revenue) one mile	689,391,942	714,748,217	841,636,864
Passengers carried (earning revenue) one mile per mile of road	40,022	41,773	50,957
Average passenger journey—miles	60·84	59·87	62·01
Average amount received per passenger	$ 1·58	$ 1·69	$ 1·66
Average amount received per passenger mile	c. 2·599	c. 2·827	c. 2·68
Average number of passengers per train mile	54·12	54·16	50·04
Average number of passengers per car mile	11·47	12·17	15·10
Revenue from passengers per passenger car mile	c. 29·81	c. 34·41	c. 40·52
Total passenger train earnings per train mile	$ 2·00	$ 2·13	$ 1·71
Total passenger train earnings per mile of road	$ 1,477·72	$ 1,643·66	$ 1,738·52
Freight Traffic			
Tons of revenue freight carried	22,426,403	21,258,600	25,089,376
Tons of revenue freight carried one mile	10,091,109,668	8,997,713,512	9,221,370,748
Total tons (all classes) freight carried one mile	11,470,240,341	10,295,715,553	10,454,247,657
Tons of non-revenue freight carried one mile	1,379,130,673	1,298,002,041	1,232,876,909
Tons of revenue freight carried one mile per mile of road	585,831	525,865	558,314
Tons of non-revenue freight carried one mile per mile of road	80,064	75,861	74,645
Total tons (all classes) freight carried one mile per mile of road	665,895	601,726	632,959
Average amount received per ton per mile revenue freight	c. 0·889	c. 1·041	c. 0·983
Average number of tons revenue freight per train mile	482·41	417·12	376·61
Average number of tons non-revenue freight per train mile	65·93	60·17	50·35
Average number of tons (all classes) freight per train mile	548·34	477·29	426·96
Average number of tons revenue freight per loaded car mile	23·76	23·00	21·95
Average number of tons non-revenue freight per loaded car mile	3·25	3·33	2·93
Average number of tons (all classes) freight per loaded car mile	27·01	26·43	24·88
Average haul, revenue freight	449·97	423·25	367·54
Freight train earnings per loaded car mile	c. 21·35	c. 24·27	c. 21·58
Freight train earnings per train mile	$ 4·33	$ 4·38	$ 3·70
Freight train earnings per mile of road	$ 5,262·84	$ 5,525·49	$ 5,489·12

CANADIAN NATIONAL RAILWAYS

DESCRIPTION OF FREIGHT CARRIED YEAR ENDED 31 DECEMBER, 1922

—	Quantity	Tons	Per cent
Flour and other mill products	16,744,180 Sacks	837,209	3·73
Wheat	129,800,567 Bush.	3,894,017	17·36
Oats	78,637,353 "	1,336,835	5·96
Barley and other grain	28,654,583 "	687,710	3·07
Hay and straw	.....	224,696	1·00
Fruit (fresh)	.....	105,720	·47
Vegetables and other agricultural products	.....	201,922	·90
Horses	35,671 Head	30,320	·13
Cattle	482,135 "	289,281	1·29
Sheep and hogs	630,260 "	63,026	·28
Other animal products	.....	127,616	·57
Coal and coke	.....	3,837,515	17·11
Building material, stone, etc	.....	729,057	3·25
Ores	.....	146,456	·65
Other mine products	.....	238,860	1·06
Logs, lumber, etc	2,160,126 M.F.	3,240,190	14·44
Cordwood	283,914 Cords	397,480	1·77
Pulpwood	.....	1,508,560	6·72
Other forest products	.....	99,737	·45
Immigrants effects and household goods	.....	71,874	·37
Petroleum products	.....	467,945	2·09
Paper, wood, pulp etc	.....	793,327	3·54
Other manufactures	.....	1,247,951	5·55
Merchandise and miscellaneous	.....	1,849,099	8·24
Total tons	.....	22,426,403	100·00

CANADIAN NATIONAL RAILWAYS

STATEMENT SHOWING DETAILS OF EQUIPMENT ON HAND DECEMBER 31, 1922; RETIREMENTS, DELIVERIES AND POSITION AT DECEMBER 31, 1922

—	Dec. 31, 1921	Retirements during the year	Delivered during year	Dec. 31, 1922
Locomotives—				
Passenger	1,733	24	.....	1,709
Freight	.....	.....	.....	.....
Switching	227	.....	2	229
Electric locomotives	13	.....	.....	13
Total locomotives	1,973	24	2	1,951
Passenger Equipment—				
First class cars	477	9	.....	468
Second class cars	230	9	.....	221
Combination cars	195	7	3	191
Emigrant cars	342	5	1	338
Dining cars	73	1	.....	72
Parlour cars	67	1	10	76
Sleeping cars	222	5	1	218
Postal	55	.....	2	57
Baggage and express cars	565	4	.....	561
Business and pay cars	66	3	.....	63
Other cars in passenger service	83	.....	.....	92
Total	2,375	44	26	2,357
Freight Equipment—				
Box cars	55,833	1,279	105	54,659
Flat cars	9,586	649	51	8,988
Stock cars	3,825	25	3	3,803
Coal cars	8,259	128	333	8,464
Tank cars	71	3	.....	68
Refrigerator cars	1,800	15	1	1,786
Other cars in freight service	1,595	36	68	1,627
Total	80,969	2,135	561	79,395
Work Equipment—				
Gravel cars	479	3	2	478
Derrick cars	187	15	7	179
Caboose cars	1,049	34	4	1,019
Other road cars	3,419	226	861	4,054
Total	5,134	278	874	5,730
Total cars	88,478	2,457	1,461	87,482

CANADIAN NATIONAL RAILWAYS

Mileage of Railway Lines as of December 31, 1922

MARITIME DISTRICT

	Miles	
Halifax Ocean Terminals to Mont Joli	479·68	
Sydney to Truro	224·28	
Moncton to St. John	89·31	
Pacific Jct. to Monk	342·63	
Point Tupper to St. Peters	30·60	
New Glasgow to Pictou Landing	8·24	
Stellarton to Oxford Jct	79·40	
Ferrona Jct. to Sunny Brae	12·48	
Pictou to Brown Point	1·92	
Pugwash Jct. to Pugwash	4·56	
Windsor Jct. to Stewart	81·87	
Sackville to Cape Tormentine	36·05	
Painsec Jct. to Point du Chene	11·98	
Buctouche Jct. to Buctouche	29·93	
Salisbury to Albert	44·77	
Petitcodiac to Elgin & Havelock	26·16	
St. Martins to Hampton	28·75	
Fredericton to Derby Jct	110·47	
Stanley Jct. to Stanley	5·40	
Nelson Jct. to Loggieville	13·77	
Gloucester Jct. to Tracadie	72·98	
Pokemouche Jct. to Shippegan	6·85	
Tide Head to St. Leonard	105·06	
Connection at St. Leonard with B. & A. Rly. (Leased Line)	0·62	
Dalhousie Jct. to Dalhousie	6·66	
		1,854·46

Prince Edward Island Railway—

Charlottetown to Tignish	115·26	
Emerald Jct. to Borden	12·58	
Royalty Jct. to Souris	54·98	
Harmony Jct. to Elmira	9·89	
Mt. Stewart Jct. to Georgetown	24·10	
Montague Jct. to Montague	6·36	
Charlottetown to Murray Harbour	47·70	
Lake Verde to Vernon	4·43	
Alberton to Alberton Wye	0·30	
		275·60

Halifax & South Western Railway—

South Western Jct. to Yarmouth	245·78	
Mahone Jct. to Lunenburg	6·84	
Bridgewater Jct. to Port Wade	92·33	
Caledonia Jct. to Caledonia	21·92	
Liverpool to Milton	4·63	
Middleton Jct. to Middleton (Running rights on D.A.R.)	0·70	
Yarmouth (Running rights on Town Tracks)	0·32	
		372·52

Vale Railway. (*Leased Line*)—

Thorburn to New Glasgow	5·79	5·79
St. John & Quebec Railway. (*Leased Line*)—		
Westfield Beach to Centreville	157·84	
St. John to Westfield Beach (Running rights on C.P.R.)	13·96	
		171·80
Total Mileage Maritime District		2,680·17

QUEBEC DISTRICT

Mont Joli to St. Rosalie Jct. (via Levis)	323.55	
St. Rosalie Jct. to Montreal (Joint Sect. G.T.R.)	37·62	
E. Jct. Switch, Monk to Diamond Jct	101·92	
Viaduct to Armstrong	951·16	
Quebec to St. Marc	47·77	
St. Prospere to Montreal	115·17	
Montreal (Tunnel Terminal) to Hurdman (Ottawa)	111·47	
St. Charles Jct. to West Jct	16·73	
Joffre to Cadorna	11·25	
Cadorna to Quebec, Palais Sta. (Running rights C.P.R.)	2·96	
Rivière à Pierre Jct. to Garneau Jct	39·84	
Joliette to Cushing Jct	61·58	
Rivière Ouelle Jct. to Rivière Ouelle (Inactive)	6·48	
Lyster to Deschaillons (13·0 miles inactive)	29·56	
St. Leonard Jct. to Nicolet	14·70	
Aldred Jct. to Shawinigan Falls	3·80	
Paradis to Rawdon	15·75	
Rinfret Jct. to Huberdeau	45.23	
Lazard to Cartierville	0·84	
Connection at Hawkesbury with G.T.R	0·19	
Connection at Rockland with G.T.R	0·18	
		1,937 75
Quebec and Saguenay Railway—		
Cap Tourmente to Nairn's Falls	62.10	
St. Joachim to Cap Tourmente (Leased Line)	5.30	
		67·40
Quebec and Lake St. John Railway—		
Quebec (Parent Square) to Chicoutimi	227·30	
Linton Jct. to La Tuque (inactive)	39·60	
		266.90
James Bay and Eastern Railway—		
Chambord Jct. to St. Felicien		29·90
Total Mileage Quebec District		2,301·75

ONTARIO DISTRICT

Hurdman to Current River	901.24	
Current River to Pt. Arthur (Running rights C.P.R.)	2·10	
Riverside to Ottawa, Central Station (Running rights G.T.R.)	1.70	
Rideau Jct. to Sydenham	80·76	
Deseronto to Todmorden	132.90	
Toronto (Union Station) to Rosedale (Running rights G.T.R.)	3 80	
Todmorden to Capreol	272·19	
Duncan to Donlands	2·10	
Donlands to Dovercourt Rd. (Joint Sect. with C.P.R.)	6·70	
Harrowsmith to Kingston (Running rights C.P.R.)	18.60	
Brockville to West Port (4·25 miles inactive)	44·74	
Udney to Orillia (Includes 2·80 miles running rights C.P.R.) (Inactive)	10·21	
Sudbury Jct. to Sudbury	5.24	
Algo. to C.N. Jct. Algoma Eastern Connection	2·40	
Sellwood Jct. to Sellwood	3·97	
Connection at North Bay with T. & N.O. Railway	0·25	
Connection at Colbright with G.T.R	0·13	
Connection at Pembroke with G.T.R	1·47	
Connection at Washago with G.T.R	0·27	
		1,490·77
Central Ontario Railway—		
Trenton to Picton	30·56	
Trenton to Wallace (15·90 miles inactive)	117·60	
Orsmby Jct. to Coe Hill	7·20	
		155·36
Irondale, Bancroft and Ottawa Railway—		
York River to Howland	50·96	50·96
Bay of Quinte Railway—		
Yarker to Bannockburn	53·25	
Deseronto to Sydenham	31·00	
		84·25
		1,781·34
Total Mileage Ontario District		

ELECTRIC LINES IN PROVINCE OF ONTARIO

	Miles	Miles
Toronto, Niagara and St. Catharines Railway—		
Port Dalhousie to Niagara Falls	16·74	
Thorold to Pt. Colborne	18·54	
Niagara Falls to Fallsview	4 63	
St. Catharines to Niagara-on-the-Lake	12·18	
Local Lines St. Catharines	9·58	
		61·67
Toronto Suburban Railway—		
Toronto to Woodbridge	12·30	
Toronto to Lambton	2·15	
Lambton to Guelph	46·40	
Davenport Route	3·01	
		64·46
Total Mileage Electric Lines in Ontario		126·13

MANITOBA DISTRICT

Armstrong to Winnipeg (South Side Water St.)	390·25	
Fort William to Superior Jct. (Includes 0·53 miles running rights C.P.R.)	191·89	
Loop at Fort William	1·80	
Port Arthur to Rainy River (International Boundary)	285·71	
International Boundary to Winnipeg (St. Boniface)	106·66	
Twin City Jct. to North Lake	58·40	
South Jct. to Emerson Junction	72·69	
G.N. Junction (near Emerson) to International Boundary	0·08	
Junction St. Boniface to Clarke St. Jct., Winnipeg	2·08	
Winnipeg (Woodward Ave. Jct.) to Watrous	405·75	
Joint Section through Portage la Prairie (G.N.R.)	1·00	
Beaver to Dauphin	101·40	
West Tower to M. & B. Jct	77·03	
Paddington Jct. to Victoria Beach	72·84	
St. James Jct. to Gypsumville	158·04	
Steep Rock Jct. to Steep Rock	12·36	
Grosse Isle to Hodgson	80.98	
Oakland to Alonsa	62·02	
Ochre River to St. Rose	11·14	
Carman Jct. to Somerset Jct	78·67	
Jct. Carman S.D. to Notre Dame de Lourdes	2·63	
Greenway to Deloraine	80·18	
Muir to Neepawa to McCreary Jct	70·44	
Brandon Jct. to Carberry Jct	22·83	
Rossburn Jct. to Ross Jct	190·65	
Hallboro to Beulah	74·40	
Wroxton to Willowbrook	41·37	
Melville to Canora	54·90	
Connections at Winnipeg, Portage la Prairie, Petrel, Knox, Yorkton and Canora	1·37	
Connections at St. James Jct. (Running rights G.N.R.)	0·19	
Connection at Portage la Prairie (Running rights C.P.R.)	0·03	
Connections at Knox (Running rights C.P.R.)	0·02	
Connections at Yorkton (Running rights C.P.R.)	0·24	
		2,710·04
Minnesota and Manitoba Railway (Leased Line)—		
Rainy River to International Boundary		43·76
Duluth, Winnipeg and Pacific Railway—		
Duluth Jct. to International Boundary	1·51	
International Boundary to M. 77-69 (D.R.L. & W. Rly.)	87·75	
M. 77-69 to D.W. & P. Jct. (Including Virginia Loop)	81·25	
Connections at Duluth (Running rights C.M. St. P.& O. Rly.)	0·88	
Connections at Duluth (Running rights D.T. & T. Rly. & N.P. Rly.)	1·51	
Connections at Duluth (Running rights Nor. Pac. Rly.)	4·12	
Connections at Duluth (Running rights L.S.T. & T. Rly.)	0·87	
		177·89
Northern Pacific and Manitoba Railway (Leased Line)—		
Portgage Jct. to Portage La Prairie	52·44	
Morris to Belmont	102·23	
Winnipeg Transfer Railway	1·20	
		155·87
Red River Valley Railway (Leased Line)—		
Winnipeg (South side Water Street) to Portage Jct.)	2·92	
Portage Jct. to Emerson	62·81	
		65·73
Portage and North Western Railway (Leased Line)—		
Portage la Prairie to Beaver	19·71	
Delta Jct. to Delta	15·05	
		34·76
Total mileage Manitoba District		3,188·05

SASKATCHEWAN DISTRICT

Dauphin to North Battleford	396·52	
Watrous to Biggar	107·23	
Brandon to Regina	219·88	
Melville to Regina	94·47	
C.N. Jct. Regina to Union Depot, Regina (Running rights C.P.R.)	0·85	
Union Depot, Regina, to Dewdney St., Regina (Running rights C.P.R.)	0·45	
Connection at Regina Tower (C.N.R. to G.T.P.)	0·13	
Regina to North Gate	157·24	
Regina to Riverhurst	112·58	
Hartney to Virden	38·09	
Maryfield to Bengough	183·94	
Luxton to Estevan	25·10	
Talmage to Weyburn	13·80	
Bengough Jct. to Junction Riverhurst S.D.	86·99	
Gravelbourg Jct. to Hodgeville	109·61	
Duro Jct. to Engen, Jct. with C.P.R.	3·23	
Engen Jct. to West Jct. (Running rights C.P.R.)	11·95	
West Jct. with C.P.R. to Jct. G.T.P. Main Line	0·95	
Saskatoon to Kindersley	125·76	
Delisle to Beechy	94·33	
Tichfield to Eatonia	114·45	
North Jct. to Denholm via Prince Albert	476·42	
Sifton Jct. to Winnipegosis	20·74	
Thunderhill Jct. to Kelvington	113·50	
Canora to Sturgis Jct.	21·46	
Hudson Bay Jct. to Pikwitonei (Mile 214 H.B. Rly.)	302·06	
Humboldt to Melfort	54·14	
Melfort to Ridgedale	22·69	
Young to Prince Albert	111·50	
Shellbrook to Big River	57·08	
Dalmeny to Carlton	35·93	
Connections at Hartney, Lampman, Regina, Moosejaw, Yorath Jct., Yorath-Craik S.D'S., Rosetown S.D., Saskatoon, Conquest S.D., Melfort S.D., and Prince Albert	5·13	
Connections at Regina (Running rights C.P.R. 0·78 Street Rly. 0·05)	0·83	
Connections at Moose Jaw (Running rights C.P.R.)	0·22	
		3,119 25
Qu'Appelle L. L. and Saskatchewan Railway—		
Regina to Nutana	156·42	
Nutana to E. Prince Albert	92·84	
Connection at Nutana (C.N.R. to G.T.P.)	0·49	
		249 75
Northern Pacific and Manitoba Railway (Leased Line)—		
Hartney Jct. to M. & B. Jct.	37·50	
M. & B. Jct. to Brandon	2·36	
Belmont to Hartney	54·10	
Connection at Minto (Nor. Pac. Rly. to Great Nor. Rly.)	0·20	
		94·16
Total mileage Saskatchewan District		3,463·16

ALBERTA DISTRICT

N. Battleford to Edmonton (West Yard Limit)	259·22
Union Jct. to Evansburg, C.N.R.	68·41
Biggar to N. Edmonton	263·60
Kindersley to Calgary	273·31
N. Battleford to St. Walburg	77·80
Battleford Jct. to Old Battleford	7·91
Oban to Battleford	48·40
Battleford to Carruthers	49·03
Biggar to 4th Meridian	104·39
Eatonia to Alsack	34·09
Camrose S.E. Jct. to Alliance	59·70
Medicine Hat Jct. to Steveville	58·90
Vegreville Jct. to Munsen	160·57
Tofield to Calgary	201·19
Warden to Otway	113·12
Otway to Ullen (Running rights C.P.R.)	4·27
Ullen to Brazeau	55·38
Camrose Jct. to Terminal Jct. (South Edmonton)	45·75
St. Paul Jct. to St. Paul	120·91

ALBERTA DISTRICT—*Concluded*

St. Albert to Athabaska	85·36	
Cardiff Jct. to Cardiff	2·29	
Peace River Jct. to Whitecourt	72·40	
Edmonton Jct. to Stony Plains (Inactive)	19·94	
Red Deer Jct. to Red Deer	6·10	
East Jct. Switch to Edmonton Station G.T.P.	3·45	
121st St., Edmonton, to Union Jct., G.T.P.	4·88	
East Jct. Switch to W. Jct. Switch, Edmonton, G.T.P.	4·02	
Connection at Edmonton (Running rights Edmonton Radial Rly.)	0·04	
Connections at Calgary, Camrose and Edmonton	1·10	
		2,205·53
Edmonton, Yukon and Pacific Railway—		
E.Y. & P. Jct. (Edmonton) to Strathcona	9·29	
Total mileage Alberta District		2,214·82

BRITISH COLUMBIA DISTRICT

Union Jct. to Red Pass Jct.	273·75	
Red Pass Jct. to Prince Rupert	679·06	
Red Pass Jct. to East End Gt. Nor. Rly.	471·13	
B.C. Government Bridge (Running rights)	1·64	
Fraser River Jct. to Vancouver Yd. E. Switch (Running rights C.N.R.)	11·57	
West End Gt. Nor. Rly. to Vancouver	1·09	
Snaring Jct. to Pocahontas (Inactive)	14·89	
Bickerdike to Lovett	55·28	
Coal Spur to Mountain Park	30·55	
Luscar Branch	5·53	
Kamloops Jct. to Kamloops	2·78	
Victoria to Koksilah River (25·90 miles inactive)	52·50	
Junction to Patricia Bay	15·52	
Sidney Jct. to Sidney	1·70	
Total mileage British Columbia District		1,616·99
Total Main Line Mileage, December 31, 1922	17,372·41	
Main Line Mileage Inactive, December 31, 1922	148·37	
Total Main Line Mileage in operation, December 31, 1922		17,224·04

MILEAGE SUMMARY BY DISTRICTS

	Total Mileage	Mileage in Operation
Maritime District	2,680·17	2,680·17
Quebec District	2,301·75	2,244·47
Ontario District	1,781·34	1,750·98
Electric Lines in Ontario	126·13	126·13
Manitoba District	3,188·05	3,188·05
Saskatchewan District	3,463·16	3,463·16
Alberta District	2,214·82	2,194·88
British Columbia District	1,616·99	1,576·20
Totals	17,372·41	17,224·04

CANADIAN NORTHERN RAILWAY SYSTEM

LOANS FROM DOMINION GOVERNMENT WITH INTEREST ACCRUED FOR YEAR ENDED DECEMBER 31, 1922

Loan	Amount outstanding	Interest due per accounts rendered to Dec. 31, 1922
	$ cts.	$ cts.
Advances under 1911 legislation	2,396,099 68	121,544 61
Advances under 1914 legislation	5,294,000 02	494,300 05
Advances under 1915 legislation	10,000,000 00	2,085,616 44
Advances under 1916 legislation	15,000,000 00	5,867,753 41
Advances War *Measures* Act, 1916—$497,566.80 repaid 15-1-21		42,940 66
Advances War Measures Act, 1918	1,887,821 16	1,240,875 26
Advances under 1917 legislation	25,000,000 00	7,571,122 58
Advances under 1918 legislation	25,000,000 00	6,472,644 02
Advances under 1919 legislation	35,000,000 00	6,974,271 70
Advances under 1920 legislation	48,611,077 00	6,837,786 26
Advances under 1921 legislation	45,438,141 52	3,091,680 50
Advances under 1922 legislation	29,845,010 59	430,439 95
Equipment loans under Chapter 38, 1918, Vote 96, 1919, Vote 115, 1920, Vote 113, 1921 and Vote 115, 1922	55,327,441 75	10,002,181 22
	298,799,591 72	51,233,156 66
SUMMARY—		
Amount outstanding December 31, 1922		298,799,591 72
Interest due as per accounts rendered to December 31, 1922		51,233,156 66
		$350,032,748 38

CANADIAN NORTHERN RAILWAY SYSTEM

EQUIPMENT NOTES OUTSTANDING DECEMBER 31, 1922

Series	Date of final payment	Principal outstanding	Annual Payment	
			Principal paid during 1922	Interest paid during 1922
		$ cts.	$ cts.	$ cts.
Imperial Rolling Stock Co., Ltd.—				
Series "C-1"			110,000 00	2,475 00
"D-1"			165,000 00	3,712 50
"E-1"			210,000 00	7,087 50
"F-1"	Mar. 1, 1923	220,000 00	420,000 00	24,075 00
"G-1"	" 1, 1923	55,000 00	110,000 00	6,187 50
"H-1"	Dec. 1, 1923	70,000 00	80,000 00	6,500 00
"K-1"	Oct. 1, 1924	425,000 00	210,000 00	29,125 00
"L-1"	Aug. 1, 1926	524,000 00	132,000 00	31,150 00
		1,294,000 00		
Canadian Northern Rolling Stock Co., Ltd.—				
Series "A"	July 1, 1928	2,600,000 00	450,000 00	169,500 00
"B"	Jan. 1, 1929	4,500,000 00	750,000 00	303,750 00
"C"	May 1, 1929	4,875,000 00	750,000 00	326,250 00
"D"	Dec. 1, 1929	5,250,000 00	750,000 00	348,750 00
		17,225,000 00		
Canadian National Rolling Stock Company—				
Series "E"	May 1, 1935	14,000,000 00	.....	980,000 00
		$32,519,000 00	$4,137,000 00	$2,238,562 50

In addition to principal paid during 1922, there were payments made to the Sinking Fund *re* Equipment Trust Series "E" amounting to $1,000,000.00.

SESSIONAL PAPER No. 32

CANADIAN NORTHERN RAILWAY SYSTEM

STATEMENT of Securities Outstanding as at December 31, 1922, showing Securities guaranteed by Dominion Government, Securities Guaranteed by Provincial Governments, Securities Unguaranteed, Maturities of all issues, and Interest paid during the year.

—	Date of Maturity	Total Issue outstanding as at Dec. 31, 1922	Held by Public as at Dec. 31, 1922	Pledged as collateral as at Dec. 31, 1922	Interest paid during year 1922
GUARANTEED BY DOMINION GOVERNMENT—		$ cts.	$ cts.	$ cts.	$ cts.
Canadian Northern Railway—					
3% 1st mortgage debenture stock	July 10, 1953	9,359,996 72	9,359,996 72	.....	280,799 86
3½% 1st mortgage debenture stock	July 20, 1958	7,896,588 26	7,896,588 26	.....	276,380 46
4% 1st mortgage debenture stock and bonds.....	Sept. 1, 1934	35,773,333 33	17,060,333 33	18,713,000 00	682,413 34
7% 20-year sinking fund gold debenture bonds.....	Dec. 1, 1940	24,793,000 00	24,793,000 00	.....	1,735,510 00
6½% 25-year sinking fund gold debenture bonds.....	July 1, 1946	25,000,000 00	25,000,000 00	.....	1,625,000 00
Canadian Northern Alberta Railway—					
3½% 1st mortgage debenture stock	April 1, 1962	3,569,996 86	.....	3,569,996 86	
3½% 1st mortgage debenture stock	May 4, 1960	3,149,998 66	3,149,998 66	.....	110,249 94
Canadian Northern Ontario Railway—					
3½% 1st mortgage debenture stock.	May 19, 1961	35,770,000 00	34,229,996 87	1,540,003 13	1,198,049 84
		145,312,913 83	121,489,913 84	23,822,999 99	5,908,403 44
GUARANTEED BY PROVINCE OF ONTARIO—					
Canadian Northern Ontario Railway—					
3½% 1st mortgage debenture stock (1938).....	June 30, 1938	6,724,151 66	6,724,151 66	.....	235,345 30
3½% 1st mortgage debenture stock (1936).....	" 10, 1936	1,135,845 93	1,135,845 93	.....	39,754 60
		7,859,997 59	7,859,997 59	.....	275,099 90
GUARANTEED BY MANITOBA GOVERNMENT—					
Canadian Northern Railway—					
4 % Consolidated debenture bonds	June 30, 1930	10,784,046 65	10,784,046 65	.....	431,361 86
4 % Ontario division bonds.....	June 30, 1930	5,675,506 67	5,675,506 67	.....	226,991 06
4½% Ontario division bonds.....	June 30, 1930	69,106 66	69,106 66	.....	3,186 45
4 % Winnipeg terminal bonds.....	July 1, 1939	3,000,000 00	3,000,000 00	.....	120,000 00
4 % 1st mortgage debenture stock	June 30, 1930	2,859,998 87	2,859,998 87	.....	114,399 92
4½% Can. Nor. Man. railway bonds	June 30, 1930	160,680 00	.....	160,680 00	
4 % Sifton Branch Line bonds.....	Feb. 1, 1929	1,137,340 00	1,137,340 00	.....	45,493 60
4 % Gilbert Plains Branch bonds..	Nov. 1, 1930	2,433 33	2,433 33	.....	97 32
4 % Manitoba and S.E. Railway bonds.....	Feb. 1, 1929	512,460 00	512,460 00	.....	20,498 38
		24,201,572 18	24,040,892 18	160,680 00	962,028 59
GUARANTEED BY SASKATCHEWAN GOVERNMENT—					
Canadian Northern Railway—					
4 % 1st mortgage debenture stock and bonds.....	Jan. 23, 1939	10,005,866 66	8,029,999 99	1,975,866 67	321,200 00
Canadian Northern Saskatchewan Railway—					
4½% 1st mortgage debenture stock.	Dec. 19, 1943	486,666 66	.....	486,666 66	
		10,492,533 32	8,029,999 99	2,462,533 33	321,200 00
GUARANTEED BY ALBERTA GOVERNMENT					
Canadian Northern Railway—					
4 % 1st mortgage debenture stock.	Feb. 25, 1939	6,005,821 91	5,586,665 64	419,156 27	223,466 62
Canadian Northern Western Railway—					
4½% 1st mortgage debenture stock and bonds.....	Feb. 16, 1942	6,424,000 00	6,424,000 00	.....	289,080 00
4½% 1st mortgage debenture stock and bonds.....	Oct. 22, 1943	2,799,997 73	2,799,997 73	.....	125,999 90
		15,229,819 64	14,810,663 37	419,156 27	638,546 52

(Statement concluded next page.)

CANADIAN NORTHERN RAILWAY SYSTEM

STATEMENT of Securities Outstanding as at December 31, 1922, showing Securities guaranteed by Dominion Government, Securities Guaranteed by Provincial Governments, Securities Unguaranteed, Maturities of all issues, and Interest paid during the year—*Continued.*

—	Date of Maturity	Total Issue outstanding as at Dec. 31, 1922	Held by Public as at Dec. 31, 1922	Pledged as collateral as at Dec. 31, 1922	Interest paid during year 1922
		$ cts.	$ cts.	$ cts.	$ cts.
GUARANTEED BY BRITISH COLUMBIA GOVERNMENT—					
Canadian Northern Pacific Railway—					
4 % 1st mortgage debenture stock.	April 2, 1950	16,412,001 13	16,412,001 13	.....	656,480 04
4½% Terminal debenture stock.....	April 2, 1950	8,614,000 00	8,614,000 00	.....	387,630 00
4½% Branch Lines stock.....	April 2, 1950	2,029,400 00	.....	2,029,400 00	
		27,055 401 13	25,026,001 13	2,029,400 00	1,044,110 04
Total Provincial Guarantees....	.....	84,839,323 86	79,767,554 26	5,071,769 60	3,240,985 05
UNGUARANTEED SECURITIES—					
Canadian Northern Railway—					
4 % Perp. Cons. deb. stock.....	Perpetual.....	50,721,402 53	44,943,019 40	5,778,383 13	1,797,720 76
4 % 1st mortgage Pas Mission bonds.....	April 15, 1939	880,000 00	.....	880,000 00	
4½% 1st mortgage Gunflint bonds..	June 30, 1930	241,400 00	.....	241,400 00	
4½% Prince Albert Branch bonds..	June 30, 1930	518,000 00	300,000 00	218,000 00	13,500 00
Canadian Northern Ontario Railway—					
4 % Perp. Cons. debenture stock..	Perpetual.....	12,299,395 25	8,724,113 20	3,575,282 05	348,964 50
Central Ontario Railway—					
5 % 1st mortgage bonds.....	Jan. 1, 1934	805,433 38	805,433 38	.....	40,271 66
Bay of Quinte Railway—					
5 % 1st mortgage bonds.....	Jan. 2, 1927	730,000 00	730,000 00	.....	36,500 00
Canadian Northern Quebec Railway—					
4 % Perpetual debenture stock....	Perpetual	5,435,127 39	5,250,369 26	184,758 13	210,014 76
Great Northern Railway of Canada—					
4 % Bonds.....	Oct. 1, 1934	3,510,250 00	3,510,250 00	.....	140,410 00
Quebec and Lake St. John Railway—					
4 % 1st mortgage debenture stock.	Perpetual.....	4,380,301 73	4,252,503 06	127,798 67	170,001 14
5 % 1st mortgage bonds.....	Dec. 31, 1924	31,390 00	.....	31,390 00	
6 % Non-cum. income bonds.....	Dec. 31, 1924	102,930 00	.....	102,930 00	
Duluth, Winnipeg and Pacific Railway—					
4 % 1st mortgage bonds.....	June 1, 1939	8,056,586 61	7,004,997 27	1,051,589 34	280,199 84
Halifax and South Western Railway—					
3½% 1st mortgage bonds.....	Sept. 30, 1942	5,663,666 66	4,447,000 00	1,216,666 66	155,645 00
Niagara, St. Catharines and Toronto Railway—					
5 % 1st mortgage bonds.....	Nov. 1, 1929	1,203,000 00	1,098,000 00	105,000 00	54,900 00
5 % 1st mortgage bonds.....	Nov. 1, 1929	536,500 00	.....	536,500 00	
Qu'Appelle, Long Lake and Saskatchewan Railway and Steamboat Co.—					
4 % 1st mortgage bonds.....	July 1, 1936	5,019,539 86	5,019,539 86	.....	200,781 14
Mount Royal Tunnel and Terminal Co., Ltd.—					
5 % 1st mortgage bonds.....	April 15, 1970	7,353,046 66	2,004.580 00	5,348,466 66	111,933 34
James Bay and Eastern Railway—					
5 % 1st mortgage bonds.....	Sept. 1, 1945	300,000 00	.....	300,000 00	
Minnesota and Manitoba Railway—					
4 % 1st mortgage bonds.....	Sept. 1, 1931	349,000 00	349,000 00	.....	13,960 00
Toronto Suburban Railway—					
4½% 1st mortgage debenture stock.	July 15, 1961	2,628,000 00	2,628,000 00	.....	118,260 00
Can. Nor. Coal and Ore Dock Co., Ltd.—					
*5 % 1st mortgage sinking fund bonds.....	Jan. 1, 1936	1,750,000 00	1,750,000 00	.....	87,500 00
LAND SECURITIES—					
Canadian Northern Railway—					
4 % Land grant bonds (1909).....	.....	.....	.....	.....	5,375 69
5 % Land mortgage debentures....	June 1, 1923	7,099,493 34	.....	7,099,493 34	357,201 16
Total Unguaranteed.....	.....	119,614,463 41	92,816,805 43	26,797,657 98	4,143,237 99
Grand Total.....	.....	349,766,701 10	294,074,273 53	55,692,427 57	13,292,626 48
In addition to the above the following are authorized and issued:—					
(a) *Canadian Northern Railway—*					
5 % Income charge convertible stock.....	Nov. 2, 1930	24,140,174 02	24,140,174 02		

*NOTE.—$375,000 of these securities have been redeemed and are held by the Trustees. The Company, however, are obligated under the Trust Deed to provide half-yearly interest on the total issue, viz.: $1,750,000.00.

GRAND TRUNK RAILWAY SYSTEM

Statement of Securities Outstanding as at December 31, 1922, showing Securities guaranteed by Dominion Government, Securities Unguaranteed, Maturities of all issues, and interest paid during the year.

	Date of Maturity	Total Issue Outstanding as at December 31, 1922	Held by Public as at December 31, 1922	Pledged as Collateral as at December, 31, 1922	Interest paid during year 1922	Owned by Grand Trunk Railway Co.
GUARANTEED BY DOMINION GOVERNMENT.						
Grand Trunk Railway Company of Canada—						
4% Guaranteed stock	Perpetual	$ 60,833,333 33	$ 60,833,333 33		$ 2,433,333 33	
4% Consolidated debenture stock	"	181,419,381 00	119,839,014 33	$ 61,580,366 67	4,793,560 56	
5% Debenture stock (G.T.)	"	20,782,491 67	20,782,491 67		1,039,124 58	
5% Debenture stock (G.W.)	"	13,252,322 67	13,252,322 67		662,616 12	
4% Debenture stock (N.R.)	"	1,499,979 67	1,499,979 67		59,999 18	
20-year 7% Sinking fund gold debenture bonds	Oct. 1, 1940	24,743,000 00	24,743,000 00		1,732,010 00	
15-year 6% Sinking fund gold debenture bonds	Sept. 1, 1936	25,000,000 00	25,000,000 00		1,500,000 00	
		$327,530,508 34	$265,950,141 67	$ 61,580,366 67	$ 12,220,643 77	
UNGUARANTEED SECURITIES—						
Wellington, Grey & Bruce Ry. 7% bonds	July 1, 1901 Extended	$ 259,393 32	$ 259,393 32		$ 48,404 85	
Northern Railway, third preference 6% bonds	Interminable	70,566 66	70,566 66		4,234 00	
Canada Atlantic Railway, first mortgage 4% bonds	Jan. 1, 1955	16,000,092 00	16,000,092 00		640,003 68	
		$ 16,330,051 98	$ 16,330,051 98		$ 692,642 53	
AFFILIATED COMPANIES—						
Grand Trunk Western Railway Co. First Mortgage 4% Bonds	July 1, 1950	$ 14,999,720 00	$ 10,964,416 00		$ 438,576 64	$ 4,035,304 00
Grand Trunk Western Ry. Gen. Con. Mortgage 4% Bonds	Sept. 1, 1962	11,541,000 00				11,541,000 00
Pontiac, Oxford & Northern R.R. 6% 1st Mortgage Bonds	Sept. 1, 1916	400,000 00				* 400,000 00
Grand Trunk Junction Ry. Mortgage 5% Bonds	Jan. 1, 1934	3,872,000 00	938,960 00		24,000 00	
Central Vermont Ry. Refunding Mortgage 5% Gold Bonds	May 1, 1930	13,929,700 00	13,560,700 00		46,948 00	2,933,040 00
Grand Trunk Milwaukee Car Ferry Co. 4½% Bonds	Oct. 1, 1923	17,000 00	17,000 00	$ 369,000 00	658,787 50	
New England Elevator Co. 1st Mortgage 3¾% Bonds	July 1, 1941	190,000 00	190,000 00		1,327 50	
Portland Elevator Company, 1st Mortgage 4% Bonds	Jan. 1, 1937	75,000 00	75,000 00		7,500 00	
Montreal Warehousing Co. 1st Mortgage 4% Bonds	April 1, 1936	1,000,000 00	1,000,000 00		3,000 00	
Rail and River Coal Co. 1st Mortgage 5% Bonds	April 1, 1938	1,546,000 00	1,546,000 00		40,000 00	
					91,162 50	
		$ 47,570,420 00	$ 28,292,076 00	$ 369,000 00	$ 1,311,302 14	$ 18,909,344 00
Grand Total		$391,430,980 32	$310,572,269 65	$ 61,949,366 57	$ 14,224,588 44	$ 18,909,344 00

*Owned by Canadian National Railways Insurance Investment Fund.

GRAND TRUNK RAILWAY SYSTEM

Equipment Notes Outstanding, December 31, 1922

Series	Principal outstanding	Annual Payment	
		Principal paid during 1922	Interest paid during 1922
Grand Trunk Railway Company of Canada—	$ cts.	$ cts.	$ cts.
"A"		197,000 00	4,432 50
"B"		336,000 00	11,340 00
"C"	224,000 00	224,000 00	17,640 00
"D"	1,250,000 00	250,000 00	71,875 00
"F"	11,230,000 00	...	740,090 00
U.S.R.A. No. 84	778,700 00	59,900 00	48,519 00
	13,482,700 00	1,066,900 00	893,896 50
Grand Trunk Western Railway Company—			
U.S.R.A. No. 83	2,684,500 00	206,500 00	167,265 00

In addition to principal paid during 1922 there were payments made to the Sinking Fund *re* Equipment Trust Series "F," amounting to $800,000.

GRAND TRUNK RAILWAY SYSTEM

Loans from Dominion Government with interest accrued for year ended December 31, 1922

Loan	Amount outstanding	Interest accrued, 1922
Dominion Government Loan, 1920-21	$25,000,000 00	$ 1,500,000 00
" " " 1921-22	56,442,019 88	3,154,731 28
" " " 1922-23	3,118,322 72	91,031 33
	$84,560,342 60	$ 4,745,762 61

Summary—

Amount outstanding, December 31, 1922	$84,560,342 60
Interest accrued to December 31, 1922	4,745,762 61
	$89,306,105 21

GRAND TRUNK PACIFIC RAILWAY SYSTEM

STATEMENT of Securities Outstanding as at December 31, 1922, showing Securities Guaranteed by Dominion Government; Securities Guaranteed by Provincial Governments; Securities Guaranteed by Grand Trunk Railway Company of Canada; Unguaranteed Securities, Maturities of all issues and interest paid during the year.

	Date of Maturity	Total issue outstanding as at Dec. 31, 1922	Held by Public as at Dec. 31, 1922	Owned by G.T.R.	Owned by Dominion Government	Pledged as Collateral	Interest paid during year
GUARANTEED BY DOMINION GOVERNMENT.							
Grand Trunk Pacific Railway Co.—							
3% First mortgage bonds (Prairie)	Jan. 1, 1962	$ 11,908,000 00	$ 34,992,000 00		$ 33,048,000 00		$ 357,240 00 "A"
3% First mortgage bonds (Mountain)		56,132,000 00					
4% Sterling bonds	Jan. 1, 1962	15,940,800 00	8,440,848 00			7,499,952 00	337,633 92
		$ 83,980,800 00	$ 43,432,848 00		$ 33,048,000 00	$ 7,499,952 00	$ 694,873 92
GUARANTEED BY PROVINCE OF ALBERTA.							
Grand Trunk Pacific Branch Lines Co.—							
4% First Mortgage Alberta Lines Bonds	Feb. 15, 1942	1,153,764 00	1,153,764 00				46,150 56
4% " " "	Feb. 25, 1939	2,430,000 00	2,430,000 00				97,200 00
		$ 3,583,764 00	$ 3,583,764 00				$ 143,350 56
GUARANTEED BY PROVINCE OF SASKATCHEWAN.							
Grand Trunk Pacific Branch Lines Co.—							
4% First Mortgage Saskatchewan Lines Bonds	Jan. 22, 1939	11,309,706 00	9,874,062 00	$1,435,644 00			394,962 48 "B"
4½% Sterling Terminal Bonds	Dec. 18, 1943	1,881,792 00		1,881,79200			"B"
		$ 13,191,498 00	$ 9,874,062 00	$3,317,436 00			$ 394,962 48
GUARANTEED BY GRAND TRUNK RAILWAY COMPANY OF CANADA.							
Grand Trunk Pacific Railway Company –							
4% Prairie Section "A" Bonds	Apr. 1, 1955	10,206,000 00	10,206,000 00				408,240 00
4% Mountain Section "B" Bonds	Apr. 1, 1955	9,963,000 00	9,963,000 00				398,520 00
4% Lake Superior Branch Bonds	Apr. 1, 1955	7,533,000 00	7,533,000 00				301,320 00
"C" 4% Perpetual Debenture Stock	Perpetual	49,459,252 86	34,879,252 86			14,580,000 00	
4% Debentures	July 1, 1923	15,000,000 00				15,000,000 00	
4% Mortgage Bonds	July 1, 1919	10,000,000 00				10,000,000 00	
		$102,161,252 86	$ 62,581,252 86			$ 39,580,000 00	$1,108,080 00
UNGUARANTEED SECURITIES.							
Grand Trunk Pacific Terminal Elevator Co.—							
5% First Mortgage Sterling Bonds	Aug. 1, 1940	1,862,352 00		1,862,352 00			"B"
Total		$204,779,666 86	$119,471,926 86	$5,179,788 00	$33,048,000 00	$ 47,079,952 00	$2,341,266 96

"A" Exclusive of interest on $56,132,000.00, Mountain Section Bonds payable by Dominion Government.
"B" Exclusive of interest on Bonds owned by Grand Trunk Railway Company.
"C" Conditionally guaranteed. Interest not paid since March 1, 1919.

GRAND TRUNK PACIFIC RAILWAY SYSTEM

INTEREST on Loans and advances from Dominion Government to Grand Trunk Pacific Railway Co. and to the Receiver Grand Trunk Pacific Railway Co., charged for year ending December 31, 1922

Loan	Rate per cent	Amount outstanding	Interest charged and accrued for year ending Dec. 31, 1922
		$ cts.	$ cts.
O.C. Sept. 5, 26, Oct. 24, Nov. 20, 1914	6	6,000,000 00	360,000 00
G.T.P. Loan Act, 1909, Chap. 19, 1909—$10,000,000 transferred to G.T.R. legislation, 1921—Feb. 28, 22	4	.....	64,657 53
G.T.P. Loan Act, 1913	4	15,000,000 00	600,000 00
Appropriation Act, 1916	6	7,081,783 45	424,907 00
" " 1917	6	5,038,053 72	302,283 22
" " 1918	6	7,471,399 93	448,284 00
		40,591,237 10	2,200,131 75
Receivers certificates, as per statement of interest from Dominion Government, Jan. 1, 1923	.....	39,432,475 78	2,135,481 63
		80,023,712 88	4,335,613 38

CANADIAN NATIONAL RAILWAYS

Total Advances by Dominion Government to December 31st, 1922

——	Total	Construction and Betterments	Equipment	Repayment of Loans, including Equipment Trust Obligations	Operating Deficit	Fixed Charges
Canadian Northern Railway	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Total Advances to Dec. 31, 1921	251,088,248 88	76,318,790 29	37,362,781 00	32,225,080 16	16,748,874 00	88,432,723 43
Total Advances during year ended Dec. 31, 1922	49,826,881 29	13,251,014 30	719,046 85	19,254,893 33	4,344,418 27	12,257,508 54
Less Repayments	*2,115,538 45*			*2,115,538 45*		
Total Advances to Dec. 31, 1922	298,799,591 72	89,569,804 59	38,081,827 85	49,364,435 04	21,093,292 27	100,690,231 97

Total Accrued Interest on above Advances to Dec. 31, 1922—$51,333,156.66.

Grand Trunk Pacific Railway						
Total Advances to Dec. 31, 1921	90,724,394 52	38,520,687 42	6,417,729 83		21,433,043 02	24,352,934 25
Total Advances during year ended Dec. 31, 1922	9,813,640 23	2,991,397 24			4,552,021 98	2,270,231 01
Less Transfer to Grand Trunk Railway	*10,000,000,00*	*10,000,000 00*				
Total Advances to Dec. 31, 1922	90,538,034 75	31,512,074 66	6,417,729 83		25,985,065 00	26,623,165 26

Total Accrued Interest on above Advances to Dec. 31, 1922—$20,924,521 32.

Grand Trunk Railway System						
Total Advances to Dec. 31, 1921	73,702,154 42	612,322 46	7,246,495 98	31,370,661 71	18,514,130 87	15,958,543 40
Total Advances during year ended Dec. 31, 1922	10,858,188 18	3,142,680 96		2,487,778 44	3,272,385 22	1,955,343 56
Total Advances to Dec. 31, 1922	84,560,342 60	3,755,003 42	7,246,495 98	33,858,440 15	21,786,516 09	17,913,886 96

Total Accrued Interest on above Advances to Dec. 31, 1922—$7,967,405.29.

CANADIAN GOVERNMENT RAILWAYS

REPORT OF W. A. KINGSLAND, GENERAL MANAGER, FOR THE CALENDAR YEAR ENDED DECEMBER 31, 1922

CAPITAL ACCOUNT

Intercolonial Railway

The cost of road and equipment on December 31, 1921	$ 145,152,064 38
The expenditure during the year ended December 31, 1922	1,068,817 11
Making the total cost on December 31, 1922	$ 146,220,881 49

The gross earnings and working expenses for the year ended December 31, 1922, are as follows:—

Gross earnings	$ 25,358,308 60
Working expenses	27,332,813 63
Working expenses over gross earnings (deficit)	$ 1,974,505 03

REVENUE

The earnings per train mile compare as follows:—

Calendar year ended December 31, 1921	$ 3 62
Calendar year ended December 31, 1922	3 50

WORKING EXPENSES

The averages, compare with those of last year as follows:—

Per mile run by engine calendar year ended December 31, 1921	$ 3 25
" " during calendar year 1922	3 02
" train calendar year ended December 31, 1922	4 17
" " during calendar year 1922	3 76

The mileage of the railway for the calendar year 1922 was 1,670·38 miles, including Vale Railway (5·79 miles), New Brunswick and Prince Edward Island Railway (36·05 miles), and International Railway (105·74 miles).

Note.—Earnings and working expenses include operation of electric and steam unit car in passenger service on portion of Campbellton Division.

STORES

The value of general stores on the Canadian Government Railways, including St. John and Quebec Railway, carried over from the previous year was	$ 7,639,140 53
The value of stores purchased and charged from other departments was	22,488,889 40
Total of	$ 30,128,029 93
The value of stores used and sold	23,530,478 25
Balance of general stores on hand December 31, 1922	$ 6,597,551 68

Prince Edward Island Railway

The length of railway in operation at December 31, 1922, was 275·71 miles. The gauge is 3 feet, 6 inches. On 60·98 miles of railway there has been a third rail laid for standard gauge.

The cost of road and equipment to December 31, 1921	$ 12,836,122 56
The expenditure during year ended December 31, 1922	138,430 54
Making the total cost on December 31, 1922	$ 12,974,555 10
Gross earnings	$ 835,774 24
Working expenses	$ 1,480,713 43
Deficit	$ 644,939 19

New Brunswick and Prince Edward Island Railway

The length of railway in operation at December 31, 1922 was 36.05 miles.

The cost of road and equipment to December 31, 1921 was	$ 788,950 96
The expenditure during the year ended December 31, 1922 was	61,677 48
Making the total cost on December 31, 1922	$ 850,628 44

An amount of $3,540 was paid as interest.

This railway is included in the operation of the Intercolonial Railway.

International Railway of New Brunswick

The length of railway in operation at December 31, 1922 was 105·14 miles.

The cost of road and equipment to December 31, 1921 was	$ 2,936,064 29
The expenditure during the year ended December 31, 1922 was	26,843 75
Making the total cost on December 31, 1921	$ 2,962,908 04

This railway is included in the operation of the Intercolonial Railway.

National Transcontinental Railway

This line extends from Moncton to Winnipeg and is 1,997·88 miles in length, which included the Grand Trunk Pacific Branch line from Fort William to Superior Junction.

The cost of the National Transcontinental Railway to December 31, 1921, was	$ 168,409,018 58
Expenditure during the year ended December 31, 1922	681,102 97
Making the total cost on December 31, 1922	$ 169,090,121 55

The gross earnings and working expenses for the year ended December 31, 1922, compare as follows:—

Gross earnings	$ 14,139,136 86
Working expenses (including $600,000.00 rental Lake Superior Br.)	14,120,975 04
Surplus	$ 18,161 82

Moncton and Buctouche Railway

This railway extends from Moncton to Buctouche and is 29·93 miles in length.

The cost of road and equipment to December 31, 1921	$	256,011 10
Expenditure during the year ended December 31, 1922		36,881 49
Making the total cost on December 31, 1922	$	292,892 59

This railway is included in the operation of the Intercolonial Railway.

Salisbury and Albert Railway

This railway extends from Salisbury to Albert and is 44·77 miles in length.

The cost of road and equipment to December 31, 1921	$	494,925 71
Expenditure during the year ended December 31, 1922	$	13,183 28
Making the total cost on December 31, 1922	$	508,108 99

This railway is included in the operation of the Intercolonial Railway.

Elgin and Havelock Railway

This railway extends from Petitcodiac to Havelock and from Petitcodiac to Elgin and is 26·16 miles in length.

The cost of road and equipment to December 31, 1921	$	137,088 42
Expenditure during the year ended December 31, 1922		3,113 88
Making the total cost on December 31, 1922	$	140,202 30

This railway is included in the operation of the Intercolonial Railway.

St. Martins Railway

This railway extends from Hampton to St. Martins and is 28·75 miles in length.

The cost of road and equipment to December 31, 1921	$	289,285 36
The expenditure during the year ended December 31, 1922		10,409 23
Making the total cost on December 31, 1922	$	299,694 59

This railway is included in the operation of the Intercolonial Railway.

York and Carleton Railway

This railway extends from Cross Creek to Stanley and is 5·40 miles in length.

The cost of road and equipment to December 31, 1921	$	29,040 41
The expenditure during the year ended December 31, 1922		31,817 49
Making the total cost on December 31, 1922	$	60,857 90

This railway is included in the operation of the Intercolonial Railway.

Quebec and Saguenay Railway

This Railway extends from St. Joachim to Murray Bay and is 62·31 miles in length.

The cost of road and equipment to December 31, 1921	$ 7,741,954 17
The expenditure during the year ended December 31, 1922	14,348 39
Making the total cost on December 31, 1922	$ 7,756,302 56

This railway is included in the operation of the Intercolonial Railway.

Caraquet and Gulf Shore Railway

This railway extends from Gloucester Junction to Tracadie and from Pokemouche Junction to Shippegan and is 79·83 miles in length.

The cost of road and equipment to December 31, 1921	$ 512,952 84
The expenditure during the year ended December 31, 1922	192,671 98
Making the total cost on December 31, 1922	$ 705,624 82

This railway is included in the operation of the Intercolonial Railway.

Lotbinière and Megantic railway

This Railway extends from Lyster to Deschaillons and is 29·56 miles in length.

The cost of road and equipment to December 31, 1921	$ 343,588 77
The expenditure during the year ended December 31, 1922	10,247 39
Making the total cost on December 31, 1922	$ 353,836 16

This railway is included in the operation of the Intercolonial Railway.

Cape Breton Railway

This railway extends from Point Tupper to St. Peters and is 30·64 miles in length.

The cost of road and equipment to December 31, 1921	$ 103,026 76
The expenditure during the year ended December 31, 1922	3,280 20
Making the total cost on December 31, 1922	206,306 96

This railway is included in the operation of the Intercolonial Railway.

Hudson Bay Railway

This Railway extends from The Pas a distance of 238·17 miles of which 214·0 miles are under operation.

The cost of road and equipment to December 31, 1921	$14,345,583 37
The expenditure during the year ended December 31, 1922	8,578 39
Making the total cost on December 31, 1922	$14,354,161 76
Gross earnings	$ 32,625 66
Working expenses	57,577 09
Deficit	$ 24,951 43

Quebec Bridge

The cost of bridge to December 31, 1922 ..... $ 22,640,228 46

St. John and Quebec Railway

This railway extends from Centreville to Westfield Beach and is 157·84 miles in length, not including 13·96 miles running right Westfield Beach to St. John.

The gross earnings and working expenses for the year ended December 31, 1922, compare as follows:—

Gross earnings	$ 279,070 92
Working expenses	444,588 48
Deficit	$ 165,517 56
In addition to above amount 40 per cent of gross earnings charged to rental was	118,906 54
Total deficit	$ 284,424 10

Canadian Government Railways

Statement showing miscellaneous rolling stock charged against rolling stock vote for the calendar year ended December 31, 1922

Locomotives			$ 115,198 52
Freight cars—			
Draft arms and safety appliances to freight cars	48,246 81		
Convertions	15,955 44		
		64,202 28	
Passenger—			
Postal cars equipped with steel underframes	9,407 13		
Dining car converted to Cafe Coach	4,921 02		
Converted to parlor buffet	500 00		
Prince Edward Island chair car (converted)	822 48		
Baggage (converted)	8,323 18		
Sleeping car converted to combination car	1,818 28		
		$ 25,792 09	
Appliances	7,412 76		
Convertions	840 64		
		8,253 40	
Miscellaneous		1,050 98	
		$ 214,497 24	

Fatal Accidents

The number of fatal accidents on the Canadian Government Railways amounted to fifty-two of which twenty-three were employees, one passenger and twenty eight others, the Railway being exonerated in forty-nine cases.

CANADIAN GOVERNMENT RAILWAYS

Telegraph Report

Statement showing miles of Railway operated by the Canadian Governments Railways, by Telegraph, by Telephone and by both during the year ending December 31, 1922.

Railways	Telegraph	Telephone	Telegraph and Telephone	Pole Mileage	Wire Mileage
National Transcontinental	1,295·42	688·40	6·50	1,989,32	7,113·40
Intercolonial	553·42	790·00	.....	212·35	5,715·12
Prince Edward Island	229·08	47·70	.....	57·55	103·96
Intercolonial Railway of New Brunswick	.....	.....	105·73	105·73	211·46
Salisbury and Albert	44·77	.....	.....	44·77	44·77
St. John and Quebec	.....	157·86	.....	157·86	315·72
Moncton–Buctouche	.....	.....	.....	.....	.....
Elgin and Havelock	.....	.....	.....	.....	.....
York and Carleton	.....	.....	.....	.....	.....
Cape Breton	.....	31·00	.....	31·00	31·00
Lotbinière and Megantic	.....	30·00	.....	30·00	30·00
Quebec and Saguenay	.....	.....	67·40	.....	249·00
Caraquet and Gulf Shore	.....	.....	73·16	12·00	73·16
Canada Eastern	109·75	.....	.....	.....	109·75
Hudson Bay Railway	332·00	.....	.....	332·00	664·00
Dartmouth and Deans	.....	66·16	.....	66·16	66·16

CANADIAN GOVERNMENT RAILWAYS

STATEMENT SHOWING EARNINGS, EXPENDITURES AND DEFICIT YEAR ENDING DECEMBER 31, 1922

Operating Expenses—		
Maintenance of way and structure	$ 9,540,307 53	
Maintenance of equipment	10,035,521 69	
Traffic expenses	866,025 96	
Transportation – Rail line	21,348,560 71	
Miscellaneous operations	674,482 84	
General expenses	971,768 94	
		$43,436,667 67
Operating Revenue—		
Freight	$29,779,416 97	
Passenger	7,001,911 14	
Mails and express	2,164,128 45	
Miscellaneous	1,042,290 17	
Incidental	900,358 56	
Joint facility	51,840 47	
		$40,939,945 76
Net operating deficit	$ 2,496,721 91	
Railway tax accruals	23,426 91	
Uncollectible railway revenues	6,317 11	
Total operating deficit		$ 2,526,465 93
Non Operating Income—		
Hire of freight cars credit balance	$ 231,250 36	
Rent from locomotives	282,356 88	
Rent from work equipment	91 64	
Joint facility rent income	194,806 15	
Income from lease of road	22,500 00	
Miscellaneous rent income	74,132 87	
Income from unfunded securities and accounts	109,748 08	
Miscellaneous income	159,662 76	
		$ 1,074,548 74
Gross deficit		$ 1,451,917 19
Deductions from Gross Income—		
Rent for locomotives	$ 133,711 08	
Rent for passenger cars	204,600 24	
Rent for work equipment	376 80	
Joint facility rents	383,866 74	
Rent for leased roads	720,106 54	
Miscellaneous rents	762 50	
Interest on unfunded debt	12,900 00	
Miscellaneous income charges	2,416 84	
		$ 1,458,740 74
Net deficit		$ 2,910,657 93

CANADIAN GOVERNMENT RAILWAYS

CAPITAL ACCOUNT, YEAR ENDING DECEMBER 31, 1922

Intercolonial Railway—		
To cost of Intercolonial Railway to December 31, 1921	$ 145,152,064 38	
Construction and betterments	1,068,817 11	
		$ 146,220,881 49
Prince Edward Island Railway—		
To cost of Prince Edward Island Railway to December 31, 1921	$ 12,836,122 56	
Construction and betterments	138,430 54	
		12,974,553 10
New Brunswick and Prince Edward Island Railway—		
To cost of New Brunswick and Prince Edward Island Railway to December 31, 1921	$ 788,950 96	
Construction and betterments	61,677 48	
		850,628 44
Intercolonial Railway—		
To cost of railway to December 31, 1921	$ 2,936,064 29	
Construction and betterments	26,843 75	
		2,962,908 04
National Transcontinental Railway—		
To cost of railway to December 31, 1921	$ 168,409,018 58	
Construction and betterments	681,102 47	
		169,090,121 55

Moncton and Buctouche Railway—			
To cost of railway to December 31, 1921		256,011 10	
Construction and betterments		36,881 49	
			292,892 59
Salisbury and Albert Railway—			
To cost of railway to December 31, 1921	$	494,925 71	
Construction and betterments		13,183 28	
			508,108 99
St. Martins Railway—			
To cost of railway to December 31, 1921	$	289,285 36	
Construction and betterments		10,409 23	
			299,694 59
Elgin and Havelock Railway—			
To cost of railway to December 31, 1921	$	137,088 42	
Construction and betterments		3,113 88	
			140,202 30
York and Carlton Railway—			
To cost of railway to December 31, 1921	$	29,040 41	
Construction and betterments		32,840 00	
	$	61,880 41	
Less interest deducted		1,022 51	
			60,857 90
Quebec and Saguenay Railway—			
To cost of railway to December 31, 1921	$	7,741,954 17	
Construction and betterments		14,348 39	
			7,756,302 56
Caraquet and Gulf Shore Railway—			
To cost of railway to December 31, 1921	$	512,952 84	
Construction and betterments		142,671 98	
Account of purchase price		50,000 00	
			705,624 82
Lotbiniere and Megantic Railway—		R	
To cost of railway to December 31, 1921	$	343,588 77	
Construction and betterments		10,247 39	
			353,836 16
Cape Breton Railway—			
To cost of railway to December 31, 1921	$	103,026 76	
Construction and betterments		3,280 20	
			106,306 96
Hudson Bay Railway—			
To cost of railway to December 31, 1921	$	14,345,583 37	
Construction and betterments		8,578 39	
			14,354,161 76
Quebec Bridge—			
To cost of bridge to December 31, 1921			22,640,228 46
Canadian Government Railways—			
Cost of rolling stock to December 31, 1921	$	39,725,382 24	
Expenditure		214,497 24	
	$	39,939,879 48	
Less—			
Locomotives sold $ 2,000 00			
Converting five hospital cars 44,982 15			
Equipment destroyed and retired 332,415 77			
Locomotives sold Grand Trunk Railway 3,759,471 91			
		4,138,869 83	
			35,801,009 65
Capital suspense—Vale Railway	$	49,234 31	
Capital suspense—Branch line aid		36,485 95	
Capital suspense—miscellaneous		59,479 00	
Branch lines purchased—balance of purchase account—			
Moncton and Buctoche Railway $ 70,000 00			
New Brunswick and Prince Edward Island Railway. 63,413 77			
		133,418 77	
	$	278,618 03	
DEDUCT—			
Capital account—Moncton and Buctouche Railway. $ 5,713 40			
Capital account—Overseas rails 604,921 68			
		610,635 08	
			332,017 05 Cr.
			$ 414,786,302 31

CANADIAN GOVERNMENT RAILWAYS

Summary of Revenue and Expenses Year Ending December 31, 1922

——	Revenue	Expenses	Deficit	Surplus
	$ cts.	$ cts.	$ cts.	$ cts.
Intercolonial Railway, including branch lines	25,358,308 60	27,332,813 63	1,974,505 03	.....
Prince Edward Island Railway	835,774 24	1,480,713 43	644,939 19	.....
Transcontinental Railway, Eastern Lines	5,688,919 14	6,603,184 66	914,265 52	.....
Transcontinental Railway, Western Lines	8,450,217 72	7,517,790 38	.....	932,427 34
Hudson Bay Railway	32,625 66	57,577 09	24,951 43	.....
St. John and Quebec Railway	160,164 38	444,588 48	284,424 10	.....
	40,526,009 74	43,436,667 67	3,843,085 27	932,427 34

CANADIAN GOVERNMENT RAILWAYS

Renevue Account, Year Ended December 31, 1922

Working Expenses	$ cts.
Maintenance of way and structures	9,540,307 53
Maintenance of equipment	10,035,521 69
Traffic expenses	866,025 96
Transportation rail line	21,348,560 71
Miscellaneous operations	674,482 84
General expenses	971,768 94
	43,436,667 67

Earnings		$ cts.
Freight traffic		30,065,826 59
Passenger traffic		8,343,624 40
Mails, express and miscellaneous		2,661,654 53
		41,071,105 52
Less:—		
Rentals	$ 720,106 54	
Hire of equipment —credit	175,010 76	
		545,095 78
		40,526,009 74
Balance		2,910,657 93
		43,436,667 67

CANADIAN GOVERNMENT RAILWAYS

General Balance Year Ended December 31, 1922

ASSET

Investments

Investment in road and equipment	$ 414,786,302 31
Miscellaneous physical property	97,798 15
Other investments	21,812 01
	$ 414,905,912 47

Current Assets

Cash	$ 3,027,363 30
Traffic car service balances receivable	1,108,852 25
Net balance receivable from agents and conductors	513,659 98
Miscellaneous accounts receivable	10,366,260 52
Material and supplies	6,582,367 42
Interest and dividends receivable	48,509 47
Rents receivable	56,986 06
	$ 21,703,999 00

Deferred Assets

Working fund advances	$ 10,603 56
Other deferred assets	475,761 49
	$ 486,365 06

Unadjusted Debits

Other unadjusted debits	$ 532,338 63

Profits and Loss

Balance December 31, 1921	$ 6,326,800 47	
Twelve months ended December 31, 1922	5,695,669 05	
		$ 12,022,469 52
Total asset side		$ 449,651,084 67

LIABILITY

Long Term Debts

Non-negotiable debt to affiliated companies	$ 442,062,571 45
Branch lines purchase accounts	132,828 77
	$ 442,195,400 22

Current Liabilities

Audited accounts and wages payable	$ 2,924,622 78	
Miscellaneous accounts payable	1,634,072 19	
Unmatured rents accrued	79,389 59	
Other current liabilities	35,713 45	
		$ 4,673,798 01

Deferred Liabilities

Liability for Provident Funds	$ 475,761 49

Unadjusted Credits

Operating reserves	$ 1,248,063 84
Other unadjusted credits	1,058,061 11
	$ 2,306,124 95

Total liability side	$ 449,651,084 67

CANADIAN GOVERNMENT RAILWAYS

General Stores Account, Year Ended December 31, 1922

Debit

To balance December 31, 1921		$ 7,628,014 85
Purchases during twelve months ending December 31, 1922	$17,910,729 61	
Charges from other departments	3,946,483 04	
Labour	385,638 30	
Staff pay-rolls	236,716 73	
		22,479,567 68
		$30,107,582 53

Credit

By issue during twelve months ending December 31, 1922	$19,354,812 02	
Sales of material, fuel, etc	3,690,996 72	
Sales old material	479,406 37	
		23,525,215 11
Balance ordinary store, including fuel	4,996,139 46	
Roadway and bridge material	1,586,227 96	
		6,582,367 42
		$30,107,582 53

CANADIAN GOVERNMENT RAILWAYS

STATEMENT OF CASH RECEIVED, YEAR ENDED DECEMBER 31, 1922

DEBIT		CREDIT	
Amounts received during year ended December 31, 1922, and credited as follows:—		By amounts deposited in Bank of Montreal, Moncton, during year ended December 31	$50,931,464 00
Station agents	$25,721,908 20	Balance on hand	98,718 77
Traffic ledger	9,198,577 96		
Car service ledger	585,911 46		
Individuals and companies ledger	6,986,638 04		
Rents ledger	106,631 34		
Silding rental ledger	38,683 02		
General ledger	8,391,832 75		
	$51,030,182 77		$51,030,182 77

CANADIAN GOVERNMENT RAILWAYS

RAIL RENEWAL ACCOUNT, YEAR ENDED DECEMBER 31, 1922

On January 1, 1922, there was a balance to the credit of the rail renewal account of	$ 52,411 38
Nothing has been charged during the year against the above amount.	
Leaving a balance to the credit of the rail renewal account on December 31, 1922	$ 52,411 38

FIRE RENEWAL ACCOUNT, YEAR ENDING DECEMBER 31, 1922

On January 1, 1922, there was a balance to the credit of the fire renewal account of	$ 67,962 41
There has been charged during the year against the above amount	37,697 47
Leaving a credit balance to the credit of the fire renewal account on December 31, 1922	$ 30,264 94

EQUIPMENT RENEWAL ACCOUNT, YEAR ENDED DECEMBER 31, 1922

	DR.	CR.
There was a credit balance at January 1, 1922, to the credit of equipment renewal account of		$ 1,147,307 54
Cash received from sale of old rolling stock and machinery during the year		83,720 18
		$ 1,231,027 72
There has been charged during the year against the above account and credited to investment account for equipment retired in 1922	65,640 20	
Leaving a credit balance to the credit of equipment renewal account on December 31, 1922, of		$ 1,165,387 52

NATIONAL TRANSCONTINENTAL RAILWAY

RENTAL ACCOUNT, YEAR ENDED DECEMBER 31, 1922

DEBIT			CREDIT	
1922 Dec. 31.	To amount paid Grand Trunk Pacific Railway for rental Lake Superior Branch from January 1 to December 31, at $50,000 per month	$ 600,000 00	1922 Dec. 31. By income account	$ 600,000 00
		$ 600,000 00		$ 600,000 00

VALE RAILWAY

Rental Account, Year Ended December 31, 1922

1922	Debit		1922	Credit	
Dec. 31.	To amount paid Acadia Coal Co. for one year's rental of Vale Railway to April 30, 1922.....	$ 1,200 00	Dec. 31.	By income account.....	$ 1,200 00
		$ 1,200 00			$ 1,200 00

ST. JOHN AND QUEBEC RAILWAY

Rental Account, Year Ended December 31, 1922

1922	Debit		1922	Credit	
Dec. 31.	To amount paid St. John and Quebec Ry. Co. for rental one year ending December 31, 1922, based on 40 p.c. gross earnings.....	$ 118,906 57	Dec. 31.	By income account.....	$ 118,906 57
		$ 118,906 57			$ 118,906 57

CANADIAN GOVERNMENT RAILWAYS

Statement of Average, Year Ending December 31, 1922

	Intercolonial Railway	Prince Edward Island Railway	National Transconti-nental Railway	Hudson Bay Railway	St John Quebec Railway	Canadian Government Railways
Mileage of railway	2,011·35	275·99	2,008·45	214·00	172·07	4,681·86
Total engine mileage	9,022,177	445,174	4,090,238	12,298	151,142	13,720·129
Total train mileage	7,253,259	339,245	3,492,412	10,382	140,203	11,235·501
Total car mileage	130,956,570	2,654,441	113,887,003	97,630	1,037,808	248,633·442
Earnings—						
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Transportation—rail	24,697,144 27	835,774 24	14,139,136 86	31,102 42	160,164 38	39,863,322·17
"	.....	.....	.....	.....	.....	.....
Incidentals	661,164 33	.....	.....	1,523 24	.....	622,687·57
Total	25,358,308 60	835,774 24	14,139,136 86	32,625 66	160,164 38	40,526,009·74
Operating Expenses—						
Rail	27,332,813 63	1,480,713 43	14,120,975 04	57,577 09	444,588 48	43,436,667·87
Water	.....	.....	.....	.....	.....	.....
Total	27,332,813 63	1,480,713 43	14,120,975 04	57,577 09	444,588 48	43,436,667·87
Ratio of Earnings to Gross Earnings—	per cent	per cent	per cent	per cent	per cent	per cent
Earnings from transportation—rail	97·39	100·00	100·00	95·33	100·00	98·36
" " water	.....	.....	.....	.....	.....	.....
" incidentals	2·61	.....	.....	4·67	.....	1·64
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Earnings per mile of railway	12,607 61	3,028 28	7,039 83	152 46	930 81	8,655·96
" engine mile	2 81	1 88	3 46	2 63	1 07	2·95
" train mile	3 50	2 46	4 05	3 14	1 14	3·61
" car mile	19 36	31 49	12 42	33 42	15 43	16·50
Ratio of expenses to gross earnings—	per cent	per cent	per cent	per cent	per cent	per cent
Rail	107·79	177·16	99·87	176·48	277·58	107·18
Water	.....	.....	.....	.....	.....	.....
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Expenses per train mile	3 77	4 36	4 04	5 55	3 17	3·87
Expenses per mile railway	13,589 29	5,365 10	7,030 78	269 05	2,583 77	9,277·65
Repairs of locomotives	2,122,605 28	71,000 59	1,209,945 31	693 46	29,659 26	3,433,912·90
Repairs of freight cars	1,895,797 53	28,268 69	1,679,326 01	17 43	8,756 49	3,612,166·15
Repairs of passenger cars	1,134,925 14	48,645 05	462,256 34	.....	12,471 44	1,658,297·97
Cost of repairs per locomotive	6,360 11	2,730 79	6,993 95	693 46	4,237 04	5,694·71
Cost of repairs per freight car	158 46	83 64	146 10	.....	43 78	150·53
Cost of repairs per passenger car	2,288 15	1,081 00	3,349 68	.....	2,078 57	2,420·87

CANADIAN GOVERNMENT RAILWAYS

SUMMARY of the Passenger and Freight Traffic on the Canadian Government Railways and the St. John and Quebec Railway Year ending December 31, 1922.

	Intercolonial Railway and Branch Lines	Prince Edward Island Railway	Transcontinental Railway	Hudson Bay Railway	St. John and Quebec Railway	Grand Total
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Freight traffic	16,958,197 35	541,748 29	12,047,763 16	24,158 98	207,549 19	29,779,416 97
Passenger traffic	4,880,923 37	214,309 58	1,825,564 91	5,616 98	75,486 30	7,001,911 14
Mails and express	1,834,036 14	71,438 25	246,123 44	1,326 46	11,204 16	2,164,128 45
Miscellaneous	695,779 08	3,991 16	342,009 14	.....	510 79	1,042,290 17
Incidental	661,164 33	14,637 49	221,274 13	1,523 24	1,759 37	900,358 56
Joint facility No. 151	.....	.....	51,840 47	.....	.....	51,840 47
Total	25,030,110 27	846,124 77	14,734,575 25	32,625 66	296,509 81	40,939,945 76
Hire of equipment	143,968 60	*15,345 49*	64,557 28	.....	*18,169 63*	175,010 76
Income account	185,429 73	4,994 96	*59,995 67*	.....	730 74	131,159 76
Rental leased lines	*1,200 00*	.....	*600,000 00*	.....	*118,906 54*	*720,106 54*
Total	25,358,308 60	835,774 24	14,139,136 86	32,625 66	160,164 38	40,526,009 74
Passenger Statement—						
Local traffic—						
Number of passengers	4,133,803	295,030	1,402,889	2,002	72,698	5,843,521
Mileage	147,440,665	7,402,468	37,846,160	106,365	2,463,649	195,259,307
Through traffic—						
Number of passengers	261,071	24,474	146,382	.....	370	406,024
Mileage	56,913,320	1,124,769	39,698,813	.....	22,918	97,759,818
Total number passengers	4,394,874	319,504	1,549,471	2,002	73,068	6,249,545
Total mileage	204,353,985	8,527,237	77,544,973	106,365	2,486,565	293,019,125
Freight Statement Local Traffic—						
Tons	2,274,124	65,866	452,703	2,177	40,209	2,814,027
Mileage	.....	.....	.....	.....	.....	.....
Through traffic—						
Tons	3,162,085	145,673	4,578,209	.....	72,386	6,853,393
Mileage	.....	.....	.....	.....	.....	.....
Total	5,436,209	211,539	5,030,912	2,177	112,596	9,667,420
Total mileage	1,628,131,087	10,185,190	1,713,150,898	1,293,033	8,040,747	3,360,800,955

NOTE.—Less interline passenger and freight traffic. Italics denote debit items.

CANADIAN GOVERNMENT RAILWAYS

General statement of work done in the Canadian Government Railway Shops, January 1: 1922, to December 31, 1922

Locomotive Department

Locomotives rebuilt	29
" repaired	594
" converted to superheater	36
" equipped with latest type headlight	19
" equipped with power reverse gear	7
" equipped with brick arch tubes	95
" equipped with coal pushers	11
" equipped with 8½" cross compound pump	5
" equipped with coal boxes	28
" equipped with air fire doors	16
" equipped with automatic driving box wedges	3
" equipped with power grate shakers	6
" equipped with Okadee front end hinges	15
" equipped with handrails	181
" and tenders painted	46
" boilers tested	13
" fire boxes patched	8
Tender tanks, largely rebuilt	5
Tender frames, largely rebuilt	

Repairs to Work Equipment

Ditchers	6
Steam shovels	14
Ledgerwood unloaders	17
Spreaders	3
Pile drivers	8
Rail loaders	3
Ballast plough	9
Yard—coal and wreck cranes	29
Jordan spreaders	12
Snow plough	1

Car Department

Built	Nil
Purchased	Nil

Cars Remodelled

Business to passenger and baggage	1
Baggage to postal	1
Dining to cafe coach	1
Sleeper to observation	1
Flat to coal	83
Auxiliary to coal	1
Box to pulp	48
Box to boarding	69
Box to work	1
Box to cinder	1
Box to tool car	1
Boarding to pulp	1
Boarding to box	3
Flat to auxiliary	2
Flat to gas transport	1
Work to flat	6
Pulp to boarding	3
Pulp to box	1
Tank to fire fighting	2
Stock equipped for poultry shipments	

Cars Repaired

Passenger cars—Heavy	288
Passenger cars—Light	321
Freight and work cars	13,186
Cars equipped with steel draft arms	830
" " " Winslow roofs	49
" " " Hutchins steel roofs	335
Passenger cars equipped with steel underframes—passenger	7
Cars equipped with Economy draft arms	491
" " " Universal draft arms	26

NEW MACHINERY INSTALLED IN SHOPS

Moncton	1 Spring punch, shear and nibber combined. 1 Spring stripping machine. 1 Emery grinding machine. 1 Lead and oil bath furnace. 1 Automatic screwing machine. 1 E.T. equipment test rack. 2 80-ton electric travelling cranes.
	The following machines were made up:—
	4 50-ton hydraulic presses. 1 Pony brake testing machine. 1 Tie plug machine. 1 Air brake testing machine. 1 Job crane complete.
St. Malo	1 No. 2 Brown and Sharp miller. 1 No. 2 Brown and Sharp surface grinder. 1 600-ton Southwark wheel press. 1 Centering machine. 1 Hanna pneumatic punch. 1 36-inch band saw. 1 Combined punch and shear. 1 Power hack saw. 1 Bolt painting machine.
Transcona	1 Turret lathe. 1 Automatic truing machine. 4 Gap squaring and slotting machine. 20 Charging trucks for foundry use. 1 Boring mill. 1 Jack and steel car frame straightened. 1 Upright spreader drill. 1 Coil winding equipment. 1 Acetylene gas generator. 1 Air cooling plant. 3 Berwick electric rivet heating furnace. 1 Tender drop pit jack. 1 Wood chopping hog. 1 Standard cylinder boring bar. 1 Arch welding generator. 2 35-ton Simplex geared jacks. 1 Electric treating and annealing furnace.

CANADIAN NATIONAL RAILWAYS

Canadian Government Railway—Eastern and Western Lines

Statement showing the number of Locomotives and the Various Classes of Other Rolling Stock on the Lines, December 31, 1921, and December 31, 1922.

—	Locomotives	Passenger Cars														Freight Cars														
		Sleeping	Parlor	Dining	Colonist	1st Class	2nd Class	Postal	Baggage	Hospital	Vision Test	Box Baggage	A. B. Inspection	Steam Motor	Total Passenger Cars	Box	Refrigerator	Platform	Oil Tank	Pitch Tank	Hopper	Gondola	20-ton Coal	Hart Otis	Stock	Hart Convertible	Pulpwood	Pit Cars	Eastman Heaters	Caboose	Total Freight Cars
On hand serviceable and repairing, December 31, 1921	754	77	30	21	62	175	107	41	122	2	1	25	1	0	667	16,140	376	2,261	60	20	102	302	6	923	1,228	1,114	1,101	4	198	382	24,217
To be replaced, December 31, 1921	14	2	..	..	.	2	6	2	7	..	..	1	...	1	21	294	29	1,513	2		651	335	368	1	35	13	37	...	2	32	3,310
Total equipment, December 31, 1921	768	79	30	21	62	177	113	46	129	2	1	26	1	1	688	16,434	405	3,774	62	20	753	637	924	921	1,261	1,127	1,138	4	200	414	27,527
Converted on capital Flat to coal 83, auxiliary to coal 1, stock to poultry 2, business to passenger and baggage 1, dining to cafe coach 1, baggage to postal 1, sleeper to observation 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Converted on maintenance—Box to pulp 48, to boarding 69, to work 1, to cinder 1, to tool car 1; boarding to pulp 1, to box 3; flat to auxiliary 2, to cars transport 1, work to flat 1, pulp to boarding 6, to box 3, tank to fire fighting 1, locomotives sold Grand Trunk Railway	...	1	....	1	....	..	..	1	1	..	.	.	.	.	4	6	.....	1	1	....	....	84	....	....	.....	.....	49	..	....	....	141
	78	*1*	....	*1*	..	...	.....	..	*1*	..	...	...	...	...	*3*	*120*	.....	*86*	*1*	....	...	...	...	...	.....	.....	*9*	....	..	...	*116*
Total equipment December 31, 1922	690	79	30	21	62	177	113	47	129	2	1	26	1	1	689	16,320	405	3,689	62	20	753	721	371	921	1,261	1,127	1,178	4	200	414	27,552
To be replaced December 31, 1921, as above	14	2	..	.	..	2	6	2	7	..	.	1	....	1	21	291	29	1,513	2	...	651	335	368	1	33	13	37	...	2	32	3,310
Condemned year ending December 31, 1922	7	....	1	1	.	1	1	..	1	..	.	1	...	.	6	69	10	90	....	....	12	19	...	...	7	6	18	....	2	13	246
Total condemned and destroyed to December 31, 1922	21	2	1	1	..	3	7	2	8	..	..	2	...	1	27	363	39	1,603	2	....	663	354	368	1	40	19	55	....	4	45	3,556
Add serviceable and repairing	679	77	29	20	62	174	106	45	121	2	1	26	1	1	662	15,957	366	2,086	60	20	90	367	6	923	1,221	1,108	1,123	4	196	369	23,996
Total equipment, December 31, 1922	690	79	30	21	62	177	113	47	129	2	1	26	1	1	689	16,320	405	3,689	62	20	735	721	371	924	1,261	1,127	1,176	4	200	414	27,552

Note.—Italics indicate deductions.

CANADIAN NATIONAL RAILWAYS

Canadian Government Railways—Eastern and Western Lines

Statement showing Number of Locomotives and the Various Classes of Other Rolling Stock on the Lines, December 31, 1921 and December 31, 1922

| | Work Cars | | |

PRINCE EDWARD ISLAND RAILWAY

STATEMENT SHOWING THE NUMBER OF LOCOMOTIVES AND THE VARIOUS CLASSES OF OTHER ROLLING STOCK ON THE LINE ON DECEMBER 31ST, 1921, AND DECEMBER 31ST, 1922

	Passenger Cars								Freight Cars							Work Cars				
	Locomotives	First Class Passenger	Second Class Passenger	Combination Second & Baggage	Postal and Smoking	Combination Postal & Baggage	Baggage	Total Passenger Cars	Box Cars	Refrigerator Cars	Stock Cars	Oil Tank Cars	Flat Cars	Coal Cars	Platform	Caboose	Total Freight Cars	Dump Cars	Snow Plows	Steam Shovels	Total Work Cars	Total
On hand serviceable and repairing December 31, 1921	21	19	10	[illegible]	[illegible]	3	6	45	335	2	28	1	15	8	202	3	597	15	11	1	27	624
To be repaired December 31, 1921	14	5	4	[illegible]	[illegible]	1	2	16	3	1	...	...	...	4	5	1	16	...	2	...	2	18
Total equipment December 31, 1921	35	24	14	7	4	4	8	61	338	3	28	1	15	12	207	4	613	15	13	1	29	642
Condemned year ending December 31, 1921	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
To be replaced as above	14	5	4	[illegible]	[illegible]	1	2	16	[illegible]	1	...	...	...	4	5	1	16	...	2	...	2	18
Add serviceable and repairing	21	19	10	5	[illegible]	3	6	45	338	2	28	1	15	8	202	3	597	15	11	1	27	624
Total equipment, December 31, 1922	35	24	14	7	4	4	8	61	343	3	28	1	15	12	207	4	613	15	13	1	29	642

CANADIAN GOVERNMENT RAILWAYS

Annual Report of the Chief Engineer for the Year Ended December 31, 1922

ROADBED AND TRACK

The operated mileage of Canadian Government Railways on December 31, 1922 was as follows:—

	Main Line	Second Main Line	Passing Tracks	Other Sidings and Spurs	Total
Eastern Lines	3,802·45	68·72	305·04	774·82	4,921·03
Western Lines	390·25	4·80	34·65	91·25	520·95
Leased Lines	203·07		22·72	53·78	279·57
Joint Sections					
Running Right	57·35	38·35			95·70
Totals	4,453·12	111·87	362·41	889·85	5,817·25

LINE CHANGES AND NEW LINES PUT INTO OPERATION

At Moncton the additions to and rearrangements of the yard were continued, and the cutoff between St. John and Harcourt Subdivisions, built last year, was put in operation during the month of December as Main Line track eliminating the portion of the old Main Line of Harcourt Subdivision between Moncton and Franklin Junction. By these changes Harcourt Sub-division has been reduced by 3·92 miles Main Line and 3·03 miles Second Main Line while 3·45 miles of Main Line have been added, thus making a net reduction of 3·50 miles Main Line in this subdivision. On the St. John Subdivision there was an addition of 1·31 miles Second Main Line and a reduction of 0·03 miles Main Line, making a net addition of 1·28 miles of Main Line in this Subdivision.

TABLE OF MILEAGE

Division	Main Line	Second Main Line	Passing Sidings	Other Sidings and Spurs
HALIFAX DIVISION				
Bedford Subdivision	64·00	15·93	6·96	54·42
Deepwater Branch				32·89
Willow Park Branch				10·23
Dartmouth Subdivision	81·87		2·34	13·16
Mulgrave "	1·82			
Springhill "	1·70	1·70		
Totals for division	149·39	17·63	9·30	115·70
NEW GLASGOW DIVISION				
Mulgrave Subdivision	120·61	1·90	12·29	21·43
Sydney "	101·85		9·44	31·95
Oxford "	79·40		4·11	10·88
Scotia "	8·24			7·91
Pugwash "	4·55		0·18	2·56
Sunny Brae "	12·48			0·76
Pictou "	1·92		0·17	3·69
St. Peters "	30·64			2·13
Vale Railway (leased line)	5·79			2·65
Total for division	365·49	1·90	26·19	83·96
ISLAND DIVISION				
Charlottetown Subdivision	115·26		2·58	14·51
Alberton "	0·30			2·08
Borden "	12·58			5·79
Souris "	54·98		0·27	5·56
Georgetown "	24·10			2·00
Murray Harbour "	47·70		0·14	2·78
Vernon "	4·43			0·36
Montague "	6·36			0·48
Elmira "	9·89			0·93
Total for division	275·60		2·99	34·49
MONCTON DIVISION				
Springhill Subdivision	123·03	22·65	22·06	53·64
" (Moncton Shop Yard)				19·44
" (Moncton N.T.R. Yard)				13·55
Sackville Subdivision	36·05		1·59	5·37
St.John "	89·31	4·30	9·80	46·43
Pt. du Chene "	11·98		1·04	2·96
Buctouche "	29·93		0·15	1·66
Albert "	44·77		0·66	3·82
Elgin and Havelock Subdivision	26·16		0·22	0·93
St. Martins Subdivision	28·75		0·11	1·28
Total for division	389·98	26·95	35·62	149·08
CAMPBELLTON DIVISION				
Harcourt Subdivision	71·29		6·93	8·61
" (N.T.R.)	7·29		0·66	0·18
Loggieville Subdivision	13·77		0·56	6·63
Bathurst "	106·99		14·13	22·62
Caraquet "	72·98		0·91	6·69
Shippigan "	6·85			1·12
Dalhousie "	6·66			2·16
Matapedia "	105·38		10·10	23·03
Leonard "	105·14		2·65	4·18
Van Buren Bridge and Railway Co. (Leased Line)	0·62			
Total for division	496·97		35·94	75·22

TRACK MILEAGE—*Concluded*

Division	Main Line	Second Main Line	Passing Sidings	Other Sidings and Spurs
EDMUNDSTON DIVISION				
Chipman Subdivision	106·67		10·78	8·89
Grand Falls "	112·91		12·35	16·90
Glendyne "	123·05		11·98	8·00
Nashwaak "	110·47		3·93	10·11
Stanley "	5·40			0·79
Centreville "	157·84		5·87	6·64
" (Westfield Beach) to St. John, running rights on C.P.R.)	13·96			
Total for division	630·30		44·91	51·33
LEVIS DIVISION				
Glendyne Subdivision	0·91			
Armagh "	101·01		10·65	13·76
Bridge "	11·25	1·77	1·58	15·53
Bridge Joint Section with C.P.R. Cadorna to Quebec	2·96			
Marine Spur				6·70
Rimouski Subdivision	83·44		9·95	20·47
Montmagny "	114·80		15·63	22·19
Drummondville Subdivision	123·03	17·63	18·44	30·22
Joint Section with G.T.R. Ste. Rosalie Jct. to Montreal and Pte. Levis to Chaudiere	39·90	38·35		
Diamond Subdivision	16·73	2·84	1·60	19·09
Nicolet "	14·70			3·30
Deschaillons "	29·56			3·1
Riv. Ouelle "	6·48			0·4
Total for division	544·77	60·59	57·85	4·81
ST. MAURICE DIVISION				
La Tuque Subdivision	124·04		12·78	16·23
Manouan "	118·78		9·50	8·14
Oskalanea "	102·54		7·95	8·60
Amos "	107·09		9·71	9·86
Makamik "	1·12			
Total for division	453·57		39·94	42·83
COCHRANE DIVISION				
Makamik Subdivision	111·47		11·56	15·69
Kapuskasing "	129.08		13·85	27·77
Pagwa "	125·11		12·75	8·68
Kowkash "	131·23		12·02	6·84
Bucke "	0·70			
Total for division	497·59		50·18	58·98
SAGUENAY DIVISION				
Murray Bay Subdivision	62·10		2·12	1·07
Leased from Q.R.L. and P. Co.	5·30		0·15	
Total for division	67·40		2·27	1·07
FORT WILLIAM DIVISION				
Bucke Subdivision	138·37		9·95	1·66
Quibell "	123·21		11·54	21·52
Minaki "	128·67	4·80	13·16	68·07
Graham (leased line)	191·36		22·57	51·13
" (Joint Section)	0·53			
Total for division	582·14	4·80	57·22	142·38

SUMMARY OF MILEAGE

Eastern Lines	2,307·65	46·48	154·95	309·78
Maritime District				
Eastern Lines	1,563·33	60·59	150·24	237·69
Quebec District				
Western Lines	582·14	4·80	57·22	142·38
Central District				
Total	4,453·12	111·87	362·41	889·85

ROADBED AND TRACK MILEAGE

		Inter-colonial Railway	Prince Edward Island Railway	New Brunswick and Prince Edward Island	Inter-national Railway	Moncton and Buctouche Railway	Elgin and Havelock Railway	Hampton and St. Martins Railway	York and Carleton Railway	Salisbury and Albert Railway
Main Line	Miles	1,477·98	275·60	36·05	105·06	29·93	26·16	28·75	5·40	44·77
2nd Main Line	"	67·41								
Passing Sidings	"	149·66	2·99	1·59	2·65	0·15	0·22	0·11		0·65
Other sidings and spurs	"	468 18	34·49	5·37	4·18	1·66	0·93	1·28	0·79	3·82
Totals		2,181·23	313·08	43·01	111·89	31·74	27·31	30·14	6·19	49·24

		National Trans-continental Railway	St. John and Quebec Railway	Caraquet and Gulf Shore Railway	Lotbiniere and Megantic Railway	Cape Breton Railway	Quebec and Saguenay Railway	Leased Lines	Joint Sections and Running rights	Total
Main Line	Miles	1,803·03	157·84	79·83	29·56	30·64	62·10	203·07	57·35	4,453·00
2nd Main Line	"	6·11							38·35	111·00
Passing Sidings	"	172·77	5·87	0·91			2·12	22·72		362·00
Other Sidings and Sprus	"	276·57	6·64	7·81	3·15	2.13	1·07	53·73		889·00
Totals		2,258·48	170·35	88·55	32·71	32·77	65·29	279·57	95·70	5,817·00

WEIGHT OF RAIL IN MAIN TRACK

	Inter-colonial Railway	Prince Edward Island Railway	New Brunswick and Prince Edward Island Railway	Inter-national Railway	Moncton and Buctouche Railway	Elgin and Havelock Railway	Hampton and St. Martins Railway	York and Carleton Railway	Salisbury and Albert Railway
50-lb.		107·67				17·91			
56-lb.	14·21	155·86			19·03	1·00	27·50		28·87
60-lb.				51·22					
67-lb.	178·82	0·80		40·86	1·05	7·25		5·40	3·50
67½-lb.		67·53							
70-lb.	14·18								
72-lb.									1·20
80-lb.	361·65	4·72	36·05	12·29	9·85		1·25		11·20
85-lb.	976·53			0·69					
Totals	1,545 39	* 336·58	36·05	105·06	29·93	26·16	28·75	5·40	44·77

	National Trans-continental Railway	St. John and Quebec Railway	Caraquet and Gulf Shore Railway	Lotbiniere and Megantic Railway	Cape Breton Railway	Quebec and Saguenay Railway	Leased Lines	Joint Sections and Running rights	Total
50-lb.			27·61						153·19
56-lb.			15·39	29·56					291·48
60-lb.					25·03	15·41	5·20		96·94
67-lb.		0·19				9·41			247·28
67½-lb.						33·89			101·42
70-lb.							0·62		14·80
72-lb.					5·61		4·34		11·15
80-lb.	1,627·39	140·15	32·83			3·39	144·66		2·385·43
85-lb.	181·75	17·50	4·00				48·15		1·228. 62
Total	1,809·14	157·84	79·83	29·56	30·64	62·10	203·07		4·570. 25

*Mileage of Rail on Prince Edward Island Railway includes 60·98 miles of track on which there is a third Rail for standard guage trains.

Titles	Unit	Inter-Colonial Railway	Lotbiniere and Megantic Railway	National Trans-continental Railway	Quebec and Saguenay Railway	Grand Trunk Pacific Railway	Prince Edward Island Railway	New Brunswick and Prince Edward Island Railway
85-lb. rails laid new	Miles	87·51		45·78		10·50		
85-lb. " " relay	"	9·96						
80-lb. " " "	"	11·91		7·26		0·56		
72-lb. " " "	"							
70-lb. " " "	"							
67½-lb. " " "	"							
67-lb. " " "	"							
60-lb. " " "	"							
56-lb. " " "	"							
50-lb. " " "	"							
Tie renewals main line	No.	558,517	5,000	448,831	12,145	70,329	56,996	9,335
" " sidings	"	75,794	500	43,956	453	7,880	2,777	1,251
" " switch ties	Sets	340	2	118			23	
Tie plates placed	No.	16,400		134,524	125,000	20,000		
Rail anchors placed	"	17,000		33,000		46,600		
Ballasting	Miles	140·30		82·70		23·9	36·33	1·00
Ditching	"	94·63	4·0	109·00	14·6	3·16	15·00	10·00
Bank widening and trimming	"	2·20		9·75		2·0	2·00	
Tile underdraining	"	1·56		1·54	0·09			
Rip-rap protector	Lin.-Ft.	1,900		1,650	115			
Crib-work protectors	"			704			2,200	
Dangerous rocks removed	Cu. Yds.	15,250		1,850	500			
Wire fence erected	Miles	154·77		22·43	1·05		21·00	6·50
Snow fence erected	"	8·96		0·62			1·75	0·09
Board fence erected	"	0·12						
Clearing right of way	Acres			170·5				
Farm crossing built	No.			33				
Sidings, additional passenger	Lin.-Ft.	6,723		2,276	240	7,988		
" " business	"	22,170		10,238	500	3,063		1,000
" " private	"	16,527		10,946		7,640	1,200	
Sidings taken up, passing	"	561						
" " business	"	9,346		975				
" " private	"	5,641	377	1,413				
Yard tracks	"			30,288		467		
Loading roads constructed	"			1,700				

RAIL AND TIE RENEWALS, BALLASTING, DITCHING, NEW SIDINGS, ETC.—*Continued*

Titles	Unit	Inter-National Railways	Moncton Buctouche Railway	Elgin and Havelock Railway	Hampton and St. Martin Railway	York and Carleton Railway
85-lb. rails laid new	Miles					
85-lb. " " relay	"					
80-lb. " " "	"	1·27			0·30	
72-lb. " " "	"					
70-lb. " " "	"					
67½-lb. " " "	"					
67-lb. " " "	"			0·7		5·40
60-lb. " " "	"	0·45				
56-lb. " " "	"	0·15				
50-lb. " " "	"					
Tie renewals—main line	No.	27,254	7,539	7,516	6,348	1,495
" " sidings	"	2,054	397	395	334	
" " switch ties	Sets	2	3	4	6	
Tie plates placed	No.					
Rail anchor placed	"					
Ballasting	Miles	14·80				4·00
Ditching	"	9·50				1·00
Bank widening and trimming	"		0·5			
Tile underdraining	"					
Rip-rap protection	Lin.-Ft.					
Crib-work protection	"					
Dangerous rocks removed	Cu. Yds.					
Wire fence erected	Miles					
Snow fence erected	"					
Board fencing erected	"					
Clearing right of way	Acres		12	12		
Farm crossing built	No.					
Sidings, additional passing	Lin.-Ft.					
" " business	"			240	228	
" " private	"	691			484	
Sidings taken up, passing	"					
" " business	"			482		3,250
" " private	"		3 59			
Yard tracks	"					
Loading roads constructed	"					

RAIL AND TIE RENEWALS, BALLASTING, DITCHING, NEW SIDINGS, ETC.—*Concluded*

Titles	Unit	Salisbury and Albert Railway	St. John and Quebec Railway	Caraquet and Gulf Shore Railway	Cape Breton Railway	Leased Line	Total
85-lb. rails laid new	Miles						113·79
85-lb. " " relay	"						9·83
80-lb. " " "	"	2·7		16·95		1·00	41·95
72-lb. " " "	"						
70-lb. " " "	"						
67½-lb. " " "	"						
67-lb. " " "	"						6·55
60-lb. " " "	"						0·15
56-lb. " " "	"			1·02			1·02
50-lb. " " "	"						
Tie renewals main line	No.	15,671	66,171	32,243	15,433		1,350,826
" " sidings	"	825	2,912	169	160		141,305
" " switch ties	Sets	5	26				537
Tie plates placed	No.						295,924
Rail anchors placed	"						96,600
Ballasting	Miles		22·00	9·69			334·72
Ditching	"		16·80				277·69
Bank widening and trimming	"	0·25					16·70
Tile underdraining	"						3·19
Rip-rap protection	Lin.-Ft.						3,665
Crib-work protection	"						2,904
Dangerous rocks removed	Cu. Yds.						17,600
Wire fence erected	Miles						208·75
Snow fence erected	"						11·42
Board fencing erected	"						0·42
Clearing right of way	Acres	4					198·50
Farm crossings built	No.						33
Sidings, additional passing	Lin.-Ft.				191		17,418
" " business	"			106			37,545
" " private	"		250	829			38,567
Sidings taken up, passing	"						561
" " business	"						14,053
" " private	"						8,320
Yard tracks	"					570	30,755
Loading roads constructed	"						1,700

TERMINAL IMPROVEMENTS

Halifax Ocean Terminals.—A heated compartment was constructed in shed 24 for use of C.G.M.M., for handling perishable freight. Office of Canadian National Express remodelled and painted. Additional facilities provided for Stores Department in car repair building and high platform constructed for handling oil from cars. Steam pipes laid in gutter of train shed to prevent their blocking by snow and ice.

Deepwater.—Extensive repairs made to new pier No. 2. The concrete superstructure given a coating of gunnite. Part of the roof was relaid with Arco-Top. The gutter and down-spouts were repaired. Repairs were made to fenders, girders, floor slabs, piles, etc., where damaged by steamers *Empress of Scotland* and *Cameronia*.

Truro.—Six stalls of enginehouse were extended ten feet to accomodate Sante Fe locomotives. An additional drop pit was constructed.

Stellarton.—Foundation and track alterations completed for new 150-t track scale. All ready for installation. New drop pit constructed in engine-house.

Mulgrave.—Portion of wharf at freight shed was rebuilt where crushed in by ice last spring. Work of renewing pedestals and protection crib under transfer apron begun last year and was carried to completion. Transfer cleaned and patch painted and rivets in floor system renewed.

Point Tupper.—Work of renewing pedestals and retaining waol under transfer apron berun last year was continued and 90 per cent completed. Portion of spring piling was replaced with creosoted material of greater length transfer cleaned and painted, and rivers in floor system renewed. Section of wharf renewed where crushed by ice.

Sydney.—Boilerhouse rebuilt and two second hand boilers installed. Drop pit installed in enginehouse.

St. Peters.—Enginehouse rebuilt. New ashpit constructed.

Pictou.—100 feet of permanent wharf constructed at freight shed wharf.

Charlottetown.—12,000 square feet of concrete platform was replaced with wood. A frost proof warehouse was constructed in shed on railway wharf.

Borden.—About 5,300 tons of heavy stone and spalls were placed outside the existing pier forming additional protection from sea wash. 150 cubic yards of concrete was placed under and along the face of the concrete pier, forming the steamer berth, where it was scoured out by the action of the ship's propellors. The rigid fenders at the outer end of the power were repaired and additional timbers placed to strengthen the work.

Summerside.—450 lineal feet of the approach to the wharf was rebuilt, using old tie construction.

Cape Tormentine.—The turning basin and entrance channel were further dredged to permit of sufficient water for the Car Ferry at low tide. Repairs were made to docks where scour had been caused by the propellors, of the steamer.

Sackville.—Foundation was installed in enginehouse to permit raising of locomotives for repairs. Heating system in station and baggage room over-hauled and repaired.

Moncton.—Yard re-arrangement was continued consisting of relocation of main line and construction of 1·7 miles of new double track. Re-arrangement of the coach yard and yard tracks at West end, the demolition of old engine-house and coaling plant, and installation of transmission lines from power-house to new round house. Concrete platforms at station were repaired and

new wooden platforms constructed. General offices were cleaned, repaired and painted, new lavatory installed on third floor, gutters and down spouts renewed, and lighting system in Superintendent's office was re-arranged and improved.

Mechanical Shop.—Concrete floor laid in brass moulding shop. Portion of roof of freight car repair shop was insulated. Alterations and improvements were made in stores building. Other general repairs and renewals to buildings were carried on.

St. John.—Re-arrangement of Island yard was completed. A new yard office was built, a new 150-ton track scale was erected, boilers were taken from old power house and installed at enginehouse and extensive repairs were made to Long wharf and trestle approach.

Bathurst.—Leanto built on enginehouse to shelter the electric car. Tool house extended for electrical department.

Shippegan.—Old timber platform at shore end of Public wharf was replaced with cinders.

Tracadie.—The wye started late in the fall of 1921 was completed this year.

Campbellton.—Two oil tanks were erected to supply fuel for steam unit car. Ashpit was renewed.

Edmundston.—New resthouse was completed. New drop pit was constructed in engine house.

Rivière du Loup.—Roof over 10 stalls of enginehouse renewed, new cone drop pit installed and Taylor and Arnold Jack provided. New office building 22′ x 16′ built to provide larger quarters for Round-house foreman and staff. Boilers in shop repaired. Train service pipe in yard extended 200 feet and one additional coach hydrant installed to facilitate watering passenger trains at this point. Galvanized Iron shed built for Stores Department.

Joffre.—General repairs and renewals made to enginehouse.

Monk.—General repairs and renewals to facilities at this point.

St. Malo Shops.—General repairs and renewals made to the different shops.

St. Leonard Junction—Robert & Schaefer type 100-ton coaling plant has been dismantled and erected at this point, new water proof concrete boot built and pump installed to drain same on account of Robert & Schaefer type 100-ton coaling plant from Rideau, Ont., was dismantled and erected at this point, new water proof concrete boot built and pump installed to drain same on account of the extreme depth (22 feet). New motor house has also been built and gasoline motor installed to operate plant. New water supply has been installed consisting of a 40 H.P. vertical boiler and Canadian Fairbanks Morse 10 x 12 steam pump located in wooden frame building erected near the Nicolet River wherefrom the water is taken. The suction pipe which is a 6-inch cast iron pipe is about 100 feet long with a lift of 16 feet. The delivery pipe is also a 6-inch cast iron pipe 1,525 feet long with a total head of 110 4 feet to top of water. The tank was raised 15 feet to increase flow of water at stand pipes. New stanepipe has been installed on the Nicolet Subdivision to provide water for trains operating over this S. D., the original standpipe located on the Drummondville subdivision having been moved to a point east of the junction switch. The station platform was extended 100 feet along the Nicolet subdivision to provide more standing accomodation for trains. New standard brick lines standard ashpit 50 feet long has been installed on passing siding, and an 8 inch terra cotta drain pipe 1,000 feet long has been laid, with suitable connections, to receive drainage from coaling plant, standpipe pits, ashpit and overflow from water tank.

Ste. Rosalie Junction.—Exterior of yard office painted and storm windows installed. All necessary repairs and renewals made to enginehouse. Coal-hoist raised to facilitate coaling Grand Trunk Railway engines. In order to provide water for locomotive shop and other buildings at this point a water pipe line 10,050 feet long has been laid to the City of St. Hyacinthe, where connection was made with the city main on Gèrouard street, just north of the subway under the Grand Trunk Railway. The above pipe line consists of 2,050 feet of 10″, 1,800′ of 8″, and 5,700 feet of 6″ cast iron pipe as well as 500 feet of 10″ steel pipe, and was laid on the Grand Trunk right of way about 30 feet north of the W. B. main line between Yamaska River Branch and Ste. Rosalie Junction. The 500 feet of 10″ steel pipe which was used in crossing Yamaska River was placed in steel brackets on the Grand Trunk branch and covered with insulation to withstand a temperature of 40° below zero without freezing, one 10″ extension joint was also installed on this point, suitable valves were installed at different points on the pipe line and four hydrants installed at Ste. Rosalie Junction; also float valve installed in water tank. In order to accurately measure the water supplied by the city of St. Hyacinthe, two Trident Crest water meters were installed, one 10″ near connection with the city supply at St. Hyacinthe and 6″ near Ste. Rosalie Junction. A drain pipe 7,000′ long also laid in the same trench as the water pipe (but lower, to obtain the necessary grade) consisting of 6,000′ of 10″ and 1,000′ of 12″ Terra Cotta pipe, with a mininum grade of O. 2 per cent and draining into a stream located about 7,000 feet east of Ste. Rosalie. Ten manholes were installed at suitable intervals in the yard to drain turntable pit, standpipe pit, ashpit, shop and various other buildings.

Fitzpatrick.—The walls and ceiling of station were repaired also station platform. The brick walls of roundhouse were repaired. 100-foot standard ashpit was built with proper drainage. The boxing and steam pipe to pump was renewed as well as the air line to coal chute, and the four-inch cold water main to roundhouse was renewed. The exterior of the bunkhouse was repainted and the interior thoroughly disenfected. An electric light line was installed across the yard and electric lights were placed on the station platform.

Parent.—The ten double employees dwellings which about 25 per cent completed in 1921 are now 70 per cent completed. The water supply for the dwellings is about 50 per cent completed and the sewerage 80 per cent. The electric light line is about 50 per cent completed. A 6-foot extension has been constructed at the end of the pump house for the use of the chlorinator. A 30′ x 30′ extension to the store-house has been built, also platform built in rear and at the east end of the storehouse and a spur line, 354 feet long for unloading of stores has been built. A gasoline storage shed 20′ x 20′ was constructed. The rivets in the turntable were gone over and tightened where necessary and the superstructure given a coat of paint. The centre and conical rollers were renewed. The ground floor of the station building was renewed in hardwood, and the 4″ water main in roundhouse replaced.

Doucet.—The station, ice house and freight shed were painted, and a tower was erected on the top of the station for the installation of meteorolological instruments. The roof of roundhouse was repaired and the air line to coal chute renewed. The turntable was gone over and the rivets tightened where necessary. The island wood passenger platform replaced by cinders. The catch water ditch in rear of station was deepened permitting the automatic drainer to be replaced with a 6″ tile drain. Fire hose was placed in bunkhouse.

O'Brien.—The ground floor of the station was renewed in hardwood, the roof of roundhouse repaired, also the 4 inch water main in same renewed. Fire hose was replaced in bunkhouse and the air line renewed. The pumphouse which was destroyed by fire was rebuilt and the gasoline pumping plant repaired.

The large offtake ditch 5,100 feet long, which drains O'Brien yard was deepened and enlarged at drain into the river on the south side and a ditch excavated at the east end and four culverts placed under the tracks to allow the free drainage of the yard.

Cochrane.—Twenty foot extension built to storehouse and platform at same extended, steel roof trusses in machine shop, power-house and boiler room repainted. Wood floor of roundhouse repaired. General repairs made to coaling plant Six concrete pedestals thereof which had heaved with frost straightened and levelled. Coach wheel drop pit installed. Fire hose provided in second floor of trainmen's Resthouse. Additional Firehouse provided for Terminal Hydrants.

Hearst.—Plaster in ceilings of station repaired, Mastic concrete floor laid in station lavatory. Steel trusses in fan room and power-house painted. Defective concrete in centre pier of steel water tank out and replaced. New floor put in ice-house. Timbers under track at cinder hoist renewed.

Grant.—Platter in station ceilings repaired mastic concrete floor laid in station lavatory. Repairs made to roof roundhouse. Defective sills and posts in coaling trestles renewed. Pipe line from pumphouse to tank repaired. Additional fire hose provided to second floor of trainmens' resthouse.

Armstrong.—Plaster in station ceilings repaired. Mastic concrete floor laid in station lavatory. Portion of station platform renewed. Fire hose provided in second floor of trainmen's resthouse. Additional fire hose provided for Terminal Hydrants. Steel water tank painted. Two standpipes painted. Roundhouse roof repaired. Roof trusses painted. Plaster repaired in section-houses.

Sioux Lookout.—As noted in detail, under "Additional Trackage" and "Buildings"—the storage capacity of this yard has been increased 137 cars, by the additional two through sidings, and new enginehouse facilities are being erected to comply with standard layout, west of the enginehouse, to replace present out-of-date facilities, which are expensive to maintain and uneconomical to operate. In conjunction with these alterations, Leads and Ladder tracks have been rearranged to conform with the new layout. Work has been commenced on an extension to the enginehouse in order to provide greater length for the proper handling of Mikadoes and larger class of power. An employees' boarding and recreation building is in course of construction. The public Hospital commenced in 1921—erected on Railway property by public subscription—has now been completed, and is in operation.

Redditt.—As noted under "Additional Trackage" the storage yard capacity was increased 104 cars by an extension at the East end. Five tracks are now able to accomodate an average train, thus doing away with the necessity of cutting trains when entering this yard, and blocking leads and switches when making trains up for departure.

Transcona.—The capacity of the yard has been increased 285 cars, by the laying of 12,220 feet of additional trackage. A lavatory with water and sewer connections was installed near car repair tracks, and additional hydrants provided for fire protection.

Water Service and Sewers.—Repairs were made generally throughout the Districts to pipe lines and tanks to keep them in working order and ensure proper service,—the more important work being as follows:—

Halifax Ocean Terminals.—All Fire Hydrants, water mains and steam lines throughout the yard, as well as heating and plumbing systems in the railway owned houses, were thoroughly inspected and repairs or renewals were made where necessary.

Deepwater Terminals.—The steam heating system in freight shed, elevator and pier No. 2 repaired for winter service. A steam boiler was installed at Pier No. 2, as an independent heating unit for the hospital.

Elsdale.—The old wooden tank was replaced by a new 40,000 gallon steel tank on concrete foundation.

Stellarton.—New supply pipes laid from City Main to tank and meter installed on same.

Piedmont and Bayfield Road.—New cribs and earth dams constructed by which the gravity supplies at these points were considerably increased.

River Denys.—Substructure for the new 40,000 gallon steel tank was completed ready for the erection of the tank.

Folleigh.—A new 40,000 gallon steel tank on concrete foundation was erected, work being about 98 per cent completed. Coal house from Londonderry was converted into pumphouse for new tank.

Maccan.—A new electric pump was installed in station replacing old pump.

Moncton.—A new water, steam, vacuum and gas pipe system was installed in new coach yard.

Sussex.—A 40,000 gallon water tank was removed from Moncton and erected at Sussex.

Brockville.—A Cesspool was provided for the station sewerage.

Charlo.—Drain from the station was connected with sewer to the Bay.

St. Quentin.—Well bored to provide domestic water supply for agent.

Burnsville.—Water station completed early in December consisting of a 20,000 gallon tank with a battery of 2 No. 40 Rife Hydraulic rams, pumping the water from reservoirs.

At McGivney Junction, Juniper, Glendyne, Holliday, Estcourt, Lapointe, Pelletier, kerosene vaporizers were placed on gasolene engines of pumping station.

St. Eugene.—Temporary water supply installed on Ballast pit spur for spotting engines.

St. Casimir.—The gasolene pumping plant which has existed from construction days has been changed to electrical drive by installing a motor. A distance switch for winter operation and a float switch for summer operation installed.

Hervey Junction.—A 10″ standpipe was installed with necessary drainage and connection made by a 6″ supply main to 50,000 gallons standard NTR water tank.

La Ferme.—The 50,000 gallon wooden tank which was destroyed by fire, Dec. 6, 1921, is about 90 per cent completed.

La Sarre.—Station and section house supplied with water from town main.

Fauquier.—Station and section house supply with water from railway tank.

Hearst.—Emergency dam built and new well dug at intake pipe on account of low water in Matawishquia River.

Savoff.—New dam built in stream supplying water to tank.

Webster and Ycliff.—Repairs were made to pipe lines.

Minaki and Elma.—Tanks were repaired and cleaned out.

Griff and Larson.—Pipe lines were repaired.

Alcona.—Water tank was repaired.

BUILDINGS

Buildings repaired	148
Buildings painted	80
Platforms repaired	166
Buildings extended	13
Platforms extended	13
New umbrella roofs	3
New stations and shelters built	23
Stations and shelters painted and repaired	110
New tool houses	5
New platforms	3
New section dwellings	1
New miscellaneous buildings	22
Employees' dwellings repaired	10
Cesspools installed	1

DAMAGE BY FLOODS AND HIGH TIDES

On November 17, high tides caused considerable damage on the Sydney subdivision at four locations, requiring 1,700 cubic yards of rock and train fill to repair same.

On August 24, high tides resulted in a washout on the Sackville Subdivision, Mile 40-47, and on Springhill Subdivision, at Mile 97·5. The track at both these locations has since then been raised to a higher elevation than that of the high tide.

On August 26, heavy rains damaged 12 culverts on the St. Martins Subdivision, also considerable damage to the foundation of frame trestle at Mile 13·2. Small land slides occurred at Miles 13·8 and 26·4.

Continuous rains for two weeks prior to June 22nd caused a number of washouts on Leonard Subdivision between Miles 2 and 29. All traffic was held up from the 22nd until the night of the 26th. Cost to repair the damage was about $8,500.

On June 23, excessive rain caused ditches east of summit yard to overflow resulting in 600 feet of ballast shoulder being washed away.

At Mile 43·78 Manouan Subdivision, on April 8, a small washout of embankment 50 feet long by 8 feet deep occurred. Temporary trestle was put in and later permanent work was completed by filling. No damage to culvert occurred.

Excessive high water caused a washout behnd southwest wing wall of Mattagami river, Bridge Mile 31·4 Kapuskasing Subdivision. Prompt steps were taken to repair damage and no delay to trains were caused.

Water elevations of streams and lake in vicinity of Brinka. Quibell Subdivision rose to abnormal height on May 11, due to heavy rainfall and 100 feet of track was washed out at Mile 118·5 and 105′ at mile 119·8.

Due to heavy rainfall on May 11, several small slides occurred in clay cuts, between mileages 3 and 5, Minaki Subdivision. These were cleaned out by mechanical ditcher.

DAMAGE BY FIRE

On July 13 tool house at Tatamagouche was destroyed by fire.

On July 20 at Murrays one car loaded with lumber was destroyed and another badly scorched, and on October 20, 200 track ties were destroyed. Both of these fires originated in lumber piles adjacent to tracks.

Near Alma fire which originated in ash pile destroyed 50 feet of cribwork at Mile 73·5.

On September 14 fire which originated in lumber pile destroyed the station and freight shed at Elgin. Damage about $2,150.

On May 2, a slight fire in Hampton station caused damage to the extent of about $30.

On June 25 and July 29 fire caused damage to old enginehouse at Moncton amounting to about $250.

On January 31, fire totally destroyed the Yard Office in Island Yard, St John. Damage about $1,500.

On September 24, fire destroyed an old wooden culvert at Mile 11·4 Caraquet Subdivision.

On May 22, fire which originated in Fraser's Mill at Baker Brook destroyed a section tool house; cost to replace about $330.

On August 27, at McGivney Junction a spark from a boarding car started a fire in a B. and B. tool car, C.G.R. 18726, resulting in a loss of about $700.

On November 24, the pumphouse at Holliday was damaged by fire to the extent of $200.

At Old Lake, road section tool house destroyed.

At Riviere Ouelle, 8 box cars and 200 track ties destroyed.

At Ville Marie, 7 telegraph poles destroyed.

At Mile 3·0 to 5·0 Diamond Subdivision, 11 telegraph poles, 590 fence posts and 240 track ties destroyed.

At Carrier, shim shelter destroyed.

At St. Malo shops, damage done to blueprinting room in office building.

At Amos on September 29 the privy, N.T.R. Stn., was destroyed by fire, the fire starting from an unknown origin.

At O'Brien on February 15, the pumphouse was totally destroyed by fire and also the gasoline pump injured. The pumphouse has been rebuilt and the engine repaired. The cause of the fire was an overheated stove.

At Hyland, station destroyed by fire June 4.

At Pagwa, tool house destroyed by fire March 30.

At Mission, switchmen's shanty was destroyed by fire on January 2.

At Redditt, two of the engine house doors were damaged by fire on April 30.

BRIDGES AND CULVERTS

Maintenance repairs generally were carried on throughout the Districts to keep all bridges and culverts in proper condition. The following list shows some of the work carried on:—

Masonry in bridges grouted and repaired	34
Masonry in culverts	2
Bridge decks renewed	59
Steel bridges cleaned and repaired	218
Second hand steel spans placed and painted	2
Openings replaced with concrete slabs	10
New concrete abutments built	6
Standard timber trestles	1
Openings replaced with reinforced concrete culverts	8
Openings replaced with concrete pipe culverts	138
New concrete pipe culverts	51
New concrete culverts	4
Concrete arch culverts built	5
Stone culverts repaired	3
Timber trestle repaired	53
New wooden culverts built	35
New bridge seats	3
Minor repairs to other culverts	317
Trestles filled	5

CONCRETE PIPE

The following concrete pipe was manufactured on the Districts:—

	Feet
18-inch circular	1,786
24-inch "	1,493
30-inch "	935
36-inch "	862
24-inch arch	2,970
30-inch "	1,340
36-inch "	1,686

SURVEYS AND TRACK CENTERING

7·07 miles of track were centered and curves spiralled and 156·85 miles of rechainage run.

Surveys for plans of station yards, bridges, culverts, sidings road diversion, ballast pit and other improvements along the railway have been carried on, yard plans and records have been revised, deed and lease plans made and other miscellaneous information secured for reports and appropriation work.

TRACK SCALES

These were maintained and kept in proper working order throughout the districts generally, repairs being made where necessary. At Stellarton the work of installing a new 150-ton track scale was about 80 per cent complete, the track rearrangements and foundation being finished and all ready for erection of steel. At. St. John a new 150-ton track scale has been installed. At Hervey Junction track scale was removed and shipped off division. At Hearst new track scales provided and existing concrete foundation repaired and raised.

TURNTABLES

These were cleaned, maintained and kept in proper working order throughout the Districts generally, repairs being made where necessary. Turntable 75 feet long at Bridge was taken up and shipped to Yarmouth, N.S., Halifax and Southwestern Railway.

SIGNALS AND INTERLOCKING

These were maintained and kept in proper working order throughout the Districts generally, repairs being made where necessary. The more important works carried out during the year were as follows:—

Wigwag crossing signal installed at Bedford.

Electric crossing bells installed at St. Alexis, Bic and at Broad street, Kensington, P.E.I.

Automatic signals between Moncton and Sackville completed and new one installed at Maccan. Electric Bell was installed on water tank at Sussex.

ELECTRIC POWER AND LIGHTING

These facilities were maintained and kept in proper working order throughout the Districts generally, repairs to plants and lines being made where necessary. Among the more important works carried out were the following:—

Altered transmission lines and lighting necessitated by extension at Truro enginehouse.

Complete installation of motor equipment, with circuit, transformer, etc., for new air compressor at Stellarton and installed meters in lighting and power circuits for coaling plant at same place.

Removed car battery charging plant from Sydney and installed same at Charlottetown.

Installed electric wiring and light in stations and freight sheds at Cardigan and Georgetown.

Complete installation of power and lighting systems for new engine terminals at Moncton, also completed removal relocation and extensions of transmission lines and circuits through the yard to suit the new layout of tracks.

Completed alterations and additions to lighting and power systems at mechanical shops.

Installed electric lights for track scales at Campbellton, Edmundston and South Devon.

Replaced defective wiring and circuits throughout S.S. Prince Edward Island and installed new circuit to the new electric range.

Electric lights installed in station and on platform at St. Marc and St. Casimir.

Electric lights installed along platform at Pointe a Pic and La Malbaie.

POSTS AND SIGNS

Section limited boards, mile posts, highway crossing signs, Yard limit boards, station signs, and switch targets, etc., were painted and repaired where found necessary throughout the districts.

CAR FERRIES

S. S. Scotia I and II.—These vessels were drydocked and put in proper shape to pass marine inspection.

Hulls were scraped and painted, plates reriveted, propellers and shafting drawn, examined and readjusted, ventilators renewed, new wood guards put on, capstans repaired, upper works cleaned and painted, engines, pumps, piping and wiring overhauled and repaired where necessary, boiler thoroughly cleaned inside and outside and furnaces repaired and reset.

S.S. Prince Edward Island.—This vessel was put in drydock at Halifax and thoroughly overhauled and painted. repairs and readjustments were made where necessary to plating. Engines, boilers and fittings and everything put in proper condition after the winter's service. The dining room was rearranged. and a lunch counter service substituted. Considerable alterations were necessary to effect this change and an additional power circuit from engine-room to pantry connecting up the new electric range was installed.

MAIN LINE CHANGES

Preliminary work consisting of bridge and culvert replacements and extensions, bank widening, ballasting and ditching, was begun in connection with the standardization of the line between Summerside and Tignish on the Island Division.

At Moncton the additions to and rearrangements of the yard were continued and the cutoff between St. John and Harcourt Subdivision built last year was put in operation during the month of December as Main Line of Harcourt Subdivision between Moncton and Franklin Junction.

By these changes Harcourt Subdivision has been reduced by 3·92 miles Main Line and 3·03 miles second Main Line, while 3·45 miles of Main Line has been added, thus making a net reduction of 3·50 Miles main line in this Subdivision. On the St. John Subdivision there was an addition of 1·31 miles second main line and a reduction of 0·03 miles main line, making a net addition of 1·28 Miles of Main line in this Subdivision.

CANADIAN GOVERNMENT RAILWAY EMPLOYEES' RELIEF AND INSURANCE ASSOCIATION

Statement of Receipts and Expenditures from January 1, to December 31, 1922

RECEIPTS

Credit balance on December 31, 1921		$ 115,573 85
Amount of premiums collected from Canadian Government Railways' pay-lists	$ 194,136 98	
Premiums collected from railways' vouchers	2,748 38	
Cash premiums collected by railways	166 34	
Contribution from Canadian Government Railways	15,000 00	
		212,051 70
Cash members not on duty, refunds, etc	1,114 42	
Premiums from S. and A. vouchers	2,460 96	
Premiums from retired members	4,054 97	
Annual fees	1,217 50	
Examination fees	104 00	
Government security bonds and interest	25,176 70	
Interest on bonds	4,599 00	
Interest on monthly balances	348 72	
		39,076 27
Total receipts		$ 366,701 82

EXPENDITURES

Government security bonds and interest purchased	$ 25,176 70	
Sick and accident indemnity	93,804 60	
Medical and surgical attendance	48,521 35	
	$ 167,502 65	
Temporary employees' accident fund	23,066 31	
Death and total disability claims	48,000 00	
Examination fees	38 00	
	$ 238,606 96	

OPERATING EXPENSES

Sick and accident fund, temporary employees' accident fund, retired employees, death and total disability fund	19,754 24	
		258,361 20
Difference		$ 108,340 62
Less outstanding liabilities		14,000 00
Estimated net surplus December 31, 1922		$ 94,340 62

SICK AND ACCIDENT FUND (Regular and Temporary)

This fund shows a surplus December 31, 1922	$ 67,880 90

DEATH AND TOTAL DISABILITY FUND

This statement shows an expenditure on account of death and total disability claims, of		$ 48,000 00
This statement shows that one hundred and six death and total disability claims were assessed and paid during the year.		
Eighty-nine death claims, due to natural causes, aggregating	43,750 00	
Fifteen death claims, due to accidental injuries, aggregating	3,750 00	
	$ 47,500 00	
Two total disability claims, aggregating	500 00	
	$ 48,000 00	

C. B. Trites, *Secretary.*

W. F. Sears, *Auditor.*

The death and total disability list of the temporary employees' accident fund, show 115 death claims during the year.

CANADIAN GOVERNMENT RAILWAYS

STATEMENT showing the amount credited to the Canadian Government Railways Employees' Relief and Insurance Association, by the Canadian Government Railways, during the year ended December 31, 1922.

Amount of premiums collected from the Canadian Government Railways' pay-lists	$ 194,136 98
Premiums collected from railway vouchers	2,748 38
Annual contribution from the Canadian Government Railways	15,000 00
Canadian Government Railways cash premium	166 34
Total	$ 212,051 70

S. L. SHANNON,
Comptroller and Treasurer, C. G. Railways.

INTERCOLONIAL AND PRINCE EDWARD ISLAND RAILWAYS EMPLOYEES' PROVIDENT FUND

STATEMENT of Receipts and Expenditures during the year ended December 31, 1922

Balance to credit of the fund on December 31, 1921		$ 603,462 18
The contribution made by employees during the year, being one and one-half per cent of their monthly salary and wages, were	$ 280,360 00	
The contribution made by the railways were	100,000 00	
Amount received to increase retiring allowances of all retired employees receiving less than $30 per month, in order that the minimum allowance now paid under the Act, viz. $20, might be increased to $30 per month, in accordance with vote No. 475, whereby an amount was placed in the estimates to supplement retiring allowances payable under the provisions of the Intercolonial and Prince Edward Island Railways Employees' Provident Fund, including from January 1 to December 31, 1922	48,699 09	
		429,059 09
Amount received for refunds, etc		611 03
Interest accrued (at three per cent)		15,213 30
		$1,048,345 60

The amount contributed by the employees is shown to exceed by $180,360 the amount contributed by the railways. By reference to section 4 of the Provident Fund Act it will be noted that the maximum sum the railways are authorized to contribute to the Fund in any one year must not exceed $100,000.

The expenditures were:—

For retiring allowance	$ 433,647 75	
For allowance made to retired employees receiving less than $30 per month, to increase the minimum allowance in accordance with Vote No. 473, whereby an amount was placed in the estimates to supplement retiring allowances payable under the provisions of the Intercolonial and Prince Edward Island Railways Employees' Provident Fund including from January 1 to December 31, 1922	48,699 09	
For contributions refunded in the cases of deceased employees	10,695 11	
For contributions refunded, which were deducted in error	2,068 04	
For contributions refunded to discharged employees, etc	5,630 90	
Medical examinations for probationers entering the service, etc	1,104 00	
Medical examinations for employees retiring from service	33 70	
For election expenses	1,406 15	
For salaries and travelling expenses, secretary's office and proportion of salary of Chief Medical Officer	16,596 86	
For stationery, printing, postage, etc	1,410 65	
		$ 521,292 25
Balance to the credit of the fund on December 31, 1922		$ 527,053 35
It will be noted by the above statement of receipts and expenditures that the amount of contributions received from the railways and from the employees during the year were		429,059 09
And the expenditures were		521,292 25
Showing that during the year the expenditures exceeded the receipts		92,233 16
The gross surplus, including interest, to the credit of the fund on December 31, 1922, was		527,053 35

W. A. KINGSLAND,
Chairman.

C. B. TRITES,
Secretary.

GRAND TRUNK RAILWAY COMPANY OF CANADA

To the Stockholders of the Grand Trunk Railway Company of Canada:—

The Board of Directors submit the following report of the operations for the year ended December 31, 1922:—

Income Account

Condensed Statement

	Year 1922	Year 1921
Operating revenues	$ 77,700,019 23	$ 76,858,032 27
Operating expenses	70,317,813 45	71,179,292 80
Net operating revenue	7,382,205 78	5,678,739 47
Railway taxes	1,200,287 20	1,325,577 28
	$ 6,181,918 58	$ 4,353,162 19
Equipment and joint facility rents, etc. (net)	3,083,932 71	2,475,151 74
Net operating income	$ 9,265,851 29	$ 6,828,313 93
Non-operating income	5,347,824 66	5,691,456 86
Gross income	$ 14,613,675 95	$ 12,519,770 79
Deductions from gross income	23,025,409 98	26,584,213 15
Net income transferred to profit and loss	$ 8,411,734 03	$ 14,064,442 36

The operating revenues for the year were $77,700,019, an increase as compared with the year 1921 of $841,987, or 1.10 per cent.

Revenue from freight traffic was $56,561,067, an increase of $2,321,164 or 4·28 per cent.

Number of revenue tons carried 23,675,475, an increase of 1,987,726 or 9·16 per cent.

Revenue Tons carried one mile 4,561,145.848, an increase of 508,581,437 or 12·55 per cent.

Average haul per revenue ton was 192·65 miles, an increase of 3·10 per cent.

Freight revenue per train mile was $5.59, a decrease of 3c. or ·53 per cent.

Average revenue per ton was $2·38902, a decrease of ·11193 or 4·47 per cent.

Average revenue per ton mile was $0·01240, a decrease of ·00098 or 7·32 per cent.

Revenue from pasenger traffic was $14,342,003, a decrease as compared with the year 1921 of $1,168,161 or 7·53 per cent.

Number of passengers carried was 10,998,246, a decrease of 611,516 or 5·27 per cent.

Average revenue per passenger was $1·30403, a decrease of $0·03193 or 2·39 per cent.

Average revenue per passenger mile was $0·02864, a decrease of $0·00181 or 5·94 per cent.

Average distance per passenger was 45·53 miles, an increase of 1·66 or 3·78 per cent.

Revenue from mails was $1,212,433, an increase of $78,696 or 6·94 per cent.

Revenue from express was $2,883,700, a decrease of $401.410 or 12·22 per cent.

Revenue from milk was $228,541, a decrease of $14·214 or 5·85 per cent.

Revenue from switching was $679,860, an increase of $118,002 or 21·00 per cent.

Revenue from dining and buffet was $325,003, a decrease of $3·042 or ·93 per cent.

Revenue from demurrage was $264,162, a decrease of $51,640 or 16·35 per cent.

OPERATING EXPENSES

Operating expenses for the year 1922 were $70,317,713,a decrease of $861,479 as compared with the year 1921 or 1·21 per cent, as compared with an increase of 1·10 per cent in operating revenues.

Maintenance of way and structures decreased $2,122,092 or 16·50 per cent.

Maintenance of equipment increased $2,982,817 or 16·75 per cent.

Traffic expenses increased $232,023 or 14·65 per cent.

Transportation expenses decreased $1,554,149 or 4·37 per cent.

Average loaded cars per freight train mile were 22·49, an increase of 2·85 or 14·51 per cent.

Average empty cars per freight train mile were 10·38, a decrease of ·93 or 8·22 per cent.

Average total cars per freight train mile were 32·87, an increase of 1·92 or 6·20 per cent.

Average load per loaded freight car mile was 20·88 tons, a decrease of 1·38 tons or 6·20 per cent.

Average load per freight train mile was 450·83 tons, an increase of 31·28 tons or 7·46 per cent

Miscellaneous operations decreased $48,186 or 10·42 per cent.

General expenses decreased $343,433 or 11·83 per cent.

THE GRAND TRUNK RAILWAY COMPANY OF CANADA

PAY ROLLS

	Number employees	Total pay roll	Increase per cent over 1918
1918	25,342	$30,152,476 36	.....
1919	30,617	42,617,415 93	41·34
1920	31,686	53,375,736 60	77·02
1921	29,128	45,865,171 10	52·11
1922	28,869	42,915,246 42	42·33

TAXES

Taxes for the year 1922 were $1,200,287, a decrease compared with the year 1921 of $125,290 or 9·45 per cent.

Taxes per mile of road operated were $332.32, as compared with $367.00 in the year 1921.

CAPITAL STOCK

The capital stock outstanding at December 31, 1922, was $241,237,588.83 as under, there having been no change during the year:—

4% Guaranteed stock..	$ 60,833,333 33
1st Preference "	16,644,000 00
2nd " " ..	13,312,666 67
3rd " " ..	34,884,535 43
Ordinary stock.....	116,563,053 40
	$ 241,237,588 83

DEBENTURE STOCK

The debenture stock outstanding at December 31, 1922, was $155,373,808.34 as follows, there having been no change during the year:—

Grand Trunk	5%	debenture stock	$ 20,782,491 67
Great Western	5%	" "	13,252,322 67
Grand Trunk	4%	" "	119,839,014 33
Northern Railway	4%	" "	1,499,979 67
			$ 155,373,808 34

INTEREST BEARING OBLIGATIONS

The total of interest bearing obligations outstanding at December 31, 1922, was $380,323,236.25 as shown on page 31.

Principal retirements during the year were $197,000.00 4½ per cent equipment trust notes "A", $336,000.00 4½ per cent equipment trust notes "B", $224,000.00 4½ per cent equipment trust notes "C", and $250,000.00 5 per cent equipment trust notes "D". Principal issues during the year were $7,739,865 loan from Dominion Government under Appropriation Act, 1921-22, and $3,118,322 Loan from Dominion Government under Appropriation Act, 1922-23.

CAPITAL EXPENDITURE

The capital expenditure account at December 31, 1922, amounted to $394,737,012, an increase of $3,167,549.46, details of which appear on page 33 (excluding credit of $73,893,491.74 covering adjustment of prior year).

The Board desires to express its appreciation to the officers and employees of the company for their faithful and efficient services.

H. W. THORNTON,
Chairman and President.

GRAND TRUNK RAILWAY COMPANY OF CANADA

Operated Mileage December 31, 1922

CANADIAN LINES

	First Track	Second Track	Yard Track and Sidings
Portland Division	55·00		20·76
Montreal Division	480·76	173·28	117·19
Montreal Terminals	25·86	13·30	133·01
Belleville Division	650·38	201·71	197·95
Ottawa Division	466·07	1·58	123·52
Toronto Terminals	26·94	20·01	172·84
Barrie Division	444·02	1·30	153·09
Stratford Division	809·46	9·40	199·17
London Division	407·50	202·82	231·83
St. Thomas Division	244·61	88·34	143·24
International Bridge	1·02	·58	5·83
Suspension Bridge	·25	·25	
Total	3,611·87	712·57	1,498·03

Of this mileage, 3,336·74 of first track and 689·99 of second track is owned, 250·47 of first and 8·40 of second track leased, and 22·29 of first and 4·32 of second track operated under trackage rights. In addition, there are 7·53 miles of third track and 7·43 of fourth track (Toronto Terminals) owned by the company, and 2·37 of first and ·86 of second owned by subsidiary companies and operated without formal lease.

WESTERN LINES

	First Track	Second Track	Yard Track and Sidings
Grand Trunk Western Railway	335·94	326·78	219·60
Chicago and Kalamazoo Terminal Railway	1·92	.....	·53
Chicago, Kalamazoo and Saginaw Railway	9·51	.....	12·04
Detroit, Grand Haven and Milwaukee Railway	188·32	15·72	144·99
Grand Rapids Terminal Railway	1·51	.....	3·05
Toledo, Saginaw and Muskegon Railway	116·28	.....	14·97
Pontiac, Oxford and Northern Railway	99·89	.....	17·36
Detroit and Huron Railway	18·58	.....	3·62
Chicago, Detroit and Canada G.T. Jct. R.R.	59·55	11·08	92·28
Michigan Air Line	105·92	.....	20·09
Cincinnati, Saginaw and Mackinaw Railway	53·10	.....	45·40
Bay City Terminal Railway	1·17	.....	2·53
Grand Trunk Milwaukee Car Ferry (85·9 miles)			
Total	991·69	353·58	576·46

NEW ENGLAND LINES

Atlantic and St. Lawrence Railroad, including line from Island Pond to International Boundary	165·28	·99	91·29
Lewiston and Auburn Railroad	5·43	.....	1·28
Norway Branch Railroad	1·50	.....	·45
Total	172·21	·99	93·02
Grand Trunk Railway System operated mileage	4,775·77	1,067·14	2,167·06

Of the Grand Trunk Western Lines 733·83 of first track, and 337·65 of second track are owned, 231·48 of first and 11·08 of second leased, and 26·38 of first and 4·85 of second track operated under trackage rights. The New England mileage is all leased. In some of the leased lines the Grand Trunk owns all or part of the capital stock.

GRAND TRUNK RAILWAY COMPANY OF CANADA

Condensed Balance Sheet at December 31, 1922

ASSETS

Investments—		
Road and equipment account	$ 394,737,012 36	
Improvements on leased railway property	3,469,322 57	
Sinking funds	966,671 43	
Miscellaneous physical property	1,478,738 86	
Investments in affiliated companies	77,166,157 77	
Other investments	527,784 98	
		$ 478,345,687 97
Current Assets—		
Cash	$ 8,096,645 05	
Special deposits	571,653 46	
Loans and bills receivable	7,100 00	
Traffic and car service balances receivable	1,203,786 29	
Net balance receivable from agents and conductors	3,616,035 40	
Miscellaneous accounts receivable	8,905,203 36	
Material and supplies	14,605,958 87	
Interest and dividends receivable	247,778 72	
Rents receivable	55,282 95	
Other current assets	231,127 57	
		37,540,571 67
Deferred Assets—		
Working fund advances	105,053 15	
Insurance and other funds	2,646,656 83	
Other deferred assets	62,128,829 97	
		64,880,539 95
Unadjusted Debits—		
Rents and insurance premiums paid in advance	$ 212,789 48	
Discount on funded debt	1,886,348 15	
Other unadjusted debits	4,937,867 82	
Securities issued or assumed—Unpledged	7,496,589 00	
" " " Pledged	7,300,000 00	
		21,833,594 45
		$ 602,600,394 04

LIABILITIES

Stock—		
Capital stock	$ 241,237,588 83	
Debenture stock	155,373,808 34	
		$ 396,611,397 17
Governmental Grants—		
Grants in aid of construction		15,158,136 63
Long Term Debt—		
Funded debt unmatured	$ 79,555,751 98	
Dominion Government loans and interest thereon	92,527,747 89	
Non-negotiable debt to affiliated companies	1,918,527 55	
		174,002,027 42
Current Liabilities—		
Loans and bills payable	442,403 76	
Traffic and car service balances payable	5,524,820 77	
Audited accounts and wages payable	9,801,501 34	
Miscellaneous accounts payable	114,877 99	
Interest matured unpaid	1,736,491 01	
Dividends matured unpaid	3,566,421 34	
Funded debt matured unpaid	47,273 28	
Unmatured rents accrued	526,163 99	
Other current liabilities	874,280 13	
		22,634,233 61
Deferred Liabilities—		
Liability for provident funds	$ 266,650 65	
Other deferred liabilities	6,300,131 12	
		6,566,781 77
Unadjusted Credits—		
Insurance and casualty reserves	$ 1,693,998 55	
Operating reserves	18,672 57	
Accrued depreciation—equipment	2,200,000 00	
Other unadjusted credits	9,771,011 98	
		13,683,683 10
Corporate Surplus—		
Profit and loss balance	Dr.	*26,055,865 66*
		$ 602,600,394 04

J. M. Rosevear,
Comptroller.

THE GRAND TRUNK RAILWAY COMPANY OF CANADA

INCOME ACCOUNT

	Year 1922	Year 1921
Operating Income—		
Railway operating revenues	$ 77,700,019 23	$ 76,858,032 27
Railway operating expenses	70,317,813 45	71,179,292 80
Net revenue from railway operations	$ 7,382,205 78	$ 5,678,739 47
Railway tax accruals	$ 1,200,287 20	$ 1,325,577 28
	$ 6,181,918 58	$ 4,353,162 19
Hire of freight cars—credit	$ 1,525,788 36	$ 1,306,972 18
Rent from locomotives	744,628 03	586,600 83
Rent from passenger-train cars	404,191 25	185,095 04
Rent from floating equipment	171 34	951 01
Rent from work equipment	80,569 31	40,261 35
Joint facility rent income	698,997 11	822,764 28
	$ 3,454,345 40	$ 2,942,644 69
Gross operating income	$ 9,636,263 98	$ 7,295,806 88
Uncollectable railway revenues	$ 33,291 76	$ 8,908 68
Hire of freight cars—debit		
Rent for locomotives	128,692 91	101,791 34
Rent for passenger-train cars	100,927 40	238,647 37
Rent for floating equipment	9,197 25	16,429 41
Rent for work equipment	10,601 21	7,953 16
Joint facility rents	87,702 16	93,762 99
	$ 370,412 69	$ 467,492 95
Net operating income	$ 9,265,851 29	$ 6,828,313 93
Non-Operating Income—		
Income from lease of road	$ 56,124 80	$ 10,000 00
Miscellaneous rent income	266,930 20	262,059 74
Miscellaneous non-operating physical property	100,476 59	90,049 51
Separately operated properties—profit	516,594 97	
Dividend income	359,930 00	157,819 00
Income from funded securities	2,353,061 25	2,586,783 73
Income from unfunded securities and accounts	634,015 82	672,125 98
Income from sinking and other reserve funds	11,950 13	11,842 54
Miscellaneous income	1,048,740 90	1,900,776 36
Total non-operating income	$ 5,347,824 66	$ 5,691,456 86
Gross income	$ 14,613,675 95	$ 12,519,770 79
Deductions from Gross Income—		
Rent for leased roads	$ 477,917 73	$ 477,832 31
Miscellaneous rents	57,263 30	65,462 95
Miscellaneous tax accruals	88,949 48	
Separately operated properties—loss*	3,307,514 63	6,857,092 97
Interest on funded debt	18,517,889 96	16,492,614 70
Interest on unfunded debt	189,142 41	613,237 83
Amortization of discount on funded debt	159,975 23	275,804 35
Miscellaneous income charges	226,757 24	1,802,168 04
Total deductions from gross income	$ 23,025,409 98	$ 26,584,213 15
Income balance (Deficit)	$ 8,411,734 03	$ 14,064,442 36

*See Statement next ensuing.

THE GRAND TRUNK RAILWAY COMPANY OF CANADA

YEARS ENDED DECEMBER 31, 1922 and 1921

LOSSES OF SUBSIDIARY COMPANIES, AS CHARGED TO THE GRAND TRUNK RAILWAY COMPANY OF CANADA

INCOME ACCOUNT

	Year to December 31, 1922		Year to December 31, 1921	
	Grand Trunk New England Lines	Grand Trunk Western Lines	Grand Trunk New England Lines	Grand Trunk Western Lines
	$ cts.	$ cts.	$ cts.	$ cts.
Operating Income—				
Railway operating revenue	3,123,182 90	25,525,304 98	2,910,515 43	22,193,256 82
Railway operating expenses	3,180,273 38	20,027,078 78	3,592,005 72	22,641,181 93
Net revenue from railway operations	*57,090 48*	5,498,226 20	*681,490 29*	*447,925 11*
Railway tax accruals	199,576 23	1,123,675 14	223,549 43	863,786 21
	256,666 71	4,374,551 06	*905,039 72*	*1,311,711 32*
Hire of freight cars—Credit				
Rent from locomotives	46 78	39,760 65	1,854 45	5,731 91
Rent from passenger-train cars		54,505 35		9,008 18
Rent from work equipment	973 06	101,887 14		19,199 30
Joint facility rent income		145,505 66		23,625 74
	1,019 84	[illegible]	1,854 45	57,565 13
Gross operating income	*255,646 87*	4,716,209 86	*903,185 27*	*1,254,146 19*
Uncollectible railway revenues	53 15	1,432 21	52 99	14,957 71
Hire of freight cars—Debit	516,003 08	2,336,075 87	337,053 16	2,020,766 51
Rent of locomotives	80,714 68	304,587 66	70,306 47	244,981 84
Rent of passenger-train cars	58,324 81	387,628 10	44,404 92	98,939 00
Rent of work equipment	41,634 99	248,693 97	28 00	1,297 97
Joint facility rents	53 40	411,695 43	54 30	453,557 11
	696,784 11	3,690,113 24	451,899 84	2,834,500 14
Net operating income	*952,430 98*	1,026,096 62	*[illegible]*	*4,088,646 33*
Miscellaneous rent income	22,681 57	183,841 82	10,318 93	283,370 27
Miscellaneous non-operating physical pro-		2,706 54		
Dividend income		410,080 00		161,520 00
Income from funded securities		74,026 25		73,150 00
Income from unfunded securities and ac-	5,926 17	16,635 15	8,594 62	8,263 20
Miscellaneous income	106,786 60	*1,808 42*	43,110 64	72,991 74
" (U.S. Govt. Guaranty			28,376 66	1,909,849 42
Total non-operating income	135,394 34	690,481 34	90,400 85	2,509,144 63
Gross income	*817,036 64*	1,716,577 96	*1,264,684 26*	*1,579,501 70*
Deductions from Gross Income—				
Rent for leased roads	565,191 50	319,860 29	565,766 50	296,030 53
Miscellaneous rents		18,824 80	6 00	15,134 81
Miscellaneous tax accruals		3,234 07		810 02
Separately operated properties—Loss		355,850 19		
Interest on funded debt		2,013,108 88		2,077,098 76
Interest on unfunded debt	3 08	124,850 64	75 90	137,876 36
Amortization of discount on funded debt		35,664 88		31,088 64
Miscellaneous income charges	6,298 06	28,309 49	39,612 79	678,656 64
Profit and loss items	10,071 07	94,621 92	10,948 39	Cr. *19,019 85*
Total deductions from gross income	581,563 71	[illegible]	616,409 58	3,217,675 85
Net income or loss	*1,398,600 35*	[illegible]	*1,881,093 84*	*4,797,177 55*
Grand Trunk New England Lines (as above)		$1,398,600 35		$ 1,881,093 84
Grand Trunk Western Lines (as above)		*1,277,747 20*		*4,797,177 55*
Ottawa Terminals Railway Co		*113,769 09*		*104,994 20*
Canada Atlantic Transit Co		*82,454 25*		*73,827 38*
St. Clair Tunnel Co		*231,852 26*		
Toronto Terminals Railway Co		[illegible]		
Total charged to income account		*3,307,514 63*		*6,857,092 97*

THE GRAND TRUNK RAILWAY COMPANY OF CANADA

PROFIT AND LOSS ACCOUNT

—	Debit	Credit
	$ cts.	$ cts.
Debit balance at December 31, 1921	17,475,495 98	
Debit balance transferred from income	8,411,734 03	
Profit on road and equipment sold		109,151 60
Delayed income credits		66,803 21
Unrefundable overcharges		3,347 63
Donations		59,504 04
Miscellaneous credits		102,138 63
Loss on retired road and equipment	51,377 67	
Delayed income debits	447,767 26	
Miscellaneous debits	10,435 83	
Dr. balance at December 31, 1922, as per balance sheet		26,055,865 66
	26,396,810 77	26,396,810 77

THE GRAND TRUNK RAILWAY COMPANY OF CANADA

OPERATING REVENUES

(Canadian Lines only)

—	Year to Dec. 31, 1922	Year to Dec. 31, 1921
	$ cts.	$ cts.
Railway Operating Revenues—		
Freight	56,561,067 87	54,239,903 65
Passenger	14,342,003 03	15,510,164 08
Excess baggage	88,951 54	92,451 06
Parlor and chair car	119,594 37	120,141 98
Mail	1,212,433 28	1,133,737 52
Express	2,883,700 28	3,285,110 86
Other passenger train	62,575 49	104,132 10
Milk	228,541 20	242,755 14
Switching	679,860 01	561,858 32
Special service train	23,217 74	48,076 06
Other freight train	66,791 23	
Dining and buffet	325,003 60	328,045 59
Hotel and restaurant	61,581 85	94,191 50
Station, train and boat privileges	48,842 71	47,890 78
Parcel room	41,468 00	46,649 00
Storage—freight	70,183 89	82,217 47
Storage—baggage	25,783 30	27,604 32
Demurrage	264,162 37	315,802 01
Telegraph and telephone	26 24	1,978 48
Grain elevator	284,800 77	275,967 37
Rents of buildings and other property	110,541 28	88,661 60
Miscellaneous	233,772 54	252,278 59
Joint facilities—Cr	3,738 52	4,121 55
Joint facilities—Dr	*35,631 88*	*45,706* 76
Total operating revenue	77,700,019 23	76,858,032 27

THE GRAND TRUNK RAILWAY COMPANY OF CANADA

OPERATING EXPENSES

(Canadian Lines only)

	Year to Dec. 31, 1922	Year to Dec. 31, 1921
	$ cts.	$ cts.
Maintenance of Way and Structures—		
Superintendence	480,374 65	485,886 51
Roadway maintenance	691,726 20	759,857 09
Bridges, trestles and culverts	591,579 20	698,050 33
Ties	2,521,470 66	3,308,237 06
Rails	1,512,767 64	2,319,082 26
Other track material	1,030,067 36	1,084,370 56
Ballast	133,659 38	65,186 55
Track laying and surfacing	2,552,803 51	3,150,127 39
Right of way fences	195,373 06	217,340 09
Snow and sand fences and snowsheds	8,701 70	15,286 75
Crossings and signs	306,433 01	218,957 17
Station and office buildings	447,690 80	463,458 73
Roadway buildings	7,724 49	15,013 52
Water stations	108,344 92	115,039 37
Fuel stations	32,615 53	54,659 75
Shops and enginehouses	432,822 78	541,373 56
Grain elevators	29,626 25	24,443 45
Wharves and docks	26,095 80	56,863 14
Coal and ore wharves	*1,060 00*	1,634 53
Telegraph and telephone lines	54,958 89	50,483 92
Signals and interlockers	73,832 56	99,639 16
Power plant buildings	238 67	725 00
Miscellaneous structures	65 80	5,427 46
Paving	1,983 16	611 99
Roadway machines	47,011 34	64,449 00
Small tools and supplies	94,870 28	86,873 39
Removing snow, sand and ice	177,974 44	110,150 57
Assessments for public improvements	643 31	*67 31*
Injuries to persons	44,238 95	114,938 23
Insurance	64,594 09	63,702 45
Stationery and printing	9,354 55	11,218 65
Other expenses	7,979 17	5,304 94
Maintaining Jt. tracks, yards, etc.. Dr.	221,848 07	180,163 99
" " " Cr.	*1,167,704 50*	*1,525,691 78*
Total maintenance of way and structures	10,740,705 72	12,862,797 47
Maitenance of Equipment—		
Superintendence	437,366 18	469,338 68
Shop machinery	445,982 10	507,170 80
Power plant machinery	7,956 53	6,967 74
Steam locomotives—Repairs	6,519,602 97	7,035,513 30
" " Renewals	40,260 06	92,425 60
" " Depreciation	707,080 00	.....
Freight train cars—Repairs	8,332,042 10	7,119,317 67
" " Renewals	163,448 05	249,037 48
" " Depreciation	1,189,320 00	.....
Passenger train cars—Repairs	2,072,176 80	1,839,356 10
" " Renewals	26,035 64	51,080 00
" " Depreciation	243,320 00	.....
Floating equipment—Repairs	47,255 45	51,512 56
" " Depreciation	18,920 00	.....
Work equipment—Repairs	441,731 75	350,850 22
" " Renewals	12,567 11	29,110 29
" " Depreciation	41,360 00	.....
Miscellaneous equipment—Repairs	4,140 69	9,449 30
Injuries to persons	87,791 74	136,769 78
Insurance	73,524 02	60,258 73
Stationery and printing	38,023 83	36,341 51
Other expenses	8,595 01	*32,537 75*
Maintaining Jt. equipment at terminals—Dr	27,542 99	12,747 18
" " " Cr	*193,728 59*	*215,211 78*
Total maintenance of equipment	20,792,314 43	17,809,497 41

OPERATING EXPENSES—*Continued*

	Year to Dec. 31, 1922	Year to Dec. 31, 1921
	$ cts.	$ cts.
Traffic Expenses—		
Superintendence	490,040 38	502,481 91
Outside agencies	868,481 10	670,455 81
Advertising	221,772 86	235,134 94
Traffic Association	35,514 86	26,855 02
Industrial and Immigration Bureaus	16,069 70	18,164 75
Insurance	1,165 22	1,630 21
Stationery and printing	181,236 49	128,405 20
Other expenses	1,572 61	702 18
Total traffic expenses	1,815,853 22	1,583,830 03
Transportation Rail Line—		
Superintendence	826,601 25	900,414 37
Despatching trains	265,119 05	315,449 26
Station employees	5,891,072 48	6,288,409 05
Weighing, inspection and demurrage bureaus	25,779 10	30,956 96
Coal and ore wharves	122 00	
Station supplies and expenses	483,747 01	481,416 34
Yardmasters and yard clerks	966,628 45	1,054,117 83
Yard conductors and brakemen	1,823,712 71	1,811,940 76
Yard switch and signal tenders	410,612 85	439,993 65
Yard enginemen	1,377,385 30	1,383,979 41
Fuel and yard locomotives	2,172,337 31	1,897,002 27
Water and yard locomotives	49,384 09	68,268 08
Lubricants for yard locomotives	19,289 89	25,426 01
Other supplies for yard locomotives	21,937 18	26,965 07
Engine house expenses—Yard	432,261 69	527,339 52
Yard supplies and expenses	28,608 60	30,896 44
Operating Jt. yards and terminals—Dr	886,040 16	1,457,262 05
" " Cr	*1,503,309 63*	*1,614,350 13*
Train enginemen	3,131,569 59	3,182,479 60
Fuel and train locomotives	8,658,609 82	7,963,451 95
Water and train locomotives	256,887 21	273,510 83
Lubricants for train locomotives	73,361 08	106,097 09
Other supplies for train locomotives	68,592 81	73,666 82
Engine house expenses—Train	1,092,834 49	1,340,594 05
Trainmen	3,467,095 71	3,614,638 40
Train supplies and expenses	1,304,277 97	1,435,354 99
Signal and interlocker operation	128,101 09	54,578 01
Crossing protection	378,775 91	380,420 77
Drawbridge operation	52,646 62	78,610 45
Telegraph and telephone operation	123,875 22	152,646 78
Operating floating equipment	107,151 36	127,677 29
Stationery and printing	302,209 21	309,649 59
Other expenses	60,102 44	75,897 50
Operating Jt. tracks and facilities—Dr	160,340 81	116,638 60
" " Cr	*423,738 04*	*384,435 35*
Insurance	76,934 21	95,133 07
Clearing wrecks	98,561 68	103,586 10
Damage to property	50,332 89	26,588 66
Damage to live stock on right of way	13,120 79	11,683 53
Loss and damage—Freight	456,456 87	874,553 75
" " Baggage	5,503 99	13,652 36
Injuries to persons	199,715 44	422,635 79
Total transportation rail line	34,020,648 66	35,574,797 57
Miscellaneous Operations—		
Dining and buffet service	327,164 60	348,082 45
Hotels and restaurants	62,672 19	91,589 41
Grain elevators	24,297 16	22,648 18
Total miscellaneous operations	414,133 95	462,320 04

OPERATING EXPENSES—*Concluded*

—	Year to Dec. 31, 1922	Year to Dec. 31, 1921
General Expenses—		
Salaries and expenses of gen. officers	221,346 39	280,256 43
" " clerks and attendants	1,661,943 05	1,894,429 64
Gen. office supplies and expenses	108,711 17	146,158 65
Law expenses	117,899 67	133,157 75
Insurance	1,658 12	873 10
Relief department expenses	12,500 00	12,500 00
Pensions	266,123 97	243,346 88
Stationery and printing	109,924 48	143,787 48
Valuation expenses	567 16	1,906 47
Other expenses	77,874 48	64,170 82
General joint facilities—Dr	417 93	2,939 49
" " Cr	*18,375 46*	*19,502 39*
Total general expenses	2,560,590 96	2,904,024 32
Transportation for investment—Cr	*26,433 49*	*17,974 09*
Maintenance of way and structures	10,740,705 72	12,862,797 47
Maintenance and equipment	20,792,314 43	17,809,497 41
Traffic expenses	1,815,853 22	1,583,830 08
Transportation rail line	34,020,648 66	35,574,797 57
Miscellaneous operations	414,133 95	462,320 04
General expenses	2,560,590 96	2,904,024 32
Transportation for investment—Cr	*26,433 49*	*17,974 09*
Total operating expenses	70,317,813 45	71,179,292 80

YEAR ENDED DECEMBER 31, 1922, COMPARED WITH PREVIOUS YEAR

—	1922	1921
	p.c.	p.c.
Ratio of Each Class of Revenue to Total Operating Revenue—		
Freight	72·79	70·57
Passenger	18·46	20·18
Mail	1·56	1·48
Express	3·71	4·27
Miscellaneous	1·56	1·52
Incidental	1·97	2·03
Joint facility—Net Dr	*0·05*	*0·05*
Total	100·00	100·00
Ratio of Each Class of Expenses to Total Operating Expenses—		
Maintenance of way and structures	15·27	18·07
Maintenance of equipment	29·57	25·02
Traffic	2·58	2·22
Transportation	48·38	49·98
Miscellaneous operations	0·59	0·65
General	3·64	4·08
Transportation for investment—Cr	*0·03*	*0·02*
Total	100·00	100·00
Ratio of Each Class of Expenses to Total Operating Revenue—		
Maintenance of way and structures	13·82	16·74
Maintenance of equipment	26·76	23·17
Traffic	2·34	2·06
Transportation	43·78	46·28
Miscellaneous operations	0·53	0·60
General	3·30	3·78
Transportation for investment—Cr	*0·03*	*0·02*
Total	90·50	92·61

STATISTICS OF RAIL-LINE OPERATIONS

(Canadian Lines)

	Year 1922	Year 1921
Average Mileage of Road Operated	3,611·87	3,611·91
Train Miles—		
Freight—Ordinary	9,135,542	8,759,191
" —Light	469,140	397,442
" —Total	9,604,682	9,156,633
Passenger	7,524,503	7,733,973
Mixed	709,961	714,067
Special	7,578	9,023
Total transportation service	17,846,724	17,613,696
Work service	595,304	547,379
Locomotive Miles—		
Transportation service	25,870,635	25,109,664
Work service	741,787	667,287
Car Miles—		
Freight train—Loaded	216,039,068	179,864,821
" " —Empty	99,711,586	103,561,884
Sum of loaded and empty	315,750,654	283,426,705
Freight train—Caboose	9,577,797	9,106,324
" " —Total	325,328,451	292,533,029
Passenger train—Passenger	18,130,408	19,015,093
" " —Sleeping, parlor and observation	8,417,523	8,348,919
" " —Dining	804,675	842,567
" " —Other	17,242,020	17,459,046
" " —Total	44,594,626	45,665,626
Mixed train	4,826,854	4,617,456
Special train	134,656	107,008
Total transportation service	374,884 567	342,923,118
Work service	3,539,680	2,861,808

THE GRAND TRUNK RAILWAY COMPANY OF CANADA

	Year 1922	Year 1921
Freight Service—		
Tons—revenue freight	23,675,475	21,687,749
" —non-revenue freight	3,661,618	3,339,690
" —total	27,337,093	25,027,439
Ton-miles—revenue freight	4,561,145,848	4,052,564,411
" —non-revenue freight	304,837,720	284,232,200
" —total	4,865,983,568	4,336,796,611
Passenger Service—		
Passengers carried—revenue	10,998,246	11,609,762
Passenger miles	500,718,446	509,330,321
Revenues and Expenses—		
Freight revenue	$56,561,067 87	$54,239,903 65
Passenger revenue	14,342,003 03	15,510,164 08
Passenger service train revenue	18,937,799 19	20,488,492 74
Operating revenues	77,700,019 23	76,858,032 27
Operating expenses	70,317,813 45	71,179,292 80
Net operating revenues	7,382,205 78	5,678,739 47
Averages per Mile of Road—		
Freight train miles	2,659	2,535
Passenger train miles	2,083	2,141
Mixed train miles	197	198
Special train miles	2	2
Transportation service train miles	4,941	4,877
Work train miles	165	152
Locomotive miles—transportation	7,163	6,952
Freight service car miles	91,065	81,913
Passenger service car miles	12,727	13,029
Freight revenue	$ 15,659 77	$ 15,016 96
Passenger service train revenue	$ 5,243 21	$ 5,672 48
Operating revenues	$ 21,512 41	$ 21,279 05
Operating expenses	$ 19,468 53	$ 19,706 83
Net operating revenues	$ 2,043 88	$ 1,572 22
Ton-miles—revenue freight	1,262,821	1,122,000
" —all freight	1,347,220	1,200,693
Passenger miles—revenue	138,631	141,014
Averages per Train Mile—		
Loaded freight car miles—freight trains	22·49	19·64
" " " " —mixed "	2·34	3·05
Empty " " " —freight "	10·38	11·31
" " " " —mixed "	1·44	1·38
Ton-miles—revenue freight	450·83	419·55
" —all freight	480·96	448·97
Passenger train car-miles—passenger trains	5·93	5·90
" " " —mixed trains	1·89	1·91
Revenue passenger miles	64·84	64·10
Freight revenue	$ 5 59	$ 5 62
Passenger service train revenue	$ 2 45	$ 2 58
Operating revenues	$ 4 35	$ 4 36
Operating expenses	$ 3 94	$ 4 04
Net operating revenues	$ 0·41	$ 0 32
Averages per Locomotive Mile—		
Train miles—freight trains	·93	·94
Car " — " "	31·59	30·04
Train " —passenger trains	·97	·97
Car " — " "	5·72	5·71
Train " —mixed "	·99	·99
Car " — " "	6·76	6·39
Train " —special "	·96	·97
Car " — " "	17·03	11·45

THE GRAND TRUNK RAILWAY COMPANY OF CANADA—*Con.*

	Year 1922	Year 1921
Average per Loaded Freight Car Mile—		
Ton-miles—revenue freight	20·88	22·26
" —all freight	22·28	23·82
Freight revenue	$ 0·25896	$ 0·29795
Averages per Car Mile—Passenger—		
Passenger miles—revenue	18·37	18·13
Passenger revenue	$ 0·52630	$ 0·55224
Miscellaneous Averages—		
Miles hauled—revenue freight	192·65	186·86
" " —non-revenue freight	83·25	85·11
" " —all freight	178·00	173·28
Miles carried—revenue passengers	45·53	43·87
Revenue per ton of freight	$ 2·38902	$ 2·50095
" " ton-mile of freight	$ 0·01240	$ 0·01338
" " passenger	$ 1·30403	$ 1·33596
" " passenger-mile	$ 0·02864	$ 0·03045
operating ratio	90·50	92·61

GRAND TRUNK RAILWAY SYSTEM

(Canadian Lines).

FREIGHT TRAFFIC MOVEMENT (Company's material excluded)

	1922	
	Tons	Per cent
Agricultural Products—		
Wheat	1,365,129	5·77
Corn	904,736	3·82
Oats	507,328	2·14
Barley	86,916	·37
Rye	164,624	·70
Flax	27,242	·12
Other grain	38,302	·16
Flour	747,387	3·16
Other mill products	384,193	1·62
Hay and straw	233,288	·99
Cotton	95,161	·40
Apples (fresh)	51,708	·22
Other fruit (fresh)	167,151	·71
Potatoes	47,578	·20
Other fresh vegetables	73,647	·31
Other agricultural products	206,301	·87
Total, 1922	5,100,691	21·56
Total, 1921	4,351,691	20·06
Animal Products—		
Horses	20,191	·09
Cattle and calves	219,470	·93
Sheep	25,984	·11
Hogs	104,961	·44
Dressed meats (fresh)	319,660	1·35
Dressed meats (cured or salted)	32,056	·14
Other packing house products	91,964	·39
Poultry	19,049	·08
Eggs	60,910	·26
Butter and cheese	101,888	·43
Wood	13,463	·06
Hides and leather	84,530	·36
Other animal products	35,747	·15
Total, 1922	1,129,873	4·79
Total, 1921	1,001,429	4·62
Mine Products—		
Anthracite coal	2,070,619	8·75
Bituminous coal	2,789,019	11·78
Lignite coal	539	.....
Coke	147,143	·62
Iron ores	321,013	1·36
Other ores and concentrates	62,484	·26
Base bullion and matte	27,067	·11
Clay, gravel, sand, stone (crushed)	1,522,687	6·43
Slate—dimension or block stone	416,691	1·76
Crude Petroleum	24,540	·10
Asphaltum	46,924	·20
Salt	140,169	·59
Other mine products	103,951	·44
Total, 1922	7,672,846	32·40
Total, 1921	7,785,059	35·90
Forest Products—		
Logs, posts, poles, cordwood	357,748	1·51
Ties	47,914	·20
Pulpwood	964,893	4·08
Lumber, timber, box shooks, staves, heading	1,576,896	6·66
Other forest products	91,158	·38
Total, 1922	3,038,609	12·83
Total, 1921	2,573,082	11·8

FREIGHT TRAFFIC MOVEMENT (Company's material excluded)—*Concluded*

	1922	
	Tons	Per cent
Manufactures and Miscellaneous—		
Refined petroleum and its products	444,833	1·87
Sugar	263,361	1·11
Iron, pig and bloom	173,178	·73
Rails and fastenings	60,242	·25
Bar and sheet iron—structural iron and iron pipe	385,251	1·63
Castings, machinery and boilers	149,559	·63
Cement	427,893	1·81
Brick and artificial stone	358,173	1·51
Lime and Plaster	141,739	·60
Sewer pipe and drain tile	44,492	·19
Agricultural implements—Vehicles, other than autos	51,434	·22
Automobiles and auto trucks	247,443	1·05
Household goods	17,624	·06
Furniture	37,330	·16
Liquor beverages	35,972	·15
Fertilizers, all kinds	85,433	·36
Paper, printed matter, books	755,411	3·19
Wood pulp	550,365	2·32
Fish (fresh, frozen, cured, etc.)	28,203	·12
Canned meats	1,448	·01
Canned goods (all canned food products other than meat)	72,663	·31
Other manufactures and miscellaneous	1,278,733	5·40
Merchandise	1,122,676	4·74
Total, 1922	6,733,456	28·42
Total, 1921	5,976,488	27·55
Grand Total (Canadian Lines), 1922	23,675,475	100·00
1921	21,687,749	100·00

THE GRAND TRUNK RAILWAY COMPANY OF CANADA

EXPENDITURES ON CAPITAL ACCOUNT—YEAR TO DECEMBER 31, 1922

Investment in Road—			
Land and land damages (net)	$ 38,294 09	$	
Grade revisions and changes of line—Cr.	*2,569 94*		
Increase weight of rail	691,592 85		
Sidings, yards and spur tracks	278,309 65		
Bridges, trestles and culverts	146,808 37		
Fences, crossings and signs	100,349 72		
Stations and office buildings	153,359 64		
Office equipment	20,215 07		
Fuel and water stations	32,486 26		
Grain elevators	168,103 71		
Shops, enginehouses and turntables	98,406 82		
Shop machinery and tools	17,231 57		
Power plant machinery	4,072 12		
Telegraph and telephone lines	70,327 27		
Signals and interlockers	46,028 46		
Roadway machines	853 71		
Roadway buildings	406 96		
Hotels—Cr.	*2,985 55*		
Wharves and docks	37 08		
Assessments for public improvements	44,980 99		
		$ 1,906,308 85	
Investment in Equipment—		$ 2,899,361 09	
5 Locomotives from Dominion Government	$ 244,849 55		
5 Transfer locomotives (new) part cost	101,470 23		
10 Switch locomotives (new) part cost	298,559 48		
Improvements to locomotives	99,698 85		
1 Mail car—new	13,143 62		
1 Canadian mail coach car (rebuilt)	6,910 70		
4 Canadian mail and baggage cars (rebuilt)	27,601 33		
348 Refrigerator cars	648,425 83		
1,050 Box cars	1,206,249 66		
175 Coal cars	52,500 00		
30 Caboose (new) part cost	57,392 52		
1 Working crane (new)	53,507 41		
1 Derrick (rebuilt)	8,415 28		
Improvements to cars	49,114 71		
Improvements to floating equipment	31,592 92		
Less Equipment Retired—			
10 Locomotives transferred back to Dom. Govt.	*$642,500 00*		
4 Locomotives retired	*43,605 99*		
2 Passenger cars	*11,345 10*		
1 Baggage car	*3,616 92*		
203 Refrigerator cars	*280,259 38*		
431 Box cars	*392,159 06*		
3 Coal cars	*1,901 44*		
43 Flat cars	*23,161 71*		
95 Work cars	*26,570 48*		
369 Freight cars "misc."	*204,001 02*		
68 Locomotives (adjustment in price)	*8,999 38*		
	1,638,120 48		
		1,261,240 61	
		$ 3,167,549 46	
Less Adjustments—			
Stock, bonds, etc., of affiliated companies, transferred from capital account to appropriate balance sheet accounts	*$72,235,721 96*		
Improvements covering prior years on leased railway property now transferred	*1,657,769 78*		
		$73,893,491 74	
		$70,725,942 28	

SESSIONAL PAPER No. 32

CANADIAN NATIONAL RAILWAYS

(Grand Trunk)

STATEMENT OF OWNED EQUIPMENT AT DECEMBER 31, 1922, COMPARED WITH 1921

	Canadian Lines		Grand Trunk System	
	1922	1921	1922	1921
Locomotives	1,249	1,248	1,395	1,404
Passenger Service Cars—				
First-class and second-class	480	483	530	533
Combination cars	80	86	84	90
Dining cars	22	22	23	23
Parlor cars	26	26	28	28
Postal cars	33	33	36	36
Baggage and express	338	334	370	366
Other passenger cars	29	30	29	30
	1,008	1,014	1,100	1,106
Freight Service Cars—				
Box cars	26,206	26,915	29,771	30,505
Flat cars	3,385	3,485	3,405	3,501
Stock cars	1,496	1,510	1,496	1,510
Coal cars	4,840	4,846	6,823	6,829
Tank cars	100	100	100	100
Refrigerator cars	1,137	1,391	1,394	1,638
Caboose cars	634	628	677	671
	37,798	38,875	43,656	43,754
In Company's Service—				
Officers and pay cars	31	30	34	33
Gravel cars	598	605	598	605
Derrick cars	39	36	43	40
Other road cars	1,546	1,575	1,696	1,721
	2,214	2,246	2,371	2,399
Total cars	41,020	42,135	47,127	48,259
Floating Equipment—				
Car ferries	3	3	3	3

GRAND TRUNK RAILWAY COMPANY OF CANADA

REPAIRS AND RENEWALS OF CARS—YEAR TO DECEMBER 31, 1922

—	Heavy Repairs	Medium Repairs	Painted	Wheels		Axles	Roofs		Steel Tyres
				Cast Iron	Steel Tyres		Wood	Iron	
First class parlor and dining, etc	350	135	343						
" corresponding	322	143	374						
Other passenger cars	246	132	246						
" corresponding	248	217	291						
Roofs of passenger cars			589						
" corresponding			520						
Box, cattle and brake vans	4,395	243	4,216				2,220	379	
" corresponding	3,965	440	3,824				1,275	449	
Platform coal and tank	1,276	91	1,249						
" corresponding	723	148	750						
Company's work cars	521	75	500						
" corresponding	437	64	457						
Roofs of freight cars			6,074						
" corresponding			4,836						
Wheels				34,800	1,562				
" corresponding				26,809	200				
Axle						103			
" corresponding						280			
Steel tyres									1,002
" corresponding									846

COMPARATIVE COST OF REPAIRS AND RENEWALS OF LOCOMOTIVES

Per Train, Engine and Car Mile

Cost per Mile	Repairs and Renewals of Locomotives		All Repairing Charges, including shop machinery, tools and marine equipment, etc.	
	1922	1921	1922	1921
	cts.	cts.	cts.	cts.-
Train	40·72	40·53	45·01	44·96
Engine	28·09	28·42	31·05	31·53
Car	1·94	2·08	2·14	2·31

COMPARATIVE COST OF REPAIRS AND RENEWALS OF CARS

	Total Cost of Repairs and Renewals	Total Miles run by Cars			Cost per Mile	
		Passenger	Freight	Total	Car	Train
	$	Miles	Miles	Miles	cts.	cts.
Year ending Dec., 1922	12,789,085	45,968,489	328,916,078	374,884,567	3·411	71·66
" " 1921	9,900,722	47,060,369	295,090,927	342,151,296	2·894	55·44

THE GRAND TRUNK RAILWAY COMPANY OF CANADA

STATEMENT OF REPAIRS TO ENGINES

Year ended	Engines repaired							Engines									Fire Boxes		Steel Tires		Axles	Wheels	
	Class 1 Repair	Class 2 Repair	Class 3 Repair	Class 4 Repair	Class 5 Repair	Class 6 Repair	Total	Re-tubed	Painted	Cylinders	Injectors	Crank Pins	Smoke Stacks	Extension Smoke Boxes	Complete	Inside	Boilers	Driving	Tender and Truck	Driving	Tender and Truck	Pair Complete	C.I. Tender and Truck	Steel tired steel Tender and Truck
December, 1922.	6	41	426	8	142	647	1,270	484	678	74	23	322	105	5	5	46	1	1,322	680	164	152	41	994	459
December, 1921.	5	30	321	7	142	555	1,060	370	550	63	27	346	66	2	12	43	10	810	537	136	156	80	936	56

During the year four (4) engines were scrapped, ten (10) switching type engines constructed at the Company's Works, Point St. Charles, five (5) Mikado type engines purchased by Grand Trunk Ry. from Canadian Government, and ten (10) Pacific passenger type engines which were formerly considered owned are now leased from Canadian National Rys.

The actual stock at December 31, 1922, was	1,249	engines
Of the above there are in service on lines in United States	226	"

Engines out of service undergoing or waiting repairs:—

	Number	Percentage on Actual stock
December 31, 1922	102	9·79
December 31, 1921	104	10·20

THE GRAND TRUNK RAILWAY COMPANY, OF CANADA

EMPLOYEES AND THEIR COMPENSATION—YEAR TO DECEMBER 31, 1922

Class of employees	Number of employees in service at middle of month					Time on duty and compensation		
	Jan.	April	July	Oct.	Average number	Total time during year		Total compensation during the year
						Days	Hours	
								$ cts.
General officers	95	93	93	95	94·00	29,488		664,421 05
Division officers	214	214	214	213	213·75	71,544		731,750 75
Clerks	3,931	3,870	3,952	3,992	3,936·25		9,092,230	5,306,879 22
Messengers and attendants	102	99	103	94	99·50	23,818		69,729 72
Assistant engineers and draftsmen	63	63	67	63	64·00	20,282		126,161 61
M. W. & S. foreman (excluding Nos. 7 and 25)	84	89	100	122	98·75		238,356	162,647 78
Section foremen	761	774	798	806	784·75		1,981,929	1,115,807 74
General foremen—M.E. department	83	86	87	80	84·00	27,427		209,964 82
Gang and other foremen—M.E. department	343	318	338	345	343·50		759,186	672,778 67
Machinists	1,065	1,077	1,087	1,091	1,080·00		2,149,629	1,792,717 93
Boiler makers	320	328	332	339	329·75		681,118	574,335 61
Blacksmiths	144	144	144	151	145·75		290,272	247,663 03
Masons and bricklayers	17	21	19	19	19·00		42,156	27,108 60
Structural iron workers	3	6	9	9	6·75		12,706	8,949 06
Carpenters	1,032	1,020	1,015	1,056	1,030·75		2,122,233	1,519,011 95
Painters and upholsterers	254	273	310	319	296·50		591,037	447,091 00
Electricians	133	120	127	120	125·00		274,291	201,944 76
Air-brake men	120	123	122	126	122·75		259,418	191,315 47
Car inspectors	326	320	297	320	315·75		761,221	549,214 55
Car repairers	780	769	737	798	771·00		1,722,635	1,205,258 86
Other skilled labour	727	693	716	723	714·75		1,526,258	1,166,250 98
Mechanics helpers and apprentices	2,169	2,153	2,191	2,301	2,203·50		4,447,373	2,519,501 34
Section men	2,022	1,975	3,845	3,615	2,864·25		6,611,388	2,430,278 79
Other unskilled labour	1,552	1,544	1,800	1,813	1,677·25		3,655,954	1,623,359 43
Foremen of construction gangs and work trains	9	1	14	19	10·75		30,173	18,603 49
Other men in construction gangs and work trains	187	12	199	214	153·0		406,237	106,632 74
Travelling agents and solicitors	92	92	90	91	91·25	28,703		206,737 43
Employees in outside agencies	17	19	25	23	21·00		52,916	39,904 51
Other traffic employees								
Train dispatchers and directors	85	83	89	84	85·25		215,662	244,753 36
Telegraphers, telephoners, and block operators	388	368	387	404	386·75		1,041,423	713,198 24
Telegraphers and telephoners operating interlockers	15	11	12	12	12·50		31,723	20,880 68
Levermen (non-telegraphers)	124	125	116	121	121·50		309,540	145,653 02
Telegrapher-clerks	110	107	118	123	114·50		285,118	188,669 82
Agent-telegraphers	405	411	414	411	410·25		1,095,446	775,874 65
Station agents (non-telegraphers)	87	90	91	91	89·75	28,561		200,227 45
Station masters and assistants	12	12	12	17	13·25	4,666		23,160 49
Station service (except Nos. 3, 34, 35, 36 and 37)	2,045	2,103	2,523	1,714	2,346·25		5,564,942	2,614,244 90
Yardmasters	44	44	43	43	43·50	15,533		133,452 34
Yardmaster's assistants (not yard clerks)	32	32	40	33	34·25	11,089		98,295 76
Yard engineers and motormen	311	313	288	326	309·50		838,599	706,218 87
Yard firemen and helpers	352	343	299	322	329·00		842,668	551,443 97
Yard conductors	308	299	311	371	322·25		890,748	734,889 60
Yard brakemen	513	508	540	640	550·25		1,550,547	1,182,094 07
Yard switch tenders	254	267	262	257	260·00		712,413	394,517 51
Other yard employees	51	54	56	58	54·75		145,128	38,208 75
Hostlers	120	118	118	120	119·00		337,863	210,300 02
Enginehouse watchmen and labourers	1,299	1,289	1,325	1,342	1,313·75		3,215,637	1,403,044 78
Road freight engineers and motormen	499	490	454	547	497·50		1,428,646	1,468,102 08
Road freight firemen and helpers	545	540	461	549	523·75		1,435,174	1,095,471 99
Road freight conductors	315	292	316	355	322·00		1,129,102	1,005,266 77
Road passenger engineers and motormen	186	182	189	160	179·25		417,353	524,895 80
Road freight brakemen and flagmen	662	633	739	801	708·75		2,380,452	1,647,705 47
Road passenger firemen and helpers	183	190	191	169	183·25		412,536	392,262 06
Road passenger conductors	128	126	143	127	131·00		390,274	375,211 45
Road passenger baggagemen	126	124	138	128	129·00		374,372	261,648 29
Road passenger brakemen and flagmen	146	149	175	153	155·75		454,198	316,772 77
Other road trainmen	7	6	7	5	6·25		21,128	12,273 53
Crossing flagmen and gatemen	465	464	476	459	466·00		1,209,105	441,689 09
Drawbridge operators		27	61	61	37·25		101,630	45,494 53
Floating equipment employees	58	53	52	51	53·50		157,464	95,630 14
Express service employees								
Policemen and watchmen	219	230	247	255	237·75	84,601		306,771 14
All other transportation employees	17	17	21	15	17·50		68,351	27,274 52
All other employees	587	570	708	563	607·00		1,758,972	583,627 62
Total	27,343	26,996	30,263	30,874	28,869·00	345,712	66,524,930	42,915,246 42

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THE GRAND TRUNK RAILWAY COMPANY, OF CANADA

INTEREST ON FUNDED DEBT

—	Date of issue	Maturing	Principal outstanding, Dec. 31, 1922	Interest rate	Interest dates	Interest Accrued 1922
			$ cts.	p.c.		$ cts.
5% debenture stock, G.T.	.....	Perpetual	20,782,491 67	5	Jan. and July 1	1,039,124 58
5% debenture stock, G.W.	.....	"	13,252,322 67	5	Feb. and Aug. 1	662,616 12
4% debenture stock, G.T.	.....	"	119,839,014 33	4	Jan. April, July and Oct. 14.	4,793,560 56
4% debenture stock, N.R.	.....	"	1,499,979 67	4	Feb. and Aug. 1	59,999 18
4% guaranteed stock	.....	"	60,833,333 33	4	Jan. and July 1	2,433,333 33
			216,207,141 67			8,988,633 77
Equipment trust notes "A"	May, 1912	Semi-annually to May, 1922.		4½	May 1	2,955 00
Equipment trust notes "B"	Nov., 1912	Semi-annually to Nov., 1922.		4½	May and Nov. 1	8,820 00
Equipment trust notes "C"	Nov., 1913	Semi-annually to Nov., 1923.	224,000 00	4½	May and Nov. 1	15,960 00
Equipment trust notes "D"	Aug., 1917	Semi-annually to Aug., 1927.	1,250,000 00	5	Feb. and Aug. 1	66,666 66
Equipment trust notes U.S.R.A.	Jan., 1920	Annually to Jan. 1935.	778,700 00	6	Jan. and July 15	46,722 00
Wellington, Grey and Bruce Bonds		Matured 1901...	259,393 32	vs.	Jan. and July 1	26,698 18
Northern Railway 3rd preference Bonds.		Interminable...	70,566 66	6	April and Oct. 1	4,234 00
Canada Atlantic 1st mortgage Bonds.	Jan., 1905	Jan. 1, 1955.....	16,000,092 00	4	Jan. and July 1	640,003 68
Sinking fund 7% gold deb. bonds	Oct., 1920	Oct. 1, 1940.....	24,743,000 00	7	April and Oct. 1	1,732,010 00
Sinking fund 6% gold deb. bonds	Sept., 1921	Sept. 1, 1936....	25,000,000 00	6	Mar. and Sept. 1	1,500,000 00
Equipment trust certificates "F"	Feb., 1921	Feb. 1, 1936.....	11,230,000 00	6½	Feb. and Aug. 1	736,949 06
Whipple car shop bonds	Dec., 1913	Annually to Dec., 1922.		6	June and Dec. 1	2,475 00
			79,555,751 98			4,783,493 58
Dom. Govt. loan, 1920–1921	Various	On demand	25,000,000 00	6	Jan. and July 1	1,500,000 00
Dom. Govt. loan, 1921–1922	"	"	56,442,019 88	6	Jan. and July 1	3,154,731 28
Dom. Govt. loan, 1922–1923	"	"	3,118,322 72	6	Jan. and July 1	91,031 33
			84,560,342 60			4,745,762 61
Total	.....	.....	380,323,236 25			18,517,889 96

THE GRAND TRUNK RAILWAY COMPANY, OF CANADA

SECURITIES OF AFFILIATED COMPANIES

Owned by the Grand Trunk Railway Company of Canada

	Total Outstanding	Held by Grand Trunk
Atlantic and St. Lawrence Railroad Company—		
Capital stock	$ 5,484,000 00	$ 224 33
1st mortgage 6% bonds	1,500,000 00	1,500,000 00
2nd mortgage 6% bonds	713,000 00	713,000 00
3rd mortgage 6% bonds	787,000 00	787,000 00
Bay City Terminal Railway Company—		
Capital stock	15,000 00	15,000 00
Canada Atlantic Transit Company—		
Capital stock	219,000 00	219,000 00
Canada Atlantic Transit Co. of U.S.—		
Capital stock	250,000 00	250,000 00
Central Vermont Railway—		
Capital stock	3,000,000 00	2,191,100 00
Refunding mortgage 5% Gold bonds	13,560,700 00	4,229,300 00
Demand notes, etc	8,756,905 52	8,041,905 52
Champlain and St. Lawrence R.R. Co.—		
Capital stock	50,000 00	50,000 00
Chicago, New York and Boston Refrigerator Co.—		
Capital stock	1,129,400 00	1,129,400 0000
Chicago, Detroit and Can. G.T. Jct. R.R. Co.—		
Capital stock	1,095,000 00	522,500 00
1st mortgage 6% bonds	1,095,000 00	1,095,000 00
2nd mortgage 5% bonds	691,141 46	691,141 46
Chicago and Western Indiana Railroad—		
1st mortgage 4% bonds		406,000 00
Cincinnati, Saginaw and Mackinaw R.R.—		
Capital stock	1,500,000 00	27,761 71
Detroit, Grand Haven and Milwaukee Ry. Co.—		
Capital stock	1,500,000 00	1,500,000 00
Equipment mortgage 7% bonds	2,000,000 00	2,000,000 00
General consolidated mortgage 7% bonds	3,200,000 00	3,200,000 00
Mowatts mortgage 5%	146,000 00	146,000 00
South Lyons land mortgage 6½%	80,000 00	80,000 00
Indebtedness for steamers	285,000 00	285,000 00
Detroit Terminal Railroad Company—		
Capital stock	2,000,000 00	1,000,000 00
Detroit and Toledo Shore Line—		
1st Mortgage 4% bonds	3,000,000 00	662,000 00
Grand Rapids Terminal Railroad Co.—		
Capital stock	50,000 00	50,000 00
Grand Trunk Junction Railway Company—		
Capital stock	500,000 00	500,000 00
1st mortgage 5% bonds	3,872,000 00	2,933,040 00
Grand Trunk Pacific Railway Company—		
Capital stock	24,940,000 00	24,940,000 00
Bonds, none held by G.T.R.		.....
Grand Trunk Pacific Branch Lines Co.—		
Saskatchewan 4% bonds	11,315,052 00	1,435,644 00
Saskatchewan 4½% bonds	1,881,792 00	1,881,792 00
Demand notes 5%		11,019,686 55
Grand Trunk Pacific Development Co.—		
Demand notes 5%		10,795,909 44
Grand Trunk Pacific Terminal Elevator Co.—		
1st mortgage bonds 5%	1,862,352 00	1,862,352 00

SECURITIES OF AFFILIATED COMPANIES

OWNED BY THE GRAND TRUNK RAILWAY COMPANY OF CANADA—*Continued*

	Total Outstanding	Held by Grand Trunk
Grand Trunk Pacific Saskatchewan Ry.—		
Demand Notes 5%		214,500 00
Grand Trunk Western Railway Company—		
Capital stock	6,000 000,00	6,000,000 00
1st mortgage 4% bonds	14,999,720 00	4,035,304 00
Gen. Consolidated mortgage 4% bonds	11,541,000 00	11,541,000 00
Equipment Gold Notes 6%	2,684,500 00	.....
Intercolonial Express Company—		
Capital stock		100,000 00
International Bridge Company—		
Capital stock	1,500,000 00	1,496,500 00
1st mortgage 7% bonds	512,260 00	512,260 00
Kingston, Smith Falls and Ottawa Ry.—		
Capital stock		122,000 00
Michigan Air Line Railway—		
Capital stock	300,000 00	300,000 00
1st mortgage 5% bonds	1,500,400 00	1,500,400 00
Montreal and Southern Counties Ry. Co.—		
Capital stock	500,000 00	306,500 00
Demand notes	1,594,065 74	1,594,065 74
Montreal Warehousing Company—		
Capital stock	236,000 00	220,300 00
1st mortgage bonds	1,000,000 00	.....
New England Elevator Company—		
Capital stock	400,000 00	400,000 00
1st mortgage 3¾% bonds	400,000 00	210,000 00
Ontario Car Ferry Company—		
Capital stock	500,000 00	250,000 00
Ontario Sault Ste. Marie Ry.—		
Capital stock		230,000 00
Ottawa Terminals Railway Co.—		
Capital stock	250,000 00	250,000 00
1st mortgage 4½% bonds	3,000,000 00	3,000,000 00
Pembroke Southern Railway Co.—		
Capital stock	178,000 00	158,000 00
1st mortgage bonds	150,000 00	.....
Portland Elevator Company—		
Capital stock	50,000 00	50,000 00
1st mortgage 4% bonds	200,000 00	125.000 00
Pontiac, Oxford and Northern R.R.—		
1st mortgage 6% bonds	400,000 00	400,000 00
St. Clair Tunnel Company—		
Capital stock	700,000 00	700,000 00
1st mortgage 5% bonds	2,500,000 00	2 ,500,000 00
The Terminal Warehousing Co. Ltd.—		
Capital stock	1,000,000 00	1,000,000 00
The Canadian Express Company—		
Capital stock	1,768,800 00	1,768,800 00
The Erie, London and Tilsonburg Railway—		
Capital stock	125,000 00	125,000 00
The Lachine, Jacques Cartier and Maisonneuve Ry.—		
Capital stock	1,200 00	1,200 00
Demand notes	2,395,882 79	2,395,882 79
The Maganetawan River Railway Company—		
Capital stock	30,000 00	30,000 00

SECURITIES OF AFFILIATED COMPANIES

Owned by the Grand Trunk Railway Company of Canada—*Concluded*

	Total Outstanding	Held by Grand Trunk
The Oshawa Railway Company—		
Capital stock	40,000 00	40,000 00
The Rail and River Coal Company—		
Capital stock	2,000,000 00	2,000,000 00
1st mortgage bonds	1,851,500 00	.....
The Realty Assets Company, Ltd.—		
Capital stock	504 00	504 00
The Toronto Belt Line Railway Co.—		
Capital stock	50,000 00	26,000 00
1st mortgage 4% bonds	462,500 00	462,500 00
Thousand Islands Ry. Co.—		
Capital stock	60,000 00	60,000 00
1st mortgage 6% bonds	50,000 00	50,000 00
Toledo, Saginaw and Muskegon Ry. Co.—		
Capital stock	1,600,000 00	1,600,000 00
1st mortgage 5% bonds	1,662,000 00	1,662,000 00
Toronto Terminals Ry. Co.—		
Capital stock	500,000 00	250,000 00
Gold notes	4,000,000 00	.....
Transcontinental Townsite Co. Ltd.—		
Capital stock	467,800 00	467,800 00
United States and Canada Railroad Co.—		
Capital stock	219,400 00	218,925 00
1st mortgage 5% bonds	225,000 00	225,000 00
2nd mortgage bonds nominal	208,470 00	208,470 00
Vermont and Province Line Ry.—		
Capital stock	200,000 00	200,000 00
Whipple Car Company—		
Capital stock	1,400,000 00	1,400,000 00

Owned by Grand Trunk Western Railway Company

Pontiac, Oxford and Northern R.R.—		
Capital stock	1,000,000 00	1,000,000 00
Detroit and Huron Railway Company—		
Capital Stock	148,000 00	148,000 00
Chicago and Kalamazoo Terminal R.R. Co.—		
Capital stock	100,000 00	100,000 00
Detroit and Toledo Shore Line Railway Co.—		
Capital stock	1,428,000 00	714,000 00

THE GRAND TRUNK RAILWAY COMPANY, OF CANADA

SECURITIES OF OTHER COMPANIES

Owned by the Grand Trunk Railway Company of Canada

	Par Value held by Grand Trunk
Aberdeen Elevator Company—	
1st mortgage 6% bonds	75,000 00
2nd mortgage 5% bonds	100,000 00
Brantford Club—	
Mortgage bonds	300 00
Canadian Iron Foundries, Ltd.—	
Stock	201,920 00
Canadian Newspaper Co., Ltd. (England)—	
Stock (£1,000)	4,855 67
Consumers Power Co.—	
Stock	200 00
Cushman Manufacturing Co.—	
1st mortgage 6% bonds	4,000 00
Dominion of Canada—	
1932—5½% bonds	1,050,000 00
1924—5½% bonds	90,000 00
Dominion Dyers Co., Ltd.—	
Stock	100 00
Financial Times—	
Stock	3,000 00
Godrich Elevator Co.—	
Stock	20,300 00
Kansas, Oklahoma & Gulf Ry.—	
Series "B" 6% bonds	100 00
King Edward Hotel, Toronto—	
Stock	1,000 00
2nd mortgage 7% bonds	2,500 00
La Patrie Publishing Company—	
Stock	2,100 00
6% mortgage bonds	10,000 00
London & Port Stanley Ry.—	
Stock	234,700 00
Muskegon Railway and Navigation Co.—	
1st mortgage 6% gold bonds	20,000 00
New York City—	
4% corporate stock	5,000 00
Ritz-Carlton Hotel, Montreal—	
Stock	25,000 00
St. Lawrence & Ottawa Railway—	
Stock	291,197 43
Toronto, Grey & Bruce Railway—	
Stock	71,100 00

Owned by the Grand Trunk Western Railway

C. T. Peavey (Harvey Elevator Co.)—	
Notes 5%	7,623 52
Toledo Terminal Railway Company—	
Capital stock	387,200 00
1st mortgage 4½% bonds	73,000 00
Notes	100,800 00

Owned by the Grand Trunk Junction Ry. Co.

Chicago & Western Indiana Railroad—	
Capital stock	1,000,000 00
Consolidated mortgage 4% bonds	1,781,000 00
Belt Railway Company of Chicago—	
Capital stock	240,000 00

Owned by the Detroit, Grand Haven & Milwaukee Railway Company

Grand Trunk Milwaukee Car Ferry Co.—	
Capital stock	200,000 00

THE CENTRAL VERMONT RAILWAY

The Central Vermont Railway is operated under separate management, but controlled by the Grand Trunk Railway Company of Canada.

The railway extends from New London, Conn., to Montreal, and the twenty-third annual report (year ended December 31, 1922) gives a total track mileage of 718·14. Of this 579·51 miles are in the United States and 138·53 in Canada. Mileage owned by the company includes 198·53 miles of main track, 5·79 miles of second track, 173·41 miles of branch line, and 126·80 miles of yard, siding and spur tracks. There are, in addition, leased lines including 121·02 miles of main line, 39·56 miles of branch lines and 52·93 miles of yard siding and spur tracks.

The following summarizes the results of operation for the year ended December 31, 1922:—

Gross receipts		$ 7,626,626 19
Gross expenses		6,520,100 62
Balance		$ 1,106,525 57
Taxes		223,375 59
Net debit from rentals		$ 883,149 98
		201,595 42
		$ 681,554 56
Hire of equipment—Dr. balance		506,519 18
		$ 175,035 38
Interest on securities held by the company		3,000 00
		$ 178,035 38
Fixed charges		914,849 57
Net result, deficit		$ 736,814 19

The foregoing result, while not satisfactory to the directors, indicates improvement over the previous year. The deficit has been reduced more than fifty per cent from the preceding year whereas the amount of business increased but twenty-four per cent. To accomplish this result economies were practiced principally in the improvement of operating methods and in curtailing all other expenses.

INCOME ACCOUNT

Operating Income—		
Railway operating revenues	$ 7,626,626 19	
Railway operating expenses	6,520,100 62	
Net revenue from railway operations		$ 1,106,525 57
Railway tax accruals	223,375 59	
Uncollectible railway revenue	1,774 90	225,150 49
Total operating income		$ 881,375 08
Non-operating Income—		
Rent from locomotives	898 49	
Rent from passenger train cars	68,874 50	
Rent from work equipment	1,584 40	
Joint facility rent income	31,364 51	
Income from lease of road	2,600 04	
Miscellaneous rent income	6,068 48	
Income from unfunded securities and accounts	6,895 78	
Income from funded securities and accounts	3,000 00	
Miscellaneous income	16,268 68	
Total non-operating income		137,554 88
Gross income		$ 1,018,929 96

INCOME ACCOUNT—*Concluded*

Deductions from Gross Income—		
Hire of freight cars—Dr. Balance	$ 472,825 75	
Rent for locomotives	42,817 32	
Rent for passenger train cars	62,180 94	
Rent for work equipment	52 56	
Joint facility rents	5,444 41	
Miscellaneous rents	27,631 49	
Rent for leased roads	216,552 50	
Interest on funded debt	682,376 80	
Interest on unfunded debt	167,419 89	
Amortization of discount on funded debt	15,920 27	
Miscellaneous income charges	62,522 22	
Total deductions from gross income		$ 1,755,744 15
Net deficit		$ 736,814 19

PROFIT AND LOSS ACCOUNT

Net deficit at December 31, 1921	$ 2,036,904 95
Miscellaneous adjustment credit	22,956 00
Deficit	2,013,948 95
Deficit in income account for the year	736,814 19
Depreciation on equipment retired during the year from date of purchase to June 30, 1907	14,918 02
Net deficit at December 31, 1922	$ 2,765,681 16

BALANCE SHEET, DECEMBER 31, 1922

Assets

Investments—			
Investment in road and equipment	$17,738,155 97		
Improvements on leased railway property	448,531 24		
		$18,186,687 21	
Investments in affiliated companies—			
Stocks	$ 4,973,914 92		
Advances	3,338,302 65		
		8,312,217 57	
Other investments—			
Bonds	75,000 00		
Miscellaneous	133 30		
		75,133 30	
Total investments			$26,574,038 08
Current Assets—			
Cash	$ 546,915 39		
Special deposits	17,930 50		
Loans and bills receivable	6,620 00		
Traffic and car service balances receivable	350,555 37		
Net balance receivable from agents and conductors	130,270 66		
Miscellaneous accounts receivable	683,418 53		
Material and supplies	641,975 57		
Interest and dividends receivable	6,513 32		
Other current assests	260,426 04		
Total current assets			$ 2,644,625 38
Deferred Assets—			
Working fund advances	1,740 75		
Other deferred assets, U.S. Government	2,338,661 83		
Total deferred assets			$ 2,340,402 58
Unadjusted Debits—			
Rents and insurance premiums paid in advance	4,374 38		
Discount on funded debt	106,678 04		
Other unadjustde debits	819,706 83		
Securities issued or assumed—Unpledged	379,600 00		
Securities issued or assumed—Pledged	369,000 00		
Total unadjusted debits			$ 1,679,359 25
Grand total			$33,238,425 29

BALANCE SHEET, DECEMBER 31, 1922—*Concluded*

LIABILITIES

Stock—		
Authorized, 30,000 shares of $100 each..	$ 3,000,000 00	
Issued	$ 2,984,600 00	
Scrip	15,400 00	
		$ 3,000,000 00
Long-Term Debt—		
Funded debt unmatured, refunding—		
Mortgage 5% gold bonds	$13,560,700 00	
Equipment trust notes "E,"	401,000 00	
U. S. government note	128,000 00	
U. S. government note	52,000 00	
American locomotive note	50,000 00	
Non-negotiable debt to affiliated companies—		
Notes	8,041,905 52	
Open accounts	3,330,731 56	
Total long term debt		$25,564,337 08
Current Liabilities—		
Loans and bills payable	715,000 00	
Traffic and car service balances payable	573,166 89	
Audited accounts and wages payable	1,337,008 61	
Miscellaneous accounts parable	2,525 90	
Interest matured unpaid	13,448 99	
Funded debt matured unpaid	45,300 00	
Unmatured interest accrued	246,236 73	
Other current liabilities	57,311 95	
Total current liabilities		$ 2,989,999 07
Deferred Liabilities—		
Other deferred liabilities, miscellaneous	225,572 87	
Other deferred liabilities, U. S. Government	2,945,848 90	
Total deferred liabilities		$ 3,171,421 77
Unadjusted Credits—		
Accrued depreciation—Road	123,847 66	
Accrued depreciation—Equipment	836,191 25	
Tax liabilities	129,862 47	
Other unadjusted credits	188,447 15	
Total unadjusted credits		$ 1,278,348 53
Profit and loss balance (deficit)		2,765,681 16
Contingent Liabilities—		
In respect of Principal of and Interest on $200,000.00 par value first mortgage 4% bonds of the Montreal and Province Line Railway Company.		
Grand total		$33,238,425 29

COMPARATIVE STATEMENT OF EARNINGS, EXPENDITURES AND RESULT OF OPERATION

Revenue	Year Ended Dec. 31, 1922	Year Ended Dec. 31, 1921
Freight	$ 5,677,849 89	$ 5,143,566 53
Passenger	1,207,451 76	1,362,007 56
Mail and express	305,346 18	242,860 63
Other revenue from transportation	293,268 75	262,734 87
Revenue from operations other than transportation	126,423 11	108,730 29
Dining and buffet service	16,286 50	15,853 18
Total revenue	$ 7,626,626 19	$ 7,135,753 06
Expenses		
Maintenance of way and structures	$ 1,045,831 74	$ 1,304,427 26
Maintenance of equipment	1,092,053 62	1,604,438 61
Traffic	150,454 71	145,934 57
Transportation	3,949,302 15	3,959,970 20
Miscellaneous operations	18,933 67	19,173 95
General	266,181 59	280,394 91
Transportation for investment—Cr	2,656 86	1,780 02
Total operating expenses	$ 6,520,100 62	$ 7,312,559 48
Balance	$ 1,106,525 57	†$ 176,806 42
Net Dr. from rentals, etc	201,595 42	61,126 15
Balance	$ 904,930 15	†$ 237,932 57
Taxes	223,375 59	237,032 08
Balance	$ 681,554 56	†$ 474,964 65
Hire of equipment balance—Dr	506,519 18	255,986 69
Balance	$ 175,035 38	†$ 730,951 34
Extra Receipts		
Interest on securities held by the company, etc	$ 3,000 00	$ 3,000 00
Total	$ 178,035 38	†$ 727,951 34
Fixed charges	914,849 57	905,744 06
Net result	† 736,814 19	†$1,633,695 40

†Deficit.

COMPARATIVE STATEMENT OF FREIGHT AND PASSENGER TRAIN EARNINGS PER TON AND PER PASSENGER MILE

Freight	Year Ended Dec. 31, 1922	Year Ended Dec. 31, 1921
Revenue train miles	959,769	877,168
Freight earnings	$ 5,677,849 89	$ 5,143,566 53
Earnings per freight train mile	$ 5 90	5 86
Tons carried	3,865,689	3,428,344
Tons carried one mile	369,128,514	298,520,857
Earnings per ton mile	$ ·0153	·0172
Passenger		
Revenue train miles	923,448	992,892
Passenger earnings	$ 1,756,653 86	$ 1,708,027 40
Earnings per passenger train mile	$ 1 90	$ 1 72
Passengers carried	1,015,097	1,235,122
Passengers carried one mile	33,149,915	36,890,101
Earnings per passenger per mile	$ ·0364	$ ·0369

Earnings from express and mails are included in passenger train earnings.

Earnings per passenger mile do not include express and mail earnings.

Freight carried amounted to 3,865,689 tons, as against 3,428,344 tons in 1921. This was made up by the following classes of merchandise, given in percentages:—

	1922	1921
Products of agriculture	21,872	22,845
" animals	5,919	6,003
" mines	19,290	24,996
" forests	14,234	12,220
Manufactured and miscellaneous	31,800	27,656
L. C. L. traffic (merchandise)	6,885	6,280
	100,000	100,000

MILEAGES

	Year Ended Dec. 31, 1922	Year Ended Dec. 31, 1921
Engine Mileage—		
Freight	1,034,295	889,078
Passenger	922,855	1,000,478
Mixed	69,344	69,057
Special	825	327
Switching	590,592	546,266
Total revenue miles	2,617,911	2,505,206
Non-revenue miles	41,512	40,355
Total	2,659,423	2,545,561
Train Mileage—		
Freight	910,678	824,710
Passenger	908,824	976,883
Mixed	63,733	66,608
Special	825	308
Total revenue miles	1,884,060	1,868,509
Non-revenue miles	41,512	40,355
Total	1,925,572	1,908,864
Car Mileage—		
Passenger	4,379,694	4,533,605
Freight	29,008,828	22,643,662
Total	33,388,522	27,177,267

EQUIPMENT

	On Hand Jan. 1, 1922	On Hand Jan. 1, 1923
Locomotives—		
Passenger	28	30
Freight	66	65
Switch	5	4
Total	99	99
Passenger Cars—		
Coach	49	48
Cafe-parlor	2	2
Parlor	2	2
Dining	1	1
Comb. passenger and baggage	11	10
Baggage, mail and express	26	25
Milk	13	20
Total	104	108
Freight and Work Cars—		
Freight—		
Box	1,875	1,871
Refrigerator	13	5
Stock	7	7
Coal	200	200
Flat	423	413
Caboose	40	40
Work—		
Cinder	34	33
Wreck	17	17
Snowplows	8	8
Construction	70	67
Scraper	15	15
Official	1	1
Store	1	1
Total	2,704	2,678

REPORT OF THE DEPARTMENTAL ACCOUNTANT

TOTAL EXPENDITURE and REVENUE of the Department of Railways and Canals prior to and since Confederation to March 31, 1923

	$ cts.	$ cts.
Grand total expenditure		1,265,026,651 16
Expenditure on Railways	925,624,456 52	
" Quebec Bridge	22,640,228 46	
" Railway Subsidies	76,391,471 09	
" Miscellaneous	38,204,750 68	
" Canals	202,165,744 41	
Total expenditure		1,265,026,651 16
Classification of expenditure in general—		
Capital account	664,039,641 46	
Revenue "	487,659,707 20	
Income "	36,935,831 41	
Consolidated Fund—railway subsidies	76,391,471 09	
Total expenditure		1,265,026,651 16
Classification of expenditure in detail—		
Railways—		
Capital	473,745,067 80	
Income	6,964,683 12	
Revenue	444,914,705 60	
		925,624,456 52
Quebec Bridge—		
Capital	22,181,017 82	
Income	459,210 64	
		22,640,228 46
Railway subsidies		76,391,471 09
Total expenditure on railways		1,024,656,156 07
Canals—		
Capital	146,420,557 21	
Income	13,076,896 65	
Revenue, staff	23,819,146 94	
Revenue, repairs	18,849,143 61	
		202,165,744 41
Miscellaneous expenditure—		
Capital	21,692,998 63	
Income	16,435,041 00	
Revenue	76,711 05	
		38,204,750 68
Grand total expenditure		1,265,026,651 16

General Summary of the Expenditure and the Revenue for the Fiscal Year ending March 31, 1923, and for previous years

Revenue Received		
Grand total of revenue received from July 1. 1867, to Mar. 31, 1923—		
Railways	391,866,392 09	
Canals	19,822,927 19	
Grand total		411,689,319 28
Expenditure		
Total expenditure for the year		21,213,373 80
This expenditure is divided as follows:—		
Canals	5,113,072 30	
General expenditure	7,548,024 80	
	8,552,276 70	
		21,213,373 80
Grand total expenditure to Mar. 31, 1923		1,265,026,651 16
This expenditure is divided as follows:—		
Railways, including Quebec Bridge	1,017,406,536 54	
Quebec Bridge—prior expenditure	7,249,619 53	
Canals	202,165,744 41	
General expenditure	38,204,750 68	
		1,265,026,651 16
Revenue		
Revenue received from Canals during Fiscal Year		742,410 46
Grand total revenue to Mar. 31, 1923		411,689,319 28
Railways	391,866,392 09	
Canals	19,822,927 19	
		411,689,319 28

The principal expenditures during fiscal year follow:—		
Can. Govt. Rys, operating deficits, etc		5,695,669 05
Miscellaneous railway equipment		2,315,805 79
Railway Commission, maintenance		211,940 04
" Statute		58,500 00
Surveys and Inspections ,railways		49,578 38
Acquisition of the Grand Trunk Railway		100,522 73
Commissioner of Highways		59,259 79
Canada Highways Commission		5,854,395 81
Workmens Compensation Act		224,250 88
Retirement Act, 1920, Superannuation No. 4		34,080 86
Can. Govt. Rys., to supplement pension allowance		48,699 09
Surveys and Inspections, canals		12,127 44
Welland Ship Canal		4,776,393 84
Canal expenditure		2,551,603 87
Railway Grade Crossing Fund		46,885 9
Canadian Government Railways—Capital Expenditure	2,830,872 82	
" " " Credit	3,911,561 52	
		1,080,688 70
Miscellaneous expenditure		254,348 99
Total		21,213,373 80

*Principally sale of 73 locomotives to Grand Trunk railway.

General Statement of Expenditure during the Year ending March 31, 1923

	$ cts.	$ cts.
Total expenditure		21,213,373 80
Expenditure chargeable to railways	5,113,072 30	
" " canals	7,548,024 80	
General expenditure	8,552,276 70	
Total expenditure		21,213,373 80
Classification of expenditure in general—		
Capital account	6,258,352 64	
Income Account	7,263,754 06	
Revenue	7,691,267 10	21,213,373 80
Classification of expenditure by accounts—		
Railways—		
Capital expenditure, railways		1,052,637 42
Revenue expenditure, railways		5,695,669 05
Income expenditure, railways general		470,040 67
Canals—		
Capital expenditure, canals		4,995,184 27
Income expenditure, canals	548,757 36	
Income expenditure, canals general	15,485 12	
		564,242 48
Revenue expenditure, canals, staff	924,216 63	
Revenue expenditure, canals, staff general	142,150 61	
		1,066,367 24
Revenue expenditure, canals, repairs	859,839 45	
Revenue expenditure, canals, repairs general	62,391 36	
		922,230 81
General expenditure, Capital Account	2,315,805 79	
General expenditure, Income Account	6,229,470 91	
General expenditure, Revenue Account	7,000 00	
		8,552,276 70
Total expenditure		21,213,373 80

REVENUE

General Statement of the Revenue Received during the Year Ending March 31, 1923

	$ cts.
Canals—	
Welland Canal	85,938 08
" " Port Colborne elevator	356,740 43
Welland ship canal	4,360 20
Williamsburg canal	1,746 10
Cornwall canal	23,462 84
Beauharnois Canal	14,753 65
Lachine canal	209,644 04
Chambly canal	903 24
Rideau canal	11,499 33
Trent canal	28,174 56
Sault Ste. Marie canal	116 00
Carillon and Grenville canal	815 50
Soulanges canal	3,756 49
St. Annes Lock	223 00
Chats Falls canal	1 00
St. Peter's canal	12 00
Murray canal	264 00
Total	742,410 46

EXPENDITURE on Government and other Railways to March 31, 1923. Fiscal Year 1922-1923

—	Capital	Income	Revenue	Total
	$ cts.	$ cts.	$ cts.	$ cts.
Canadian Government Railways			5,695,669 05	5,695,669 05
Intercolonial Railway	1,302,168 60			1,302,168 60
New Brunswick and Prince Edward Island Railway	65,305 76			65,305 76
Prince Edward Island Railway	243,481 37			243,481 37
International Railway of New Brunswick	26,907 58			26,907 58
National Transcontinental Railway	844,547 44			844,547 44
Moncton and Buctouche Railway	20,899 09			20,899 09
Salisbury and Albert Railway	15,135 36			15,135 36
St. Martin's Railway	8,354 61			8,354 61
Elgin and Havelock Railway	4,009 09			4,009 09
York and Carleton Railway	31,942 49			31,942 49
Quebec and Saguenay Railway	35,059 65			35,059 65
Caraquet and Gulf Shore Railway	143,895 71			203,845 71
" " " " " Purchase	59,950 00			
Lotbinière and Mégantic Railway	12,215 05			12,215 05
Cape Breton Railway (extension)	3,176 08			3,176 08
Hudson Bay Railway	13,824 94			13,824 94
Canadian Government Railways—Miscellaneous railway equipment—rolling stock	*46,553 68*			*46,553 68*
Total	2,784,319 14		5,695,669 05	8,479,988 19
Canadian Government Railways—rolling stock—sale of locomotives	*3,759,471 91*			*3,759,471 91*
Amount transferred to Intercolonial Railway	*8,650 12*			*8,650 12*
Amount transferred to Intercolonial Railway operation	*96,541 11*			*96,541 11*
	1,080,344 00		5,695,669 05	4,615,325 05
Quebec Bridge—sale of miscellaneous equipment	*344 70*			*344 70*
	1,080,688 70		5,695,669 05	4,614,980 35
Railway Commission, maintenance		211,940 04		211,940 04
Railway Commission, statutory		58,500 00		58,500 00
Surveys and inspections		49,578 38		49,578 38
Railway Grade Crossing Fund		46,885 94		46,885 94
Governor General's cars		2,613 58		2,613 58
To provide for payment of expenses in connection with the acquisition of the Grand Trunk and associated Railway Systems		100,522 73		100,522 73
Canadian Pacific Railway, Vote 486	248 72			248 72
Hudson Bay Railway, Port Nelson Terminals	27,802 56			27,802 56
Total	28,051 28	470,040 67		498,091 95
Grand total of railways	*1,052,637 42*	470,040 67	5,695,669 05	5,113,072 30
Miscellaneous				
Miscellaneous railway equipment	2,315,805 79			2,315,805 79
Arbitrations and awards and cost of litigation		1,086 06		1,086 06
Commissioner of Highways		59,259 79		59,259 79
Canada Highways Commission		5,854,395 81		5,854,395 81
Printing and stationery, outside service		5,708 23		5,708 23
Retirement Act, 1920, superannuation No. 4		34,080 86		34,080 86
Workmen's Compensation Act, chapter 15, Statutes of Canada, 1918		224,250 88		224,250 88
Canadian Government Railways—To supplement pension allowance		48,699 09		48,699 09
Gratuity of one year's salary to the widow of the late James Hardwell			7,000 00	7,000 00
Miscellaneous works not provided for		1,990 19		1,990 19
	2,315,805 79	6,229,470 91	7,000 00	8,552,276 70

EXPENDITURE on Canals for Year ended March 31, 1923

Name of Canal	Chargeable to		Chargeable to Revenue		Total
	Capital	Income	Staff	Repairs	
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Carillon and Grenville		29,720 82	30,512 09	26,175 79	86,408 70
Chambly		35,145 79	44,671 41	60,546 90	140,364 10
Cornwall			90,140 08	86,853 01	176,993 09
Lachine		1,060 20	131,498 04	163,120 92	295,679 16
Murray			7,444 33	6,869 93	14,314 26
Rideau	3,989 68	19,426 27	77,511 75	107,547 53	208,475 23
Sault Ste. Marie		36,000 00	37,019 73	38,571 41	111,591 14
Soulanges		53,616 28	43,059 50	84,573 46	181,249 24
St. Anne's Lock		3,975 45	7,273 60	4,252 24	15,501 29
St. Ours			5,170 44	7,454 57	12,625 01
St. Peters			5,325 12	8,024 26	13,349 38
St. Lawrence Ship Canal	45,145 74				45,145 74
Trent	169,655 01	223,340 23	108,268 66	66,480 96	567,744 86
Welland		146,472 32	292,527 56	163,169 87	602,169 75
Welland Ship	4,776,393 84				4,776,393 84
Williamsburg			43,794 32	36,198 60	79,992 92
	4,995,184 27	548,757 36	924,216 63	859,839 45	7,327,997 71
General on Canals					
Dredge vessels, Quebec Canals			32,671 05	19,489 55	52,160 60
" " Rideau Canal				28,820 25	28,820 25
Sunday labour			76,102 00		76,102 00
Surveys and inspections		12,127 44			12,127 44
Quebec Canals					
Maintenance			31,371 23		31,371 23
Hungry Bay Dyke				14,081 56	14,081 56
Miscellaneous					
Civil Service Amendment Act, gratuities to dependents of deceased employees		3,357 68			3,357 68
Compassionate allowance to the widow of the late James Innes			2,000 00		2,000 00
Canals revenue			6 33		6 33
Total		15,485 12	142,150 61	62,391 36	220,027 09
Grand total	4,995,184 27	564,242 48	1,066,367 24	922,230 81	7,548,024 80

RECAPITULATION OF EXPENDITURE

—	Capital	Income	Revenue	Total
	$ cts.	$ cts.	$ cts.	$ cts.
Expenditure on railways	*1,052,637 42*	470,040 67	5,695,669 05	5,113,072 30
Expenditure on canals	4,995,184 27	564,242 48	1,988,598 05	7,548,024 80
Miscellaneous expenditure, general	2,315,805 79	6,229,470 91	7,000 00	8,552,276 70
	6,258,352 64	7,263,754 06	7,691,267 10	21,213,373 80

Expenditure on Canals to March 31, 1923

CAPITAL ACCOUNT

	Previous Years	1922–1923	Total
	$ cts.	$ cts.	$ cts.
Beauharnois	1,636,690 26		1,636,690 26
Carillon and Grenville	4,191,756 51		4,191,756 51
Chambly	780,996 52		780,996 52
Cornwall	7,246,304 21		7,246,304 21
Culbute lock and dam	382,391 46		382,391 46
Lachine	14,132,684 80		14,132,684 80
Lake St. Francis	75,906 71		75,906 71
Lake St. Louis	298,176 11		298,176 11
Murray	1,248,946 71		1,248,946 71
Rideau	4,210,274 31	3,989 68	4,214,263 99
Sault Ste. Marie	4,935,809 42		4,935,809 42
Soulanges	7,904,044 53		7,904,044 53
St. Annes lock	1,170,215 63		1,170,215 63
St. Lawrence river and canals—			
North channel	1,995,142 87		1,995,142 87
River reaches	483,830 20		483,830 20
Galops channel	1,039,895 65		1,039,895 65
St. Lawrence ship canal		45,145 74	45.145 74
St. Ours	127,228 56		127,228 56
St. Peter's	648,547 14		648,547 14
Tay	489,599 23		489,599 23
Trent	18,850,018 78	169,655 01	19,019,673 79
Welland	29,406,405 93		29,406,405 93
Welland ship	29,620,549 43	4,776,393 84	34,396,943 27
Williamsburg	1,334,551 80		1,334,551 80
Farran's Point	877,090 57		877,090 57
Galops	6,143,468 11		6,143,468 11
Rapide Plat	2,159,880 80		2,159,880 80
Total	141,390,406 25	4,995,184 27	146,385,590 52
Canals general	34,966 69		34,966 69
Grand total	141,425,372 94	4,995,184 27	146,420,557 21

INCOME ACCOUNT

	Previous Years	1922–1923	Total
	$ cts.	$ cts.	$ cts.
Baie Verte	44,387 53		44,387 53
Beauharnois	265,810 84		265,810 84
Carillon and Grenville	427,088 29	29,720 82	456,809 11
Chambly	815,280 53	35,145 79	850,426 32
Cornwall	637,119 09		637,119 09
Culbute lock and dam	60,923 37		60,923 37
Lachine	1,785,722 09	1,060 20	1,786,782 29
Lake St. Francis	27,028 08		27,028 08
Murray	101,457 76		101,457 76
Rideau	679,479 05	19,426 27	698,905 32
Sault Ste. Marie	280,098 04	36,000 00	316,098 04
Soulanges	269,689 52	53,616 28	323,305 80
St. Anne's lock	98,478 17	3,975 45	102,453 62
St. Lawrence river and canals	128,298 11		128,298 11
St. Ours	178,366 58		178.366 58
St. Peter's	735,550 22		735,550 22
Tay	748 65		748 65
Trent	1,853,184 41	223,340 23	2,076,524 64
Welland	2,840,158 35	146,472 32	2,986 630 67
Williamsburg	355,702 84		355,702 84
Total	11,584,571 52	548,757 36	12,133,328 88
Canals general	928,082 65	15,485 12	943,567 77
Grand total	12,512,654 17	564,242 48	13,076,896 65

REVENUE ACCOUNT—STAFF

Canals	Previous Years	1922–1923	Total
	$ cts.	$ cts.	$ cts.
Beauharnois	649,574 89		649,574 89
Carillon and Grenville	956,171 75	30,512 09	986,683 84
Chambly	1,187,560 73	44,671 41	1,232,232 14
Cornwall	2,076,866 56	90,140 08	2,167,006 64
Culbute lock and dam	11,507 48		11,507 48
Lachine	3,317,186 49	131,498 04	3,448,684 53
Murray	174,809 66	7,444 33	182,253 99
Rideau	2,077,118 12	77,511 75	2,154,629 87
Sault Ste. Marie	581,952 74	37,019 73	618,972 47
Soulanges	744,809 23	43,059 50	787,868 73
St. Anne's lock	141,993 75	7,273 60	149,267 35
St. Ours	143,048 17	5,170 44	148,218 61
St. Peter's	143,248 22	5,325 12	148,573 34
Trent	1,028,717 54	108,268 66	1,136,986 20
Welland	6,042,812 80	292,527 56	6,335,340 36
Williamsburg	858,511 88	43,794 32	902,306 20
Total	20,135,890 01	924,216 63	21,060,106 64
Canals general	2,616,889 69	142,150 61	2,759,040 30
Grand total	22,752,779,70	1,066,367 24	23,819,146 94

REVENUE ACCOUNT—REPAIRS

Beauharnois	525,691 23		525,691 23
Carillon and Grenville	684,337 77	26,175 79	710,513 56
Chambly	1,199,928 70	60,546,90	1,260,475 60
Cornwall	1,282,402 27	86,853 01	1,369,255 28
Culbute lock and dam	7,036 15		7,036 15
Lachine	2,935,576 23	163,120 92	3,098,697 15
Murray	121,858 92	6,869 93	128,728 85
Rideau	2,388,025 06	107,547 53	2,495,572 59
Sault Ste. Marie	507,543 52	38,571 41	546,114 93
Soulanges	914,776 14	84,573 46	999,349 60
St. Anne's lock	167,749 18	4,252 24	172,001 42
St. Ours	133,632 13	7,454 57	141,086 70
St. Peter's	37,542 04	8,024 26	45,566 30
Trent	1,065,806 46	66,480 96	1,132,287 42
Welland	4,468,527,00	163,169 87	4,631,696 87
Williamsburg	741,808 22	36,198 60	778,006 82
Total	17,182,241 02	859,839 45	18,042,080 47
Canals general	744,671 78	62,391 36	807,063 14
Grand total	17,926,912 80	922,230 81	18,849,143 61

Total Expenditure by Canals to March 31, 1923

Canals	Capital	Income	Revenue		Total
			Staff	Repairs	
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Baie Verte		44,387 53			44,387 53
Beauharnois	1,636,690 26	265,810 84	649,574 89	525,691 23	3,077,767 22
Carillon and Grenville	4,191,756 51	456,809 11	986,683 84	710,513 56	6,345,763 02
Chambly	780,996 52	850,426 32	1,232,232 14	1,260 475 60	4,124,130 58
Cornwall	7,246,304 21	637,119 09	2,167,006 64	1,369,255 28	11,419,685 22
Culbute lock and dam	382,391 46	60,923 37	11,507 48	7,036 15	461,858 46
Lachine	14,132,684 80	1,786,782 29	3,448,684 53	3,098,697 15	22,466,848 77
Lake St. Francis	75,906 71	27,028 08			102,934 79
Lake St. Louis	298,176 11				298,176 11
Murray	1,248,946 71	101,457 76	182,253 99	128,728 85	1,661,387 31
Rideau	4,214,263 99	698,905 32	2,154,629 87	2,495,572 59	9,563,371 77
Sault Ste. Marie	4,935,809 42	316,098 04	618,972 47	546,114 93	6,416,994 86
Soulanges	7,904,044 53	323,305 80	787,868 73	999,349 60	10,014,568 66
St. Anne's lock	1,170,215 63	102,453 62	149,267 35	172,001 42	1,593,938 02
St. Lawrence river canals—					
North channel	1,995,142 87				
River reaches	483,830 20	128,298 11			3,647,166 83
Galops channel	1,039,895 65				
St. Lawrence ship canal	45,145 74				45,145 74
St. Ours	127,228 56	178,366 58	148,218 61	141,086 70	594,900 45
St. Peters	648,547 14	735,550 22	148,573 34	45,566 30	1,578,237 00
Tay	489,599 23	748 65			490,347 88
Trent	19,019,673 79	2,076,524 64	1,136,986 20	1,132,287 42	23,365,472 05
Welland	29,406,405 93	2,986,630 67	6,335,340 36	4,631,696 87	43,360,073 83
Welland ship	34,396,943 27				34,396,943 27
Williamsburg	1,334,551 80				
Farran's Point	877,090 57	355,702 84	902,306 20	778,006 82	12,551,007 14
Galops	6,143,468 11				
Rapide Plat	2,159,880 80				
Total	146,385,590 52	12,133,328 88	21,060,106 64	18,042,080 47	197,621,106 51
Canals general	34,966 69	943,567 77	2,759,040 30	807,063 14	4,544,637 90
Grand total	146,420,557 21	13,076,896 65	23,819,146 94	18,849,143 61	202,165,744 41

YEARLY EXPENDITURE on Canals and Revenue Received to March 31, 1923

—	Year ending	Capital	Income	Revenue		Revenue received
				Staff	Repairs	
		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Government expenditure prior to Confederation, including Imperial Government expenditure		20,593,866 13	98,378 46			
Government expenditure (1868 to 1879 included)		17,004,842 55	515,196 21	1,830,398 92	1,832,998 61	5,079,068 36
Govt. expenditure since	1880	2,123,366 34		195,039 33	147,167 52	341,598 14
" "	1881	2,075,891 65	7,246 69	197,573 62	164,653 63	361,558 17
" "	1882	1,593,174 09	55,025 03	224,572 61	187,399 02	325,231 54
" "	1883	1,763,001 97	62,403 14	269,415 01	178,617 86	361,604 01
" "	1884	1,577,295 42	60,993 99	280,657 29	192,219 38	372,561 69
" "	1885	1,504,621 47	58,298 29	280,226 20	201,708 47	321,289 47
" "	1886	1,333,324 80	31,984 02	282,323 63	198,251 97	328,977 43
" "	1887	1,783,698 16	65,983 06	285,172 62	198,888 84	321,784 88
" "	1888	1,033,118 34	120,561 59	292,458 76	201,928 93	317,902 04
" "	1889	972,918 43	162,015 49	301,040 23	240,261 36	333,188 90
" "	1890	1,026,364 24	146,853 54	290,516 63	176,089 00	354,816 92
" "	1891	1,318,092 15	165,843 87	294,562 12	204,768 45	349,431 90
" "	1892	1,437,149 30	194,129 61	293,115 58	231,089 54	324,475 24
" "	1893	2,069,573 30	196,185 84	291,048 97	204,759 39	357,089 87
" "	1894	3,027,164 19	110,512 07	294,446 34	179,630 13	387,788 97
" "	1895	2,452,273 65	216,057 58	281,477 04	164,033 71	339,890 49
" "	1896	2,258,778 97	85,820 49	292,121 05	209,321 60	339,538 72
" "	1897	2,348,636 91	101,205 74	287,970 36	178,385 47	384,780 54
" "	1898	3,207,249 79	82,400 55	280.872 44	203,478 86	407,652 82
" "	1899	3,899,877 31	82,205 60	280,628 57	202,312 36	369,044 33
" "	1900	2,639,564 93	120,653 93	292,609 24	227,626 97	322,642 81
" "	1901	2,360,569 89	135,500 57	314,095 04	262,876 07	315,425 68
" "	1902	2,114,689 88	213,044 91	317,838 61	263,768 27	300,413 66
" "	1903	1,823,273 61	275,103 58	390,281 82	294,113 92	230,213 19
" "	1904	1,880,787 20	298,678 23	381,016 82	350,278 54	†79,536 58
" "	1905	2,071,593 72	353,855 43	431,499 60	401,742 79	78,009 25
" "	1906	1,552,121 21	310,716 70	447,962 92	375,889 60	108,067 71
" "	1907	887,838 61	254,423 18	329,629 63	287,231 03	105,003 11
" "	1908	1,708,156 37	483,250 11	473,638 95	411,660 53	144,882 16
" "	1909	1,868,834 45	699,304 73	475,515 04	433,958 10	199,501 25
" "	1910	1,650,706 64	459,835 62	415,585 16	491,793 02	193,384 23
" "	1911	2,349,474 49	385,534 55	511,305 94	471,530 32	221,138 46
" "	1912	2,554,938 91	384,860 73	585,899 54	555,709 95	264,114 48
" "	1913	2,255,448 21	292,960 26	605,248 57	535,135 66	307,567 69
" "	1914	2,824,536 79	351,397 24	642,844 68	574,038 68	380,188 08
" "	1915	5,490,796 03	405,806 32	675,770 67	562,599 27	427,763 16
" "	1916	6,142,148 96	348,174 41	697,532 44	529,565 23	446,722 26
" "	1917	4,304,589 09	372,102 96	700,022 11	486,167 67	461,423 14
" "	1918	1,781,957 07	90,255 66	743,857 09	540,331 49	414,868 21
" "	1919	2,211,935 48	137,604 37	733,090 71	698,878 14	387,654 90
" "	1920	4,579,565 22	743,877 26	745,986 58	713,334 83	442,193 02
" "	1921	5,449,961 68	1,104,239 51	815,979 22	920,992 94	366,010 69
" "	1922	4,482,638 65	744,990 40	983,042 31	1,105,053 90	804,518 58
" "	1923	4,995,184 27	548,757 36	924,216 63	859,839 45	742,410 46
Total*		146,385,590 52	12,133,328 88	21,060,106 64	18,042,086 47	19,822,927 19

* This does not include expenditure which has been charged to Miscellaneous Canals Expenditure, but only the amount expended on specific canals.

† Canal tolls abolished this year.

STATEMENT of Canals Revenue for Year Ending March 31, 1923

Divisions	Dues	Rents	Total
	$ cts.	$ cts.	$ cts.
Welland Canal—			
Port Colborne	611 20	16,909 75	17,520 95
Port Colborne elevator	356,740 43		356,740 43
Port Dalhousie	1,168 22	67,248 91	68,417 13
Total	358,519 85	84,158 66	442,678 51
Welland Ship Canal		4,360 20	4,360 20
St. Lawrence Canals—			
Coteau Landing, Beauharnois canal		14,753 65	14,753 65
" Soulanges canal	28 00	3,728 49	3,756 49
Cornwall	1,080 34	22,382 50	23,462 84
Cardinal, Williamsburg canal	15 00	1,731 10	1,746 10
Lachine Canal, Montreal	20,027 29	187,639 22	207,666 51
" Lachine	1,881 53	96 00	1,977 53
Total	23,032 16	230,330 96	253,363 12
Chambly Canal—			
Chambly		758,24	758 24
St. Ours		60 00	60 00
St. Johns	8 00	77 00	85 00
Total	8 00	895 24	903 24
Ottawa River Canals—			
Carillon and Grenville—			
Grenville canal		10 00	10 00
Carillon canal		805 50	805 50
St. Annes lock	70 00	153 00	223 00
Chats Falls canal		1 00	1 00
Total	70 00	969 50	1,039 50
Rideau Canal—			
Ottawa	440 00	9,442 80	9,882 80
Kingston Mills		769 53	769 53
Smiths Falls	45 00	802 00	847 00
Total	485 00	11,014 33	11,499 33
St. Peter Canal		12 00	12 00
Murray Canal		264 00	264 00
Trent Canal	36 00	28,138 56	28,174 56
Sault Ste. Marie Canal		116 00	116 00
Grand total	382,151 01	360,259 45	742,410 46
Net amount deposited to the credit of the Receiver General			742,410 46

Statement of Hydraulic and other Rents, showing Rents Accrued, Paid and Balances due March 31, 1923

Balance due April 1, 1922	Hydraulic and other rents accrued	Lock House Rents	Totals	Canals	Abatement for overcharges	Deposited to the credit of the Receiver General		Balance due Mar. 31, 1923	Totals
						Lock House Rents	Hydraulic Rents, etc.		
$ cts.	$ cts.	$ cts.	$ cts.		$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
60,152 68	82,772 21	2,385 60	145,310 49	Welland	9,790 18	2,306 60	81,852 06	51,361 65	145,310 49
750 00	472 00	3,864 83	5,086 83	Welland Ship	48 00	3,954 50	405 70	678 63	5,086 83
3,239 00	2,435 10	216 00	5,890 10	Williamsburg	851 00	216 00	1,515 10	3,308 00	5,890 10
135 00	22,382 50	. .	22,517 50	Cornwall			22,382 50	135 00	22,517 50
1,935 84	14,748 65	. . . .	16,684 49	Beauharnois	155 00	. .	14,753 65	1,775 84	16,684 49
8,277 94	188,765 51	204 00	197,247 45	Lachine	189 35	204 00	187,531 22	9,322 88	197,247 45
55 00	206 24	687 00	948 24	Chambly		690 00	205 24	53 00	948 24
9,477 60	10,064 06	2,048 00	21,589 66	Rideau	125 58	2,048 00	8,966 33	10,449 75	21,589 66
117,162 43	26,488 13	1,814 33	145,464 89	Trent	4 03	1,668 33	26,470 23	117,322 30	145,464 89
	116 00	. . . .	116 00	Sault Ste. Marie			116 00	.	116 00
15 00	647 00	166 50	828 50	Carillon and Grenville		169 50	646 00	13 00	828 50
48 00	3,407 49	326 00	3,781 49	Soulanges		321 00	3,407 49	53 00	3,781 49
10 00	33 00	120 00	163 00	St. Annes Lock		120 00	33 00	10 00	163 00
	1 00	. . . .	1 00	Chats Falls			1 00		1 00
	12 00	. . . .	12 00	St. Peters			12 00		12 00
10 00	14 00	240 00	264 00	Murray		250 00	14 00		264 00
201,268 49	352,564 89	12,072 26	565,905 64		11,163 14	11,947 93	348,311 52	194,483 05	565,905 64

Welland Ship Canal—Amounts Expended on Construction to March 31, 1923

—	Year ending	Capital
		$ cts.
Government expenditure	1914	994,257 60
" "	1915	4,074,200 69
" "	1916	4,892,105 15
" "	1917	3,513,769 82
" "	1918	1,235,046 59
" "	1919	1,823,875 96
" "	1920	3,499,963 35
" "	1921	5,070,297 57
" "	1922	4,279,815 61
" " $6,404,157 18		
Less sale of materials 1,627,763 34	1923	4,776,393 84
Total		34,159,726 18

Expenditure as above		$34,159,726 18
To which add the preliminary expenditure for surveys, borings, etc., charged to Welland canal capital, as follows:—		
1905-06	$ 13,231 97	
1906-07	10,825 27	
1907-08	8,300 34	
1908-09	19,993 37	
1909-10	9,979 91	
1910-11	21,229 35	
1911-12	23,138 60	
1912-13	112,890 92	
1915-16	17,627 36	
		237,217 09
Total cost of Welland ship canal to March 31, 1923		$34,396,943 27

Hudson Bay Railway and Port Nelson Terminals—Expenditure to March 31, 1923

—	Year ending	Hudson Bay Railway	Port Nelson Terminals	Total
		$ cts.	$ cts.	$ cts.
Government expenditure	1909	92,427 83	.....	92,427 83
" "	1910	53,042 63	.....	53,042 63
" "	1911	184,149 81	.....	184,149 81
" "	1912	159,632 00	.....	159,632 00
" "	1913	1,009,024 52	90,038 63	1,099,063 15
" "	1914	3,071,631 22	1,427,086 03	4,498,717 25
" "	1915	3,256,074 39	1,517,669 60	4,773,743 99
" "	1916	2,983,425 47	1,905,706 30	4,889,131 77
" "	1917	1,792,190 39	812,089 55	2,604,279 94
" "	1918	1,288,789 61	590,909 39	1,879,699 00
" "	1919	641,318 69	*78,760 89*	562,557 80
" "	1920	*247,153 67*	11,545 19	*235,608 48*
" "	1921	.....	*121,063 71*	*121,063 71*
" "	1922	61,563 43	34,769 87	96,333 30
" "	1923	13,824 94	27,802 56	41,627 50
		$ 14,359,941 26	6,217,792 52	20,577,733 78

IMPERIAL GOVERNMENT ACCOUNTS.—Statement of Expenditure to March 31, 1923, in connection with the lifting of rails for the use of the Imperial Government; all costs, damages and expenses to be borne by His Majesty's Government in England; per Order in Council dated Ottawa, December 19, 1916.

Expenditure fiscal year	1916–17	$ 393,053 86
" "	1917–18	3,603,279 05
" "	1918–19	178,680 85
" "	1919–20	348,103 36
" "	1920–21	777,814 83
" "	1921–22	134,679 65
" "	1922–23	*150,734 19*
		$ 5,284,877 41
Less payment by Imperial Munitions Board for rails		*1,356,615 62*
Total		$ 3,928,261 79

ACQUISITION of Grand Trunk and Associated Railway Systems

Expenditure fiscal year	1919–20	$ 14,930 55
" "	1920–21	799,941 02
" "	1921–22	453,846 81
" "	1922–23	100,522 73
Total		$ 1,369,241 11

CANADA HIGHWAYS ACT.—Aid Granted to the Various Provinces Toward the Improvement of Highways

Expenditure fiscal year	1920–21	$ 535,000 97
" "	1921–22	3,399,008 20
" "	1922–23	5,854,395 81
Total		$ 9,788,404 98

QUEBEC BRIDGE.—Amounts Expended on Construction

—	Year ending	Capital	Income
		$ cts.	$ cts.
Government expenditure	1909		422,867 12
" "	1910		111,788 02
" "	1911	227,563 40	
" "	1912	603,293 07	
" "	1913	1,512,825 96	
" "	1914	2,604,105 61	
" "	1915	2,816,305 10	
" "	1916	2,746,813 70	
" "	1917	2,733,677 00	
" "	1918	931,278 01	
" "	1919	656,761 79	
" "	1920	*880 65*	
" "	1921		24,555 50
" "	1923	*344 70*	
		14,831,398 29	559,210 64
Less amount received from Phoenix Bridge Co			100,000 00
		14,831,398 29	459,210 64

Capital expenditure as above		$14,831,398 29
In this expenditure a total of $91,188.10 has been credited, being received for sale of scrap and used material from the collapsed bridge.		
Add amounts paid by the Finance Department not included above—		
Amount guaranteed by Act of 1903, Chap. 54	$ 6,424,781 00	
Amount paid to the province of Quebec	250,000 00	
Amount paid to the city of Quebec	300,000 00	
Amount paid to Emile Tanguay, as per Supreme Court award	485 20	
		6,975,266 20
		$21,806,664 49
Less amount received from the Phoenix Bridge Co		100,000 00
		$21,706,664 49
To which add the expenditure under income, 1909, 1910 and 1921	559,210 64	
Add also amount paid for subsidies in 1901, 1902 and 1903	374,353 33	
		933,563 97
Total expenditure to March 31, 1923		$22,640,228 46

EXPENDITURE made from Capital Appropriations Relative to Railways during Year ending March 31, 1923

	Previous years	Year ending Mar. 31, 1923	Total
	$ cts.	$ cts.	$ cts.
Canadian Government Railways—			
Intercolonial Railway System—			
Canada Eastern Railway	819,000 00		819,000 00
Cape Breton Railway	3,860,679 14		3,860,679 14
Drummond County Railway	1,464,000 00		1,464,000 00
Eastern Extension Railway	1,324,042 81		1,324,042 81
Montreal and European Railway	333,942 72		333,942 72
Oxford and New Glasgow Railway	1,949,063 21		1,949,063 21
Intercolonial Railway	135,508,770 66	1,302,168 60	136,810,939 26
Total	145,259,498 54	1,302,168 60	146,561,667 14
New Brunswick and Prince Edward Island Railway	796,542 07	65,305 76	861,847 83
Prince Edward Island Railway	12,836,775 49	243,481 37	13,080,256 86
International Railway of New Brunswick	2,936,114 29	26,907 58	2,963,021 87
National Transcontinental Railway	168,487,927 03	844,547 44	169,332,474 47
Moncton and Buctouche Railway	272,168 07	20,899 09	293,067 16
Salisbury and Albert Railway	431,902 65	15,135 36	447,038 01
St. Martin's Railway	299,910 55	8,354 61	308,265 16
Elgin and Havelock Railway	134,550 03	4,009 09	138,559 12
York and Carleton Railway	29,760 31	31,942 49	61,702 80
Quebec and Saguenay Railway	7,737,851 38	35,059 65	7,772,911 03
Caraquet and Gulf Shore Railway	517,971 67	203,845 71	721,817 38
Lotbiniere and Megantic Railway	356,193 34	12,215 05	368,408 39
Cape Breton Railway (extension)	108,991 19	3,176 08	112,167 27
Hudson Bay Railway	14,346,116 32	13,824 94	14,359,941 26
Canadian Government Railways—rolling stock	39,864,147 80	*3,911,216 82*	35,952,930 98
b Quebec Bridge	22,640,573 16	*344 70*	22,640,228 46
Total	417,056,993 89	*1,080,688 70*	415,976,305 19
Other Railways and Miscellaneous—			
Canadian Northern Railway	9,999,999 90		9,999,999 90
Annapolis and Digby Railway	660,683 09		660,683 09
a European and North American Railway	88,363 18		88,363 18
a Nova Scotia Railway	208,509 72		208,509 72
c Carleton Branch Railway	48,410 48		48,410 48
Canadian Pacific Railway	62,789,776 09	248 72	62,790,024 81
Hudson Bay Railway—Port Nelson Terminals	6,189,989 96	27,802 56	6,217,792 52
Yukon Territory Works, Stikine—Teslin Railway	283,323 55		283,323 55
Governor General's cars	71,538 82		71,538 82
Miscellaneous expenditure	18,345 00		18,345 00
Total	497,415,933 68	*1,052,637 42*	496,363,296 26

a Amount paid between 1868 and 1873, inclusive, was transferred to Consolidated Fund.
b See Special Statement.
c This railway, which cost $88,410.48, was sold in 1893 to the City of St. John, N.B., for $40,000. (Vic. Cap. 6).
d Amounts totalling $108,991.19 erroneously included in Cape Breton Railway (Intercolonial Railway System) in 1920-21 and 1921-22 reports, now included in Cape Breton Railway (Extension).

GOVERNMENT EXPENDITURE RELATIVE TO RAILWAYS

Recapitulation of Expenditure and Revenue to March 31, 1923

— —	Capital	Revenue			Revenue received
		Compassionate and miscellaneous	Improvements and betterments	Working expenses	
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
Expenditure prior to Confederation	13,881,460 65				
Since Confederation—					
1868 to 1890 inclusive	105,592,016 89	43,639 97		45,661,435 22	39,107,792 60
1890 to 1891	1,184,317 34			3,949,263 73	3,181,888 56
1891 to 1892	417,425 73			3,748,597 77	3,136,393 51
1892 to 1893	712,917 44			3,288,629 62	3,262,505 62
1893 to 1894	585,749 01			3,226,208 13	3,179,019 57
1894 to 1895	376,814 83			3,197,846 17	3,129,450 37
1895 to 1896	324,774 72			3,254,442 64	3,140,678 47
1896 to 1897	204,624 31			3,195,959 58	3,060,074 38
1897 to 1898	270,990 85	1,400 00		3,507,248 88	3,313,847 10
1898 to 1899	1,112,348 47			3,696,612 31	3,940,570 11
1899 to 1900	3,309,130 42			4,665,228 06	4,774,161 87
1900 to 1901	3,922,989 37			5,739,051 54	5,213,381 24
1901 to 1902	5,386,611 24			5,861,099 54	5,918,990 43
1902 to 1903	3,083,680 86			6,474,134 20	6,584,598 77
1903 to 1904	2,619,059 86			7,599,958 57	6,627,255 51
1904 to 1905	6,125,481 79			8,906,154 35	7,050,892 11
1905 to 1906	6,102,565 74			7,893,653 49	7,950,552 97
1906 to 1907	7,174,370 17			6,328,745 65	6,509,186 49
1907 to 1908	23,684,005 25			9,595,295 43	9,534,569 04
1908 to 1909	29,414,227 34			9,764,586 51	8,894,420 42
1909 to 1910	21,505,975 91			9,095,903 96	9,647,963 71
1910 to 1911	24,532,466 18	1,000 00		10,037,878 77	10,249,394 38
1911 to 1912	23,108,805 52	3,950 00		11,074,852 80	11,034,165 83
1912 to 1913	17,375,968 10	4,500 00		12,499,925 65	12,442,203 46
1913 to 1914	21,628,095 15	11,300 00		13,559,225 45	13,394,317 37
1914 to 1915	21,865,663 92	23,000 00		12,474,453 85	12,149,357 32
1915 to 1916	21,155,255 19	1,400 00	1,515,895 57	17,891,484 65	18,427,908 65
1916 to 1917	12,003,649 70	4,000 00	1,070,334 64	24,725,571 90	23,539,758 61
1917 to 1918	34,699,416 96	15,100 00		33,400,460 45	27,240,956 87
1918 to 1919	40,193,180 64	17,000 00		43,889,626 07	38,013,725 69
1919 to 1920	11,593,148 00	8,500 00		48,194,709 86	41,402,061 36
1920 to 1921	5,096,534 94	2,000 00		43,770,971 10	36,814,349 70
*1921 to 1922	4,553,638 03			6,326,800 47	
1922 to 1923	*1,052,637 42*			5,695,669 05	
	473,744,723 10	136,789 97	2,586,230 21	442,191,685 42	391,866,392 09

	$ cts.
Total amount of Capital Expenditure	473,744,723 10
Cost of Quebec Bridge to Mar. 31, 1922	22,640,573 16
Miscellaneous Expenditure in 1914	18,000 00
	496,403,296 26
Less amount received from the City of St. John, N.B., as purchase price of Carleton Branch Railway	40,000 00
	496,363 296 26

*Under authority of Item 341, Chapter 54, 1921, the receipts and Revenues of the Canadian Government Railways were, from Jan. 1, 1921, applied by the management towards payment of working expenditures.

II.—STATEMENT showing Subsidies paid to March 31, 1923

Subsidies Voted		Number	Railways	July 1, 1883, to March 31, 1922	Total
Authority	Amount				
	$ cts.			$ cts.	$ cts
47 Vic., chap. 8 52 " 3	51,200 00	1	Albert Southern Railway, N.B.	50,460 00	50,460 00
3-4 Geo. V, chap. 46 62-3 Vic., chap. 7	—	2	Alberta Central Railway, Alta.	404,480 00	404,480 00
63-4 " 8 1 Ed. VII, chap. 7	—	3	Algoma Central and Hudson Bay Ry., Ont.	2,048,704 00	2,048,704 00
9-10 " 51		4	Algoma Eastern Ry. Co., formerly Manitoulin and North Shore Ry. Co., Ontario.	547,648 00	547,648 00
1 " 7		5	Atlantic and Lake Superior Ry., Quebec.	163,418 19	163,418 19
37 Vic., chap. 14	186,500 annually for 20 years...	6	Atlantic and Northwestern Railway.	3,732,000 00	3,732,000 00
6 Ed. VII, chap. 43 9-10 " 51	—	7	Atlantic, Quebec and Western Ry. Co., Quebec.	902,800 00	902,800 00
46 Vic., chap. 25 47 " 8	320,000 00	8	Baie des Chaleurs Railway, Quebec.	620,000 00	620,000 00
52 " 3	300,000 00				
—	—	9	Bay of Quinte Railway, Ontario, now Canadian Northern Ry.	141,722 45	141,722 45
50-1 Vic., chap. 27 56 " 4	62,400 00	10	Beauharnois Junction Railway, Quebec.	62,400 00	62,400 00
48-9 " 54	22,400 00	11	Belleville and North Hastings Railway, Ontario.	21,888 00	21,888 00
49 " 19 50-1 " 24	57,600 00	12	Brantford, Waterloo and Lake Erie Ry., Ontario	57,600 00	57,600 00
51-8 " 4 48-9 " 59	128,000 00				
53 " 2		13	Brockville, Westport and Sault Ste. Marie Railway, Ontario, now Canadian Northern Ry.	140,800 00	140,800 00
54-5 " 8 57-8 " 4	64,000 00				
—	—	15	Bruce Mines and Algoma Railway, Ontario.	53,920 00	53,920 00
49 Vic., chap. 10	96,000 00				
50-1 " 24	6,400 00	14	Buctouche and Moncton Railway, New Brunswick	101,600 00	101,600 00
48-9 " 59	96,000 00				
49 " 10	38,400 00	16	Canada Atlantic Railway, Ontario.	282,355 20	282,355 20
50-1 " 24	180,000 00				
App. Act. 2, 1918	175,000 0	016½	Canada Central Ry., Alberta.	175,000 00	175,000 00
47 " 8	128,000 00				
48-9 " 59	19,200 00				
49 " 10	32,000 00	17	Canada Eastern Ry., formerly Northern and Western Ry., New Brunswick, including also Chatham Branch Ry.	374,839 84	374,839 84
48-9 " 59	24,439 84				
51 " 3	140,800 00				
57-8 " 4	35,200 00				
62-3 " 7	—	18	Canada and Gulf Terminal Ry. Co.	210,053 59	210,053 59
47 Vic., chap. 8	32,000 00				
49 " 10	57,600 00				
52 " 3	22,400 00				
53 " 2	48,000 00	19	Canadian Northern Quebec Ry. Co., formerly Great Northern Ry., Quebec.	1,265,357 14	1,265,357 14
56 " 2	47,000 00				
57-8 " 4	70,400 00				
7-8 Ed. VII, c. 63	—				
2 Geo. V, chap. 7 3-4 " 10	—	20	Canadian Northern Alberta Ry. Co., Alberta.	3,120,000 00	3,120,000 00
6-7 Ed. VII, c. 40 7-8 " 63	—	21	Canadian Northern Ontario Ry. Co.	14,485,635 20	14,485,635,20
"	—	22	Canadian Northern Ry. Co., Ontario, Manitoba and North West Territories.	1,909,132 00	1,909,132 00
2 Geo. V, chap. 9	—	23	Canadian Northern Pacific Ry. Co., British Columbia.	5,987,520 00	5,987,520 00
—		24	Canadian Northern Quebec Ry., formerly Chateauguay and Northern Ry., Quebec.	391,819 75	391,819 75
60-61 Vic., chap. 5	3,630,000 00	25	Canadian Pacific Ry. Co., British Columbia (Crow's Nest Pass).	3,404,720 00	3,404,720 00
—	—	26	Canadian Pacific Ry. Co. (Dyment Branch).	22,336 00	22,336 00
2 Geo. V, chap. 48	—	27	Canadian Pacific Ry., Bridge at Edmonton, Alberta.	126,000 00	126,000 00
3-4 " 46	—	28	Canadian Pacific Ry., Gimli to Icelandic River Bridge.	80,032 00	80,032 00
—	—	29	Can. Pac. Ry. Co. (Kootenay and Arrowhead Branch).	153,866 00	153,866 00
7-8 Ed. VII, c. 63	—	30	Can. Pac. Ry. Co., Moosejaw northwesterly.	485,474 27	485,474 27
2 Geo. V, chap. 48	—	31	Can. Pac. Ry. Co., Bridge at Outlook.	115,000 00	115,000 00
—	-	32	Can. Pac. Ry. Co. (Pheasant Hills Branch).	435,200 00	435,200 00
—	—	33	Can. Pac. Ry. Co. (Pipestone Branch).	160,000 00	160,000 00
55-6 Vic., chap. 5	80,000 00	34	Can. Pac. Ry. Co. (Revelstoke to Arrow Lake).	80,000 00	80,000 00
"	—	35	Can. Pac. Ry. Co. (Selkirk Branch).	83,200 00	83,200 00
4 Ed. VII, chap. 34	—	36	Can. Pac. Ry. Co. (Staynerville Branch).	13,024 00	13,024 00
6 " 43	—	37	Can. Pac. Ry. Co. (Teulon to Icelandic River).	112,000 00	112,000 00
—	—	38	Can. Pac. Ry. Co. (Waskada Branch).	64,000 00	64,000 00
7-8 Ed. VII, c. 63	—	39	Can. Pac. Ry., Winnipeg to Gimli, Man.	34,522 43	34,522 43

II.—Statement showing Subsidies paid to March 31, 1923—*Continued*

Subsidies Voted		Number	Railways	July 1, 1883, to March 31, 1922	Total
Authority	Amount				
	$ cts			$ cts.	$ cts.
48-9 Vic., chap. 58	1,500,000 00	40	Canadian Pacific Extension	1,500,000 00	1,500,000 00
57-8 " 4	9,000 00	41	Cap de la Magdeleine Railway, Quebec	7,424 00	7,424 00
—	—	42	Cape Breton Extension Railway, Nova Scotia	196,800 00	196,800 00
46 Vic. chap. 25	115,200 00				
47 " 8	76,800 00	43	Caraquet Railway, New Brunswick	224,000 00	224,000 00
50-1 " 24	32,000 00				
47 " 8					
51 " 3					
52 " 3	83,612 00				
53 " 2	142,400 00	44	Central Railway, New Brunswick	226,012 54	226,012 54
57-8 " 4	48,000 00				
61 " 1					
62-3 " 1					
2 Ed. VII, chap. 48	—	45	Central Railway of Canada, Quebec, now Canadian Northern Ry	30,145 02	30,145 02
46 Vic., chap. 2	1,525,250 00	46	Central Canada Railway	1,525,250 00	1,525,250 00
7 " 8					
6-7 Ed. VII, c. 40	—	47	Central Ontario Railway Co., Ontario, now Canadian Northern Ry	205,862 79	205,862 79
—		48	Coast Line of Nova Scotia (Halifax and Yarmouth Ry.), now Canadian Northern Ry	160,000 00	160,000 00
6 Ed. VII, chap. 43	—	49	Colchester Coal and Railway Co., Nova Scotia	12,800 00	12,800 00
53 Vic., chap. 2	112,000 00	50	Columbia and Kootenay Ry. Co., British Columbia	88,800 00	88,800 00
50-1 " 24	44,800 00	51	Cornwallis Valley Railway Co., Nova Scotia	44,800 00	44,800 00
52 " 3					
50-1 " 24	44,800 00	52	Cumberland Railway and Coal Co., Nova Scotia	39,850 00	39,850 00
5-6 " 5	89,600 00	53	Dominion Coal Company, Nova Scotia	87,808 00	87,808 00
50-1 " 24	22,400 00	54	Dominion Lime Company, Quebec	15,360 00	15,360 00
50-1 " 24	96,000 00				
52 " 3	14,400 00	55	Drummond County Railway, Quebec	423,936 00	423,936 00
53 " 2	76,800 00				
57-8 " 4	96,000 00				
"	—	56	East Richelieu Valley Railway Co., Quebec (Quebec Montreal and Southern Ry.)	69,952 00	69,952 00
3-4 Geo. V, chap. 46	—	57	Edmonton, Dunvegan and British Columbia Railway, Alberta	338,382 48	338,382 48
6-7 Ed. VII, c. 40	—	58	Edmonton, Yukon and Pacific Railway Co., Alberta, now Canadian Northern Ry	91,200 00	91,200 00
46 Vic., chap. 25	38,400 00	59	Elgin, Petitcodiac and Havelock Railway, N.B.	82,652 82	82,652 82
51 " 3	44,252 82				
47 " 8	96,000 00	60	Erie and Huron Railway, Ontario	96,000 00	96,000 00
47 " 6	750,000 00	61	Esquimalt and Nanaimo Railway, British Columbia	1,520,560 00	1,520,560 00
2 Geo. V, chap. 48	—	62	Fredericton and Grand Lake Railway Co., New Brunswick	216,576 00	216,576 00
52 Vic., chap. 3	30,000 00	63	Fredericton and St. Mary's Ry. Bridge Co., New Brunswick	30,000 00	30,000 00
60-61 " 4	500,000 00	64	Grand Trunk Ry. Co., Victoria Jubilee Bridge, Quebec	500,000 00	500,000 00
63 " 3					
56 " 2	48,000 00	65	Grand Trunk, Georgian Bay and Lake Erie Ry., Ontario	39,744 00	39,744 00
7-8 Ed. VII, c. 63	—	66	Grand Trunk Pacific Ry. Co	1,220,480 00	1,220,480 00
49 Vic., chap. 10	32,000 0				
50-1 " 24	96,000 00	67	Great Eastern Railway, Quebec	40,345 00	40,345 00
56 " 2	64,000 00				
53 " 2	37,500 00				
50-1 " 24	51,200 00	68	Guelph Junction Railway, Ontario	46,000 00	46,000 00
57-8 " 4	—	69	Gulf Shore Railway Company, New Brunswick	53,699 20	53,699 20
9-10 Ed. VII, c. 51	—	69½	Ha-Ha-Bay Railway Co., Quebec	231,462 00	231,462 00
—	—	70	Halifax and Southwestern Railway Co., Nova Scotia, now Canadian Northern Ry	1,238,450 93	1,238,450 93
50-1 Vic., chap. 24	9,600 00	71	Harvey Branch Railway Co., New Brunswick	5,553 57	5,553 57
49 " 10	108,800 00	72	Hereford Railway, Quebec	155,200 00	155,200 00
52 " 3	48,000 00				
46 " 25	156,800 00	73	International Railway, Quebec	156,800 00	156,800 00
53 " 3					
7-8 Ed. VII, c. 63	—	74	International Ry. of New Brunswick, formerly Restigouche and Western Ry. Co	726,080 00	726,080 00
—	—	75	Inverness Railway and Coal Co	368,545 97	368,545 97
47 Vic., chap. 8	160,000 00	76	Irondale, Bancroft and Ottawa Railway, Ontario, now Canadian Northern Ry	144,000 00	144,000 00
52 " 3					
49 " 10	38,400 00	77	Joggins Railway, Nova Scotia	37,500 00	37,500 00
50-1 " 24	4,000 00				
6 Ed. VII, chap. 43	—	78	Kettle Valley Ry., British Columbia	2,174,190 72	2,174,190 72
46 Vic., chap. 24	89,600 00				
49 " 10	70,000 00				
50-1 " 24	12,800 00	79	Kingston, Napanee and Western Ry., formerly Napanee, Tamworth and Quebec Ry., Ontario, now Canadian Northern Ry	208,732 80	208,732 80
52 " 3	32,000 00				
55-6 " 5	64,000 00				
47 Vic., chap. 8	48,000 00	80	Kingston and Pembroke Ry., Ontario	48,000 00	48,000 00

II.—Statement showing Subsidies paid to March 31, 1923—*Continued*

Subsidies Voted		Number	Railways	July 1, 1883, to March 31, 1922	Total
Authority	Amount				
	$ cts.			$ cts	$ cts.
6 Ed. VII, chap. 47	-	81	Klondike Mines Railway	197,184 00	197,184 00
2 " 48	-	82	Kootenay Central Ry. Co., British Columbia	1,065,856 00	1,065,856 00
50-1 Vic., chap. 23	118,400 00				
55-6 " 4	224,000 00	83	Lake Erie and Detroit River Railway, Ontario	475,851 00	475,851 00
62-3 " 5	—				
2 Geo. V, chap. 48		84	Lake Erie and Northern Ry. Co., Ontario	320,192 00	320,192 00
50-1 Vic., chap. 24	65,022 00	85	Lake Temiscamingue Colonization Ry., Quebec	310,335 95	310,335 95
57-8 " 4	274,940 00				&
49 " 10	11,200 00	86	L'Assomption Railway, Quebec	11,200 00	11,200 00
50-1 " 24	217,600 00	87	Laurentian Railway, now Canadian Northern Ry	217,600 00	217,600 00
48-9 " 50	44,800 00	88	Leamington and St. Clair Ry., Ontario	51,200 00	51,200 00
50-1 " 24	6,400 00				
6-7 Ed. VII, c. 40	-	89	Liverpool and Milton Ry., now Canadian Northern Ry	32,000 00	32,000 00
45 Vic., chap. 14	-	90	Lindsay, Bobcaygeon, Pontypool Ry. Co., Ontario	185,173 06	185,173 06
55-6 Vic., chap. 5	48,000 00	91	Lotbinière and Megantic Railway, Quebec	96,000 00	96,000 00
57-8 " 4	48,000 00				
—	—	92	Maganetawan River Railway Co., Ontario	3,552 00	3,552 00
7-8 Ed. VII, c. 63		93	Maritime Coal and Railway Co	3,200 00	3,200 00
—	-	94	Massawippi Valley Railway Co., Quebec	5,376 00	5,376 00
—	—	95	Midland Railway Co., Nova Scotia	399,060 40	399,060 40
—		96	Middleton and Victoria Beach Railway Co., Nova Scotia, now Canadian Northern Ry	125,760 00	125,760 00
3 Ed. VII, chap. 57	--	97	Minudie Coal Co., Nova Scotia	18,544 00	18,544 00
56 Vic., chap. 2	67,200 00				
57-8 " 4	38,400 00	98	Montfort Colonization Railway, Quebec, now Canadian Northern Ry	167,440 00	167,440 00
60-1 " 4	66,000 00				
48-9 " 59	30,000 00				
50-1 " 24	64,000 00	99	Montreal and Champlain Junction Railway, Quebec	103,600 00	103,600 00
51 " 3	9,600 00				
49 " 10	32,000 00	100	Montreal and Lake Maskinongé Railway, Quebec	41,280 00	41,280 00
53 " 2	10,200 00				
50-1 " 24					
53 " 2	192,000 00	101	Montreal and Ottawa Railway, Ontario	192,000 00	192,000 00
54-5 " 8					
57-8 " 4					
1 Ed. VII, chap. 7	—	102	Montreal and Province Line Railway, Quebec	58,560 00	58,560 00
48-9 " 59	72,000 00	103	Montreal and Sorel Railway, Quebec (Quebec, Montreal and Southern Ry.)	93,757 57	93,757 57
53 " 2	40,000 00				
53 Vic., chap. 2	361,270 00	104	Montreal and Western Railway, Quebec	361,270 00	361,270 00
57-8 " 4	121,600 00	105	Nakusp and Slocan Railway, British Columbia	117,760 00	117,760 00
6 Ed. VII, chap. 43	—	106	Napierville Junction Railway Co., Quebec	173,440 00	173,440 00
—	—	107	New Brunswick Coal and Railway Co., New Brunswick	48,000 00	48,000 00
48-9 Vic., chap. 59	118,400 00	108	New Brunswick and Prince Edward Island Railway	113,440 00	113,440 00
55-6 " 5	40,000 00	109	New Glasgow Iron, Coal and Railway Co., Nova Scotia	39,840 00	39,840 00
Ed. VII, chap. 57	—	110	Nicola, Kamloops and Similkameen Coal Railway Co	300,800 00	300,800 00
7-8 " 63	—	111	North Shore Railway Co., formerly Beersville Coal and Railway Co	27,616 00	27,616 00
	—	112	Northern Colonization Railway Co., Quebec	355,200 00	355,200 00
2 Geo. V, chap. 47	—	113	Northern New Brunswick and Seaboard Railway Co., New Brunswick	108,160 00	108,160 00
3-4 " 46					
46 " 26	660,000 00	114	Northern and Pacific Junction Railway, Ontario	1,320,000 00	1,320,000 00
53 " 2	660,000 00				
55-6 " 5	240,000 00	115	Nova Scotia Central Railway Co., Nova Scotia, now Canadian Northern Ry	235,200 00	235,200 00
61 "					
56 " 2	32,000 00	116	Ontario, Belmont and Northern Ry. Co., Ontario (Marmora Ry. & Mining Co.) now Canadian Northern Ry	30,720 00	30,720 00
53 Geo. V, chap. 2	99,200 00	117	Orford Mountain Railway Company, Quebec	202,926 50	202,926 50
3 Ed. VII, chap. 2	—				
56 " 2	22,400 00	118	Oshawa Railway and Navigation Co., Ontario	22,400 00	22,400 00
55-6 " 5	—	119	Ottawa, Arnprior and Parry Sound Ry., Ontario	779,712 00	779,712 00
—	—	120	Ottawa and New York Railway Company, Ontario	262,384 00	262,384 00
52 Vic., chap. 3	320,000 00	121	Ottawa, Northern and Western Railway, Quebec, formerly Ottawa and Gatineau Valley Railway	414,931 20	414,931 20
57-8 " 6	64,000 00				
60-1 " 4	—				
52 " 3	128,000 00	122	Parry Sound and Colonization Railway, Ontario	152,800 00	152,800 00
57-8 " 4	64,000 00				
—	—	123	Pembroke Southern Railway, Ontario	64,000 00	64,000 00
55-6 Vic., chap. 5	—	124	Phillipsburg Junction Ry. Quarry Co., Quebec	23,712 00	23,712 00
47 " 8	272,000 00				
51 " 3	41,000 00	125	Pontiac Pacific Junction Railway, Quebec	193,578 00	193,578 00
53 " 2	24,000 00				
60-1 " 4	212,500 00	126	Pontiac Pacific and Ottawa & Gatineau Ry. Co. (Interprovincial Bridge over Ottawa River)	212,500 00	212,500 00
63-4 " 2					
52 " 3	19,200 00	127	Pontiac and Renfrew Railway, Ontario	13,600 00	13,600 00

II.—Statement showing Subsidies paid to March 31, 1923—*Continued*

Subsidies Voted			Number	Railways	July 1, 19— to March 31, 1922	Total
Authority		Amount				
		$ cts.			$ cts.	$ cts.
51	" 3	287,200 00	128	Port Arthur, Duluth and Western Ry., Ontario, now Canadian Northern Ry.	[illegible]	271,200 00
53	" 2					
62-3	" 7	1,000,000 00	129	Quebec Bridge Co., Quebec	374,353 33	374,353 33
63-4	" 8					
47	" 8	60,342 00				
51	" 3		130	Quebec Central Ry., Quebec	585,038 90	[illegible]
53	" 2	288,000 00				
7-8 Ed. VII, c. 63		—				
45 Vic., chap.	14	384,000 00				
46	" 25	80,000 00				
48-49	" 59	96,000 00				
49	" 10	186,[illegible]5 00				
50-1	" 24	28,800 00	131	Quebec and Lake St. John Railway, Quebec, now Canadian Northern Ry.	1,261,463 50	1,261,463 50
51	" 3	96,000 00				
52	" 3	64,000 00				
53	" 2	40,000 00				
54-5	" 8	5,250 00				
57-8	" 4	44,800 00				
52 Vic., chap.	3	96,000 00	132	Quebec, Montmorency and Charlevoix Railway Co., Quebec	96,000 00	96,000 00
56	" 3					
—		—	132½	Quebec, Montreal and Southern Railway Co.—*See* South Shore Ry., Quebec		
7-8 Ed. VII, c. 51		—	133	Quebec and Saguenay Railway Co., Quebec	248,801 28	248,801 28
—		—	134	Schomberg and Aurora Railway Co., Ontario	46,144 00	46,144 00
52 Vic., chap.	3	162,200 00	135	Shuswap and Okanagan Railway, British Columbia	163,200 00	163,200 00
2 Geo. V, chap.	48	—	136	Southampton Railway Co., New Brunswick	81,280 00	81,280 00
50-1 Vic., chap.	24	54,400 00	137	South Norfolk Railway, Ontario	54,400 00	54,400 00
7-8 Ed. VII, c.	63	—	138	South Shore Railway (Quebec, Montreal and Southern), Quebec	529,442 00	529,442 00
50-1 Vic., chap.	24	138,300 00				
55-6	" 5	108,000 00	139	St. Catharines and Niagara Central Railway, Ontario	38,400 00	38,400 00
57-8	" 4	108,800 00				
52	" 3	375,000 00	140	St. Clair Frontier Tunnel Co., Ontario	375,000 00	375,000 00
2 Geo. V, chap.	48	—	141	St. John and Quebec Railway Co., New Brunswick	1,005,902 42	1,005,902 42
53 Vic., chap.	2	57,600 00				
55-6	" 5	25,024 00	142	St. Lawrence and Adirondack Railway, Quebec	149,481 60	149,481 60
60-61	" 4					
47	" 8	22,400 00	143	St. Louis and Richibucto Railway, New Brunswick	22,400 00	22,400 00
—		—	144	St. Mary River Railway Co., Northwest Territories	148,094 00	148,094 00
7-8 Ed. VII, c.	63		145	St. Mary's and Western Ontario Railway Co., Ontario	67,709 00	67,709 00
7-8	" 63		146	St. Maurice Valley Railway Co., Three Rivers to Grand'Mère, Quebec	173,120 00	173,120 00
56 Vic., chap.	2	—	146½	St. Stephen and Milltown Railway, New Brunswick	14,848 00	14,848 00
3-4 Geo. V, chap.	53	—	147	Temiskaming and Northern Ontario Railway Co., Ontario	2,134,080 00	2,134,080 00
45 Vic. chap.	14	240,000 00				
48-9	" 58	258,000 00	148	Témiscouata Railway, New Brunswick and Quebec	645,950 00	645,950 00
51	" 3	100,000 00				
53	" 2	51,200 00				
7-8 Ed. VII, c.	63	—	149	Thessalon and Northern Railway Co., Ontario	6,112 00	6,112 00
52 Vic., chap.	3	54,400 00	150	Thousand Islands Railway, Ontario	29,840 00	29,840 00
63-4	" 8					
55-6	" 5					
57-8	" 4	—	151	Tilsonburg, Lake Erie and Pacific Railway, Ontario	150,071 48	150,071 48
60-61	" 4	—				&
62-63	" 7	—				
54-5	" 8	89,600 00				
53	" 2	35,200 00	152	Tobique Valley Railway, New Brunswick	134,016 00	134,016 00
55-6	" 5	9,600 00				
59	" 10	16,000 00	153	Toronto, Grey and Bruce Railway, Ontario	14,656 00	14,656 00
56	" 2	102,400 00	154	United Counties Railway Co., Quebec (Quebec, Montreal and Southern)	188,816 00	188,816 00
57-8	" 4	102,400 00				
7-8 Ed. VII, c.	34	—	155	Vancouver and Lulu Island Railway Co., British Columbia	61,760 00	61,760 00
53 Vic., chap.	2	35,200 00	156	Waterloo Junction Railway, Ontario	32,800 00	32,800 00
49	" 10	256,000 00	157	West Ontario Pacific Railway and Ontario and Quebec Railway	256,000 00	256,000 00
53	" 2					
62-3	" 7	—	158	York and Carleton Railway, New Brunswick	32,896 00	32,896 00
				Total	†76,391,471 09	†76,391,471 09

† This amount does not include the subsidy of $25,000,000 to the Canadian Pacific Railway, nor the amount of $660,683.08 expended on the Annapolis and Digby Railway, both of which are included in Capital Account, nor the annual payment of $219,700 to the Provincial Government of Quebec, being interest at the rate of 5 per cent on the sum of $2,394,000 up to 1905, granted by Vic. 47, cap. 8 (1884) and the annual payment of $107,730 being interest at the rate of 4½ per cent since and including 1905 on the said sum of $2,394,000 for the line between Ottawa and Quebec which sum was transferred to the Public Debt as a liability and dealt with by the Finance Department. It is brought into their statement of subsidy payment in 1908. *See* Public Accounts, 1889-1920, and page 98, 1898.

STATEMENT showing Subsidies paid to March 31, 1923—*Concluded*

Agreement with Public Accounts 1922-23 as follows:—

	$ cts.
Above statement shows	76,391,471 09
Add Quebec Subsidies as per memo at foot of preceding page	2,394,000 00
Total	78,785,471 09
Total as per Public Accounts	76,116,742 91
	2,668,728 18

Difference is located as follows:
Public Accounts Statement does not include, in Subsidy Account

	$ cts.	$ cts.
(a) Item 40 (part)	970,000 00	
(b) Item 46	1,525,250 00	
(c) Item 16½	175,000 00	
		2,670,250 00
(d) Item 5 (a credit of)	1,521 82	
		2,668,728 18

REPORT OF W. A. BOWDEN, CHIEF ENGINEER OF THE DEPARTMENT OF RAILWAYS AND CANALS

The through water route between Montreal, at the head of ocean navigation, and Fort William and Port Arthur, on the west shore of lake Superior, comprises 74 miles of canal, with forty-eight locks and 1,155 miles of river and lake waters, or a total of 1,229 miles. The minimum depth of water on this route is 14 feet. From Montreal to Duluth, on the southwest end of lake Superior, the total distance is 1,354 miles, and to Chicago 1,286 miles. Connection is made with the Canadian Pacific Railway from points west and south at Fort William and Port Arthur (6 miles apart). From Fort William connection with the main transcontinental line of the Canadian National Railways is made by the branch line originally constructed by the Grand Trunk Pacific Railway, but now operated by the Canadian National Railways.

On this through route the approaches to the canals and the channels of the intermediate river reaches are well defined, and are lighted with gas buoys under the control of the Department of Marine and Fisheries, admitting of safe navigation in the hands of competent pilots, both by day and night. The Lachine, Soulanges, Cornwall, Welland, and Sault Ste. Marie canals are lighted throughout by electricity and electrically operated. The Farran's Point canal is lighted by acetylene gas.

Of the minor systems, the Murray, Trent, Rideau, and Ottawa river canals may be considered geographically as branches of the through east-and-west route. In operation, however, these canals serve a distinct traffic of more local nature. Isolated from the systems just mentioned, the navigation of the Richelieu river from its junction with the St. Lawrence at Sorel to lake Champlain, is effected by means of the St. Ours lock and the Chambly canal; while in the extreme east the St. Peter's canal provides communication between the Bras d'Or lakes of Cape Breton island and the Atlantic ocean.

A full statement of the various canals and canalized waters now in operation, with their mileage, limiting dimensions, etc., is the subject of a separate departmental publication, *The Canals of Canada*. A summary of this data is, however, appended to this report.

In the detailed report which follows the various canal systems, etc., are taken up in the following order:—

The present St. Lawrence and Great Lakes route between Montreal and lake Superior.

The route from Montreal to Kingston viâ the Ottawa and Rideau rivers.

The navigation of the Richelieu river from its junction with the St. Lawrence to lake Champlain.

The route from lake Ontario to Georgian bay viâ the Trent river, etc.

The St. Peter's canal across the isthmus at the southerly end of Cape Breton island.

Miscellaneous works.

ST. LAWRENCE AND GREAT LAKES ROUTE

Lachine Canal

This canal was in operation for the entire season of navigation with only one interruption to traffic. The steamer *Saskatoon* went through both gates of south Lock 1 during the night of 21-22 October. Spare gates were installed with the least possible delay and traffic in the lock was resumed within 24 hours.

Of repairs and improvements made during the year the following may be noted:—Two new booms were constructed and placed on the south side of Basin No. 2. The old crib wharf, 185 feet in length, opposite the Sugar Refining Company was renewed in concrete. The wooden mooring posts, 49 in all, round the St. Gabriel basins were replaced by cast iron posts. The approaches to the bascule bridge were re-macadamized. Under contract with the Sicily Asphaltum and Paving Company a portion of St. Patrick street, 1,530 feet in length, was repaved in asphalt on a new concrete foundation.

Soulanges Canal

The canal was operated without serious interruption to traffic during the entire season of navigation.

Following are the principal repairs and improvements effected:—Between Côteau Landing and Cascades Point, a distance of 14 miles, the roadway along the north side of the canal was resurfaced in macadam and penetration asphalt. This work, which was not quite completed in November last, will be resumed in the new fiscal year. The construction of a brick and steel frame shed on concrete foundation for the building and storage of lock gates, which was commenced the previous year, was completed. For a distance of 302 feet along the north slope of Weir 4, steel sheet piling was driven for reinforcement with a reinforced concrete apron 26 feet high connecting the steel apron built in 1918-19 with that constructed in 1921-22. Minor repairs such as the reflooring of swing bridge No. 6 at River Rouge, the rebuilding or repairing of 30 farm bridges, repairs to gates, pointing of masonry walls, etc., were also attended to.

Cornwall Canal

This canal, which opened for traffic on 18th April, continued in operation for a period of eight months.

There were but two accidents neither of which caused serious interruption to traffic. On 29th September the steamer, *W. B. Morley* collided with the guard gates above Lock 20. The damage was repaired within twenty-four hours. On 23rd November the steamer *Canadian Warrior* caused some damage to several of the coping stones in the north lower entrance wall of Lock 20. Necessary repairs were completed before the close of the season.

Although coal traffic through this canal was considerably less than usual, the season proved an unusually busy one, an average of twenty-one vessels a day having been passed through the lower entrance to the canal.

In addition to a general overhauling and repairing of machinery during the period in which the canal was unwatered, repairs to banks, cleaning out, etc., the following more extensive repairs and improvements were attended to during the fiscal year:—At the entrance to the supply weir of Lock 21, one of the three timber cribs to which the booms are attached had become badly tipped over from constant impact from vessels. This crib was rebuilt during the winter months and will be placed in position and filled with stone as soon as the navigation season opens. One new scow, to be used as a boarding house for repair men, was constructed and another scow for the same purpose rebuilt. A combined store house, stable and waggon shed was erected and also a brick-faced

workshop for the electrician, fully equipped with machinery. The wooden floor of the machine shop was relaid in concrete. At the guard gates west of Lock 20, the operating machinery was completely renewed. Along the south bank of the canal several hundred feet of the roadway leading to the canal wharf at Cornwall was macadamized.

Farran's Point Canal

This canal was in operation throughout the entire season without serious accident or delay to navigation. Among the repairs and improvements carried out during the past season, the following may be noted:—At the easterly boundary line a new wire fence was erected. The stone protection walls on both sides of the canal were repaired, a new pine floor was laid in the watch house and general repairs and cleaning out attended to at the locks.

Rapide Plat Canal

This canal was also operated without any delay to navigation.

The following repairs and improvements, made during the past year may be noted:—The old "Gibson" flume, north of old Lock 23, was filled in. A wooden storehouse was erected at Morrisburg. Concrete and stone protection walls were repaired, and a dry rubble wall was built along the water's edge of the park at Morrisburg.

Galops Canal

No accidents nor delays to navigation were experienced.

A considerable number of repairs and improvements were attended to among which the following were the most important:—A new floor was laid on the bridge at Iroquois and also over the lock-filling chamber west of the watch house at Lock 25. On the north side of the highway at Iroquois, the government ditch was cleaned out and the side walls strengthened. The operating machinery of the Iroquois swing bridge was renewed. A considerable amount of fencing was renewed or newly erected both at Cardinal and Iroquois. Other lesser repairs such as the painting of buildings, construction of sidewalks, etc., were attended to.

Welland Canal

The volume of traffic on this canal was slightly in excess of that of the year before. There were 1,911 upbound and 1,888 downbound passages, making a total of 3,799 vessels traversing the entire route of the canal during the 1922 season. In addition to this through traffic, a large number of tugs, pleasure boats and other vessels made use of various portions of the canal. The total freight tonnage carried was 3,391,419, an increase of about 10 per cent over that of the previous year and in volume exceeded previously only by the records of 1913 and 1914. Wheat shipments amounted to 58,415,300 bushels, the heaviest ever recorded.

There were several accidents on the canal during the year occasioning delays to traffic. Early in the season the steamer *Marquette and Bessemer. No. 1* on the downbound passage, in passing through the swing bridge of the Grand Trunk Railway near Welland Junction, collided with a corner of the span, swinging it round in the wrong direction. This resulted in considerable damage being done both to the vessel and to the mechanism of the bridge. Through this accident traffic was delayed for 32 hours. About the middle of June the wooden steamer *India*, laden with grain, struck the lower gates of Lock 16 ploughing through them into the reach below. Some damage was caused to the canal banks from the consequent rush of water and the vessel remained sunken in the reach. Traffic was resumed however within 18 hours and the position of

the sunken vessel was not such as to seriously interfere with the navigation of the canal. In September both the upper and lower gates of Lock 15 were carried out by the tug *Joseph L. Russell* which struck the upper gates stern first. Some damage resulted from the rush of water from the reach above, but the delay to traffic was not serious.

New Canal.—Of the various repairs and improvements carried out on the new canal during the year, the following may be noted:—At Port Dalhousie extensive repairs were made to the west entrance pier. Similar repairs were also carried out at the west dock below Lock 1. The road approaches to the new swing bridge on Lock 3 were paved with a macadam wearing surface. At Lake street bridge the pile fenders on both sides of the canal were renewed. The cribwork, between the centre and rest piers of Bridge No. 4, between Locks 5 and 6, was capped with a solid concrete structure. The highway swing bridges at Niagara street, St. Catharines, Marlatt's and Welland were sand blasted and painted. Over 7,000 cubic yards of stone rip-rap were placed along various portions of the canal. The canal electrical transmission line between Port Robinson and Quaker Road was entirely rebuilt in a new location.

Old Canal.—Of repairs made to the old canal during the year the following only need be noted:—At Locks 16 and 19 reinforced concrete gate bars were installed replacing the former wooden mitering gates at the upper end of the locks. Below Lock 15 a cable suspension foot bridge, replacing the timber foot bridge, was constructed.

Canal Feeder.—The concrete roadway between Dunnville and Stromness, which had been commenced in 1921, was completed. At Stromness the wooden highway swing bridge over the Port Maitland branch of the feeder was replaced by a composite wrought iron and wood structure, taken from Lock 3 of the present canal, and a new concrete substructure was constructed. At Sulphur creek near Dunnville a new steel highway bridge of three fixed spans was constructed on concrete piers and abutments to replace the former entirely wooden structure.

Port Colborne Elevator.—The Government grain elevator during the past fiscal year received 53,349,811 bushels of grain, an increase over the receipts of the previous year of about 10 per cent and over those of the year 1914 of about 35 per cent. The net earnings for the year were $210,395.29.

Welland Ship Canal

For a detailed description of the various works which it is proposed to undertake in the carrying out of this work, it will be necessary to refer back to the report of the engineer in charge contained in the annual report of this Department for the fiscal year 1913-14, page 359. In the present report, as in that of last year, a brief résumé of the general scheme involved may, therefore, not be out of place.

The proposed ship canal leaves lake Ontario at the mouth of Ten-Mile creek, about three miles east of Port Dalhousie, follows an entirely different route from the present canal as far west as Allanburg, about half way across the peninsula, and from here proceeds along the course of the present canal to Port Colborne on lake Erie. The total distance traversed from lake to lake will be 25 miles. The difference of level between the two lakes, 325½ feet, will be overcome by seven lift locks, each having a lift of 46½ feet. The locks are to be 800 feet long and 80 feet wide in the clear and will provide a depth of 30 feet of water over the mitre sills. The width of the canal prism is to be 200 feet. A new breakwater, now under construction, will be built at Port Colborne, extending 2,000 feet farther into the lake than the present breakwater. Extensive harbour works are contemplated for the lake Ontario entrance at Port

Weller. For purposes of construction, the canal is divided into nine sections or contracts numbered from the lake Ontario end. During the past fiscal year, work has been carried on on sections 1, 2, 3, 4 and 5.

On account of strikes and various labour troubles, construction work on this canal was considerably retarded for some time after the resumption of work at the close of the war years. Conditions in this respect have however improved materially during the past two years.

Following is a brief summary of the work performed and in progress on the various sections of the canal during the past fiscal year.

Section No. 1.—This section extends from Port Weller on lake Ontario in a southerly direction, a distance of nearly 3 miles inland, and comprises the entire harbour construction, prism excavation and one lock with weirs, etc., together with the construction of two bridges over the canal.

When work on the present contract was commenced, about 30 per cent of the entire work involved still remained to be completed. About 20 per cent of this work has yet to be done. Dredging operations were carried out in Port Weller harbour and satisfactory progress made, upwards of 300,000 cu. yds. having been taken out the greater part of which was deposited on the east side of the east harbour embankment. In addition to the foregoing, about 150,000 yards of land excavated material from Sections 1 and 2 was also placed on this embankment and a considerable portion of this is now ready for riprap. On the west embankment about 90,000 cubic yards of shale rock from Section 3 have been placed. At Lock 1, the extension of the lower west entrance wall was completed in November of last year. The diversion of the construction railway crossover was completed in September and traffic diverted to the new route. At Lock 1 the chamber floor has been completed, as also the pump pit monolith to coping level, the lower service gate, recess floor and mitre sill platform, the floor and the north end of the lock and the walls of the upper forebay, in all about 25,000 cubic yards of concrete. The cutting out of the recess for the lower west service gates, began in December last was completed last month. About 98 per cent of the concrete work on Lock 1 is now finished. The diversion of Ten-Mile creek was completed in April of last year and the water turned into the new channel. Excavation was then commenced for the waste weir and completed and about 71 per cent of the concrete work has already been placed. At regulating weir No. 1, 91 per cent of the structure has been completed. Work in the vicinity of Bridge No. 1 was carried forward as far as is possible until the N. S. & T. Railway has been diverted, an undertaking which it is expected will be effected by the end of April Considerable preliminary grading of the railway embankments has already been carried out. Above Lock 1 a large amount of excavation was done at the pondage area and considerable concrete placed on the east bank of the pond.

To summarize the progress of the various classes of work performed on this section it may be stated that up to date there has been completed 94 per cent of the rock excavation, 86 per cent of the earth excavation, 67 per cent of the work on watertight embankments, and of concrete of all classes 82 per cent.

Section. No. 2—The extent of this section is approximately 4½ miles. The work involved comprises the taking out of canal prism and construction of embankments, the building of Locks 2 and 3 with entrance walls, etc. and the substructures of several highway bridges.

The following work was performed on this section during the fiscal year:—At the lower west entrance wall of Lock 2 excavation for monoliths 12 to 16 was completed and concrete placed. This wall is now 89 per cent completed. At Lock 2 concrete operations were carried on continuously from April till the middle of December during which period about 53,000 cubic yards were placed. Work on this lock is now 97½ per cent completed. The greater part

of the lock floor still remains to be placed. The upper east and west entrance walls have now been completed. Back filling to the extent of about 230,000 cubic yards has been deposited at Lock 2 and at the entrance walls, or about 48 per cent of the total required. At waste weir No. 2 considerable excavation work was performed and piles driven for the wall connecting this weir with the lock. The cut-off wall under the weir has also been constructed. In all about 37 per cent of the concrete work has been placed. Regulating weir No. 2, with the exception of the deck slabs, is now completed. Between Bridge No. 4 and the Welland canal, excavation work on the canal prism was carried on continuously, about 357,000 cubic yards having been taken out. At the site of the lower west entrance wall to Lock 3 pile driving operations were carried on and are still in progress. The driving of sheet piling for the rear portion of the west wall of Lock 3 was commenced in December last and excavation has been started. Excavation of the forebay of this lock has been completed. South of the present canal about 24,000 cubic yards of material was taken out along the east side the canal prism.

Summarizing, the progress on various classes of work on this section stands as follows:—Rock excavation 57 per cent, earth excavation 76 per cent, watertight embankments 75 per cent and all classes of concrete 49 per cent.

Section No. 3.—This section extends southerly from Section 2 for a distance of about 2 miles. The work involved comprises the excavation of canal prism and lock sites, the construction of three twin locks in flight and one single lock together with masonry approach walls, a core wall for a dam, control weirs and other minor structures and the building of a large earth dam at the head of the flight locks.

During the past fiscal year work on this section has progressed as follows: Between August and November a small amount of excavation was done on the canal prism. Excavation at the site of twin Locks 4 was also proceeded with, some 74,000 cubic yards having been taken out. For twin Locks 5 excavation operations have also been in progress and about 62,000 cubic yards removed. At twin Locks 6 the outer walls of the east and west chambers were completed to one-third of their total height for a distance of 665 feet; the centre wall between the east and west chambers was completed to coping level for a length of 240 feet and to half its height for a further distance of 491 feet. About one-third of the concrete work on this structure has now been completed. Some excavation work was done for the dam and weir for Locks 6. The excavation work for Lock 7 has been completed and a small amount of concrete placed. On the canal prism south of Bridge No. 9, excavation was carried on from October till the middle of December and about 54,000 cubic yards of material were removed.

To summarize the work performed on this section to the present time it may be stated that 70 per cent of the total rock excavation has been completed, 64 per cent of the earth excavation, 71 per cent of the work on watertight embankments and of concrete work of all classes 19 per cent.

Section No. 4.—The extent of this section is about 2 miles southerly from the end of Section No. 3. The work involved comprises the excavation of canal prism, the construction of a new waterworks reservoir for the town of Thorold, the relocation of a branch of the Grand Trunk Railway, and various other lesser undertakings.

The progress of the work during the past year has been as follows:—Work on the Thorold reservoir was completed. The new reservoir which has a capacity of 4,940,000 gallons was put in service 13th August, 1922. The four piers for the new bridge on the relocated line of the Grand Trunk Railway were completed and the steel for both fixed and movable spans has been erected. Grading,

ballasting and tracklaying have been completed over the entire length of the relocated line and surfacing and lining only remain to be done. On the canal prism a total of 850,090 cubic yards of excavation was taken out during the year.

A summary of the work performed to date on this section shows that 30 per cent of the earth excavation has been completed and 2 per cent of the concrete work.

Section No. 5.—This section is about $3\frac{1}{4}$ miles in length. The work involved comprises rock and earth excavation and dredging, the construction of the substructure of bridges at Allanburg and Port Robinson and small quantities of concrete and stone protection along the canal banks.

Dredging operations were carried on along the canal prism during the entire season. 24,500 cubic yards of rock were excavated and 306,000 cubic yards of earth. Work on the east and west abutments of Bridge No. 12 has been in progress and is now practically completed. At Bridge No. 13 some progress has been made on the west abutment, but a portion of the north wing wall is as yet incomplete. Work on the east abutment has been started, the steel sheet piling having already been driven.

To summarize, about 78 per cent of the total estimated rock excavation has been taken out and 95 per cent of the earth excavation.

Sections 6 to 9.—These sections are comprised in that portion of the canal which lies between Port Robinson and Port Colborne, a distance of about $10\frac{1}{4}$ miles. No construction work has as yet been commenced on this part of the route. Considerable survey work has, however, been done and plans and cross-sections prepared. Some test holes have also been sunk, soundings taken outside the breakwaters in lake Erie and boundary monuments set over the entire route.

Construction Railway.—All tracks and structures were maintained in efficient condition throughout the year. The swing bridge over the canal was repainted and the crossover trestle on Secti n No. 1 of the canal, which had become unsafe, was abandoned for the new diversion. The traffic of the past year, which was about double that of the year before, was handled throughout without serious accident or delay.

Laboratory.—Upwards of 300,000 barrels of cement were received during the year for work on various sections of the canal. Samples of this cement were taken at the mill at Port Colborne and the necessary tests were made in the laboratory. The samples tested numbered 1,850. Tests of sand, crushed stone and concrete were also made as well as physical tests of the various paints for structural work which have been submitted by manufacturers.

Sault Ste. Marie Canal

This canal was open for traffic from the middle of April to the last week of December. The total registered tonnage of vessels which passed through the lock showed an increase of 25 per cent over that of the previous year. The total freight tonnage, however, was less than that of the year before by 15 per cent. This decrease must again be explained by the fact that on account of their greater depth a large number of Canadian vessels find it advisable to make use of the American canals. For the Canadian and American canals taken together the freight tonnage of Canadian vessels which passed the locks was practically the same as for the previous year.

No serious accidents or delays to traffic have occurred during the year. In the month of July two vessels went aground in the lower entrance near the south pier but were released without serious delay. It was found on subsequent examination that a sand and gravel shoal had formed at this point. This obstruction has since been removed by dredging.

The wooden portion on the top of the upper south pier was removed and concrete walls 300 feet in length were constructed along each side with connecting cross walls. The intervening spaces have been filled with stone and a portion of the deck completed. It is intended that this work shall be continued during the coming season. A new steel pontoon gate lifter, constructed by the Canadian Vickers Co., was delivered at the canal in November last. Extensive soundings were taken through the ice over the whole of the lower entrance during the winter and a number of shoals located. Various minor repairs have been attended to as usual.

OTTAWA AND RIDEAU RIVERS

Ste. Anne Lock

This lock was in operation from the beginning of May till the end of November.

With a view to installing electric power in place of the present hand operation of the lock, the necessary machinery, including five 3 horse-power motors for gates and five 1 horse-power motors for sluices, have been purchased and will be installed during the coming season. The usual small repairs and improvements received customary attention.

Carillon and Grenville Canals

These two canals opened for traffic on 1st May and were operated without interruption until the end of November.

The more important repairs and improvements carried out during the year include the following:—At the Carillon dam 275 feet of the downstream apron was rebuilt and stone ballasted. At Lock 2 a new lockhouse was constructed. The tow path was widened and strengthened between Locks 5 and 7. The superstructure of five mooring guide piers at the upper entrance of the Carillon canal was renewed. The government road at Carillon was regravelled and various other lesser repairs attended to.

Rideau Canal

During the past fiscal year a slight decrease in traffic, as compared with the year previous, was observed from the number of lockages reported. Very good water conditions prevailed during the entire navigation season.

A considerable number of repairs and improvements were carried out along the route of the canal among the more important of which may be mentioned the following:—At the Ottawa lock station the mitre sill of Lock 6 was replaced in concrete with steel face and one of the chamber walls at Lock 7 rebuilt with concrete blocks. A new concrete store house was built on wharf lot No. 4 at the canal basin as a dépôt for stores used upon the canal. A considerable portion of the basin wharfing was relaid in square timber and other lesser repairs attended to. At Hartwell's Lock station the upper mitre sill of the upper lock was rebuilt in concrete with steel face, the lay-by piers partially rebuilt and the bridge floor renewed. At Hogsback lock station the roadway along the canal bank was graded and tarviated for a distance of over half a mile, a new plank floor laid on the swing bridge and a number of small repairs attended to. At Black Rapids lock the lock gates were renewed and the lock house wired for electric lighting. At Long Island lock station the lay-by pier at the upper lock was entirely rebuilt, a new stable and shed erected at the lockmaster's house and the roadway at the junction of the waste weir with the embankment was repaired. At Kar's bridge a new floor was laid on the swing span. At Burritt's Rapids the old store house was replaced by one on concrete foundation. New lock gates

were installed at Clowe's lock. At Merrickville a lay-by pier was constructed at the foot of the lower lock and the lock gates of the upper lock renewed. At Kilmarnock lock the long waste weir was rebuilt and both upper and lower lock gates renewed. At Smith's Falls the old swing bridge at the upper lock was taken out and replaced by a new span the substructure also being renewed in concrete. At Poonamalie new concrete piers were constructed at the stop-log dam and gates renewed at the lower end of the lock. A new timber swing span was erected at Rideau Ferry. New gates were installed at Newboro lock and a new kitchen on concrete foundation was erected at the lockmaster's house. At Jones's Falls the timber swing bridge was renewed. At Brewer's Mills upper lock a new timber swing bridge was erected and new lock gates installed. At the lower lock the lay-by piers were rebuilt and stone filled above low water. At Kingston Mills both upper wing walls, gate piers and recesses of the upper lock were taken down and rebuilt and a considerable portion of the masonry wall on the west side of the basin removed and replaced in concrete. A new pair of gates was hung at the lower lock and the old stable at the lockmaster's house replaced by a new structure on concrete foundation.

The dredge *Rideau* (formerly *Tay*) with tug *Agnes* was employed during the summer of 1922 in cleaning out excavated material from the canal along the new retaining walls between the "deep cut" and Pretoria avenue bridge, in dredging at the gravel shoal below Long Island lock station and also in the cut above Hartwell's locks. The entire dredging plant, which wintered in the Ottawa canal basin, was generally overhauled and repaired and put in good condition for next season's work.

RICHELIEU RIVER NAVIGATION

St. Ours Lock

This lock was opened on 1st May and closed on 30th November. Navigation proceeded without interruption throughout the entire season.

The rip-rap which was placed last year at the easterly end of the dam was concreted, a new scow 20 feet by 72 feet was constructed and the usual maintenance of structures received the customary attention.

Chambly Canal

The navigation of this canal, which opened on 1st May continued uninterruptedly for a period of seven months.

Of repairs and improvements made during the year the following may be noted:—The abutments of Bridge No. 8 at Chambly Basin, on the Montreal-Sherbrooke highway, were renewed in concrete and a new steel superstructure erected with reinforced concrete roadway and sidewalk. Along the westerly side of the canal from St. Johns to Montée St. Luc, a distance of over two miles, the roadway was resurfaced with water-bound macadam. The floor and sill of old Lock 1 was renewed in concrete. The old steel bridge from Chambly Basin was installed at Bridge No. 2 on concrete abutments, the abutments of Bridge No. 1 renewed in concrete and various other lesser repairs attended to.

LAKE ONTARIO TO GEORGIAN BAY

Murray Canal

This canal, which is an open waterway 80 feet in width, with 12 feet depth at low water, across the isthmus of the Prince Edward County peninsula, connecting the bay of Quinté with lake Ontario, is without locks.

Navigation opened April 19, and closed December 9. The canal was in operation throughout the entire season.

Among the more important repairs and improvements carried out the following may be mentioned:—The four dwelling houses at the railway and Smithfield Road bridges were painted; the Smithfield Road bridge floor was replanked for about half its length; along the north bank of the canal slightly over half a mile of stone protection was relaid; bad spots on the highway were gravelled and waling timbers along masonry walls and faces of piers were renewed where necessary.

Trent Canal

The route of the Trent canal, as now in operation or under construction, lies between Trenton, on the bay of Quinté, where direct connection is made with lake Ontario, and Honey Harbour, on Georgian bay, from which the waters of the Great Lakes are at once accessible. The canal is made up of a series of lakes and rivers connected by relatively short lengths of artificial cuttings. Connection between the water levels of the various reaches is effected by locks. The route may be briefly described as follows: Between Trenton and Rice lake the canal follows the line of the Trent river. Passing through Rice lake it enters the Otonabee river, the route of which is followed to its source in Katchiwano lake. From this lake the line of the canal passes in succession through Clear lake, Stoney lake, Lovesick lake, Buckhorn lake, Pigeon lake, Sturgeon lake and Cameron lake to the west side of Balsam lake. From here a connection is made by an artificial cutting with a small lake about two miles westward, and from the latter lake another cutting makes connection with Cranberry lake. From the south end of Cranberry lake connection is made with lake Simcoe by another artificial cutting. Passing through lake Simcoe the route of the canal continues to the Severn river, the line of which is followed to the Georgian bay outlets at Honey Harbour and Port Severn. From Trenton the canal rises to a summit at Balsam lake, the level of which is about 597 feet above that of lake Ontario. From Balsam lake to Georgian bay there is a fall of 262 feet. Between Trenton and Washago the canal has been practically completed and open to traffic since June, 1918, or for a distance of 203·6 miles. On the westerly portion of the route of the canal, or between lake Couchiching and Georgian bay, various works are under construction, a description of which will be found under a subheading farther on in this report. When completed, the total length of the canal from lake to lake will be about 236 miles.

Canal in Operation

As already stated in previous reports, that portion of the Trent canal which lies between Trenton and Rice lake was formally opened for traffic on June 3, 1918. The extent of the canal now in operation may therefore be stated as 203·6 miles, or between Trenton and Washago at the head of lake Couchiching. In addition to this is maintained the Lindsay branch, 30 miles in length, and various other channels aggregating in all about 60 miles. The total extent of canal and canalized waterways maintained in operation is therefore slightly over 300 miles.

Of the various repairs and improvements effected during the year the following are among the more important:—The dredge *Fenelon* resumed operations at Dangerfield Bar on the Otonabee river last May and completed the work which

for several seasons has been in progress at this point. Dredging on the Otonabee was also carried on at Crawford's Grove, Yankee Bonnetts and at Braundport. The dredge *Auburn* was in operation at Stewart's and at Pine Plains. During the entire season these two dredges removed between them 36,123 cubic yards of material. Substantial lockmasters' houses were erected at Locks 2 and 10 and a brick residence was purchased for a similar purpose at Lock 7. The work of sandblasting and painting the Peterboro lift lock was completed last June. At Lock 19 a new crib pier was erected. At the junction of the Canal with the Talbot river, where extensive shoals had developed, dredging operations under contract with F. A. Robertson & Co., were commenced late in November last but had to be discontinued a week later on account of weather conditions. Work on the Mississaugua dam was completed and all equipment removed from the site. Dam No. 5 at Squaw river, and High Falls dam, both of which had been carried away by the freshet of 1922, were rebuilt. A new concrete dam was erected at Eagle lake replacing the former timber dam. A number of new lock gates were constructed and various other lesser repairs and improvements received the usual attention.

Canal under Construction

That portion of the Trent canal which is now under construction lies as already noted between Washago, at the head of lake Couchiching, and Honey Harbour and Port Severn on Georgian bay, and is known as the "Severn Division." This Division is for convenience divided into four sections, the Port Severn section, from Port Severn on Matchedash bay to Gloucester Pool; Section No. 1 from Honey Harbour to Big Chute and the Severn river; and Section No. 2 extending from McDonald's Chute to the head of lake Couchiching. On this division of the canal the following work was carried out during the past fiscal year:—All work at Hamlet Bridge was completed; the fixed steel span from the old bridge was moved to the new site in June, 1922, and placed on the new substructure, and by August the swing span, a contract for which had been let to the Standard Steel Construction Company, was ready for operation. A bridge man is now stationed at this point thus leaving the canal open for operation by any craft of the proper draught between Trenton and Sparrow lake. On the west side of the river just below Hamlet bridge a stone-filled timber wharf has been constructed. Dredging of the channel has been carried on at Sparrow lake chute and Portage bay cut resulting in greatly improved navigation facilities. Some work has also been performed on the enlargement of the marine railways at Swift Rapids, and Big Chute, to allow of the handling of 15 ton boats of 13 feet 6 inches beam, the original structures having been built to accommodate only 5 ton boats of 9 feet beam.

On the portion of the Trent canal which has been in regular operation, or between Trenton and Washago, certain works have also been performed by the construction forces. On the Ontario-Rice lake division, work under contract with the William Hamilton Company, was carried out involving the supply and erection of three submerged valves and operating machinery at the sluices of Dam No. 10. The housing in of the machinery was also carried out by the regular canal forces. A large amount of useful work was performed on this division by the engineering staff stationed at Campbellford including the inspection of work in progress, the placing gauges, various surveys, the collection of statistical data, etc. On the Peterborough-Lakefield division the only work in progress was that in connection with the dam at Nassau. This work, which had been partly carried out during the previous year, has now been brought nearly to completion. On the Lakefield-Balsam lake division the construction of a new dam at Young's Point has been under consideration. Plans for this undertaking have been prepared but no work has as yet been

carried out. At Bobcaygeon the lower entrance piers of the lock were completed and the greater part of the work of the Randolph Macdonald contract finished up. On the Holland river division a new floor was laid at Green Lane highway bridge.

During the past winter survey work was continued at Pigeon lake and at the easterly end of Buckhorn lake. Work of a similar nature was also carried on at Stoney lake.

St. Peter's Canal

This canal, which was constructed betwen the years 1912 and 1917 connects the Bras d'Or lakes with St. Peter's bay on the southeast coast of Cape Breton island. It consists of a tidal lock 300 feet in length and 48 feet in width and provides for a minimum depth of water on the lock sills of 18 feet.

During the past season this canal was in operation from 24th April till 6th January of the present year. The total number of vessels making use of the canal during this period was 1,543, the volume of traffic being slightly less that that of the year before.

At the Atlantic end of the canal extensive repairs were made to the face of the concrete entrance walls. Portions of the floor of the lock were also repaired. Along the east side of the canal a part of the old cribwork which had become decayed was taken down and rebuilt. At the east end of the Atlantic wharf a short portion was taken down and rebuilt in masonry; the rebuilding of the remainder of this wharf above the highwater mark is in contemplation during the coming season. A number of other lesser repairs and improvement also received attention.

MISCELLANEOUS

Hungry Bay and St. Barbe Dykes

For a distance of about $2\frac{1}{2}$ miles along the Hungry bay dyke the roadway was thoroughly resurfaced in water-bound macadam. The work of strengthening the protection walls on both dykes against erosions from lake St. Francis was continued. About 5,000 lineal feet of wall, in all, at various points along the dykes has now received attention.

St. Lawrence Ship Canal

For many years the question of the ultimate enlargement of the St. Lawrence Canal system between lake Ontario and Montreal has been studied by the engineers of this department, and much data relating thereto has been obtained.

During recent years the work of completing definite plans for such an enterprise became necessary in order to enable the Department to deal intelligently with proposals, by private corporations, for the development of isolated water-powers which might seriously conflict with any reasonable development of the navigation and power potentialities of the river as a whole. Under this impetus, plans were evolved for a comprehensive development of the upper section of the river.

During the past season, two boring parties have continued the investigation of sub-surface conditions on the sites proposed for structures, and also at some other points where the rock elevation was considered desirable for a proper study of various schemes. To facilitate the drilling of the overburden and obtain some definite information about the underlying rock formation, a heavier well drill and a calyx core drill were added to the equipment with staisfactory results. One survey party has been employed during the summer season in running check levels to the various lock gauges and in making additional surveys to supplement those already compiled, chiefly on the south shore of lake St.

Francis, and in the towns on the Canadian side of the International section which are flooded in the proposed enlargement. In the winter season, this party with the assistance of the office staff, obtained extensive information on the ice jam which formed between the foot of Croil Island and Morrisburg, and also took some measurements of the discharge of the river.

An office staff has been employed throughout the year, when not assisting the outisde staff, in the preparation of an economic analysis of the whole project and in computation of the various hydraulic data obtained in the field.

CANALS OF CANADA

Name	Location	Length in Miles	No. of Locks	Locks		
				Minimum dimensions		
				Length	Width	Depth
St. Lawrence and Great Lakes				Ft.	Ft.	Ft.
Lachine	Montreal to Lachine	8·50	5	270	45	14
Soulanges	Cascades Point to Côteau Landing	14·00	5	280	45	15
Cornwall	Cornwall to Dickinson's Landing	11·25	6	270	45	14
Farran's Point	Farran's Point Rapid	1·25	1	800	50	14
Rapide Plat	Rapide plat, Morrisburg	3·66	2	270	45	14
Galops	Iroquois to Cardinal	7·33	3	800	50	14
Welland	Port Dalhousie, Lake Ontario to Port Colborne, Lake Erie	26·75	26	270	45	14
Sault Ste. Marie	St. Mary's Rapids, 47 miles west of Lake Huron	1·30	1	900	60	19
Ottawa and Rideau Rivers						
St. Anne's Lock	Junction of St. Lawrence and Ottawa rivers	0·12	1	200	45	9
Carillon	Carillon raipds, Ottawa river	0·75	2	200	45	9
Grenville	Long Sault rapids, Ottawa river	5·75	5	200	45	9
Rideau	Ottawa to Kingston	126·25	47	134	33	5
	Rideau Lake to Perth (Tay Branch)	7·00	2	134	33	6·5
Richelieu River						
St. Ours Lock	St. Ours, Que	0·12	1	200	45	7
Chambly	Chambly to St. Johns, Que	12·00	9	118	22·5	7
Lake Ontario to Georgian Bay						
Murray	Isthmus of Murray, Bay of Quinté	5·17	None	.....	.....	12
Trent	Trenton to Peterboro Lock, Peterboro	89·0	18	175	33	8·4
	Peterboro Lock to Washago	114·6	23	134	33	6
	Sturgeon Lake to Port Perry (Scugog Branch)	30·0	1	142	33	6
Miscellaneous						
St. Peters	St. Peters Bay to Bras d'Or Lakes Cape Breton, N.S.	0·49	1	300	48	18

TABLE SHOWING THE DATES OF THE OPENING AND CLOSING OF THE CANALS FOR THE SEASONS 1919, 1920, 1921 and 1922

Canal	1919		1920		1921		1922	
	Opened	Closed	Opened	Closed	Opened	Closed	Opened	Closed
Lachine	April 16	Dec. 12	May 1	Dec. 11	April 18	Dec. 14	April 19	Dec. 13
Soulanges	" 18	" 12	" 1	" 11	" 18	" 14	" 21	" 11
Cornwall	" 17	" 13	April 30	" 12	" 18	" 15	" 18	" 13
Williamsburg—								
Farran's Point	" 17	" 17	" 29	" 13	" 18	" 16	" 18	" 14
Rapide Plat	" 17	" 13	" 29	" 13	" 18	" 16	" 18	" 14
Galops	" 17	" 13	" 29	" 13	" 18	" 16	" 18	" 14
Welland	" 19	" 13	" 19	" 15	" 15	" 19	" 17	" 14
Sault Ste. Marie	" 19	" 13	" 23	" 22	" 9	" 16	" 17	" 24
St. Anne's	" 17	Nov. 30	" 19	Nov. 27	" 15	Nov. 30	May 1	Nov. 28
Carillon	May 1	" 25	May 1	" 30	" 15	" 30	" 1	" 30
Grenville	" 1	" 25	" 1	" 30	" 15	" 30	" 1	" 30
Rideau—								
At Ottawa	April 11	Dec. 15	" 1	" 30	May 1	" 30	" 1	" 30
At Kingston	May 1	Nov. 28	" 1	" 29	" 1	" 15	" 1	" 21
Trent—								
Ont. Rice Lake Div., Lower Section	" 2	" 6	" 12	" 8	" 13	" 5	" 11	" 20
Trenton Bridge					April 14	Dec. 1	April 5	" 26
Ont. Rice Lake Div., Upper Section	" 1	" 23	" 3	Oct. 30	May 3	Nov. 10	May 12	" 17
Hastings to Rice Lake	" 15	" 14	" 12	Nov. 8	" 12	" 10	" 3	Oct. 29
Rice Lake to Peterboro	" 3	" 24	" 3	Oct. 30	April 23	" 26	" 5	Nov. 25
Peterboro to Lakefield	" 10	" 25	" 8	Nov. 20	" 29	" 8	" 13	" 4
Peterboro Lift Lock	" 15	" 7	" 1	" 20	May 12	" 7	" 20	" 4
Lakefield to Bobcaygeon	April 29	" 15	" 17	" 16	April 6	" 25	" 1	" 21
Bobcaygeon to Rosedale	" 21	" 18	" 18	" 6	" 19	" 21	April 29	" 11
Kirkfield Lift Lock	May 21	Oct. 23	" 1	" 20	May 8	Oct. 6	May 20	Oct. 26
Kirkfield to Lake Simcoe	" 7	" 23	April 24	" 13	" 8	" 11	" 18	" 28
Lake Simcoe to Orillia	" 1	Nov. 20	May 8	Oct. 20	" 30	" 11	" 18	Nov. 10
Scugog River to Lindsay Lock	April 12	" 23	" 14	" 19	" 20	Nov. 6	" 2	" 12
Murray	April 14	Dec. 4	April 12	Dec. 4	April 11	Dec. 5	" 1	" 30
St. Ours	" 23	Nov. 30	" 22	Nov. 25	" 15	Nov. 30	" 1	" 30
Chambly	May 1	" 30	May 1	Dec. 1	" 18	" 30	April 24	Jan. 6
St. Peters	April 10	Jan. 3	April 19	Jan. 10	" 19	Jan. 7		
		1920		1921		1922		1923

REPORT OF A. W. CAMPBELL, M.E.I.C., CHIEF COMMISSIONER OF HIGHWAYS

Major Graham Bell, C.M.G.,

Deputy Minister,
Department of Railways and Canals,
Ottawa.

Sir,—The year 1922 was exceptionally favourable for work of highway construction and improvement in all provinces, according to reports received from the different provincial departments of highways and from our own inspecting engineers. It is gratifying to note that steady progress was made in most cases from the date of the commencement of work until the various projects being constructed with Federal aid were generally improved or carried forward to completion.

In a number of provinces, not only was the programme of construction at first planned, completed, but a considerable amount of additional work was also undertaken and carried out.

Conditions making for this consistent progress were: exceptionally favourable weather, more efficient and available labour at lower rates, and an adequate supply of materials as required, also at lower rates.

Another factor making for greater progress in 1922 than hitherto in connection with Federal aid work, was the letting of many contracts during winter months. Contractors were thus enabled to familiarize themselves with the lay-out of their season's work, procure the necessary materials, equipment and labour early in the spring, and proceed without interruptions until their contracts were completed. These results were obtained as a consequence of the several Provincial Departments having had surveys of the work to be undertaken completed in good time so as to enable the office staff to prepare the plans and specifications necessary to the awarding of contracts.

In reporting for the fiscal year 1922-23 with respect to progress in the different provinces in connection with the Canada Highways Act, it is advisable to review the factors that have affected the rate of progress in completing provincial federal-aid systems approved by this department since the inception of the policy of federal co-operation with the provinces in constructing and improving a limited system of main and market roads, designed as far as possible to connect at provincial borders.

While the demands of local traffic on these roads and the various public and individual interests affected by a well considered plan of Dominion wide improvement thereof, should be the dominating factors as to the amount of construction to be undertaken in any given year, other factors of weight to Provincial Governments are the present and prospective cost of labour and materials involved in such work. However urgently construction and improvement of certain highway projects may be demanded by local interests, the extent of work undertaken is usually governed by varying opinions as to the relative economy of immediate or deferred construction, having regard both to the availability of funds and the cost of labour and materials. Since 1919, financial conditions and high costs of labour and materials have presented the problem as to whether these conditions were likely to continue or to become more favourable in the next few years.

Undoubtedly the amount of construction carried out in the majority of provinces of Canada during 1920 and 1921 was due more to the urgency of demand than to any idea that the prevailing rates of labour and materials were indicative of a new standard of cost levels. The enormous growth of automotive traffic in Canada has led to the general conclusion that millions of dollars must be forthcoming and expended as soon as possible for the improvement of main and market roads of all provinces. But in many cases, the question has b en as to how long the necessary expenditure can be deferred until a reasonable stability in the market has been reached. Still the conclusion prevailed rather widely in 1920 and 1921, that a new scale of values and rates for labour and materials would have to be accepted without regard to standards of values as known before the war; and in a few cases the disposition to accept such a new standard of values affected the amount of construction carried out at the peak of the market. It is only by a comparison of rates obtaining in 1913 and since 1919, that this conclusion may be t sted, and a proper comparison made as to the necessary and reasonable cost of highway work and materials from year to year; and hence, the importance of a careful study of the tendency of the market by administrators of large funds to be devoted to highway construction and improvement.

From information secured from the Department of Labour and the Dominion Bureau of Statistics of the Department of Trade and Commerce, index numbers have been prepared showing variations in rates of labour and materials during the years referred to. Upon the basis of six of the most important materials used in the construction and improvement of modern roads, and the item of labour most necessary in such work, that is, a teamster with team, the variations in costs are as follows:—

AVERAGE OF MATERIALS AND LABOUR

	Rates of wages for teamsters with team	Cost of materials
1913	100	100
1919	139	181·55
1920	216·37	216·96
1921	173·1	206·05
1922	155·8	169·15

While it is difficult to generalize with respect to the average cost of labour and material entering into the construction of the highway projects of a given province, and as different provinces require more materials in their construction work than others, it may be assumed as a working basis that on the average eighty per cent of the cost of construction of a road is on account of labour; and the balance for materials. Weighing labour and materials upon this basis, the index numbers above given show that the actual and necessary cost of highway construction and improvement varied during the years referred to as follows:

	Index number of labour and materials	Variations from assumed cost of $10,000
1913	100	$10,000
1919	147·51	14,751
1920	216·48	21,648
1921	179·69	17,969
1922	158·47	15,847

From the above it would appear costs for 1922 were almost on a par to those obtaining in 1919. It is not unreasonable to assume that approximately a nineteen hundred and nineteen standard of costs will prevail for some years; and there would appear to be no good reason for delay in undertaking and carrying to completion as much as can be financed of the large mileages in practically all Provinces of main and market roads unequal to the requirements of present traffic and without regard to probable large increases in automobile traffic using them.

It is now obvious that, on the whole, any backwardness in execution of the work and objects sought by Parliament in passing the Canada Highways Act in 1919, and any delays in undertaking provincial programmes of construction and improvement of a limited connected system of leading roads, or the completing of sections thereof placed under agreement by the Federal Government, have been among the incidental effects of the war.

On the other hand, notwithstanding the handicap mentioned, there have been commenced by practically all provinces -as will be seen, by accompanying list of projects by provinces now under agreement, and the approved expenditures to date thereon—splendid systems of arterial road connections between their leading cities and towns; and to this extent, co-operation of the Federal Government with the provinces, in bringing about a systematic improvement of through or long distance routes has been manifestly in the general public interest, and an earnest of better future transportation facilities by road in all parts of Canada.

However, the original programmes of the various provinces in respect to highway improvement are far from completion and many years must elapse before construction and improvement of the nation's trunk routes overtake present need in this regard. Meanwhile the country's indirect tax bill for rough inferior roads is a not inconsiderable annual premium borne by all its industries.

Reference was made last year to the desirability in the public interest of conservation of expediture on highway construction in the several provinces and the need of research and experiment to demonstrate most suitable methods of construction under different designs, and varying conditions of traffic. As yet little experimental work of this character has been undertaken in Canada.

Research Work

Point is given to the importance of carefully planned and systematically conducted experiments in designs of pavements, by the valuable data obtained as a consequence of the outstanding experiment of the many highway transport research activities in the United States last year, especially the test conducted in the state of Illinois on the Bates road. As a preliminary to an extensive programme of construction contemplated, that state undertook elaborate experiments upon this road with a view to determining the value of certain pavements under heavy truck traffic. Of 10,800 feet in length and consisting of 73 sections and subsections, the road was commenced in 1920 and completed during 1921. In March, 1922, trucks were started on the road, under the constant observation of stationary and travelling-inspectors; and after a definite number of trips the loads were increased by a definite amount, until nearly all sections were destroyed.

According to the chief engineer of the Division of Highways of Illinois, the principal conclusions drawn from the tests during 1922, may be summarized as follows: First, the road carrying capacity of any design of rigid pavement is in direct proportion to the ability of its weakest part to resist bending stress: and, secondly, rigid pavements having a uniform thickness or with edges thinner than at centre are greatly unbalanced in strength, and will fail at the edges long before the loads are reached that will cause destruction of other portions of the slab. Hence, it was found, in order to prevent progressive breaks from the edges, that designs for new pavements should provide either edges thicker than at centre, integral curves or a general widening of the rigid pavement. so as to distribute the traffic. The new design of cement concrete pavement prepared as a result of this conclusion calls for pavements with edges 9 inches in thickness, tapering to 6 inches at 2 feet from the edge and strengthened by a continuous $\frac{3}{4}$ inch round smooth bar.

Other important data to builders of rigid and semi-rigid pavements relative to desirable ingredients, proper thickness of base and surface, etc., have also been obtained, proving the value of tests of that character.

Standardization of Signals

Measures were taken during the year to reduce generally prevalent hazards, and to afford convenience to highway traffic by securing that uniformity of danger and direction signals on the highways, not alone of the municipalities of a province, but of all provinces of the Dominion so desirable for fast moving modern traffic.

In November, 1922, the Canadian Engineering Standards Association under ook the formation of a Sectional Committee on Traffic Signals for Highways, and the following were invited to nominate representatives thereon: The Highway Departments of the nine Provincial Governments; the Board of Railway Commissioners; the Canadian Automobile Association; the Canadian Automobile Underwriters Association; the Canadian Good Roads Association; and the Canadian Electric Railway Association.

This committee will consider not only existing diversities of highway signals in Canada, but also the desirability of agreement between Canada's regulations and those to be adopted in the United States.

As shown by specifications attached to applications for federal aid, from different provinces, variations in practice and terminology respecting different features of the same type of road have pointed to the desirability of a reasonable measure of uniformity and standardization. Accordingly, steps were taken during the year to enlist the co-operation of the different Provincial Departments of Highways in arriving at mutually acceptable standard specifications for the usual types of street pavement, highways and common roads, materials required, suitable tests and terminology relating thereto.

Organization of suitable committees was commenced under the auspices of the Canadian Engineering Standards Association, which has already published and made available to highway engineers, valuable standard specifications covering Portland cement, reinforcing material for concrete, bridges, etc. Complete specifications are proposed covering the following: Road and bridge foundations and sub-grade preparation, earth roads, gravel, sand and clay roads, broken stone roads, bituminous roads, concrete roads, block pavements, and road structures.

Educational Activities

There were procured during the year, twelve models of road culvert and bridge construction to be used as an educative exhibit, showing desirable features of design of modern roads. The types illustrated include sand-clay, gravel, waterbound macadam, bituminous surface treated macadam, bituminous macadam, penetration method, cement concrete brick, cement concrete pipe culvert, iron pipe culvert, cement concrete box culvert, cement concrete arch culvert, and a T beam cement concrete bridge. The size of the models is 30 inches by 18 inches, scale $\frac{1}{2}$ inch to the foot, except the T-beam bridge which is 36 inches by 30 inches in dimension.

Educational literature as to the economic, social and national values of good roads was published during the year. A first edition of 1,500 copies of Bulletin No. 1 entitled "Canadian Highways and Roads" was soon exhausted and 1,000 additional copies as well as 500 in French were necessary. To promote interest in the activities in highway construction being conducted in the different provinces, and to give a national perspective to a national work 3,000 copies of our last annual report were also published in bulletin form.

Circular No. 3, entitled "Motor Vehicle Registrations, Licenses, Revenues Fees, etc., and Statistics of Entries into Canada for Touring Purposes during 1921," also met with an appreciative reception, and had an influence in truing up motor vehicle legislation in two or three provinces.

Sufficient time has now elapsed to permit of a summary being made of some of the direct and indirect results from federal co-operation with the provinces in road building. Although federal participation in highway work is by virtue of the Canada Highways Act, 1919, limited to one arrangement of the construction and improvement of highways by the different provinces, necessarily this work has been proceeded with under conditions and regulations which have had an important bearing upon the whole situation. Some of the direct and indirect results of this policy have been:—

1. Selection of roads by the different provinces to be known as primary, secondary and local roads;
2. Construction and improvement of a connected system of interprovincial and primary roads upon permanent locations;
3. Encouragement to the making of careful surveys of locations and grades, so as to secure better foundations, proper drainage, durable construction and less costly maintenance;
4. With a view to encouraging engineering control and to secure greater competition in tenders on Federal aid highway work, calling for carefully prepared specifications and detailed drawings, and the preparation of preliminary estimates of cost, so as to afford prospective contractors full knowledge of the work proposed;
5. A more or less general adoption of classification of expenditures in accounting.
6. Encouraging the making of designs of construction in accordance with the present and probable traffic, as shown by censuses; and,
7. Encouraging the establishment of adequate organizations for construction and maintenance work of all highways in the different provinces.

Accompanying this report are statements of amounts expended under the Act by fiscal years to date, the highways with respect to which payments have been made, and agreements entered into, the work done and proposed to be done by the several provinces on such highways, classification, and status of completion of projects under agreement.

Part II is the report of the Chief Engineer dealing with physical conditions of federal aid work in each province.

COMPARATIVE STATEMENT Highways approved for Construction and Improvement and approved Mileages yet to be constructed under the Canada Highways Act, 1919.

Provinces	Programme Mileage Approved by Department	Improved by Provinces prior to July 7, 1919	Total Mileage under Agreement March 31, 1923	Approved Mileage to be Constructed March 31, 1923
Alberta	2,475	1,585	Nil.	890
British Columbia	2,977·5	1,000	368·746	1,608·75
Manitoba	4,000		796·2	3,358
New Brunswick	1,371	389	1,237·2	465·
Nova Scotia	1,297	397	425·6	474·4
Ontario	1,824		638·661	306·
Prince Edward Island	850		338·	512·71
Quebec	2,548·86	978·63	631·661	1,012·23
Saskatchewan	7,311	3,880	1,558·531	1,931·
Totals	24,654·36	8,229·63	5,994·599	10,558·09

STATEMENT of Types of Construction Proposed on Federal Aid Projects placed under Agreement during Fiscal Year 1922-23

Province	Earth	Gravel	Water bound macadam	Bituminous surface treat macadam	Bituminous macadam	Asphaltic concrete	Cement concrete	Totals
British Columbia	5·75	.....	.....	.....	.....	3·07	4·8	13·62
Manitoba.....	.....	31·5	.....	.....	.....	.....	.....	31·5
Nova Scotia.....	22·12	196·72	.....	.....	.....	.....	.....	218·84
Ontario.....	.....	.....	15·29	5·57	9·01	7·36	24·841	62·071
Prince Edward Island.....	156·75	.....	.....	.....	.....	.....	.....	156·75
Quebec.....	0·905	247·295	17·363	97·286	10·75	13·94	8·892	396·431
Saskatchewan.....	319·281	9·5	.....	.....	.....	.....	.....	328·781
Total.....	504·806	485·015	32·653	102·856	19·76	24·37	38·533	1,207·993
Per cent.....	41·79	40·15	2·70	8·51	1·64	2·01	3·2	100·0

The statement of types of construction proposed on federal aid projects above given relates only to proposed work during the last fiscal year. It is a notable coincidence, however, that of the 25,000 miles of federal aid roads constructed in the United States, according to data furnished by the Bureau of Public Roads, Washington, practically the same percentages of gravel and waterbound macadam types were constructed in the United States with Federal aid as in Canada, as will be seen below:—

	Per cent
Gravel	39·1
Graded and drained	20·6
Cement concrete	18·3
Sand clay	10·8
Bituminous macadam	4·0
Bituminous concrete	3·1
Waterbound macadam	2·7
Brick	1·4
Total	100·0

Note will be made of the relatively high percentage of cement concrete roads being constructed in the United States. This fact is undoubtedly due to the enormous development in the neighbourhood of many large cities in that country of heavy commercial truck traffic. This means that industrial conditions largely determine types of construction of modern highways.

One of the features of the types of construction placed under agreement in Canada for federal aid during the year, was the relatively high percentage of bituminous surface treated macadam roads. This type is between the ordinary waterbound macadam road and bituminous macadam road. A bituminous surface treated road may be defined as consisting in the application to the surface of the road of bituminous material, preferably under pressure, hot or cold, at the rate of from one-tenth to one-half gallon per square yard which is then covered with stone chips, fine gravel or sand, depending upon the amount and quality of the bituminous material used. Bituminous surface treatments are intended to serve one or both of the following purposes:—

1. To form a protective mat or blanket to the gravel or broken stone; and

2. To prevent dust from rising from the road. It would appear that this type of construction might well be adopted over a considerable mileages of roads in eastern Canada, where broken stone and gravel can usually be had locally, and where motor rehicular traffic is becoming so general. This traffic

requires an approximation of the smooth hard surface types ranging from bituminous macadam up. When properly maintained, *the bituminous surface treated gravel or broken stone road* affords the requisite qualities for the preponderance of automotive traffic as it now obtains, on most rural roads.

LIST OF PROJECTS PLACED UNDER AGREEMENT BETWEEN THE DOMINION GOVERNMENT AND THE PROVINCE OF BRITISH COLUMBIA

From April 1, 1922 to March 31, 1923

Project and agreement Numbers	Location of Project	Mileage	Estimated cost	Type of construction	Widths and depths
			$ cts.		
9–275	Vancouver-Hope Highway—				
	Chilliwack City Easterly, Sec. G...	3·07	84,962 71	Warrenite Bitulithic.	16′ (2″) on A. C. Base (3″).
	Johnston Road to Serpentine Flats Sec. H	2·90	111,000 00	Cement concrete.	18′–7″ deep.
	Langley to Murrayville, Sec. I.....	1·90	63,000 00	Cement concrete.	16′–7″ deep.
23–186	Osoyoos-Crows Nest Pass Highway—				
	Mile 29·25 to Mile 34.....	5·75	66,797 00	Earth.....	14′–16′ road bed.
		13·62	325,759 71		

LIST OF PROJECTS PLACED UNDER AGREEMENT BETWEEN THE DOMINION GOVERNMENT AND THE PROVINCE OF MANITOBA

From April 1, 1922 to March 31, 1923

Project and agreement Numbers	Location of Project	Mileage	Estimated cost	Type of construction	Widths and depths
			$ cts.		
15–185	Springfield Road—				
	Winnipeg to Beausejour.....	31·5	122,695 00	Gravel.....	18′–12′–12″.

LIST OF PROJECTS PLACED UNDER AGREEMENT BETWEEN THE DOMINION GOVERNMENT AND THE PROVINCE OF NOVA SCOTIA

From April 1st, 1922, to March 31, 1923

Project No.	Location of Project	Mileage	Estimated Cost	Type of Construction	Widths and Depths
13-230	Waverley—Elmsdale Road—				
	Bedford to Waverley	5·10	44,862 95	Gravel	22′-24′-16′-7″
18-231	New Glasgow—Truro Road—				
	Salem Church to Fishers Corner	10·05	50,301 10	"	20′-14′-6″
19-232	New Glasgow—Telford Road—				
	Sec. E—Kenzieville to Pictou	7·84	35,916 99	"	20′-14′-6″
	Sec. F and G—Pictou to Antigonish	10·18	43,831 73	"	20′-14′-6″
21-189	Tracadie—Canso Road—				
	Sec. A—Tracadie to a point 2·5 miles towards Guysborough	2·50	1,895 72	"	18′-12′-6″
21-189	Sec. C—From a point 10 miles from Tracadie to Milford.	5·00	54,688 70	"	18′-12′-6″
21-189	Sec. D—Milford Haven Bridge to Guysborough Town.	5·00	10,259 94	"	18′-14′-6″
21-189	Sec. H—From Canso North 8·60 miles	8·60	58,862 88	"	16′-12′-4″
21-233	Sec. B—Guysborough-Antigonish Co. Line south towards Guysborough	8·85	50,251 50	"	18′-12′-6″
21-233	Sec. G—White Church Road to Queens Port Bridge.	4·96	23,997 90	"	16′-10′-6″
24-234	Port Hawkesbury—Kempt Road—				
	Sec. C, D, E—Grand Anse to St. Peters	10·00	56,029 30	"	20′-14′-6″
25-235	St. Peters—Sydney Road—				
	Sec. D and E—Irish Cove to Big Pond	10·00	71,974 90	"	20′-14′-4″-6″
25-236	St. Peters-Sydney Road—				
	Sec. G—Meadows Road to East Bay	5·47	25,230 15	"	20′-14′-6″
26-237	Sydney-Baddeck Road—				
	Sec. E and F—Big Bras d'Or to Rossferry	10·00	55,742 25	"	16′ 10′ 6″
27-213	Halifax-Chester Road—				
	Indian River Bridge to a point 11 miles west	11·00	70,277 33	Earth	16′-10′-6″
28-214	Halifax-Chester Road—				
	A point 11 miles west of Indian River Bridge to Goat Lake Bridge	11·12	62,650 48	"	16′ 10′-6″
29-215	Woods Harbour-County Line Road—				
	Woods Harbour to Co. Line, Co. Shelburne	6·00	35,814 64	Gravel	16′-12′-6″
30-222	Parrsboro-Amherst Road—				
	Sec. D—Brown's Railway Crossing to Springhill Road	7·22	43,146 17	"	18′-'14′-6″
	Sec. F—Meccan Railway Crossing to Nappan.	4·58	37,991 42	"	18′-14′-6″
30-250	Parrsboro-Amherst Road—				
	Sec. E—Meccan Crossing to Brown's Crossing	2·04	17,627 25	"	18′-14′-6″
31-224	Windsor Road—				
	Sackville River Bridge to Lucasville Road	5·15	40,436 60	"	18′-12′-6″
32-225	Lucasville Road-Hants Co. Line Road—				
	Lucasville Road to Halifax, Hants Co. Line Road	6·65	53,241 45	"	18′-12′-6″
33-223	Avonport-Kentville Road—				
	Avonport to Kentville	9·67	42,305 75	"	18′-14′-6″
34-238	Sable River-Lockeport Road—				
	Sable River to Lockeport	8·04	39,085 70	"	16′-12′-6″
35-240	Hebron-Maitland Road.				
	Hebron to Maitland	7·77	37,933 05	"	18′-14′-6″
36-241	Truro-Stewiacke Road..				
	Truro Town Line to Stewiacke Town Line	15·18	69,958 70	"	20′-14′-6″
37-242	Liverpool-Millvillage Road—				
	Liverpool to Millvillage	8·77	54,903 55	"	16′-12′-6″
38-243	Bear River Road—				
	A point one mile East Victoria Bridge to a point 2·9 miles west of same.	3·90	20,325 90	"	18′-14′-6″
39-247	Middleton-Lawrencetown Road—				
	Middleton to Lawrencetown	5·00	23·076 60	"	18′-14′-6″
40-248	Wall's Corner-Lockeport Road—				
	Wall's Corner to Lockeport	3·20	21,366 50	"	16′-12′-6″
		218·84	1,253,987 10		

Estimated costs of the following projects placed under agreement in previous years have been revised as follows:—

Project Number	Original Estimated Cost	Revised Estimated Cost
3–25	$ 56,121 75	$88,851 81

SESSIONAL PAPER No. 32

LIST OF PROJECTS PLACED UNDER AGREEMENT BETWEEN THE DOMINION GOVERNMENT AND THE PROVINCE OF ONTARIO

From April 1, 1922, to March 31, 1923

Project No.	Location of Project	Mileage	Estimated Cost	Type of Construction	Widths and Depths
13-192	Talbot Highway—				
	Sec. C—Twps. Sandwich west and south	0·70	251,567 50	Cement Concrete	30′-20′-6..8¼″
	Sec. D1—Twps. Sandwich south	6·00			
13-245	Talbot Highway—				
	Sec. B1—Twp. West Sandwich	2·00	78,750 00	"	30′-18′-6-8¼″
14-288	London-St. Thomas Highway—				
	Sec. B2—Stat. 292-41 to Townline between Westminster and Southwold twps.	5·20	369,400 00	"	30′-20′-6-8½″
	Stat. 775-00 Sec. C1—Between townline Westminster and Southwold twps. to Sandymount. Station	3·90			
15-194	Longwoods Road-Middle Road, 1,011 lin. ft.—				
	Sec. A1—Twp. Westminster	0·191	7,696 25	"	30′-20′-8¼″
15-193	Longwoods Road-Middle Road—				
	Sec. M1—Twp. Raleigh	2·700	110,060 00	"	30′-20′-6-8¼″
16-256	St. Thomas-Niagara Falls Road—				
	Sec. BB1—West side Stamford to Welland Canal	2·000			
	Sec. CC—City limits Niagara Falls to West Stamford Twp.	4·110	115,910 00	W. B. Macadam	30′-20′-7½″
16-257	St. Thomas-Niagara Falls Road—				
	Sec. Y1—Crowland Wainfleet line to Wainfleet Twp.	5·360	136,745 00	"	30′-20′-7½″
	Sec. Z—City Welland to Crowland-Wainfleet line	1·740			
18-191	Hamilton-Chatsworth Road—				
	Sec. N2—Twp. Pushlinch	1·100	46,975 50	Cement Concrete	30′-20′-6-8½″
18-195	Hamilton-Chatsworth Road—				
	Sec. Q1—Twp. East and West Flamboro	3·070	110,654 50	Bit. Macadam Pen.	30′-20′-5″
22-221	Hamilton-Kitchener Highway—				
	Sec. B1—Twp. West Flamboro	2·800	127,318 00	Bituminous Macadam	"
	Sec. D1—Twp. Beverly	1·930	87,868 80	"	"
	Sec. F and H1—City limits Galt to Town of Preston.	1·050	41,5?9 0?	Asphaltic Concrete	30′-20′-3″
24-184	Huron Road—				
	Sec. B—Stratford westerly to Ellice Twp.	2·600		Bit. Concrete on Macadam.	30′-20′-3″-72¼″ base.
	Sec. C1—Lot line 15 and 16 Ellice Twp. to Lot line 20 and 21.	1·260	202,483 42	" "	"
31-249	Port Hope to Peterboro Highway—				
	Sec. J—Twp. North Monaghan	5·570	90,815 00	Macadam Bit. Sur. Treat.	30′-20′-10″
	Sec. K—City Peterboro	0·080	1,390 00	W. B. Macadam	"
35-196	St. David's-Niagara Falls Road—				
	Sec. A—Twp. Niagara	1·21	39,221 00	Macadam Pen.	30′-20′-5″
	Sec. B—Twp. Stamford			1954 l.f. Mac. Pen.	
	Sec. C—Twp. Stamford, Niagara Falls City	3·05	142,523 00	14,920 l.f Cement con.	30′-20′-6-8¼″
37-226	Port Credit-Cooksville Road—				
	Sec. A—Village Port Credit	0·300	14,718 00	Asphaltic Concrete	30′-20′-3″-7½″
	Sec. B—Twp. Toronto	2·150	103,674 00	"	"
39-227	Hastings Road—				
	Sec. A1—North city limits Belleville, Thurlow twp	2·000	47,800 00	W. B. Macadam	30′-20′-7½″
		62·071	2,127,079 97		

Estimated costs, etc., of the following projects placed under agreement in previous years have been revised as follows:

	Original Mileage	Original Estimated Cost	Revised Mileage	Revised Estimated Cost
17-53 (5 Sections)	24·15	$276,725 00 (2 sects)	3·93	$161,510 00
33-50		1,133,010 00		1,352,488 87

LIST OF PROJECTS PLACED UNDER AGREEMENT BETWEEN THE DOMINION GOVERNMENT AND THE PROVINCE OF PRINCE EDWARD ISLAND

From April 1, 1922, to March 31, 1923

Project No.	Location of Project	Mileage	Estimated Cost	Type of Construction	Widths and Depths
24-198	Cape Traverse Road— Tryon to Carleton	8·50	25,100 00	Earth	23'-16'
25-199	Hunter River-Clifton Road— Hunter River to Clifton	13·00	38,400 00	"	"
26-200	Summerside-Miscouche Road— Summerside to Miscouche	5·00	14,900 00	"	"
27-201	Summerside Road— Kensington to Read's Corner, Prince Co	6·00	17,800 00	"	"
28-202	Malpeque Road— Kensington to Malpeque	7·00	19,200 00	"	"
29-203	O'Halloran-Palmer Road— Bloomfield Corner to Miminigash	13·00	29,700 00	"	"
30-204	St. Peters Road— Charlottetown to St. Peters	10·00	20,300 00	"	"
31-205	The Fortune Road— St. Peters to Dingswells Mills	8·00	18,000 00	"	"
32-206	Seven Mile Road— Dundas to Cardigan	9·00	24,900 00	"	"
33-207	Shore Road— Head of Rollo Bay to McMahon's Bridge	9·25	41,500 00	"	"
34-208	North Shore Road— St. Peter to Elmira	30·50	59,200 00	"	"
35-209	Murray Harbour South Road— Murray River to Murray Harbour South	5·50	13,000 00	"	"
36-210	Hillsborough Bridge-Orwell Road— Hillsborough Bridge to Orwell	17·50	44,000 00	"	"
37-211	Georgetown Road— Roseneath to Georgetown	7·50	19,500 00	"	"
38-212	Shore Road— Clifton to French River	4·50	33,600 00	"	"
39-197	Lake Verde Road— Monaghan Road to Pisquid Corner	2·50	7,180 00	"	"
		156·75	426,280 00		

Estimated costs of the following projects placed under agreement in previous years have been revised as follows:—

	Original Estimated Cost	Revised
	$ cts.	$ cts.
4-13	24,040 00	49,902 45
8-33	9,950 00	15,424 58
12-94	15,875 00	19,586 16
13-93	17,600 00	27,153 42
14-95	12,000 00	16,227 95
15-96	19,000 00	22,599 36
16-97	20,600 00	35,416 55
17-98	24,345 00	42,611 94
18-99	10,300 00	14,504 74
19-100	20,100 00	32,204 99
20-101	35,550 00	45,592 30
21-102	17,700 00	25,015 76
23-104	7,125 00	9,125 48

SESSIONAL PAPER No. 32

LIST OF PROJECTS PLACED UNDER AGREEMENT BETWEEN THE DOMINION GOVERNMENT AND THE PROVINCE OF QUEBEC

From April 1, 1922 to March 31, 1923

Project No.	Location of Project	Mileage	Estimated cost	Type of construction	Widths and depths
1A-180	Montreal-Sherbrooke Highway—				
	Sec. U—Village Chambly-Canton	1·01		Asphaltic concrete	24′-16′-2″x14″ base
	Sec. V—Village Chambly-Bassin	1·83		" "	" "
	Sec. W—Parish St. Joseph-De-Chambly Co., Chambly.	2·06	282,16980	" "	" "
	Sec. X—Parish St. Hubert Co., Chambly	5·47		" "	" "
	Sec. Y—Parish Longueuil, Chambly	3·24		" "	" "
1A-262	Montreal-Sherbrooke Highway—				
	Sec. A1—Orford Twp	2·659	27,119 66	Gravel	24′-22′-12″
	Sec. A3—Rock Forest	4·473	56,299 49	"	"
	Sec. B—Village Petit Lac Magog	1·202	17,279 87	"	"
	Sec. C2—Magog Twp	3·500	42,845 85	"	"
	Sec. F—Eastman Village	4·250	61,673 91	"	"
	Sec H2—Shefford Twp	7·584	99,224 01	"	"
	Sec. I—Town of Waterloo	0·452	4,169 48	"	"
	Sec. M2—Parish St. Césaire	0·797	16,148 52	"	"
	Sec. N—Village of St. Césaire	1·120	27,159 61	Cement concrete	24′-16′-7½″
1A-263	Montreal-Sherbrooke Highway—				
	Sec. J1—Granby Twp. East of Granby City	2·56	22,054 04	Gravel	24′-22′-12″
	Sec. J2—Granby Tp. West of Granby City	4·58	27,784 50	"	"
	Sec. L—Parish St. Paul d'Abbotsford	5·92	32,823 18	"	"
	Sec. Pt. O—Parish St. Michel-de-Rougemont	1·61	16,180 17	"	"
	Sec. P—Rougemont Village	1·00	23,901 70	Cement concrete	24′-16′-7½″
2-255	Montreal-Quebec Highway—				
	Sec. PP—Town of Laval-de-Montreal	4·09	42,384 19	W. B. macadam bit. sur. treat.	24′-16′-8″
3-181	Levis-St. Lambert Highway—				
	Sec. I—Village of Lotbinière	1·78	43,638 84	Bit. macadam pen	24′-16′-12″
3-152	Levis-St. Lambert Highway—				
	Sec. FF—Parish St. Pierre-de-Sorel	1·861	25,346 61	Gravel	24′-22′-8″
	Sec. HH—Parish Ste. Victoire	2·755	38,312 48	"	"
	Sec. II—Parish St. Ours	3·250	45,920 85	"	"
	Sec. KK—Parish St. Roch	2·043	27,766 82	"	"
	Sec. NN—Parish Contrecœur	10·204	199,709 42	"	"
	Sec. PP—Parish Verchères	3·610	75,267 27	Macadam, bit. sur. treatment.	24′-16′-8″
	Sec. RR—Parish Varennes	3·458	78,652 10	" "	"
3-264	Levis-St. Lambert Highway—				
	Sec. Pt. DD—Village Yamaska	0·81	11,206 23	Gravelling	24′-22′-6-7″
	Sec. F—Parish St. Antoine de Tilly	0·51	29,919 75	Grading hillside Côte aux Glaises.	"
	Sec. II—Parish St. Ours	1·00	18,610 05	Gravelling	"
	Sec. JJ—Town St. Ours	0·40	6,251 59	"	"
	Sec. KK—Parish St. Roch	0·26	6,154 50	"	"
	Sec. M—Parish St. Pierre les Becquets	0·395	23,433 09	Grading hillside, Côte Methot.	
	Sec. MM—Village Contrecœur	0·630	1,788 00	Macadam, bit. sur. treatment.	24′-16′-8″
	Sec. OO—Village Verchères	1,420	10,978 60	" "	"
	Sec. Pt. PP—Parish Verchères	1,200	7,128 34	" "	"
	Sec. QQ—Village Varennes	1·080	6,024 60	" "	"
	Sec. R—Village Laval	0·410	9,993 96	Cement concrete	24′-16′-6-7½″
	Sec. Pt. RR—Parish Varennes	3,240	17,576 06	Macadam, bit. sur. treatment.	24′-16′-8″
	Sec. U—Town of Nicolet	0·130	4,815 75	Cement concrete	24′-16′-6-7½″
3-277	Levis-St. Lambert Highway—				
	Sec. Pt. A—Part city of Lévis (outskirts)	1·030	35,610 44	Cement concrete	24″-16′-7½″
	Sec. Pt. M—Properties fronting Fournier and Paris.		15,952 44	Grading	
	Sec. Pt. UU—Part city of Longueuil	0·850	18,267 13	Cement concrete	24′-16′-7½″
	Sec. Pt. VV—Part town Montreal South	0·100	1,555 68	Asphaltic concrete	24′-16′-2″
	Sec. Pt. WW—Part Parish St. Antoine de Longueuil	0·230	3,637 20	" "	"
4-276	Caughnawaga-Malone Highway—				
	Pt. Sec. D—Parish Ste. Martine	1·778	17,924 72	Macadam, bit. surface treatment.	24′-16′-8″
	Pt. Sec. E—Parish Très Saint Sacrement	2·260	18,179 30	" "	"
	Sec. F—Village of Howick	1·249	18,650 02	" "	"
	Pt. Sec. G—Parish St. Malachie	3·051	27,071 70	" "	"
	Pt. Sec. H—Village Ormstown	0·272	2,704 34	" "	"
	Pt. Sec. I—Twp. of Godmanchester	10·066	79,987 62	" "	"
	Pt. Sec. I—Twp. of Godmanchester	1·813	12,404 00	Waterbound macadam	"
	Sec. J—Village of Huntingdon	0·531	4,868 03	Macadam, bit. surface treatment.	"
5-187	Beauce Junction-Sherbrooke Highway—				
	Sec. C1—Parish Sacré Cœur de Jésus	1·410	972 00	Gravel	24′-24′-3-6″
	Sec. E 24—Parish Sacré Coeur de Marie	3·390	12,100 89	"	"
	Sec. L24—Parish Disraeli	3·240	1,524 40	"	"
	Sec. N1346—Twp. of Garthby	4·030	2,405 79	"	"
	Sec. P357—Twp. of Weedon	2·390	8,462 71	"	"
	Sec. Q1357—Village Lac Weedon	2·930	6,639 25	"	"
	Sec. R2—Village Weedon Centre	0·290	567 60	"	"

LIST OF PROJECTS PLACED UNDER AGREEMENT BETWEEN THE DOMINION GOVERNMENT AND THE PROVINCE OF QUEBEC

From April 1, 1922 to March 31, 1923

Projec No.	Location of Project	Mileage	Estimated cost	Type of construction	Widths and depths
5-190	Beauce Junction-Sherbrooke Highway—				
	Sec. V—Westbury Twp. Compton Co.	0·320	11,616 57	"	22′ 20′ 14″
5-246	Beauce Junction-Sherbrooke Highway—				
	Sec. J—Town of Black Lake, Megantic Co.	0·560	19,382 90	"	24′ 24′ 12″
	Sec. JA—Twp. of Ireland	0·600	6,511 16	"	"
6-278	Levis-Rimouski Highway—				
	Sec. Pt. D—Parish St. Etienne de Beaumont	5·250	25,861 30	"	24′-22′-10″
	Sec. E—Parish St. Michel	4·320	26,796 11	"	"
7-188	Beauceville-Sherbrooke Highway—				
	Sec. J—Twp. South Winslow, Frontenac Co.	5·750	46,912 49	"	24′-24′-12″
7-244	Beauceville-Sherbrooke Highway—				
	Sec. I—Two. North Winslow	4·980	53,617 70	"	"
7-268	Beauceville-Sherbrooke Highway—				
	Sec. Pt. C—Parish St. Victor de Tring	1·620	11,210 79	"	24′-22′-10″
	Sec. CC—Village St. Victor de Tring	0·390	1,598 87	"	"
8-265	Montreal-Ottawa Highway—				
	Sec. A—Town of Abord-à-Plouffe	1·430	14,817 50	Bit. macadam pen.	24′-16′-12″
	Sec. B—Parish St. Martin	2·890	27,193 25	" "	"
	Sec. C—Parish Ste. Dorothée	4·650	30,367 08	" "	"
	Sec. Pt. D—Parish Ste. Rose	0·360	3,136 82	W. B. macadam	"
	Sec. Pt. F—Parish St. Eustache	2·560	16,892 39	"	"
	Sec. Pt. H—Parish Ste. Scholastique	2·660	64,307 66	Gravel	24′-22′-8″
	Sec. Pt. J—Parish St. Jérusalem	4·240	33,252 28	"	"
	Sec. Pt. N—Village of Calumet	1·180	11,065 67	"	"
	Sec. P—Parish of N.-D. du Bon Secours	2·500	28,438 71	"	"
	Sec. Pt. Q—Village of Montebello	0·920	8,670 75	"	"
	Sec. Pt. R—Village of Papineauville	0·430	6,799 36	"	"
	Sec. Pt. T—Parish of B. V-de-Plaisance	2·280	28,674 48	"	"
	Sec. Pt. Y—Village of Masson	0·220	2,109 90	"	"
8-269	Montreal-Ottawa Highway—				
	Sec. Pt. F—Parish St. Eustache	0·930	15,442 04	Macadam, bit. surface treatment.	24′-16′-8″
	Sec. Pt. G—Parish St. Augustin	5·460	97,781 36	" "	"
	Sec. Pt. H—Parish Ste. Scholastique	1·06	20,052 82	" "	"
	Sec. Pt. H—Parish Ste. Scholastique	0·17	2,521 23	Gravel	24′-22′-8″
	Sec. Pt. I—Parish St. Hermas (Monte Paiement)	0·170	2,490 58	"	"
	Sec. Pt. J—Parish St. Jérusalem (Monte St. Hermas).	2·320	19,185 54	"	"
	Sec. Pt. Q—Village Montebello	1·170	8,743 69	Macadam, bit. surface treatment.	24′-16′-8″
9-270	King Edward Highway—				
	Sec. G1—Pt. Parish St. Cyprien-de-Léry	0·10	1,341 87	" "	"
10-239	Lévis-Sherbrooke Highway—				
	Sec. P2—Municipality of Victoriaville	0·636	13,678 20	Cement concrete	24′-16′-7½″
10-271	Lévis-Sherbrooke Highway—				
	Sec. Pt. BB—Twp. Brompton	1·420	8,348 92	Gravel	24′-22′-6″ 14″
	Sec. CC—Twp. Orford, Bromptonville Road	2·550	16,922 33	"	"
	Sec. Pt. U—Parish Kingsey Falls	2·320	15,919 69	"	"
	Sec. Pt. V—Twp. Shipton	3·600	36,384 97	"	"
	Sec. Pt. Z—Twp. Windsor	7·540	64,817 15	"	"
11-182	Montreal-Mont Laurier Highway—				
	Sec. C—Parish Ste. Therese de Blainville	4·190	38,346 00	"	"
11-229	Montreal-Mont Laurier Highway—				
	Sec. J—Parish St. Sauveur	6·900	81,467 83	"	18′-18′-12″
	Sec. K—Parish St. Joseph-de-Mont Rolland	2·600	33,611 93	"	"
	Sec. L—Parish Ste. Adèle	7·000	72,675 46	"	"
11-228	Montreal-Mont Laurier Highway—				
	Sec. E135—Parish St. Janvier	0·760	3,298 75	"	20′-20′-6″-8″
11-287	Montreal-Mont Laurier Highway—				
	Sec. Pt. C—Parish Ste. Thérèse	1·96	12,641 59	Macadam, bit. surface treatment.	24′-16′-8″
	Sec. Pt. C—Parish Ste. Thérèse	1·17	2,702 08	Gravel	24′-22′-6″
	Sec. D—Town Ste. Thérèse	0·520	3,296 10	Macadam, bit. surface treatment.	24′-16′-8″
	Sec. G 2, 6—Parish Ste. Jerôme	2·810	19,763 73	Gravel	24′-22′-14″
	Sec. Pt. M—Parish Ste. Agathe	4·230	54,924 15	"	24′-22′-10″
	Sec. Pt. N—Town Ste. Agathe-des-Montés	0·420	5,256 50	"	"
14-279	Laprairie-Lacolle Highway—				
	Sec. AA-B—Between Parish St. Luc and Marguerite de Blairfindie, County St. John.	1·040	17,550 40	Macadam, bit. surface treatment.	24′-16′-8″
	Sec. Pt. F—Parish St. Paul de l'Ile aux Noix	2·130	27,317 01	" "	"
15-254	Quebec-St. Simeon Highway—				
	Sec. C—Village Beauport	1·430	18,877 18	" "	"
	Sec. D—Village Beauport East	0·800	10,652 19	" "	"
	Sec. E—Ville de Courville	0·920	12,202 99	" "	"
	Sec. F—Village de Montmorency	0·530	7,161 64	" "	"
15-258	Quebec-St. Siméon Highway—				
	Sec. Pt. J. East—Parish Ste. Anne de Beaupré	2·180	28,385 92	" "	"
15-272	Quebec-St. Simeon Highway—				
	Sec. G—Village St. Jean-de-Boischatel	1·878	25,462 90	" "	"
	Sec. H—Parish L'Ange Gardien	3·269	58,072 57	" "	"
	Sec. I—Parish Château Richer	7·209	107,235 57	" "	"
	Sec. Pt. J West—Parish Ste. Anne de Beaupr.é	1·129	17,905 87	" "	"
	Sec. K—Village Ste. Anne de Beaupre	1·416	40,850 77	Cement concrete	24′-16′-6″-7½″

SESSIONAL PAPER No. 32

LIST OF PROJECTS PLACED UNDER AGREEMENT BETWEEN THE DOMINION GOVERNMENT AND THE PROVINCE OF QUEBEC—*Concluded*

From April 1, 1922 to March 31, 1923

Project No.	Location of Project	Mileage	Estimated cost	Type of construction	Widths and depths
			$ cts		
16-280	Richmond-St. Francois du Lac Highway—				
	Sec. B—Twp. Melbourne	2·580	14,537 19	Gravel	24′-22′-12″
16-285	Richmond-St. Francois du Lac Highway—				
	Riviere aux Vaches St. Edmond de Grantham.		2,216 90	Reinforced concrete bridge.	15′ span
18-183	Rivière du Loup-Edmundston Highway—				
	Sec. I—Parish Ste. Rose du Dégelé, County Temiscouata.	13·410	66,548 79	Gravel	22′-18′ 10″
19-266	Three Rivers-Grand' Mère Highway—				
	Sec. Pt. A—Town Cap de la Madeleine	2·30	67,454 92	Cement concrete	24′ 16′ 6″-7½″
	Sec. Pt. A—Town Cap de la Madeleine	0·33	3,945 00	Macadam, bit. surface treatment.	24′-16′-8″
	Secs. B & Pt. C—Parishes St. Louis de France and Notre-Dame du Mont Carmel.	8,590	78,040 83	W. B. macadam	"
	Sec. Pt. C—Parish Notre-Dame du Mont Carmel		3,723 70	"C" Concrete gutter and concrete pipe.	
	Sec. Pt. E—Village Almaville			"E" Concrete gutter and dry stone wall.	
20-267	Laprairie-Valleyfield Highway—				
	Sec. Pt. B—Parish Laprairie	2·088	40,038 77	Macadam bit. surface treatment.	24′-16′-8″
	Sec. C—Caughnawaga Indian Reserve	4·448	76,611 90	" "	"
	Sec. Pt. D—Parish St. Joachim de Chateauguay	1·440	9,028 05	" "	"
	Sec. E—Town de Lery	3·570	27,847 98	" "	"
	Sec. F—Town Maple Grove	2·090	29,485 70	" "	"
	Sec. G—Town Beauharnois	1·120	28,267 52	W. B. macadam	"
21-259	L'Assomption-Joliette Highway—				
	Sec. Pt. A—Parish L'Assomption	2·210	33,020 32	Gravel	24′-24′-12″
23-260	Levis-Jackman Highway—				
	Sec. Pt. A—City of Levis	0·850	17,923 93	Macadam, bit. surface treatment.	24′-16′-8″
	Sec. B—Parish St. Louis de Pintendre	5·590	125,325 64	" "	"
	Sec. Pt. C—Parish St. Henri	2·300	66,277 91	" "	"
	Sec. Pt. D—Village St. Henri	0·380	9,416 76	" "	"
	Sec. Pt. S—United Twps. Risborough and Marlow.	0·580	11,509 92	Gravel	24′-22′-12″
23-286	Levis-Jackman Highway—				
	Sec. H—Village Ste. Marie	1·680	15,915 72	Macadam, bit. surface treatment.	24′-16′-8″
	Sec. K—Village St. Joseph	0·870	7,166 02	" "	"
27-273	Montreal-Toronto Highway—				
	Sec. Pt. I—Parish St. Jean de Chantal	2·260	25,449 50	W. B. macadam	"
	Sec. Pt. K—Parish St. Michel de Vaudreuil	0·540	4,188 24	"	"
	Sec. Pt. L—Parish St. Joseph de Soulanges	0·120	2,291 00	"	"
	Sec. O—Parish St. Zotique	4·060	21,075 64	Gravel	24′-22′-12″
	Sec. P—Village St. Zotique	0·880	3,917 50	"	"
	Sec. Q—Parish Ste. Claire d'Assise	2·300	8,941 76	"	"
33-261	Rawdon-l'Assomption Road—				
	Sec. B—Parish l'Assomption	2·660	37,466 02	"	24′-22′-6″
34-251	Victoriaville-Woburn Highway—				
	Sec. B—Parish St. Christophe	0·284	1,985 93	"	24′-22′-12″
34-281	Victoriaville-Woburn Highway—				
	Sec. D—Village Chesterville	1·340	3,741 16	"	"
	Sec. K—Twp. Whitton	10·440	141,060 51	"	"
37-291	Drummondville-Annaville Highway—				
	Sec. Pt. D—Parish Notre Dame du Bon Conseil	1·090	3,347 33	"	"
	Sec. E—Parish St. Leonards	8,430	51,804 31	"	24′-22′-14″
38-274	St. Hyacinthe-St. Germain Highway—				
	Sec. Pt. D—Parish St. Simon de Ramsay	0·425	2,013 52	"	24′-22′-10″
39-282	Waterloo-Newport Highway—				
	Sec. D—Bolton West	6·210	35,106 92	"	24′-22′-8″
	Sec. E—Bolton East	1·800	8,603 68	"	24′-22′-12″
	Sec. Pt. F—Twp. Potton	10·580	61,506 19	"	"
40-283	Marieville-Cowansville Highway—				
	Sec. Pt. D—Parish St. Brigids	4·510	15,427 14	"	24′-22′-10″
41-253	Victoriaville-Ste. Angele Highway—				
	Parish Ste. Victoire	1·185	5,041 31	"	24′-22′-14″
	Parish Ste. Eulalie	4·081	16,820 45	"	"
		395·386	4,286,212 99		

Estimated costs of the following projects placed under agreement in previous years have been revised as follows: —

—	Original estimated cost	Revised estimated cost	—
	$ cts.	$ cts.	
5-110, Sec. K	40,215 75	83,694 29	
11- 35, Sec. G, 1, 3, 5, 7	92,972 22	105,944 02	Increase allowed for G 7.
11- 35, Sec. I	5,114 63	15,454 63	
12-109, Sec, A	83,420 09	64,653 95	Original mileage 4·392, New mileage 4·3.
Sec. B	67,169 42	78,084 00	
Sec. C	12,637 55	17,430 42	" 2·707 " 2·3.

LIST OF PROJECTS PLACED UNDER AGREEMENT BETWEEN THE DOMINION GOVERNMENT AND THE PROVINCE OF SASKATCHEWAN

From April 1, 1922 to March 31, 1923

Project No.	Location of Project	Mileage	Estimated cost	Type of construction	Widths and depths
			$ cts.		
1-216	Cadillac-Battleford Highway—				
	Sec. E—Rosetown to Biggar	37·60	73,630 00	Earth	30′-20′
2-284	Assiniboia-Prince Albert Highway—				
	Sec. A—Assiniboia to Crestwynd	49·30	121,400 00	"	30′-18′
4-217	Fleming-Walsh Highway—				30′-20′
	Sec. G—Moosejaw to Caron	17·88	44,880 00	"	"
	Sec. H—Caron to Parkbeg	22·40	41,375 00	"	"
	Sec. K—Swift Current to Webb	21·75	47,370 00	"	"
5-289	Togo-Lloydminster Highway—				
	Sec. C—Canora to Margo	51·57	131,950 00	"	30′-18′
8-218	Moosomin-Benito Highway —				
	Sec. D—Wroyton to Kamsack	27·70	50,020 00	"	30′-20′
17-290	Empress-Onion Lake Highway—				
	Sec. E—Battle River to north boundary Twp.	23·36	59,500 00	"	30′-18′
18-219	Gainsborough-Trossachs Highway—				
	Sec. E—NE. 13-2-7-2 to NE. 12-2-10-2	20·10	32,025 00	"	"
	Sec. F—NE. 12-2-10-2 to NE. 24-2-13-2	20·24	33,125 00	"	"
	Sec. I—North Boundary 31-3-17-2 to NE. 36-6-18-2.	19·084	44,113 00	"	"
	Sec. J—NE. 36-6-18-2 to NE. 7-8-17-2	8·297	13,052 50	"	"
27-220	Saskatoon to Aberdeen Highway—				
	Sec. A—N. 27-36-5-3 to NE. 36-36-4-3	9·500	30,600 00	Gravel	
		328·781	723,040 50		

Estimated costs of the following projects placed under agreement in previous years, have been revised as follows:—

—	Original estimated cost	Revised estimated cost	Section
	$ cts	$ cts.	
1- 63	11,102 00	16,670 20	G
3- 65	36,912 76	68,500 00	A
	52,835 00	151,260 00	F
4-121	24,730 00	76,825 00	A
	25,350 00	73,247 00	B
	31,564 25	66,105 00	E
	27,414 99	58,340 00	F
5-122	11,265 00	19,928 00	N
6-143	18,310 00	42,840 00	D
7-123	28,200 00	71,710 00	C
10-130	18,300 00	64,525 00	D
11-124	15,100 00	40,060 00	C
12-131	30,000 00	72,450 00	B
13-119	10,300 00	26,150 00	A
	31,986 00	49,550 00	G
4-145	24,280 00	46,850 00	C
	12,120 00	29,560 00	L
5-146	24,930 00	122,363 00	C
	23,060 00	49,065 00	E
17-147	15,700 00	28,395 00	F
19-125	17,710 00	40,019 50	F
20-133	13,837 50	30,216 00	D
21-134	31,520 00	70,120 00	B

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SUMMARY OF PROJECTS PLACED UNDER AGREEMENT BETWEEN THE DOMINION GOVERNMENT AND THE VARIOUS PROVINCES

From April 1, 1922 to March 31, 1923

Province	Number of projects	Mileage	Total estimated cost	Estimated Dominion aid, 40%	Average cost per mile
			$ cts.	$ cts.	$ cts.
Prince Edward Island	16	156·75	426,280 00	170,512 00	2,719 49
Nova Scotia	24	218·84	1,253,987 10	501,594 84	5,730 15
New Brunswick	.....	.....	.....	.....	.....
Quebec	46	395·386	4,286,212 99	1,714,485 20	10,840 58
Ontario	15	62·071	2,127,079 97	850,831 99	34,252 39
Manitoba	1	31·5	122,695 00	49,078 00	3,895 00
Saskatchewan	8	328·781	723,040 50	289,216 20	2,199 16
Alberta	.....	.....	.....	.....	.....
British Columbia	2	13·62	325,759 71	130,303 88	23,918 00
	112	1,206·948	9,265,055 27	3,706,022 11	7,676 43

Payments to Provinces by Projects

HIGHWAYS AND ROADS IN THE PROVINCE OF BRITISH COLUMBIA WITH RESPECT TO WHICH PAYMENTS UNDER THE ACT HAVE BEEN MADE

No.	Name of Road	Mileage	Total to March 31, 1923	During Fiscal Year 1922–23	Type of Construction
			$ cts.	$ cts.	
1	Alberni Victoria—				
	Sec. A—Craigflower Br. to Parson's Br.	2·05	86,376 34		Concrete pavement.
	B—Near Metchosin Road	1·35		17,749 36	Cement concrete.
	C—City limits Nanaimo to South Wellington Road	2·42		37,979 94	Asphaltic concrete.
4	Vancouver-Ladner—				
	Sec. A—Lulu Island	2·65			Asphaltic concrete.
	B—Lulu Island	1·89	68,064 09		Macadam base.
	C—Lulu Island	2·03		19,985 10	"
5	Ladner-New Westminster—				
	Sec. A—Com. at Ladner to Sta. 160–00				Warrenite bit.
	C—Sta. 267–00 to Sta. 346–90, and Sta. 372–76 to Sta. 451–45.	5·97	104,201 40	68,451 46 14,129 17	Concrete.
	B—Sta. 160–00 to Sta. 267–00	2·00			
	D—Sta. 346–90 to Sta. 372–76	0·49		2,610 49	"
6	Caulfield-Roche Point—				
	Sec. A—West Vancouver to North Vancouver	1·0	8,380 88		Bitulithic carpet.
9	Vancouver-Hope—				
	Sec. A—New Westminster Br. South	3·27			Concrete.
	B—From Sec. A to Johnston Road	2·31			Hard Surf. pavement.
	C—Sta. 448–99 to Sta. 522–00	1·40		30,074 39	Gravel.
	D—Sta. 522–00 to Sta. 608–00	1·63	257,954 34	23,716 41	Concrete.
	G—Sta. 67–96 to Sta. 71–03	3·07		17,654 06	Warrenite bit.
	H—Sta. 15–84 to Sta. 18–74	2·9		43,006 70	Cement concrete.
	I—Sta. 25–27 to Sta. 27–17	1·9		25,356 10	
13	Spence's-Bridge Princeton—				
	Sec. A—Aspen Grove South	25·0	18,713 48		Gravel.
Ka	mloops—Osoyoos—				
	Sec. A—NW Cor. D. L. 120 South to ¼ Post So. Bdy. Sec. A. Twp. 23.	4·0	18,864 66		Gravel.
	D—Demonstration Farm to McIntyre Creek	8·82		18,864 66	Gravel.
16	Ashcroft-Summit Lake—				
	Sec. A—Ft. George–Nixon Creek	42·0		20,554 06	Gravel.
	B—Nixon Creek–Quesnel	34·0	57,646 54		"
	C—Ft. George–Summit Lake	32·0		2,599 86	"
	D—North from Ashcroft	5·0		9,436 04	"
18	Fort George–Hazelton—				
	Sec. F—Endako–Burns Lake	32·0			First class earth, then gravel surf.
	G—Burns Laka–Rose Lake	16·0	26,093 09	2,228 04	" "
	I—North Buckley–Houston	8·0		2,698 27	" "
19	Burns Lake–Francois Lake	15·0	7,982 74		Gravel.
22	Vernon–Revelstoke—				
	Sec. A—From 5·5 miles west Revelstoke	3·3		16,025 88	Best material available.
	B—Westerly end of Sec. A	7·84			" "
	C—South end Mara Lake	3·8	160,706 90	20,374 82	" "
	D—Three Valley P.O. to Taft	10·07		61,272 93	Gravel.
23	Osoyoos–Crow's Nest Pass—				
	Sec. A—Creston–Yahk	1·28			Std. earth.
	B—Thrums–Brilliant	4·5			Gravel and Br. stone.
	C—Osoyoos–Nine Mile	6.38			Std. earth.
	D—Rossland-Paulson	6·78		46,026 39	Rock construction.
	E—Kushanook towards Creston	5·66	284,303 67		Widening and new construction.
	F—Cascade easterly	15·0		91,962 88	Earth.
	G—Easterly end of Sec. F	13·25		45,505 25	Earth.
	K—Cascade–Rossland	5·75			Best material available.
	H—Cranbrook–District	6·62		15,761 55	Grading with material available.
	J—Creston–Goatfell	3·00		8,887 07	Gravel Macadam.
24	Nelson–New Denver—				
	Sec. A—Kaslo–Ainsworth	4·2	16,095 74		Best material available.
	B—New Denver–Three Forks	5·17			" "
		362·75	11,16,383 87	662,910 88	

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HIGHWAYS AND ROADS IN THE PROVINCE OF MANITOBA WITH RESPECT TO WHICH PAYMENTS UNDER THE ACT HAVE BEEN MADE

No.	Name of Road	Mileage	Total to March 31, 1923	During Fiscal Year 1922-23	Type of Construction
			$ cts.	$ cts.	
1	Winnipeg-Western Bdy. (via Dauphin)—				
	Sec. Winnipeg Portage la Prairie	56·5	65,928 38	12,499 78	Gravel and sand.
	C—N. Cypress Cornwallis	17·0		750 90	Gravel.
	E—Sifton W. Bdy. Manitoba	34·86		812·45	Gravel and clay.
2	Portage la Prairie-West. Boundary—				
	Sec. B—Westbourne Lansdowne	25·4	72·323 61	2,690 47	Gravel and clay.
	E—McCready-Grandview	33·0		11,891 30	Gravel.
	G—Hillsbrug-Shell River	12·1		376·78	Gravel.
3	Dauphin Benito- -				
	Sec. A--Dauphin Gilbert Plains	23·25	40,601 01	159 70	Gravel.
	D—Minitonas-W. Bdry. Manitoba	50·5		12,216 19	Gravel.
5	Minitonas Bowsman-Swan River—	28·4	9,541 65	2,263 67	Gravel.
7	Winnipeg-Portage la Prairie—				
	Sec. A—Winnipeg Cartier	10·2	23,055 24	7,177 10	Gravel.
	C—Portage la Prairie Mun	19·0		427 59	Clearing, grubbing, grading pipe culverts, bridges only.
8	Winnipeg-Western Boundary—				
	Sec. A—Oak Bluff-S. Norfolk	53·0	114,051 12	15,404 96	Clay.
	D—Oakland-Western Boundary	86·0		21,531 52	Gravel and clay.
9	Winnipeg-West. Boundary (south)—				
	Sec. A—Fort Garry-Dufferin	28·0	66,279 31	3,918 16	Clearing grading pipe culverts. Bridges only
	B—Dufferin-Roland	20·0		4,897 88	Clay.
	J—Bernice-Sask. Boundary	26·0		5,607 20	Gravel.
10 A	Winnipeg-Emerson	54·63	51,634 31	20,629 14	Clearing, grading pipe culverts, culverts and bridge guard rails only
11	Winnipeg-Riverton—				
	Sec. A—West Kildonan-West St. Paul Municipality.	6·5	53,338 26	.....	Gravel, clearing, grading pipe culvert.
	B—Mun. of St. Andrews	35·6		20,882 47	" "
	C—North End B-Gimli Mun.	21·8		.....	" "
	D—Mun. of Bircheroft	13·1		1,628 45	" "
15 A	Winnipeg-Beausejour	32·0	20,535 32	20,535 32	Gravel.
		736·84	517,288 21	165,547 47	

HIGHWAYS AND ROADS IN THE PROVINCE OF NEW BRUNSWICK WITH RESPECT TO WHICH PAYMENTS UNDER THE ACT HAVE BEEN MADE

No.	Name of Road	Mileage	Total to March 31, 1923	During Fiscal Year 1922–23	Type of Construction
			$ cts.	$ cts.	
1	Matapedia–Bathurst	74·1	33,767 29	11,045 86	Improved gravel.
2	Bathurst–Newcastle	125·6	27,943 54	16,044 46	"
3	Newcastle–Moncton	91·5	88,375 37	22,141 72	From Chatham to Newcastle Std. bituminous macadam balance improved gravel.
4	Shediac–Port Elgin	29·4	13,273 33	2,476 50	Improved gravel.
5	Cape Tormentine–Aulac	30·4	20,491 78	13,114 28	"
6	Moncton–Aulac	36·0	14,923 69	1,452 46	"
7	Moncton–St. John	89·6	60,268 70	9,692 22	St. John to Rothesay bituminous macadam balance improved gravel.
8	St. John–St. Stephen	82·0	117,985 50	55,050 95	Gravel.
9	Moncton–Penobsquis	74·3	14,387 05	14,387 05	Impr. gravel.
10	St. John–Fredericton	58·0	51,046 84	19,030 46	Gravel.
11	Fredericton–Woodstock	61·0	145,698 16	94,461 90	Improved gravel.
12	Woodstock–Perth	47·4	17,390 57	1,987 24	"
13	Perth–Grand Falls	22·7	21,070 03	8,170 08	"
14	Grand Falls–Quebec Boundary	47·5	24,050 73	7,961 69	"
16	Westfield–Oromocto	65·8	29,898 28	29,898 28	"
18	St. Stephen–Burden	63·2	19,289 14	8,209 86	"
19	Fredericton–Newcastle	96·1	39,116 37	20,186 22	"
20	Newcastle–Bathurst	42·1	18,914 08	18,914 08	"
21	Fredericton–Sussex	100·5	52,386 30	17,747 70	"
		1,237·2	810,276 75	371,973 01	

HIGHWAYS AND ROADS IN THE PROVINCE OF NOVA SCOTIA WITH RESPECT TO WHICH PAYMENTS UNDER THE ACT HAVE BEEN MADE

No.	Name of Road	Mileage	Total to March 31, 1923	During Fiscal Year 1922-23	Type of Construction
			$ cts.	$ cts.	
1	Halifax-Bedford	6·29	97·358 91	59,708 77	Bit. macadam (tarvia).
2	Halifax-Indian River	17·5	136,091 49	15,652 79	Gravel surface.
3	Mt. Uniacke-Lakelands	7·6	39,742 98	6,591 22	W. B. macadam.
4	Port Joli-Sable River	6·3	49,503 71	18,735 69	Gravel macadam.
5	Aylesford-Middleton	12·1	47,417 00	853 80	W. B. macadam.
6	Elmsdale-Shubenacadie	7·1	38,283 12	1,643 44	Gravel macadam.
7	Liverpool-Caledonia	5·3	19,695 92	5,703 86	"
8	Sydney-Glace Bay	8·2	54,073 80	54,073 80	Slag macadam.
9	Windsor Hantsport	6·48	27,624 76		Gravel macadam.
10	Weymouth Meteghan	10·0	22,118 89		"
13	Bedford-Elmsdale—				
	Sec. A—Bedford Waverley	5·1	52,110 94	13,016 70	Gravel.
	B-Waverley Elmsdale	16·2		39,094 24	"
14	Elmsdale-Shubenacadie	3·48	12,106 51	1,590 28	"
15	Shubenacadie Stewiacke	2·46	6,923 27	6,923 27	"
16	Truro-Glenholme	12·12	34,163 14	34,163 14	"
17	Amherst-N. B. Boundary—				
	Sec. A—Amherst North	1·00	15,301 55		"
18	Truro-New Glasgow—				
	Sec.—E and F Salem Church-Fisher's Cor.	10·05	37,404 91	16,498 90	"
	G—New Glasgow-Alma	7·85		4,526 66	"
19	New Glasgow-Antigonish—				
	Sec. A—From New Glasgow	10·05		36,713 43	"
	E—Kensieville-Pictou	7·84	59,324 31	7,510 43	"
	F and G—Pictou-Antigonish	10·18		15,100 45	"
20	Antigonish-Mulgrave—				
	Sec. A—Antigonish Town Line	3·71			"
	B—Lower So. River Bridge	5·46	84,144 35		"
	F—From County Line (Guysboro)	5·0		22,302 50	W. B. macadam.
	G—To Mulgrave Town Line	5·53		14,359 18	
21	Tracadie-Canso—				
	Sec. A—From Tracadie	2·5		480 19	Gravel.
	B—Guysboro-Antigonish County Line South	8·85		15,941 81	"
	C—To Milford Haven Bridge	5·0	63,740 60	13,582 20	"
	D—Milford Haven Br.-Guysboro	5·0		18,457 36	"
	G—Whitehead Road-Queensport Br.	4·96		9,631 94	"
	H—To Canso Town Line	8·6		5,647 10	"
22	Woods Harbour-Shag Harbour	5·21	16,756 07	7,114 25	"
23	Halifax Hants Co. Line-Mat. Uniacke Station	3·9	17,153 63	17,110 63	Macadam.
24	Hawkesbury-St. Peters—				
	Sec. A—Pt. Hawkesbury-Kempt Road	10·0	33,775 79	18,350 91	Gravel.
	C, D, E—Grant Anse-St. Peters	10·0		15,424 88	"
25	St. Peters-Sydney Road—				
	Sec. D, E—Irish Cove-Big Pond	10·0		20,407 86	"
	F—Big Pond-East Bay	8·92	60,532·36	9,476 48	Gravel ½ mile slagmac.
	H—Sydney towards East Bay	6·0		11,698 80	
	G—Meadows Road-East Bay Church	5·47		8,397 00	Gravel.
26	Sydney-Baddeck—				
	Sec. D—Bras d'or Cor.-Big Bras d'or	8·0	27,873 17	12,315 12	Gravel.
	E, F—Big Bras d'or-Ross Ferry	10·0		15,558 05	"
27	Halifax-Chester—				
	(From Indian River Bridge)	11·0	29,534 70	29,534 70	Local material.
28	Halifax-Chester (11 miles from Indian River Bridge -Goatlake.)	11·12	26,018 61	26,018 61	"
29	Woods Hbr.-County Lines Yarmouth-Shelbourne	6·0	10,875 03	10,875 03	Gravel.
30	Parrsboro-Amherst—				
	Sec. D—Brown's Ry. Crossing-Jct. with Springhill Road.	7·22		11,108 11	Gravel.
	Sec. F—Maccan Ry. Crossing-Nappan	4·58	38,755 79	9,051 23	"
	E—Brown's Crossing-Maccan Crossing	2·04		3,163 88	"
	G—Sec. F to Amherst Town Line	5·00		7,886 93	"
31	Sackville River Bridge-Lucasville Road	5·15	16,164 11	16,164 11	"
32	Lucasville Road-Halifax-Hants Co. Line	6·65	22,747 84	22,747 84	"
33	Avonport-Kentville	9·67	15,045 47	15,045 47	"
34	Sable River-Lockeport	8·04	13,436 04	13,436 04	"
35	Hebron-Maitland	7·77	6,224 32	6,224 32	"
36	Truro Town Line-Stewiacke Town Line	15·18	28,812 11	28,812 11	"
37	Liverpool-Mill Village	8·77	19,301 92	19,301 92	"
38	1 mile East Victoria Bridge to 2·9 miles West of same.	3·9	6,905 03	6,905 03	"
39	Middleton-Lawrencetown	5·0	6,860 37	6,860 37	"
40	Walls Corner-Lockeport	3·2	3,576 11	3,576 11	
		425·60	1,297,481 63	811,068 94	

HIGHWAYS AND ROADS IN THE PROVINCE OF ONTARIO WITH RESPECT TO WHICH PAYMENTS UNDER THE ACT HAVE BEEN MADE

No.	Name of Road	Mileage	Total to March 31, 1923	During Fiscal Year 1922–23	Type of Construction
			$ cts	$ cts.	
	York Co.-Whitby—				
	Subsec. A1—Pickering Twp	3·54	91,206 75	91,206 75	Asphaltic concrete.
	Whitby-Belleville	75·90	282,371 47	98,988 82	Waterbound macadam, Gravel.
	Belleville-Kingston	46·35	376,506 10	129,846 10	Oiled macadam, gravel and oiled macadam.
	Kingston-Brockville	45·23	384,205 33	184,817 64	Macadam.
	Brockville-Prescott	11·2	59,196 31	33,046 89	Macadam surface treated with tar. Gravel.
	Ottawa-Prescott	58·3	487,911 24	143,779 33	Waterbound macadam with bituminous surface. Gravel with bituminous surface. Asphaltic concrete.
	Hamilton-Queenston	36·33	271,298 55	65,165 35	Cement concrete. Waterbound macadam. Bituminous macadam.
	Hamilton-Brantford	19·18	238,492 00	233,271 24	Bitulithic. Waterbound macadam. Cement concrete.
	Brantford-Woodstock	24·35	102,173 20	55,788 50	Gravel. Macadam.
	Ingersoll-London	15·57	46,377 18	24,417 38	Gravel with bit. surface. Asphaltic concrete.
	Windsor-St. Thomas—				
	Sec. S—Aldborough township	10·77	35,787 79	35,787 79	Gravel.
	Lambeth-Maidstone—				
	Subsec. K1—From Chatham city to centre of lot 7.	2·0	11,261 17	11,261 17	Cement concrete.
	St. Thomas-Niagara—				
	Subsec. U1—North Cayuga township	7·25	91,284 00	91,284 00	Waterbound macadam.
	Sec. V—Canboro township	8·8	87,955 44	87,955 55	" "
	Clappison's Corner-Chatsworth—				
	Subsec. L1—From city of Guelph	1·0	17,483 56	17,483 56	Cement concrete.
	N1—From N. boundary south to lot line 6 and 7, con. 8, township of Puslinch.	1·5	23,433 24	23,433 24	"
	Elginfield-Sarnia—				
	Subsec. B1—Easterly from city of Sarnia, township of Sarnia.	2·4	35,822 50	35,822 50	"
	Stratford-Goderich—				
	Sec. B—Downie and Ellice township. From Stratford westerly to lot line 15 and 16, Ellice township.	2·6	38,030 32	38,030 32	Asphaltic concrete.
	Subsec. C1—From lot line 15 and 16, Ellice township, westerly to lot line 20 and 21.	1·26	81,283 98	81,283 98	"
	Toronto-Hamilton	30·57	213,650 41	211,775 47	Bituminoius macadam. Asphalt. Concrete on cement concrete.
	Toronto-Bradford	27·03	46,923 70	46,923 70	Bituminous macadam.
	Bradford-Severn—				
	Sec. B—Township of Guillimbury West	6·6		42,485 57	Macadam.
	Sec. E—Barrie town easterly	1·2		786 06	Gravel.
	F—From Section E to Ora boundary	1·6		2,153 68	"
	Subsec. G1—From Vespra-Ora line easterly to con. 4 and 5.	3·6	107,719 86	5,130 10	"
	G2—From con. 9 and 10 east to east boundary of Ora.	6·4		20,869 27	"
	11—From W. boundary Orillia township.	4·2		18,165 12	"
	12—Orillia town northernly to con. 8 and 9, Orillia north.	4·8		18,130 06	Macadam.
	Ottawa-Point Fortune	69·19	243,873 19	198,829 15	Asphaltic concrete. Bituminous macadam. Gravel.
		528·72	3,374,247 29	2,047,918 28	

SESSIONAL PAPER No. 32

HIGHWAYS AND ROADS IN THE PROVINCE OF PRINCE EDWARD ISLAND WITH RESPECT TO WHICH PAYMENTS UNDER THE ACT HAVE BEEN MADE

No.	Name of Road	Mileage	Total to March 31, 1923	During Fiscal Year 1922-23	Type of Construction.
			$ cts.	$ cts	
1	Charlottetown-Georgetown— 10 Mile House to county line	8·0	7,794 15	....	Earth road built up and graded to afford foundation for gravel surface.
2	Charlottetown-Tryon— New Haven-Queen's Arms	8·0	4,931 04		Drain and grade to afford foundation for gravel on low portions.
3	Kensington-Bryenton's Corner	3·5	2,900 83	186 04	" "
4	O'Leary Road-Mt. Pleasant	12·0	18,738 87	1,747 99	" "
5	McMahon's Bridge Elmira Road	8·5	6,422 60		" "
6	Dundas-Rollo Bay	8·5	5,668 63		" "
7	Bovyer's Brook-Webster's Corner	9·0	4,505 46		" "
8	Montague-Cardigan Road	5·5	5,934 18	674 34	" "
12	Murray River-Montague	10·0	7,716 00	2,375 76	Improved earth.
13	Cardigan-St. Peters	13·0	10,037 81	2,819 02	"
14	St. Peter's-Charlottetown	8·5	6,328 98	1,586 80	"
15	Charlottetown-St. Peter's— Union Road-Scotchfort	11·5	8,701 95	2,180 89	"
16	Waterworks Hill-Hunter River	11·5	13,618 19	2,241 47	"
17	New Haven-Tryon	15·5	16,116 95	4,708 98	"
18	Bryenton Cor.-Irishtown-French River	6·5	5,616 68	238 55	"
19	Summerside-Borden	15·5	12,380 13	3,600 30	"
20	Mt. Pleasant-Miscouche	14·5	17,842 44	3,495 95	"
21	O'Leary-Bloomfield	6·0	9,049 85	1,087 69	"
22	Charlottetown-Queen's Arms	3·0	4,280 66	1,049 11	"
23	Charlottetown-Union Road	2·75	3,850 14	683 93	"
24	Tryon-Carleton	8·5	5,640 93	5,640 93	"
25	Hunter River-Clifton	13·0	6,846 06	6,846 06	"
26	Summerside-Miscouche	5·0	4,492 75	4,482 75	"
27	Kensington-Read's Corner	6·0	3,385 06	3,385 06	"
28	Kensington-Malpeque	7·0	4,864 60	4,864 60	"
28	Bloomfield Corner-Mininigash	13·0	5,126 75	5,126 75	"
30	Scotchfort-Lot 46	10·0	6,126 20	6,126 20	"
31	St. Peter's-Dingwell Mills	8·0	3,959 46	3,959 46	"
32	Dundas-Cardigan	9·0	9,642 53	9,642 53	"
33	Head of Rolla Bay-McMahon's Br	9·25	2,861 78	2,861 78	"
34	St. Peter's-Elmira	30·5	7,477 50	7,477 50	"
35	Murray River-Murray Harbour South	5·5	3,566 44	3,566 44	"
36	Hillsborough-Bridge-Orwell	17·5	7,924 50	7,924 50	"
37	Roseneath-Georgetown	7·5	4,042 03	4,042 03	"
39	Monaghan-Pisquid Corner	2·5	1,653 60	1,653 60	"
		333·5	250,035 73	106,277 01	

HIGHWAYS AND ROADS IN THE PROVINCE OF QUEBEC WITH RESPECT TO WHICH PAYMENTS UNDER THE ACT HAVE BEEN MADE

No.	Name of Road	Mileage	To March 31, 1923	During Fiscal Year 1922-23	Type of Construction
			$ cts	$ cts.	
1A	Montreal-Sherbrooke—				
	Subsec. A1—Orford township	2·659		9,001 31	Gravel.
	A2—Orford Twp	3·09		5,939 53	"
	A3—Rock Forest	4·473		16,644 18	"
	B—Petit Lac Magog Vil	1·202		6,061 65	"
	C1—Magog Twp., Sherbrooke Co	2·59		4,588 76	"
	C2—Magog Twp	3·5		14,359 69	"
	D1—Magog Twp., Stanstead Co	0·82		.....	Cement concrete.
	E1—E. Bolton Twp	2·07		5,293 40	Gravel.
	E2— "	2·48		13,752 90	"
	F—Eastman	4·25		23,774 15	"
	G—S. Stukely Twp	4·511		22,626 41	"
	H1—Shefford Two	2·31		12,920 60	"
	H2—Shefford Twp	7·584		32,134 71	"
	I—Waterloo	0·452		.....	"
	J1—Granby Tp	2·56	369,074 82	2,625 35	"
	J2—Granby Twp	4·58		5,020 75	"
	L—St. Paul d'Abbotsford P	5·92		6,864 82	"
	M1—St. Césaire Parish	3·305		2,606 97	"
	M2— " "	0·797		2,258 19	"
	N—St. Césaire Village	1·12		9,816 69	Concrete.
	O—Part of St-Michel-de-Rougemont.	1·61		2,674 51	Gravel.
	P—Rougemont Village	1·0		3,329 56	Concrete.
	Q1—Ste-Marie-de-Monnoir P	1·2528		1,477 90	Macadam.
	Q2— " "	5·5		14,046 29	Concrete.
	Q3— " "			15,843 29	"
	S—Notre-Dame-de-Bonsecoeur			15,465 46	"
	U—Chambly Canton			7,648 92	Asph. concrete.
	V—Chambly Basin			9,035 52	"
	W—St-Joseph-de-Chambly	13·63		.....	"
	X—St-Hubert			8,405 15	"
	Y—Longueuil			19,981 79	"
2	Montreal-Quebec—				
	Sec. A, B, C—Quebec, Champlain, Berthier, Joliette, l'Assomption.	48·13	56,374 19	.....	Asph. pavement and bituminous concrete.
3	Lévis-St. Lambert—				
	Sec. B1 2—St-David Parish	1·95	14,071 02	.....	Concrete.
	C1 2—St. Télesphore Mun	0·89	4,394 34	4,394 34	"
	D3—St-Romuald Parish	0·71	14,955 74	2,349 40	Concrete and bit. macadam.
	E1—St-Nicolas Parish	6·81	71,826 76	41,379 62	Waterbound macadam.
	F—St-Antoine-de-Tilly Parish	0·51		5,070 86	Gravel and improving grade.
	I—Lotbinière Village	1·78		22,783 45	Bit. macadam.
	L1, 3—Deschaillons Village	4·12		57,642 33	Concrete.
	M—St-Pierre-les-Becquets Parish	0·39		.....	Waterbound macadam and bit. Oil.
	R—Laval Village	0·41		.....	Concrete.
	U—Part of Nicolet Town	0·13		.....	"
	DD—Part of Yamaska Village	0·81		.....	Gravel.
	FF—St-Pierre-de-Sorel Parish	1·86		3,727 12	"
	HH—Ste-Victoire	2·75		13,364 69	"
	II—St-Ours	3·25		16,199 44	"
	II—Part of St-Ours Parish	1·0		.....	"
	JJ—Part of St-Ours Town	0·4		.....	"
	KK—Part of St-Roch Parish	0·26	326,454 65	.....	"
	KK—St-Roch	2·04		9,941 99	"
	MM—Contrecoeur Village	0·63		.....	Waterbound macadam and bit. Oil.
	NN—Contrecoeur	10·20		70,673 90	" "
	OO—Vercheres Village	1·42		.....	" "
	PP—Verchères	3·61		21,466 20	Oiled macadam.
	PP—Part of Verchères Parish	1·20		.....	Waterbound macadam and bit. Oil.
	QQ—Varennes Village	1·08		.....	" "
	RR—Part of Varennes Parish	3·24		.....	" "
	RR—Varennes	3·45		22,121 92	Oiled macadam.
	TT1, 2, 3—Boucherville Parish	2·68		23,619 43	Cement concrete. Bit. macadam.
	WW—Longueuil Parish	0·98		7,950 50	Bit. macadam.
	" "	1·92			Concrete.
4	Caughnawaga-Malone—				
	Sec. A—Caughnawaga Indian Reserve	3·5	47,948 72	17,744 35	Bit. macadam.
	D1, 3—St-Martine Parish	4·26	31,303 33	1,923 18	"
5	Beauce Junction-Sherbrooke—				
	Sec. A2—L'Enfant Jésus Parish	1·2		8,408 54	Gravel.
	B1, 2—St-Fréderic Parish	4·26		5,144 78	"
	C1—Sacré-Coeur-de-Jésus			319 42	"
	E2—Sacré-Coeur-de-Marie			4,896 14	"
	L2, 4—Disraeli Parish			446 95	"
	N1, 3, 4, 6—Garthby			962 50	"
	P3, 5, 7—Weedon Twp	17·68		.....	"
	Q1, 3—Lac Weedon Village			.....	"
	Q5, 7—Lac Weedon Village		124,361 70	.....	"

HIGHWAYS AND ROADS IN THE PROVINCE OF QUEBEC WITH RESPECT OF WHICH PAYMENTS UNDER THE ACT HAVE BEEN MADE—*Continued*

No.	Name of Road	Mileage	To March 31, 1923	During Fiscal Year 1922–23	Type of Construction
	Beauce Junction-Sherbrooke—*Concluded*		$ ct.	$ ct.	
	R2—Weedon Centre Village				Gravel.
	C2—Sacré-Coeur-de-Jésus	2·53			"
	C3— " "	1·12		287 10	"
	E1, 3—Sacré-Coeur-de-Marie	1·05			"
	J—Black Lake Town	0·56		6,400 00	"
	Ja—Ireland Twp	0·6		4,004 46	"
	K—St-Joseph-de-Coleraine	5·77		12,767 28	"
	L1, 3—Disraeli Parish	0·72		76 37	Bit. macadam.
	M2—Disraeli Village	0·68			Gravel.
	N2, 5, 7—Garthby Parish	2·58			"
	P1, 2, 4, 7, 8—Weedon Twp	2·34			"
	Q2, 4, 6—Lac Weedon Village	2·38		5,996 12	"
	R1, 3—Weedon Village	0·94		4,155 35	"
	S1, 3—Warbleton	3·73		1,000 00	"
	T2, 3, 4—Dunswell Twp	6·70			"
	V—Westbury Twp	0·32		3,430 82	"
6	Lévis-Rivière-du-Loup-Rimouski—				
	Sec. B—Bienville Village	0·25		4,573 41	Cement concrete.
	E—St-Michel Parish	4·32	18,301 54	6,096 18	
	D—St-Etienne-de-Beaumont Parish	5·25		7,631 95	Gravel.
7	Beauceville-Sherbrooke—				
	Sec. C—Part of St-Victor-de-Tring Parish	0·39	14,606 73	4,175 96	Gravel.
	I—Winslow N. Twp	4·98	25,807 01	19,196 54	"
	J—S. Winslow	5·75	28,045 33	14,606 73	"
	L—Bury Twp	7·6	14,479 24		"
	N1, 2—Eaton Twp	10·55	4,620 51	2,063 36	"
	O—East limit of Lennoxville	3·1			"
	CC—St-Victor-de-Tring Village	1·62	19,196 54	444 55	
8	Montreal-Ottawa (Via Hull)—				
	Sec. A—Abord à Plouffe	1·43			Waterbound macadam and bit. Oil.
	B—St-Martin Parish	2·89			" "
	C—Ste-Dorothée Parish	4·65			" "
	D—Ste-Rose west part Parish	0·36			Waterbound macadam.
	F—St-Eustache Parish	2·56			" "
	F—Part of St-Eustache Parish	0·93		5,666 20	Waterbound macadam and bit. Oil.
	G—St-Augustin Parish	5·46		12,741 22	
	H—Ste-Scholastique Parish	2·66	34,833 82		Gravel.
	H—Part of St-Scholastique Parish	0·17			"
	H— " "	1·06			Waterbound macadam and bit. Oil.
	J—St-Jerusalem Parish	1·48		10,063 45	Gravel, waterbound macadam and bit. Oil.
	J— " "	2·76			" "
	J—Part-St-Jerusalem Parish	2·32		5,506 84	Gravel.
	N—Calumet Village	1·18			"
	P—Notre-Dame du Bonsecours Parish	2·5			"
	Q—Montebello Village	0·92			"
	Q—Montebello Village	1·17			Waterbound macadam and bit. Oil.
	R—Papineauville Village	0·43			Gravel.
	T—Coeur Très Pur-de-la-B. V. Marie-de-Plaisance.	2·28			"
	Y—Masson Village	0·22			"
	I—Part of St-Hermas Parish	0·17		856 11	"
9	Montreal-U. S. Boundary—				
	Sec. C2—Parish of Laprairie	1·52	17,413 15		Macadam tarvia.
	C3— " "	1·14	7,778 19		" "
	D2— " "	0·27			" "
10	Levis-Sherbrooke—				
	Sec. N1—Princeville-Stanfold N	3·87		11,837 14	Gravel.
	N2— " "	3·79			
	O—Parish of St-Victoire	4·85		3,684 62	"
	P2—Victoriaville Mun	0·63			
	R—Parish of St-Christophe	2·38		2,467 34	Gravel.
	T1—Warwick Twp	3·74	48,042 13	4,933 16	Concrete.
	T2—Warwick Twp	4·18			Gravel.
	U—Part of Kingsey Falls Parish	2·32			
	V—Part of Shipton	3·6			
	Z—Part of Windsor Twp	7·54			
	BB—Part of Brompton Twp	1·42			
	CC—Orford Twp	2·55		5,076 94	
11	Montreal-Mont Laurier—				
	Sec. A—Ste-Thérèse-de-Plainville	4·19		11,489 54	Gravel.
	C— " " Parish	1·17			Waterbound macadam. Cold bit. oil and gravel.
	D— " " Town	0·52			" "
	E1, 3, 5—St-Janvier Parish	0·76		1,262 08	Gravel.
	E2, 4, 6—St. Janvier Parish	2·14		11,590 22	"
	F—Ste-Monique Parish	0·19	166,636 91	621 03	" and concrete.
	G—Ste-Thérèse Parish	1·96			Waterbound macadam and bit. oil and gravel.

HIGHWAYS AND ROADS IN THE PROVINCE OF QUEBEC WITH RESPECT TO WHICH PAYMENTS UNDER THE ACT HAVE BEEN MADE—*Concluded*

No.	Name of Road	Mileage	To March 31, 1923	During Fiscal Year 1922-23	Type of Construction
			$ cts.	$ cts.	
	G1, 3, 5, 7—St-Jérôme Parish	7·62		20,374 42	Gravel.
	G2, 6— " "	2·81			"
	G4— " "			2,501 74	" and concrete.
	J—St-Sauveur Parish	6·9		13,853 84	"
	K—St-Joseph-de-Mont-Rolland	2·6		16,837 23	"
	L—Ste-Adèle Parish	7·0		39,622 39	"
	M—Ste-Agathe Parish	4·23			"
	N—Ste-Agathe-des-Monts Town	0·42			"
	H—Shawbridge	0·83		4,468 48	"
12	St. Hyacinthe-Chambly—				
	Sec. A—Notre-Dame-de-St-Hyacinthe	4·3		9,839 90	Gravel.
	B—St-Damase Parish	6·52	30,640 19	15,696 20	"
	C—St-Michel-de-Rougemont	2·3		5,104 09	"
14	Laprairie-Lacolle—				
	Sec. B1—St-Luc Parish	5·22	29,318 50	11,988 34	Waterbound macadam.
	C3—St John Parish	4·21	7,539 74	6,088 62	Waterbound macadam with bit. surface.
15	Quebec-St. Siméon—				
	Sec. C—Beauport Village	1·43		6,644 02	Waterbound macadam and liquid tarvia.
	D—Beauport East Village	0·80		3,631 75	" "
	E—Ville de Courville	0·92		4,059 32	" "
	F—Village de Montmorency	0·53		2,431 24	" "
	G—St-Jean-de-Boischatel Village	1·87	82,639 83	8,515 28	Oiled macadam.
	H—L'Ange-Gardien Parish	3·26		15,318 68	"
	I—Château-Richer Parish	7·20		28,851 64	"
	J—Ste-Anne-de-Beaupré Parish	1·12		5,693 35	"
	J—Ste-Anne-de-Beaupré Parish	2·18		1,092 54	Waterbound macadam and liquid bitumen.
	K—Ste-Anne-de-Beaupré Village	1·41		6,402 01	Concrete.
16	Richmond-St-François-du-Lac—				
	C—Durham Twp	4·75	3,885 16		Gravel.
	D—L'Avenir Parish	5·8		3,885 16	"
17	Hull-Aylmer—				
	Sec. B—Hull County	4·3	16,731 67	16,731 67	Tarvia.
18	Rivière-du-Loup-Edmundston—				
	Sec. I—Parish Ste-Rose-du-Dégelé	13·41	20,301 53	20,301 53	Gravel.
20	Laprairie-Valleyfield—				
	Sec. B—Laprairie Parish	2·088	2,832 25	2,832 35	Waterbound macadam and bit. oil.
	C—Caughnawaga Reserve	4·448	22,573 87	22,573 87	" "
21	L'Assomption-Joliette—				
	Sec. A—L'Assomption Parish	2·21	7,108 29	7,108 29	Gravel.
		503·6218	1,684,097 50	1,143,879 51	

HIGHWAYS AND ROADS IN THE PROVINCE OF SASKATCHEWAN WITH RESPECT TO WHICH PAYMENTS UNDER THE ACT HAVE BEEN MADE

No.	Name of Road	Mileage	Total to March 31, 1922	During Fiscal Year 1922-23	Type of Construction
			$ cts	$ cts.	
1	Cadillac-Battleford—				
	Sec. B—Swift Current to Sask. Landing	31·0		9,735 97	Standard earth.
	D Elrose to Rosetown	24·6		6,127 25	"
	E—Rosetown to Biggar	37·6	51,735 37	4,944 72	Standard earth with gravel surface on mile across.
	G—Battleford to North Battleford	2·25		6,523 62	Gravel.
	H—North Battleford to Midnight Lake	49·5		7,636 12	Standard earth.
2	Assiniboia-Prince Albert—				
	Sec. B—Crestwynd to Moose Jaw	26·0		19,308 08	Earth and sand clay.
	D—N.E. 36-19-27-2 to N.E. 32-20-26-2	9·4		6,451 08	" "
	G—N.E. 33-34-27-2 to Dana	25·0	116,807 23	11,840 83	" "
	A—Assiniboia to Crestwynd	49·3		4,220 38	Earth.
	F—Simpson to N.E. 33-34-27-2	48·0		12,222 57	Earth and sand clay.
	H—Dana to St. Louis	56·0		3,810 76	" "
3	Big River-Prairie River—				
	Sec. A—Prairie River to S.E. 6-43-7-2	16·25	36,507 92		Standard earth
	F—Prince Albert to Shellbrook	26·5		36,306 52	"
4	Fleming-Walsh—				
	Sec. A—N.E. 1-13-30-1 to Wapella	36·4		27,930 42	"
	B—Wapella-Broadview	34·0		29,220 13	"
	E—McLean-Regina	26·0		9,092 40	"
	F—N.E. 36-16-20-2 to Moose Jaw	39·0	126,981 40	1,901 56	"
	G—Moose Jaw-Caron	17·88			"
	H—Caron-Parkbeg	22·4			"
	I—Parkbeg—Morse	40·0		15,042 74	"
	J—Morse-Swift Current	37·0		6,038 85	"
	K—Swift Current-Webb	21·75			"
5	Togo-Lloydminster—				
	Sec. C—Canora to Margo	51·57			"
	D—Margo to Wadena	27·0	26,604 51	8,438 29	"
	F—N.E. 8-37-18-2 to Humboldt	26·0		10,939 32	"
	N—Maidstone to Waseca	10·0		3,892 38	"
6	Forward-Melfort—				
	Sec. D—Fairy Hill to Southey	18·0	13,004 92	7,647 13	"
7	Saskatoon-Alsac—				
	Sec. C—Harris to N.E. 23-30-15-3	30·0	40,903 70	21,425 41	Standard earth and sand and clay.
	F—Kindersley to N.E. 34-28-39-3	37·0		11,828 95	
8	Moosomin-Benito—				
	Sec. D—Wroxton to Kamsack	27·7	8,429 59	2,561 62	" "
	E—Kamsack to Pelly	21·0		5,867 97	" "
9	Northgate-Preeceville—				
	Sec. G—Yorkton to Canora	28·0	3,407 64	3,407 64	" "
10	Regina-Yorkton—				
	Sec. D—Melville to N.E. 32-25-6-2	18·07	19,749 67	17,577 11	" "
11	Regina-Saskatoon—				
	Sec. —Davidson to Bladworth	12·7	15,288 93	13,160 66	" "
12	Saskatoon-Prince Albert—				
	Sec. A—NE. 32-36-5-3 to BE.-32-38-5-3	12·0	27,562 54	5,516 24	Standard earth and gravel surf.
	B—NE, 8-39-4-3 to Rosthern	30·0		6,565 08	
13	Redvers-Altawan—				
	Sec. —AManitoba Boundary to Redvers	12·26		10,660 25	Standard earth.
	B—Redvers to Carlyle	34·0	37,973 61	8,544 60	"
	G—Horizon to Verwood	26·76		11,372 73	"
14	Marchwell Macklin—				
	Sec. C—Saltcoats to Yorkton	22·14	26,260 93	15,833 58	"
	L—Grandora to Asquith	13·15		8,575 09	"
15	Bangor-Watrous—				
	Sec. C—Goodeve to Jasmin	29·59	51,841 81	36,420 03	"
	E—Punnichy to Raymore	14·77		11,674 10	"
16	Mayfield-Regina—				
	Sec. A—NE, 12-10-30-1 to Fairlight	15·0	4,195 78	4,195 78	"
17	Empress-Onion Lake—				
	Sec. E—Battle River to North Bdry. Twp. 48	23·36	8,939 92		"
	F—Lloydminster North and South	10·6		8,754 74	"
18	ainsboro-Trossachs—				
	Sec. E—NE. 13-2-7-2 to NE. 12-2-10-2	20·1		3,875 08	"
	F—NE. 12-2-10-2 to NE 24-2-13-2	20·24		4,607 73	"
	G—NE. 24-2-13-2 to NE. 24-2-16-2	18·0	40,748 50	6,658 56	"
	H—Bromhead to Blooming	21·0		8,129 34	"
	I—N. Boundary 31-317-2 to NE. 36-6-18-2	19·084		2,561 28	"
	J—NE. 36-6-18-2 to NE. 7-8-17-2	8·297			"
19	Kincaid-Hawarden—				
	Sec. F—Elbow to Hawarden	20·3	15,098 55	7,866 77	"
20	Regina-Humboldt—				
	Sec. D—NE. 15-27-22-2 to Nokomis	13·38	10,472 32	7,605 08	"
21	Robsart-Leader—				
	Sec. B—Maple Creek to NE. 35-15-26-3	27·54	22,940 45	18,533 30	"
22	Welby-Bulyea—				
	Sec. B—NE. 27-19-31-1 to NE. 34-19-4-2	37·5		8,322 18	"
	D—NE. 12-20-7-2 to NE. 11-21-11-2	37·0	27,121 27	8,302 98	"
	E—Balcarres to Dsyert	33·0		8,966 28	Standard earth and clay.
23	Manitoba Boundary-Tomkin Siding	31·0	3,658 11	3,658 11	Standard earth.
27	Saskatoon-Aberdeen—				
	Sec. A—NE. N. 27-36-5-3 to NE. 36-36-4-3	9·5	2,459 32	2,459 32	Gravel.
		1,542·441	738,594 00	544,820 71	

STATEMENT showing Classification of Types of Contruction by Provinces Placed under Agreement up to March 31, 1923. Mileages Completed and under Improvement.

	Cement Concrete			Bituminous Concrete			Bituminous Macadam			W. B. Macadam			Gravel			Earth			Total all classes		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
British Columbia	19·31	19·31	....	17·63	17·63	....	.....	.....	.....	2·81	2·81	.....	28·05	28·05	....	300·95	200·57	88·93	368·75	268·34	88·93
Alberta	....	....	....	....	....	....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	....
Saskatchewan	....	.....	....	....	....	....	....	....	....	.....	....	....	18·00	18·00	....	1,540·53	597·00	160·00	1,558·53	615·00	160·00
Manitoba*	....	....	....	....	....	....	....	....	....	....	....	....	796·20	25·00	471·00	....	....	....	796·20	25·00	471·00
Ontario†	47·42	36·93	....	25·73	19·68	....	114·09	24·09	5·60	217·52	109·78	104·60	233·25	178·63	54·62	....	....	....	638·01	369·11	164·82
Quebec‡	24·97	22·43	0·66	52·84	52·51	....	18·42	16·72	1·70	112·40	48·92	84·65	383·96	283·63	34·85	....	....	....	622·59	421·21	121·86
New Brunswick	....	.....	....	....	....	....	10·70	10·70	....	....	....	....	1,221·70	298·40	844·20	....	....	....	1,232·40	309·10	844·20
Nova Scotia	....	....	....	....	....	....	6·50	6·50	....	54·53	49·53	5·00	364·80	242·26	122·54	....	....	....	425·83	298·29	127·54
Prince Edward Island	....	.....	....	....	....	....	....	....	....	....	....	....	....	....	....	338·00	181·25	156·75	338·00	181·25	156·75
Totals	91·70	78·67	0·66	96·20	89·82	....	149·71	58·01	7·30	417·26	211·04	194·25	3,045·96	1,073·97	1,527·21	2,179·48	978·79	405·68	5,980·31	2,490·30	2,135·10

(1) Under agreement. (2) Completed. (3) Under Improvement.

*Manitoba —Grading completed ..... 314 M.
Grading 75 per cent completed 152
1st coat gravel 194
2nd coat gravel 56
3rd coat gravel 25

†The Federal aid macadam work in Ontario is receiving generally a light bituminous surface treatment and includes 5·57 miles of the heavy bituminous surface treatment.

‡The Federal aid macadam work in Quebec includes 136·324 miles of bituminous surface treated macadam, 38·221 miles completed and the balance incompleted.
Plus following miscellaneous.
Stone shoulders ..... 9·23 M
Grading only ..... 0·27
Miscellaneous works ..... 1·52
11·02 M

Summary of Classification of Provincial Expenditures under the Canada Highways Act, 1919, by Provinces on all Projects under Agreement, 1922-23

Provinces	Number of Projects including sections	Date Exp'd Audited	Total Expenditure	Distribution					
				Construction Engineering	Clearing and Grubbing	Grading	Culverts	Road Surface	Miscellaneous and Unclassified
Prince Edward Island	36	Oct. 31, 1922	$ 637,178 85	$ 36,283 40	$ 39,080 03	$ 334,574 52	$ 215,069 14	$ 6,175 26	$ 5,996 50
Nova Scotia	48	Dec. 31, 1922	3,385,287 63	180,036 66	65,006 69	1,296,020 86	400,256 09	1,410,086 24	33,881 09
New Brunswick	19	Dec. 31, 1922	2,768,698 40	90,138 81	59,265 33	718,241 83	385,595 30	1,508,683 61	6,773 52
Quebec	80	Dec. 31, 1922	5,406,088 61	120,826 27	83,975 15	964,546 53	478,895 43	2,828,845 14	929,000 09
Ontario	39	Dec. 31, 1921	9,603,944 70	71,830 83	32,378 42	2,048,689 14	1,380,364 19	5,865,543 09	205,139 03
Manitoba	10	Sept. 30, 1922	1,316,435 81	97,352 70	19,453 60	653,065 10	243,247 93	302,459 02	857 46
Sasaktchewan	35	Dec. 31, 1922	1,915,859 49	126,478 26	66,395 75	1,217,694 97	340,205 56	152,958 16	12,126 79
Alberta									
British Columbia	22	Dec. 31, 1922	2,970,959 69	94,045 16	190,444 05	1,278,300 59	91,311 33	1,101,515, 01	35,343 65
			$19,627,404 88	$ 602,120 66	$ 281,579 82	$ 8,511,133,51	$ 3,534,944 77	$13,176,265 53	$1,229,118 13
	291		27,824,453 18	816,992 09	555,999 02				
Percentage..			100%	3%	2%	31%	13%	47%	7%

The above statement shows the distribution of the approved expenditures of the different provinces, operating in connection with the Canada Highways Act. While approximately 50 per cent of the total approved expenditures to March 31, 1923 are given under the item "surfacing", this total is much larger than might be expected, as in practically all provinces it has been found to be impracticable to indicate the amount expended on the different projects for metalling in foundation work. Foundation work is of a more permanent nature than wearing surfaces, and might properly be regarded in most cases as a permanent feature of any road.

The second largest total is for grading. Under this head come such operations as excavation work, ditching, scraping, cutting and filling, as well as grading to a definite cross-section on the different projects receiving Federal aid.

Another permanent feature of any road as now constructed is the provision made for drainage outlets. The total expended upon culverts indicates that drainage is being amply provided for in Federal aid projects.

Under the head "Miscellaneous and Unclassified" come for example, expenditures for tree planting. Where trees are considered by our engineers necessary to protect road surfaces from the effects of the weather, the cost is considered as a proper item in construction. In the case of Quebec it includes some general expenditures on projects that were not classified.

It will be observed from the above that the preponderance of expenditures of the different provinces on their Federal aid highway work as approved by this Department have been for permanent features, to serve future as well as present traffic.

Summary of Dominion Aid Payments to Each Province by Fisca Years

Period	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.
April 1, 1919, to March 31, 1920....	.....	.....	.....	56,374 19	295,100 00	.....	.....	.....	86,446 52	478,185 50
April 1, 1920, to March 31, 1921.....	40,264 79	.....	.....	483,843 80	1,031,229 01	351,740 74	193,773 29	.....	367,026 47	3,155,823 67
April 1, 1921, to March 31, 1922....	103,493 93	486,412 69	438,303 74	1,143,879 51	2,047,918 28	165,547 46	544,820 71	.....	662,910 88	5,854,395 81
April 1, 1922, to March 31, 1923....	106,277 01	811,068 94	371,973 01	.....	.....	.....	.....	.....	.....	.....
	250,035 73	1,297,481 63	810,276 75	1,684,097 50	3,374,247 29	571,288 21	738,594 00	.....	1,116,383 87	9,788,404 98

STATEMENT of Progress by Provinces under Canada Highways Act, 1919 to Close of 1922-23

Province	Projects under Agreement				Dominion Aid	Dominion Aid Payments
	Number of Project agreements	Mileage	Estimated subsidizable cost	Estimated Dominion aid 40 p.c.	Provincial Allocation under the Act	Total payments to date
			$ cts.	$ cts.	$ cts.	$ cts.
Prince Edward Island	36	338·00	872,025 68	348,810 27	603,455 00	250,035 73
Nova Scotia	48	425·60	3,548,565 39	1,419,426 16	1,468,720 00	1,297,481 63
New Brunswick	19	1,237·20	2,950,600 00	1,180,240 00	1,163,845 00	810,276 75
Quebec	80	631·6198	7,145,093 31	2,858,037 37	4,748,420 00	1,684,097 50
Ontario	39	638·661	13,424,318 54	5,369,727 42	5,877,275 00	3,374,247 29
Manitoba	10	796·20	3,601,597 15	1,440,638 86	1,602,265 00	517,288 21
Saskatchewan	35	1,558·531	3,168,351 71	1,267,340 69	1,806,255 00	738,594 00
Alberta	.....	.....	.....	.....	1,477,810 00	.....
British Columbia	22	368·746	3,264,458 46	1,305,743 38	1,251,955 00	1,116,383 87
	289	5,994·5578	37,974,910 24	15,189,964 15	20,000,000 00	9,788,440 98

PART II

ANNUAL REPORT OF CHIEF ENGINEER, CANADA HIGHWAYS COMMISSION, FOR FISCAL YEAR ENDED MARCH 31, 1923

Province of British Columbia

The amount of the federal grant is $1,251,955.

The general programme map shows a system of highways of approximately 1,977 miles, divided into 27 projects, numbers 1 to 27 inclusive.

There has been 22 agreements executed for the construction or improvement of 368.7 miles at an estimated cost of $3,264,558, 40 per cent of which will be $1,305,743.

The policy of the province is to construct high class well paved roads in the vicinity of cities and towns where the traffic is heavy, both on the mainland and on the island of Vancouver.

In the interior and more remote sections new roads are being constructed, old ones are being widened, steep grades as far as possible are being reduced, sharp curves are being taken out, culverts and bridges are being constructed or reconstructed, in the interior of the province native timber is used for culverts.

The only hard surfacing done last season was on that section of the Interprovincial Highway lying between Vancouver and Chilliwack.

Federal aid roads in this province are graded from 16 feet to 18 feet wide, as traffic requires, and as far as reasonable cost will permit grades do not exceed 8 per cent. Work is done by contract, when possible, but the improvement of remote sections, that require immediate attention, have to be done by day labour, as contractors will not tender when it costs much money to get in labour supplies and plant.

To date there has been completed:—

	Miles
Gravel	164·00
Macadam	96·00
Cement concrete	43·00
Bituminous concrete	37·00
Bituminous macadam	28·00
Total completed to date	368·00

Considerable difficulty has been experienced by the provincial field engineer in obtaining economical location for some of the interior road projects, that is to say, in obtaining a road at a reasonable cost without exceeding a grade of 8 per cent and curves of less than 200 feet radius, particularly in side hill work where the necessary crib protection and stone retaining walls soon run up the cost.

It is, however, to be noted that contractors' schedule rates are now much lower than they were in 1919 and 1920, with a corresponding decrease in the costs per mile for the work being done.

It is also to benoted that this province by the end of the season 1923 will have earned its total grant under the Canada Highways Act, and may have done a considerable amount of highway work in excess of the amount required to earn the total grant allotted to that province.

There has been paid to date under the Act the sum of $1,116,383.87.

Province of Manitoba

GENERAL

The amount of the federal grant is $1,602,625, to be earned as 40 per cent of the cost of completed work done in accordance with approved specifications and signed agreements.

The provincial general map, showing roads from which road projects may be selected, shows approximately 4,000 miles of highway.

Ten road projects, numbers 1 to 3 inclusive; 5; 7 to 11 inclusive, and 15. a total length of 1,241.4 miles, have been approved.

These included five interprovincial highways.

The projects have been divided into 40 sections and 22 of those sections, with a total length of 780 miles, are under agreement.

The width of grades varies from 18 feet to 24 feet according to present or anticipated traffic.

GRADING

The grading was done by ordinary methods, lips, fresnoes, wheelers and tractor outfits being used. The tractor outfits consist of 10 feet to 12 feet blade machines hauled by gasoline tractors. There were no elevating graders on work in this Province.

CULVERTS

There have been 185 reinforced concrete, 399 concrete pipe, 979 corrugated iron pipe and 20 timber culverts (Douglas fir) installed.

SURFACING

One hundred and ninety-four miles of highway have been gravelled to date. With the exception of the southeasterly section of the province, there is a good supply of gravel.

Where gravel was not available, the road, in some sections, is surfaced with sand or clay as the case may require.

GUARD RAILS

About 600 feet of guard rail has been placed where high fills require this protection.

Expenditure

Expenditure, audited up to September 30, 1922, by the federal auditor, on sections under agreement, is $1,314,910.66.

Certificates have been issued on work costing $1,293,220.54.

The expenditure, up to December 31, 1922, not audited, amounts to $1,348,368.91.

Therefore, the percentage earned is about 33 per cent and the amount of federal subsidy yet to be earned is $1,062,917.44.

PROGRESS

Work has been commenced on all sections under agreement, viz., 780 miles.

The work done, to December 31, 1922, on all sections under agreement is 344 miles of grading completed; 152 miles 75 per cent completed; 194 miles of first coat of gravel; 56 miles of second coat and 25 miles of third coat; 5.8 miles of clay surfacing and 15.5 miles of sand surfacing.

CONTRACT AND DAY LABOUR

With the exception of light grading, which can be done more economically by municipal grading machinery, all the work is done by contract.

COSTS

The estimated cost of the 22 sections under agreement is $3,601,597,15, or an average cost of $2,770 per mile.

The average cost of the 344 miles completed and the 152 miles 75 per cent completed, exclusive of surfacing, is $2,265 per mile.

The terms of the agreements have been fulfilled except as regards the time clause.

Province of New Brunswick

The general programme map for this province shows a system of main highways of 1,371 miles from which road projects for improvement may be selected.

It is, however, to be noted that in so far as this province is concerned quite a number of sections in this 1,371 miles had been improved prior to the passing of the Canada Highways Act, so that it will not be necessary to improve this total mileage.

The provincial subsidy under this Act is $1,163,845. Up to June 30 last 19 projects had been selected and approved for 1,237 miles, estimated to cost $2,950,600, and $1,107,479.35 has been paid to the Province under the Act for work done.

Up to December 31 last work had been completed as follows:—

	Miles
Bituminous macadam	10·7
Gravel	298·4
Total completed	309·1

and a large mileage of gravel road under construction.

Unimproved roads in New Brunswick were narrow, the right of way grown up right up to the edge of the travelled way, wooden culverts in poor condition and the roads badly drained.

Under improvement, the right of way is cleared, the road is diverted where required to take it out of sloughs or other soft places, bad curves and grades are eliminated where possible at a reasonable cost, permanent culverts are put in and the new road graded to a width of 20 feet, and gravelled 16 feet or 18 feet wide as may be required.

This province is fortunate in having, with few exceptions, an abundance of good gravel adjacent to all road projects so that when the general road programme is completed the province will have an excellent system of high class gravel roads that should be, owing to the proximity of gravel pits, well maintained at a reasonable cost.

The work is done under the direction of the Minister of Highways, and all federal Aid work is done under the direct supervision of the Provincial Chief Engineer of Highways and his resident engineers.

The Provincial system connects with Nova Scotia at Amherst and with the Quebec system at Matapedia and Edmunston.

Province of Nova Scotia

The general programme map for the province of Nova Scotia as approved consists of 900 miles of highway from which projects for approval may be selected.

Up to date 425·60 miles have been approved and 48 agreements have been executed for an estimated expenditure of $3,548,565.39, and the estimated Dominion aid for that amount is $1,419,426.16.

The Dominion aid available under the Canada Highways Act is $1,468,720.

There has been paid to date, under the Act, the sum of $1,297,481.63.

Work completed up to December 31 last is as follows:—

	Miles
Gravel surfacing	242·26
Waterbound macadam	37·73
Tarvia	6·50
Crushed rock	11·80
	298·29
Under construction—	
Gravel	122·24
Waterbound macadam	5·00
Total completed and under construction	426·53

The unimproved roads in this Province are generally narrow and poorly drained, old wooden culverts usually in bad condition, the right of way over grown with bushes and trees up the edge of the travelled way.

Under improvement—the right of way is cleared, the road regraded and when necessary diverted to take out dangerous curves and bad grades, the travelled way widened to 18 or 22 feet as traffic may require, and permanent culverts of concrete or corrugated iron are put in.

The surfacing generally consists of gravel from 10 to 16 feet wide as may be required.

The control of public roads in the province is under the direction of the Minister of Highways and a Highway Board of three members, who have charge of the construction and maintenance of the roads, and all work done on federal aid roads is done under the supervision of district and resident engineers.

It is to be noted that the progress on federal aid work in this province has been very satisfactory, particularly during the past two seasons, and that by the end of this season the province will have earned the full amount of the grant under the Canada Highways Act.

A considerable amount of money has been expended in the province in the elimination of dangerous curves and road diversions in order to eliminate bad grades.

Should the 900 miles shown on the general programme map be completed this province will then have a complete and satisfactory system of main highways serving the settled sections of the province.

Province of Ontario

GENERAL

The Provincial system of highways, as submitted to and approved by, the Honourable the Minister of Railways and Canals covers 1,839 miles of road. This comprises the system from which the province may sleet highways to be constructed, or improved, as projects under federal aid.

There has been placed under agreement a total length of 628·84 miles, covering thirty projects or portions of projects.

PROGRESS

The following is a general summary of the work done to March 31, 1923, on highways under agreement for federal aid.—

	Miles under improvement	Miles completed
Gravel surface	54·62	178·63
Waterbound macadam surface	104·60	109·78
Bituminous macadam surface	5·60	24·09
Bituminous concrete surface		19·68
Cement concrete surface		36·93
	164·82	369·11

RIGHT OF WAY

The standard width of right of way has been determined at 86 feet as being the minimum which will properly provide for a 30-feet roadbed, standard side ditches, telegraph, telephone and power lines, sidewalk and shade trees. The right of way is being widened to this standard wherever it is reasonably possible.

CLEARING AND GRUBBING

Very little clearing and grubbing is necessary in Ontario, as most of the provincial highways at present follow existing roads which are largely through cleared country.

GRADING

Grading varies from 1,000 to 20,000 cubic yards per mile, depending upon the character of the country, but the average for work done to date is between 4,000 and 6,000 cubic yards per mile. The standard width of roadbed is 30 feet with a ditch on each side 2 feet wide at the bottom and 2 feet deep. Where springs are encountered or the subgrade is wet, subdrainage is provided by the use of agricultural tile.

BRIDGES

All new bridges have steel superstructures, reinforced concrete floors and mass or reinforced concrete substructures. They are designed for 20 tons. When over 20 feet in clear span, they do not receive federal aid.

CULVERTS

All new cross culverts, that is those under the highway, are of the reinforced concrete flat top type with protecting end walls. In the early stages of the work, some concrete pipe, encased in concrete, was used but this type is not now being put in. Side entrance culverts are constructed of concrete or vitrified clay pipe, the end being protected by hand laid rip rap or rough rubble walls.

ROAD SURFACE

Gravel for construction purposes is laid in courses 3 inches to 4 inches thick and each course is allowed to consolidate with traffic before the application of the next course. Rolling is not resorted to except in cases where the gravel is of such a character that it does not consolidate readily under traffic. A considerable amount of experimental work has been done for the surface treatment of gravel roads for the purpose of preserving the surface and keeping down dust. Calcium chloride has been found generally more satisfactory than oil for such purposes, and its use is being extended as rapidly as possible.

Waterbound macadam, when used as a finished surface, is from 7 to 8 inches in thickness and is laid in two courses, the lower course being 4 to 5 inches and the upper course 3 to 4 inches in thickness. When used as a base for a more permanent surface, waterbound macadam is generally laid in one course 5 inches to 6 inches in thickness. In swamps and at other points where the subgrade is soft, macadam surface is laid on a rubble base which varies in thickness from 8 to 12 inches. It has been found that waterbound macadam roads deteriorate rapidly if not protected by surface treatment. The practice in Ontario, is, now, to give all such roads surface treatment with road oil.

Bituminous Macadam.—This type of pavement is laid in depths of 3 and 4 inches and both asphaltic and tar binders are in use. Many of the Ontario limestones are not suitable for this type of road, consequently the mileage of bituminous macadam being constructed is not large in proportion to the total work done.

Bituminous concrete—Surface is laid in two courses, each 1½ inches in thickness. For the lower course, coarse aggregate open binder is the usual type adopted, the upper course being a stone filled sheet asphalt. The standard base for bituminous concrete is either cement concrete 5 inches thick or waterbound macadam 5 to 8 inches tbick.

Cement Concrete.—The standard thickness for cement concrete pavement, 20 feet wide, is 8½ inches at the centre and 6 inches at the sides, the upper surface being finished to an arc of a circle with a camber of 2½ inches.

Grades.—There have been no grades steeper than seven per cent constructed on Federal Aid work, and in general five per cent is the limiting grade. The steep, narrow, dangerous hill is now almost a thing of the past on the Provincial System of highways.

Curvature.—Great progress has been made in the past year in easing sharp curves and right angle bends. The "banking" of curves is now standard and is being generally carried out with the result that many dangerous curves have been rendered safe.

COSTS

The following table gives the average cost per mile for each type of highway constructed under federal aid:—

	Per mile
Cement concrete	$40,600
Bituminoud concrete	58,575
Waterbound macadam	26,794
Gravel	10,958
All types	27,334

PAYMENTS

The total allotment, for the province of Ontario, from the federal appropriation under the Canada Highways Act, is $5,877,275. The province has received under this appropriation $3,374, 247.29 to date, leaving a balance due of $2,503,027.71.

Province of Prince Edward Island

The public roads and highways of the province of Prince Edward Island are under the control of the Commissioner of Public Works and under him is a provincial engineer, who, with his staff, has supervision over all construction and maintenance road work, including the improvement of roads with Federal Aid according to the provisions of the "Canada Highways Act."

In the province of Prince Edward Island no gravel deposits have been found suitable for road surfacing and even gravel for concrete has to be obtained from the mainland. The underlying rock of red sandstone is too soft and friable for crushing, and rock of a harder nature required for construction purposes has also to be imported. Under these circumstances, the construction of roads with hard surface of gravel, macadam or concrete has not been attempted.

A standard improved earth road has been adopted for all highways being improved under the Canada Highways Act, within a road surface 18 feet wide. The underlying soil consists of a mixture of red clay and a fine reddish sand, the proportion of sand being greatest in the eastern part of the province. It has been found that, with the proper proportion of clay and sand, a very good road surface is obtained, and when well crowned, sheds the water very quickly and drying out presents a hard wearing surface for traffic. Where the road surface is all clay it tends to rut under traffic in wet weather and, where there is too large a proportion of sand, there is a wash to the foot of the grades, making there an

accumulation of fine loose sand difficult for traffic. It is the constant endeavour of the engineer in charge of road imporvements to surface with the best proportion of sand and clay obtainable.

In the unimproved roads, culverts are generally of wood construction. These are being replaced by concrete culverts corrugated iron pipes and, in tidal estuaries, by creosoted pile trestles with concrete slab floor.

From the passing of the Canada Highways Act in 1919 until the end of the fiscal year, March 31, 1922, the province entered into agreements, under the provisions of the Canada Highways Act, for the improvement of 20 projects, agregating 181·25 miles in length. Of this mileage 45·5 miles were completed in 1921, and the remainder, 135·75 miles, were completed during the present fiscal year. During the present fiscal year, ending March 31, 1923, further agreements were completed for the improvement of 156·75 miles. This consists of 16 projects (No. 24 to No. 39 inclusive). Several of these projects have been practically completed, but, as some work has to be done on all next spring, none of the projects undertaken in 1922 are shown as completed.

The total mileage under agreement is this 338 miles; the total completed 181·25 miles, and the mileage under construction 156·75 miles.

The average cost per mile in this province, for a completed 18 feet wide clay road, with new culverts, but not including the cost of crossing tidal estuaries, is $2,358 per mile.

The general programme map shows a system of 850 miles of road and the federal grant is $603,455.

Province of Quebec

The general programme map for the province of Quebec shows a system of main roads, covering 2,949·13 miles from which road projects may be selected.

Up to June 30 last, 80 agreements had been completed for 631·6 miles, estimated to cost $7,145,093.31, the subsidy on which would be $2,858,037.37.

The provincial subsidy under the Act is $4,748,420 of which $1,741,781.90 has been paid to date.

There has been completed up to December last:—

	Miles
Cement concrete	22·429
Asphaltic concrete	52·510
Bituminous macadam	18·422
Waterbound macadam oiled	38·221
" "	10·700
Gravel	283·630
Stone shoulders	9·230
Miscellaneous works	1·520
	436·662

There was also 123·3 miles of various classes of pavement under construction, but not complete at the above date.

It would appear that under the system by which the local municipalities in the province of Quebec control the question of road expenditures and the class of pavement to be put down within their respective limits, sometimes results in delaying the work of completing a road, as differences of opinion have to be adjusted as between the Provincial and Municipal authorities as regards the location, class of pavement and cost of the road through a municipality.

Improved roads in Quebec are graded from 20 to 24 feet wide, and gravelled the full width of the grade. The gravel in this Province is usually put on 12 inches deep in the centre, running out to a feathered edge at the sides.

At the present time this province has a large number of short isolated sections of work under construction. This is caused, as above stated, by the necessity of having the compliance of the local municipal authorities to the improvement of the highway which they control.

However, as the local authorities fall into line the unimproved sections will be completed, so that there will then be long stretches of the main highway, now under construction, continuously improved.

The improved roads are being well drained. All new culverts are of reinforced concrete, as pipe culverts of either concrete or corrugated iron are not favoured by the provincial engineers.

There has also been considerable money expended on the elimination of bad grades and dangerous curves.

In the old Quebec roads there are many right angle turns, some of which for motor traffic are in dangerous locations, some have been improved by diverting the road, others still remain, but I presume they will also be improved as time and money will be available.

The provincial engineers are to be commended on the care which has in all cases been taken to secure a solid foundation for the improved highways that are unavoidably located through bogs and other soft places. These are usually filled up with field stones to sub-grade, thereby securing a solid foundation for the pavement that will last for all time.

Highway work in this province is under the direction of the Minister of Highways, his deputy and chief engineer, the latter having a large staff of district and resident engineers.

The Provincial Government also assume the total cost of maintaining all highways that have been improved under federal aid.

Province of Saskatchewan

GENERAL

The amount of the federal grant is $1,806,255. The general map, approved July, 1920, shows a system of highways of approximately 7,311 miles, which includes four interprovincial highways. Twenty-five projects, Nos. 1 to 23 inclusive, and 26 and 27, a total length of 5,338 miles, have been approved.

These projects have been divided into 191 sections, and sixty of these sections, with a total length of 1,518 miles, are under agreement. The present policy of this province is to construct well-drained earth roads, surfacing with gravel only on portions where the material in the grade is unsuitable, or where traffic warrants the expenditure. The width, in general, of the highways constructed, is 20 feet, but this has been reduced to 18 feet on eight sections.

GRADING

The grading was done by ordinary methods, slips, fresnoses, wheelers, blade and elevating graders being used. There were no tractor outfits on the work in this province. Six hundred and fifteen miles of grading have been completed and 160 miles is about 80 per cent complete.

There have been 18 miles surfaced with gravel and 39 miles of sand surfaced with clay.

CULVERTS

There have been 21 reinforced concrete, 1,840 concrete pipe, 1,897 corrugated iron pipe and 230 timber culverts (Douglas fir) installed.

EXPENDITURES

The subsidy payable on the work done to December 31, 1922, amounts to $738,241.18. The amount of the federal grant is $1,806,255, therefore, the percentage earned is about 41 per cent, and the amount yet to be earned is $1,068,013.82.

PROGRESS

Of the 60 sections under agreement, work has been commenced on 54 of them and 16 have been completed. The length of the sections under agreement is 1,518, miles.

The total work done to the end of December, 1922, on all sections under agreement is 615 miles of grading completed, 160 miles 80 per cent complete, 18 miles of gravel surfacing, 39 miles of clay surfacing. There have been 21 reinforced concrete, 1,840 concrete pipe, 1,897 corrugated iron pipe and 230 timber culverts installed.

COSTS

The estimated cost of the 1,447 miles under agreement is $2,976,902.21. The average cost per mile is $2,050. The actual average cost of the 615 miles of grading completed and the 160 miles which is about 80 per cent complete, is $2,300 per mile. The average cost of the 18 miles of one-coat gravel surfacing is $1,800 per mile, making a total of $4,100 per mile for a one-coat gravel surfaced road. The average cost of the 39 miles of clay surfacing is $3,100 per mile, making the average cost of a clay surfaced road $5,400 per mile.

FULFILMENT OF AGREEMENTS

The terms of the agreements have been fulfilled with the exception of the time clause.

MAINTENANCE

During 1922, the maintenance department was reorganized. This department now consists of superintendent of highways, district superintendents, local supervisors and patrolmen. The work, in general, was well maintained during 1922.

GORDON GRANT,
Chief Engineer.