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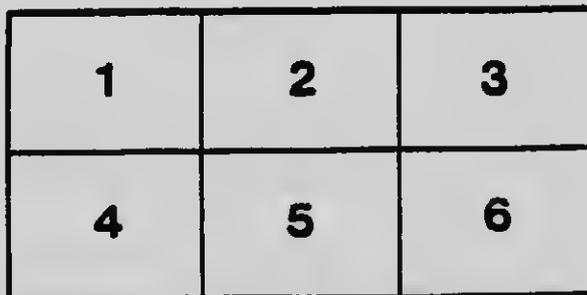
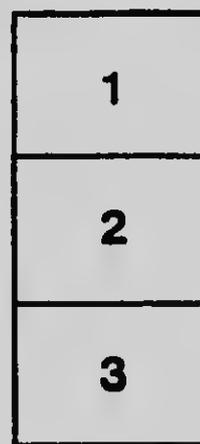
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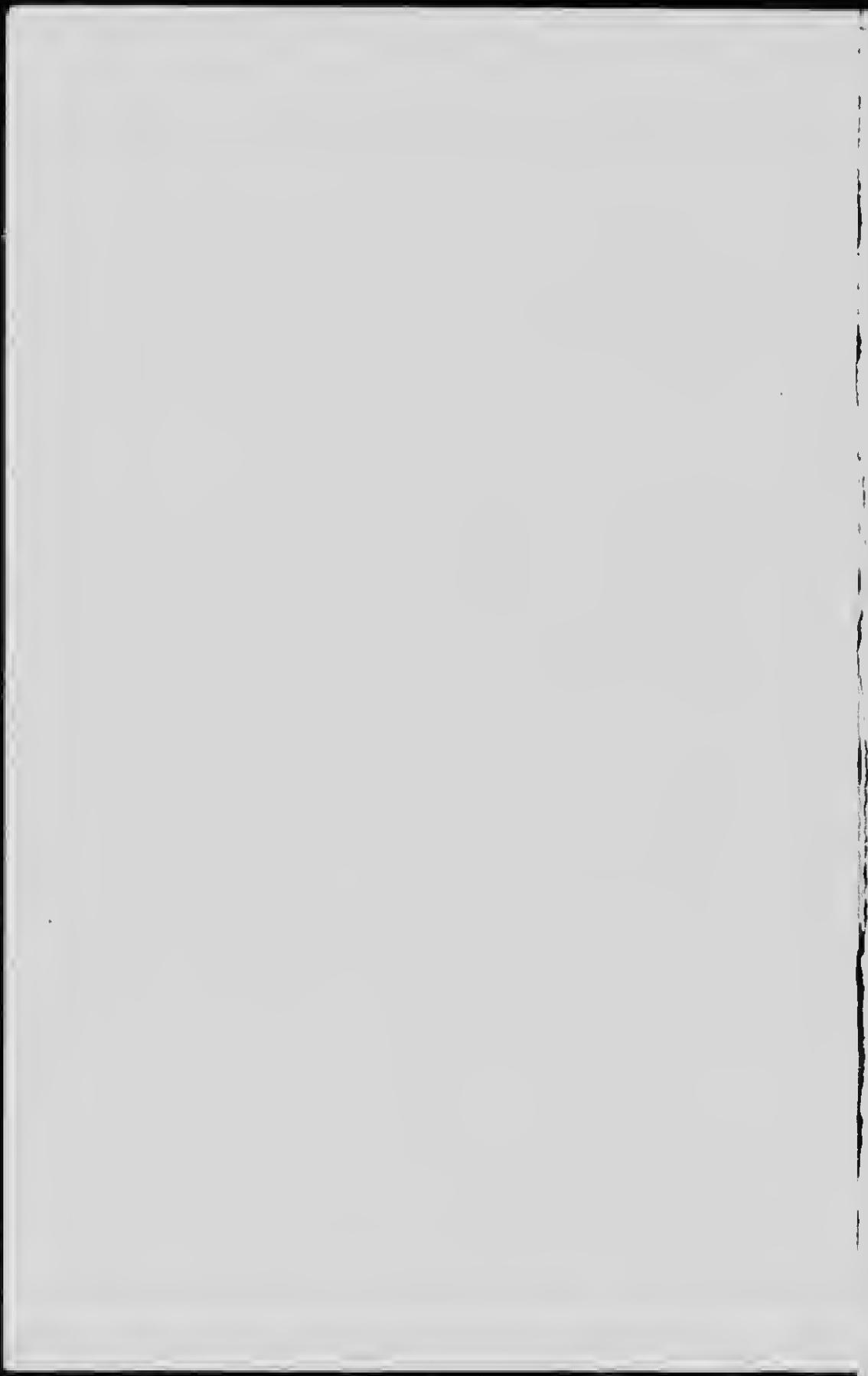
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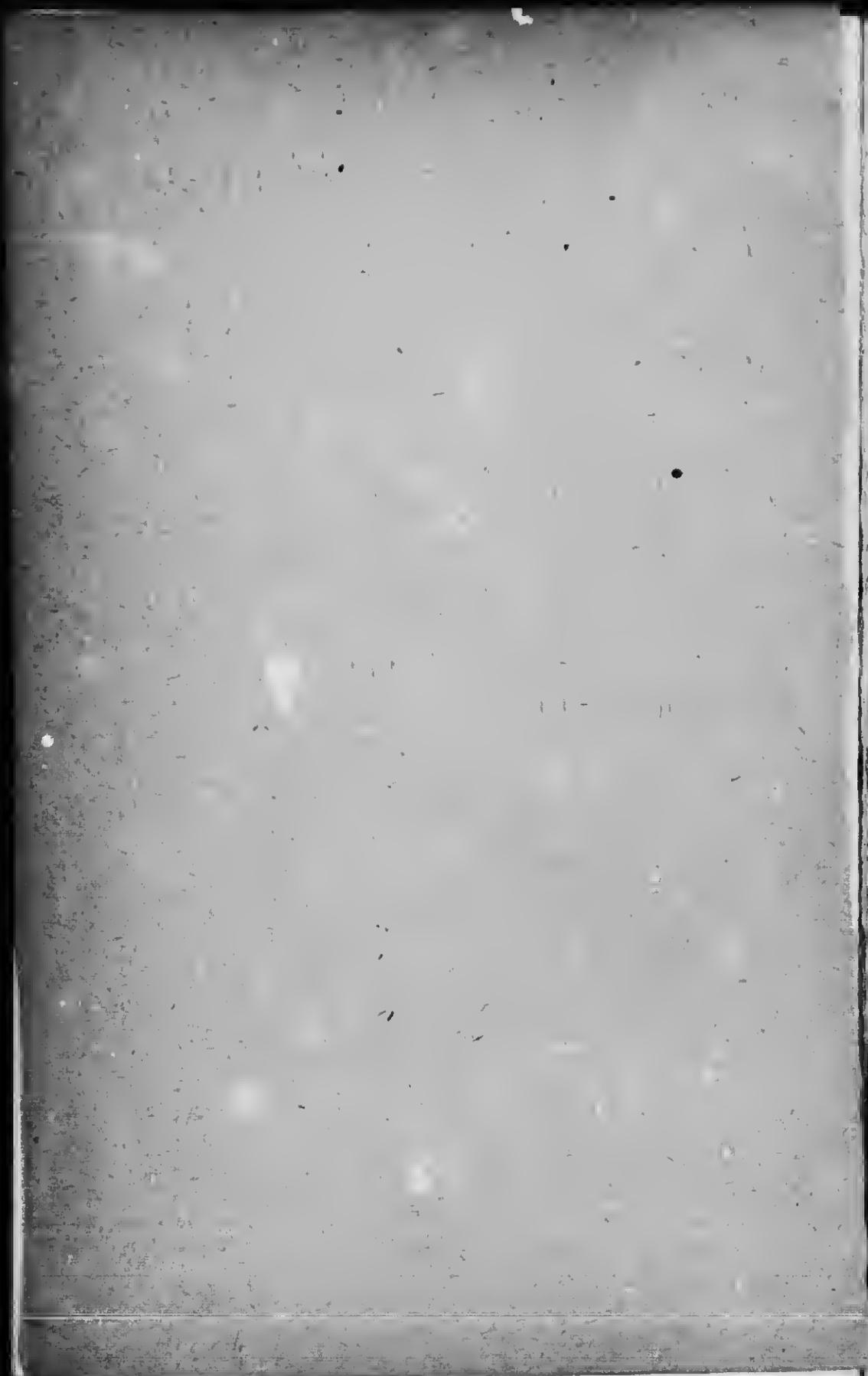
**GRAND TRUNK RAILWAY SYSTEM**

**1896 - 1907.**

*SEE SUMMARY, PAGE 15.*

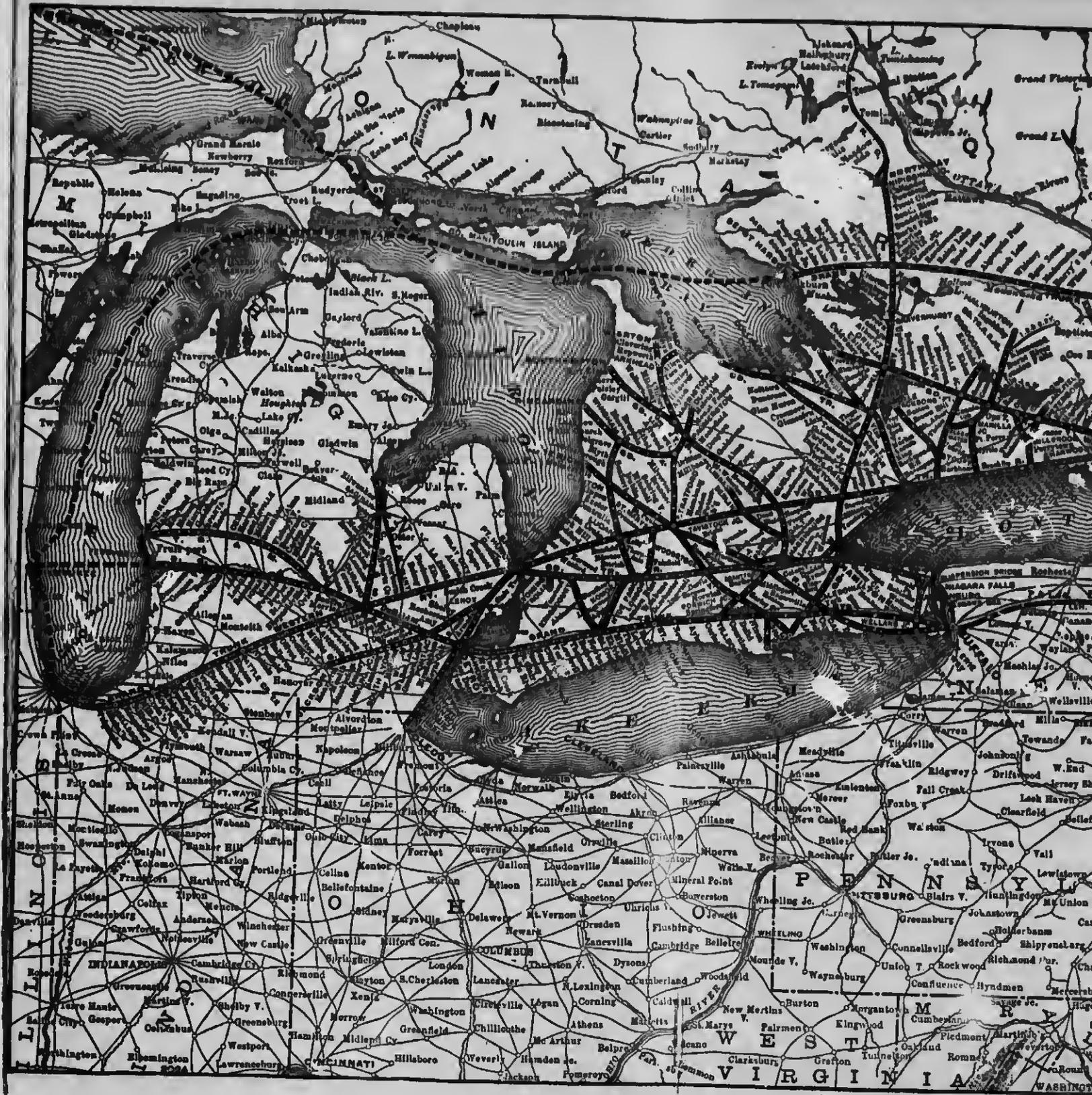
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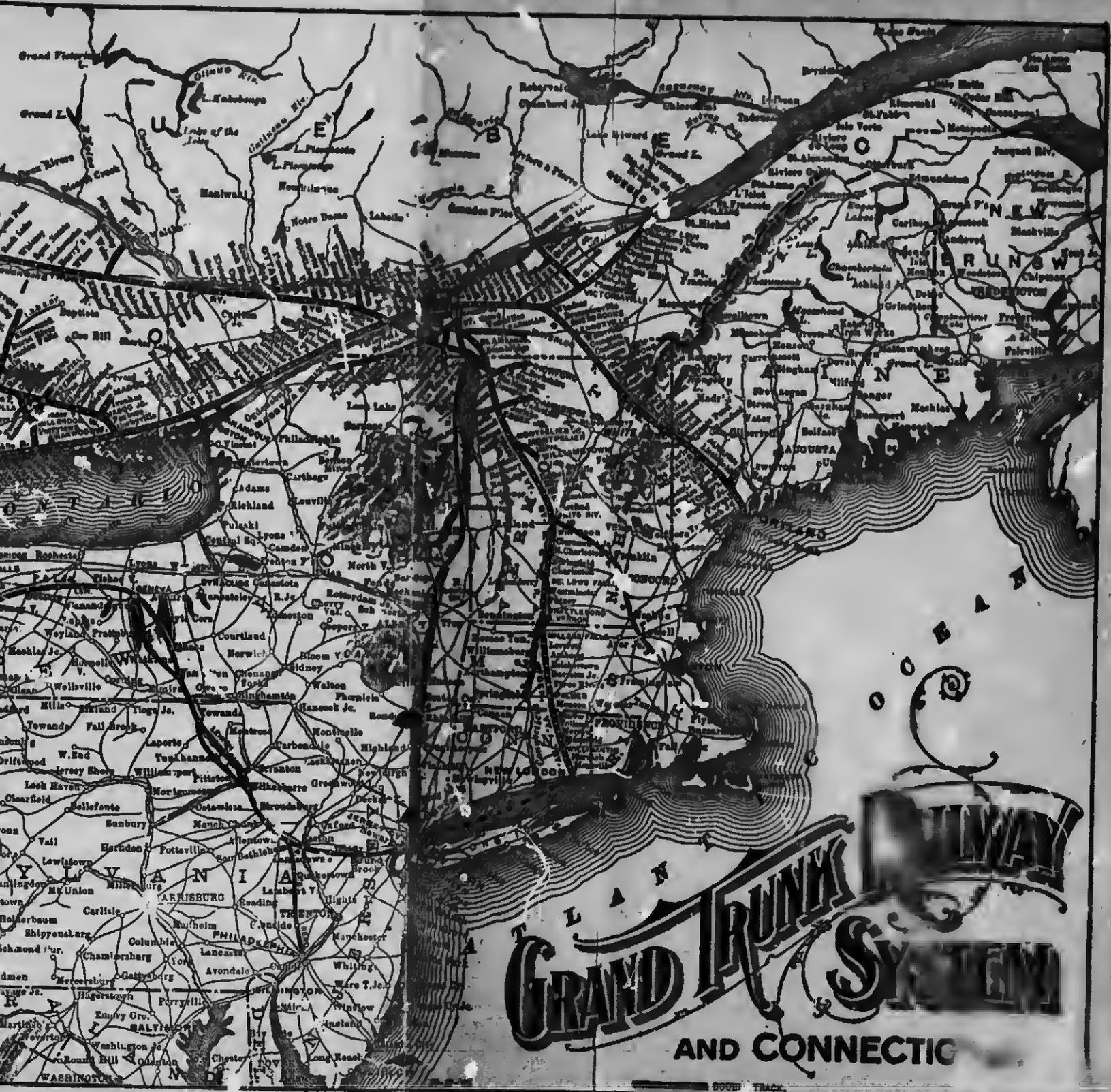
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# GRAND TRUNK SYSTEM

AND CONNECTIC

SCALE: 1:100,000



# THE GRAND TRUNK RAILWAY COMPANY OF CANADA.

## DIRECTORS.

- Sir CHARLES RIVERS WILSON, G.C.M.G., C.B., 31 Port Street, London, E. W., England, President.
- ALFRED W. SMITHERS, Esq., Homefield, Knockholt, Sevenoaks Eng. Vice-President.
- GEORGE VON CHAUVIN, Esq., 12 Queen Anne's Gate, London, Eng.
- JOHN ALAN CLUTTON-BROCK, Esq., Oakfield, Weybridge, England.
- Colonel FREDERICK FIRBRACE, R.E., 18 Old Queen Street, Westminster, London, S.W., England.
- M. RICE GEORGE CARR GLYN, 60 Lombard Street, London, E.C., Eng.
- A. SANDER HUBBARD, Esq., Homefield, St. Stephen's Road, Ealing, London, W., England.
- Sir HENRY MATHER JACKSON, BART., 19 Eastcheap, London, E.C., Eng.
- Right Honble. Lord WELBY of ALLINGBORO, G.C.B., 22 Stratton Street, Piccadilly, London, W., England.
- Sir W. LAWRENCE YOUNG, BART., 35 Lower Seymour Street, Portman Square, London, W., England.

## EXECUTIVE.

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- ALFRED W. SMITHERS, Vice-President, London, Eng.
- CHAR. M. HAYS, Second Vice-President & Genl. Mgr., Montreal, Que.
- E. H. FITZGON, Third Vice-President, Montreal, Que.
- W. WAINWRIGHT, Fourth Vice-President, Montreal, Que.
- M. M. REYNOLDS, Fifth Vice-President, Montreal, Que.
- R. S. LOGAN, Assistant to Second Vice-President, Montreal, Que.
- H. H. NORMAN, Secretary, London, Eng.
- H. DEER, Assistant Secretary, London, Eng.

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- M. K. COWAN, K.C., Assistant Solicitor, Montreal, Que.
- A. E. BUCKETT, Solicitor, Montreal, Que.
- C. A. HIGHT, Solicitor, Portland, Me.
- HON. HARRISON GREER, Attorney, Detroit, Mich.
- L. C. STANLEY, Attorney, Detroit, Mich.
- KESTINGER, GALLAGHER, ROONEY & RODGERS, Attorneys, Chicago, Ill.
- E. DONALD, Tax and Land Commissioner, Montreal, Que.

## FINANCIAL AND ACCOUNTING.

- M. M. REYNOLDS, Fifth Vice-President, Montreal, Que.
- FRANK SCOTT, Treasurer, Montreal, Que.
- G. W. ALEXANDER, Local Treas. Lines West of Detroit and St. Clair Rivers, Detroit, Mich.
- W. H. ARBLEY, General Auditor, Montreal, Que.
- J. M. ROYVEAL, Auditor of Disbursements, Montreal, Que.
- GEO. B. FILGIANO, Auditor of Passenger Accounts, Montreal, Que.
- W. CLARK, Auditor of Freight Accounts, Montreal, Que.
- B. A. NEISSER, Freight Claims Auditor, Montreal, Que.
- I. McCOWAN, General Car Accountant, Montreal, Que.

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## TRANSPORTATION, MAINTENANCE AND CONSTRUCTION.

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W. G. BROWNLEE..... General Transportation Manager..... Montreal, Que.  
D. CROMBIE..... Asst. to General Transpa. Mgr..... Montreal, Que.  
JOSEPH HOBSON..... Consulting Engineer..... Montreal, Que.  
H. O. KELLEY..... Chief Engineer..... Montreal, Que.  
WM. MCNAB..... Principal Assistant Engineer..... Montreal, Que.  
M. S. BLAICKLOCK..... Engineer Maintenance of Way..... Montreal, Que.  
W. D. ROBB..... Superintendent of Motive Power..... Montreal, Que.  
J. COLEMAN..... Superintendent of Car Department..... Montreal, Que.  
FRED. PRICE..... Superintendent Car Service..... Montreal, Que.  
W. W. ASHALD..... Superintendent of Telegraph..... Montreal, Que.  
C. H. MCLEOD..... Superintendent of Time Service..... Montreal, Que.  
H. E. WHITTENBERGER..... Superintendent, Eastern Division..... Montreal, Que.  
H. F. COYLE..... Assistant Superintendent..... Montreal, Que.  
L. G. COLEMAN..... Assistant Superintendent..... Belleville, Ont.  
M. DONALDSON..... Superintendent, Ottawa Division..... Ottawa, Ont.  
W. R. TIFFIN..... Superintendent, Northern Division..... Allandale, Ont.  
P. J. LYNCH..... Assistant Superintendent..... Allandale, Ont.  
U. E. GILLEN..... Superintendent, Middle Division..... Toronto, Ont.  
A. J. NIXON..... Assistant Superintendent..... London, Ont.  
C. S. CUNNINGHAM..... Superintendent, Southern Division..... St. Thomas, Ont.  
F. W. EGAN..... Superintendent, Western Division..... Detroit, Mich.  
J. ALEX. HUTCHISON..... Chief Medical Officer..... Montreal, Que.  
W. H. SMITH..... Manager, Canada Atlantic Transit Co. Montreal, Que.

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W. G. BURRELL..... Stationery Agent..... Montreal, Que.  
J. W. KNEESHAW..... Assistant Stationery Agent..... Detroit, Mich.  
W. CUTIBBERT..... Fuel and Tie Agent..... Montreal, Que.

## TRAFFIC.

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JOHN PULLEN..... Assistant Freight Traffic Manager..... Montreal, Que.  
C. A. HAYES..... General Freight Agent..... Montreal, Que.  
R. L. BURNAP..... Assistant General Freight Agent..... Chicago, Ill.  
A. E. ROSEVEAR..... Assistant General Freight Agent..... Montreal, Que.  
E. ARNOLD..... Freight Claim Agent..... Montreal, Que.  
A. F. READ..... Foreign Freight Agent..... Montreal, Que.  
F. R. PORTER..... Asst. Foreign Freight Agent..... Toronto, Ont.

### PASSENGER.

W. E. DAVIS..... Passenger Traffic Manager..... Montreal, Que.  
G. T. BELL..... General Passenger & Ticket Agent..... Montreal, Que.  
OEO. W. VAUX..... Asst. General Pass. & Ticket Agent..... Chicago, Ill.  
H. G. ELLIOTT..... Asst. General Pass. & Ticket Agent..... Montreal, Que.  
W. P. HINTON..... Asst. General Pass. & Ticket Agent..... Montreal, Que.  
J. E. QUICK..... General Baggage Agent..... Toronto, Ont.  
H. R. CHARLTON..... Advertising Agent..... Montreal, Que.  
E. W. SMITH..... Superintendent, Dining & Parlor Car  
Service..... Toronto, Ont.

## EUROPEAN TRAFFIC AGENCY.

F. C. SALTER, European Traffic Manager, 20 Water Street, Liverpool.  
F. S. JONES, General Agent, 44, 45 & 46 Leadenhall Street, London, E.C., Eng.  
J. M. WALKER, General Agent, 75 Union Street, Glasgow.  
J. W. DAWSON, 7 Haymarket, Sheffield, England.  
PIIT & SCOTT, 47 Rue Cambon, Paris, France.

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## THE GRAND TRUNK RAILWAY SYSTEM

### COMPRISING

	Miles
THE GRAND TRUNK RAILWAY COMPANY OF CANADA.....	3949
GRAND TRUNK WESTERN RAILWAY.....	336
DETROIT, GRAND HAVEN & MILWAUKEE RY.....	191
TOLEDO, SAGINAW & MUSKOGON RY.....	116
CINCINNATI, SAGINAW & MACKINAW R.R.....	53
Total.....	4645
Total Mileage 1896.....	4186
Increase (net).....	459
	or 11%

### Review of Operation and Financial Results for Twelve Years 1896 to 1907 inclusive, under Present Management.

	1896	1907	Increase	%
Loan Capital.....	\$122,595,584	\$137,526,397	\$14,930,813	12.2
Share Capital.....	198,627,324	215,741,609	17,114,285	8.6
Rentals.....	712,449	712,119	Cr. 330	
Fixed Charges, including rentals payable.....	7,282,733	7,514,896	232,163	3.2
Dividends paid.....	None	4,100,139	4,100,139	....

NOTE.—Loan and Share Capital shown is net amount outstanding, and does not include the securities of subsidiary Companies held by the Grand Trunk Railway Company of Canada.

The following synopsis will show what has been accomplished in the direction of improving the earning and carrying capacity of the System, strengthening bridges, double tracking and laying heavy rail, and by the erection of new and commodious stations at the most important points; new engine houses, and coaling facilities, and the acquisition of new equipment, also the extension of sidings to industrial plants for the twelve year period, January 1st, 1896, to December 31st, 1907, inclusive.

**Additional Single Track Mileage, added between January 1st, 1896, and December 31st, 1907.**

Meaford Jct. to Meaford Harbor.....	2.50 Miles
Lynden, Ont., to Brantford, Ont.....	4.09 "
Canada Atlantic Ry.....	<u>463.50 "</u>
Total.....	<u>470.09 Miles</u>

**DOUBLE TRACK MILEAGE :**

The total length of double track in existence at January 1st, 1896, was as follows:—

	MILES.	
Montreal to Toronto.....	268.05	
Toronto to Hamilton.....	38.75	
Glencoe to Windsor.....	79.58	
Thornton, Ill., to C. & W. I. Jct.....	20.41	
Sundry small pieces at various stations aggregating.	18.82	
		<u>425.61</u>

The following sections have been opened to December 31st, 1907:—

Balance between Montreal and Toronto.....	65.56	
Montreal to St. Johns.....	20.67	
Hamilton to Niagara Falls.....	40.89	
Port Robinson to Welland.....	6.98	
Hamilton to Sarnia.....	135.50	
Port Huron and Chicago.....	302.66	
St. Lambert and Ste. Rosalie (31.85 M.) of which there has been opened.....	28.56	
Brantford to Alford.....	4.05	
Detroit to Milwaukee Jct.....	2.67	
Sundry small pieces at various stations aggregating.	1.13	
		<u>608.67</u>
Increase.....	140%	

Making a total mileage of double track in operation to December 31st, 1907, of..... 1034.28

This large increase in construction of second main track of 608 miles, involved extensive changes in grades; raising or lowering the line in many places, besides reducing curvatures, and avoiding unfavorable locations which were expensive to maintain and operate.

Prior to 1896, there had been expended on double track work the sum of..... \$ 5,843,669  
 Since that date there has been expended.. 9,089,994  
 Making a total to December 31st, 1907, of. \$14,933,663

Extensive improvements have also been made in reducing grades on many other portions of the line, and replacing with rail weighing 80 to 100 lbs. per yard, the light sections of rail formerly in use.

### NEW RAIL

The following statement shows the mileage, weight, and cost of the new rails (including double track) put into the road-bed during the years 1896 to 1907 inclusive:—

Year.	80-lb. tons.	90-lb. tons.	100-lb. tons.	Miles.	Cost.
1896	17,723	.....	.....	142	\$ 392,685
1897	17,770	.....	200	143	323,620
1898	35,050	.....	.....	280	630,895
1899	32,577	.....	300	262	648,465
1900	45,696	1,620	.....	376	1,416,540
1901	34,787	.....	.....	278	906,050
1902	52,380	.....	200	420	1,345,455
1903	60,900	.....	.....	487	1,599,025
1904	32,011	.....	4,728	286	824,020
1905	33,590	.....	.....	269	958,680
1906	40,440	.....	4,215	350	1,364,545
1907	20,556	.....	52,554	500	2,327,235
	<u>423,480</u>	<u>1,620</u>	<u>62,197</u>	<u>3,793</u>	<u>\$12,737,215</u>

The distances laid with the different weights of rail for the period are as follows:—

80-lb. rail.....	3387 miles
90-lb. " .....	11 "
100-lb. " .....	395 "
Total.....	<u>3793 miles</u>

The new heavy weight rails were used to replace the lighter weight rail (70 lbs. per yard and under) which has now practically all been removed from main tracks,—such as suitable being placed on branches, sidings, spur tracks, etc.

### SIDINGS TO INDUSTRIAL WORKS

The following mileages of Industrial Tracks have been constructed during the years mentioned:—

YEAR.	MILES.
1897. ....	4.05
1898. ....	11 85
1899. ....	13 14
1900. ....	15.09
1901. ....	19.70
1902. ....	19.72
1903. ....	19.67
1904. ....	18.95
1905. ....	22.31
1906. ....	24.04
1907. ....	15.09
Total Miles.....	183.61

### NEW STATIONS, ETC.

The undermentioned amounts have been expended under the headings shown:—

Year.	New Stations.	New Engine Houses.	New Coal Chutes.
1896	\$ 8,669	\$.....	\$.....
1897	8,406	.....	.....
1898	20,758	.....	.....
1899	40,882	.....	3,582
1900	28,530	576	47,566
1901	25,235	17,839	104,684
1902	101,423	1,762	12,189
1903	167,959	55,481	8,641
1904	88,816	127,085	31,312
1905	156,382	151,010	51,012
1906	61,089	109,482	30,404
1907	87,732	145,170	27,119
	<u>\$795,881</u>	<u>\$608,405</u>	<u>\$356,471</u>

Total for new buildings..... \$1,760,757.

To this should be added the amount expended in the construction of two handsome new fireproof buildings in the business center of the City of Montreal for the General Offices of the Company, costing \$1,050,000.

The number of new stations built since 1896, is as follows:

Value \$2,000 and under .....	79
" between \$ 2,000 and \$ 4,000.....	54
" " 4,000 and 6,000.....	16
" " 6,000 and 10,000.....	6
" " 10,000 and 20,000.....	6
" \$22,000.....	3
" 37,000.....	1
" 43,000.....	2
" 46,000.....	1
" 54,000.....	2
	170
Total number built.....	170

Besides a number of small station buildings and shelters for passengers at flag stations in sparsely populated districts.

#### RENEWING AND STRENGTHENING BRIDGES

Under this head the following expenditures have been made:—

YEAR.	AMOUNT.
1896. ....	\$ 781,274
1897. ....	158,002
1898. ....	413,844
1899. ....	399,675
1900. ....	623,265
1901. ....	231,550
1902. ....	629,733
1903. ....	791,955
1904. ....	472,672
1905. ....	27,832
1906. ....	379,000
1907. ....	627,642

Total ..... \$5,536,444

In addition to the above there was spent on the reconstruction and double tracking of the Victoria Bridge at Montreal the sum of ... \$1,883,678  
and on the renewal and strengthening of the International Bridge at Buffalo..... \$ 291,950  
making the total expenditure on account of bridges..... \$7,712,072

The old Suspension Bridge at Niagara Falls has been entirely replaced by the Bridge Company owning and leasing it to the Grand Trunk, with a double track steel arch span, capable of carrying the heaviest of modern locomotives. The Grand Trunk Railway Company has a perpetual and exclusive lease of the railway floor of this bridge.

### EXPENDITURE ON NEW EQUIPMENT

Year.	Engines.	Passenger Cars.	Freight Cars.	Total.
1896	\$ 80,196	\$ 24,000	\$ 128,705	
1897	8,793	48,530	293,305	
1898	237,875	191,156	877,657	
1899	333,328	97,555	247,308	
1900	326,271	145,087	936,411	
1901	344,619	117,642	511,104	
1902	391,945	116,688	1,642,055	
1903	475,243	74,943	2,118,691	
1904	424,944	219,477	230,022	
1905	335,398	29,422	604,178	
1906	1,428,305	142,580	985,287	
1907	1,668,798	70,415	4,071,177	
Total...	\$6,055,715	\$1,911,495	\$12,646,500	\$20,613,710

### LOCOMOTIVES

In 1895, the total number of locomotives on all the lines comprising the System amounted to 1,036, a considerable proportion of which consisted of engines of light tractive power. The total haulage capacity of the engines combined was..... 1,947,915 tons.

In 1907, the stock was 1,111 engines with haulage capacity of..... 3,577,324 tons.  
An increase over 1896 of..... 1,629,409 tons.  
or 83.6%

The following figures show the haulage capacity per engine, together with the percentage of increase at the periods mentioned:—

Year.	No. of Engines.	Total capacity tons.	Haulage capacity per engine tons.	Percentage of increase over 1896	
				Total Capacity.	Per Engine.
1896	1,038	1,947,915	1,876	....	....
1900	994	2,106,261	2,119	8.1	13.0
1904	996	2,564,326	2,575	31.6	37.2
1907	1,111	3,577,324	3,220	83.6	71.7

### FREIGHT CARS

In 1896, the total number of freight cars in use for traffic was 25,515, with a total tonnage capacity of..... 473,877 tons.

In 1907, there were in use 32,019 freight cars with a total capacity of..... 896,035 tons.  
 An increase over 1896 of..... 6,504 cars.  
 and in tonnage capacity of..... 422,158 tons,  
 or 89.1%

The following table shows the tonnage capacity for the years mentioned, with the percentages of increases:—

Year.	Total No. of Cars.	Tonnage Capacity.	Average Capacity per car.	Percentage of increase over 1896	
				Tonnage Capacity.	Per Car.
1896	25,515	473,877	18.57	....	....
1900	25,341	534,819	21.10	12.7	13.6
1904	28,689	733,915	25.58	54.9	37.8
1907	32,019	896,035	28.00	89.1	50.8

The above figures include Canada Atlantic Railway equipment, which being largely of old type, and small capacity, unfavorably affect the comparisons.

The following statement gives in a summarized form the amount expended under the foregoing heads:—

New Rails.....	\$12,737,215
New Double Track.....	9,089,994
New General Office Buildings.....	1,050,000
New Stations.....	795,881
New Engine Houses.....	608,405
New Coal Chutes.....	356,471
Renewing Bridges.....	7,712,072
New Engines.....	6,055,715
New Passenger Cars.....	1,911,495
New Freight Cars.....	12,646,500
Total.....	<u>\$52,963,748</u>

The following figures show the increase in the Pay Rolls in each of the undermentioned Departments:

	1898	1907	Increase	%
Conducting Transportation...	\$3,842,921	\$6,474,605	\$2,631,684	68.5
Maintenance of Way.....	1,756,949	3,423,582	1,666,633	94.8
Motive Power Department...	2,983,030	5,903,009	2,919,979	97.9
Car Department.....	913,903	1,670,045	756,142	82.7

The total pay roll figures for the System in the year 1898 (the earliest year with which a reliable comparison can be made) was..... \$ 9,969,717  
and in 1907..... 18,274,427

An increase of..... \$ 8,304,710  
or 83.3%

While much of this increase is due to the larger business handled, a very considerable proportion is due to increases in rates of wages paid to the various classes of employes, ranging from 20 to 30 per cent. in the wages of both skilled and unskilled workmen and corresponding increases in the higher branches of the service.

That the Company has not been unmindful of the welfare of its many employes during the period under review, is evidenced by the liberal amounts appropriated, for the comfort and well being of the men, as shown in the following statement. The Superannuation and Pension Funds minister to the relief of the aged and infirm, the Insurance and Provident Society aiding the sick and injured, and contributing to the welfare of families of deceased employes, while the Railroad Y.M.C.A. has provided for shelter and recreation of employes at the large terminal points.

Statement of amounts contributed by Grand Trunk Ry. System to Associations established for the welfare of its employees, viz.: Superannuation; Insurance and Provident (sickness and death) and Railroad Young Men's Christian Associations (housing and recreation).

Year.	Superannuation & Prov. Fund Assn.	Ins. & Prov. Society.	Y.M.C.A. Assns. Buildings and Maintenance.	Total.
1896	\$12,407	\$12,500	.....	\$24,907
1897	13,905	12,500	\$ 5,808	32,213
1898	14,460	12,500	11,695	38,655
1899	15,452	12,500	18,459	46,411
1900	17,353	12,500	14,301	44,154
1901	18,515	12,500	8,529	39,544
1902	21,536	12,500	14,331	48,367
1903	23,889	12,500	31,529	67,918
1904	26,314	12,500	17,223	56,037
1905	27,625	12,500	18,176	58,301
1906	29,803	12,500	19,309	61,612
1907	33,198	12,500	18,000	63,698
	254,457			
New Pension Fund, 1907	194,667	150,000	177,360	581,817
	\$449,124			

SUMMARY.

Sup. Prov. and Pension Funds.....	\$449,124
Ins. and Prov. Society.....	150,000
R. R. Y. M. C. A.....	177,360
<b>TOTAL.....</b>	<b>\$776,484</b>



The amount charged to Capital during the period 1896 to 1907 for improvements in the railway was \$17,677,927; of which \$2,174,507 was for land required for increased terminal facilities, while \$9,256,416 was spent on new bridges, buildings, double track and other works, and \$6,250,000 on new rolling stock; other additions being made at the cost of revenue.

(To the above should be added the amount of bonds issued for purchase of Canada Atlantic Railway bearing the Grand Trunk's guarantee, \$11,476,404.)

In 1896 the Interest, Rentals, and Fixed Charges, (not including deficiencies of subsidiary companies) amounted to.....	\$ 6,413,092
while in 1907 it was.....	6,768,357
an increase of.....	355,265
	or 5.6%
while the Capacity of the System as represented by the Gross Earnings increased from, in 1896.	\$22,631,488
to, in 1907.....	45,040,526
an increase of.....	22,409,038
	or 99.0%
the Net Earnings of the system increased from, in 1896.....	\$ 5,708,946
to, in 1907.....	10,600,467
an increase of.....	4,891,515
	or 85.7%

The increased carrying capacity of the System is shown in the number of tons moved in the year 1907 as against 1897, the earliest year with which comparisons for the System can be made.

In 1897 the number of tons moved was.....	9,582,677
In 1907 " " " " .....	20,305,275
An increase of.....	<u>10,722,598</u> or 111.9%

The average number of tons of revenue freight carried per train was as follows:—

1897.....	189
1907.....	285
An increase of.....	<u>96 tons or 50.79%</u>

and the tons carried one mile were (millions):—

1897 .....	2,439
1907.....	4,446
An increase of.....	<u>2,007 millions or 82.20%</u>

Had the basis of the train load remained the same in 1907 as in 1897, it would have necessitated additional freight train mileage of approximately seven million seven hundred thousand miles to carry the increased tonnage as shown above. Figured on the basis of an average net expense per train mile for the year 1907, of \$1.10, this would have added to the expenses for the latter year in round figures \$8,470,000.

The number of passengers carried in 1897 was.....	8,095,950
and in 1907.....	13,854,883
An increase of.....	<u>5,758,933</u> or 71.1%.

Summarizing the foregoing, the results are as follows:—

	Total 1907	Increase over 1896	Per Cent.
Total Mileage Operated. . . . .	4,645	459	11.0
Mileage Double Tracks. . . . .	1,034	608	140.0
Loan Capital. . . . .	\$137,526,397	\$14,930,813	12.2
Share Capital. . . . .	215,741,609	17,114,285	8.6
Gross Earnings. . . . .	45,040,526	22,409,038	99.0
Operating Expense* . . . . .	33,451,853	16,529,313	97.7
Net Earnings. . . . .	10,600,461	4,891,515	85.7
Taxes. . . . .	988,212	541,139	121.4
Fixed Charges and Rentals (including deficiencies of subsidiary Companies). . . . .	7,514,896	232,163	3.2
Amt. available for Dividend.	4,100,139	4,100,139	....
Pay Rolls (1898). . . . .	18,274,427	8,034,710	83.3
*Total Tons moved. . . . .	20,305,275	10,722,598	111.9
*Total Tons moved one mile (millions). . . . .	4,446	2,007	82.29
*Freight Train Load (tons).	285	96	50.79
*Number of Pass'gers car- ried. . . . .	13,854,883	5,758,933	71.1
Number of Locomotives. . . . .	1,111	75	6.8
Haulage capacity of Loco- motives (tons). . . . .	3,577,324	1,629,409	83.6
Number of (Revenue) Freight Cars. . . . .	32,019	6,504	25.5
Tonnage capacity of Freight Cars. . . . .	896,035	422,158	89.1

\* These items compare with 1897, the earliest year for which "System" figures are available.

### Central Vermont Ry. and Detroit and Toledo Shore Line.

While there has been but 11% increase in the gross mileage of the "System" proper since 1896, there have been additions made to the railway lines owned and controlled, of the Central Vermont Railway 531 miles, and Detroit and Toledo Shore Line (one half interest) 79 miles, but the figures for these lines are not included in this statement.

### IMPORTANT IMPROVEMENTS.

Mention may be made of some of the special and important improvements that have been completed during the twelve years under review, which have contributed to the greatly enhanced value of the System, as follows:—

**BUILDINGS:**—The two handsome stone fireproof buildings at Montreal used as Headquarters for the General Staff, toward which the City of Montreal generously contributed a valuable site in the center of the City now valued at \$150,000, also agreeing to a fixed low valuation upon site and buildings for a period of years, for assessment purposes.

**ELEVATORS:**—Large and modern grain elevators have been constructed at Montreal and Portland affording greatly needed facilities for handling the increasing grain tonnage of the railway. The steel and concrete fireproof elevator at Montreal having a capacity of 1,080,000 bushels, and costing \$732,000, is equipped to handle both rail and water borne grain, and occupies a desirable site on the tract of Harbor property leased from the Dominion Government through the Montreal Harbor Commission for a term of forty years. This site has an area of 707,000 square feet—16¼ acres—fronting on both sides of the new Windmill Point basin, available for steamships alongside, and for docks and coaling facilities. Two modern elevators having a capacity of 1,000,000 and 1,250,000 bushels, and costing \$237,000 and \$430,000 respectively have also been erected on the property of the Company at Portland Harbour. All these elevators have been constructed with finances obtained by the organization of subsidiary Companies controlled by the Grand Trunk.

### DOUBLE TRACKING :

At January 1st, 1896, the only double tracked portions of the System were between Windsor and Glencoe, 79.5 miles; and Montreal and Hamilton, 372 miles, the latter section had 306 miles completed, leaving gaps between Ste. Annes and Vaudreuil, 4 miles (which required unusually heavy construction work, and made necessary the reconstruction of two expensive bridges across branches of the Ottawa River). Also between Belleville and Scarborough Junction, 104.3 miles, necessitating heavy cuts and fills and the diversion of the line in several places to secure better grades and alignment. Between Sidney and Trenton very heavy earthwork was necessary owing to the line having to be raised about fourteen feet, which enabled a separation of grades to be made at the former level crossing of the Central Ontario Railway Company's tracks at Trenton, thus doing away with the attendant expense and risk; while between Port Hope and Port Union, 47 miles, the former maximum eastbound grade of 1.13 per cent. has been reduced to 0.4 per cent. and the westbound grade has been reduced from 1.03 to 0.66 per cent. The diversions of the line, besides securing much better grades, have resulted in eliminating five curves and reducing the total curvature over this section by 218 degrees.

On the section between Niagara Falls and Sarnia several grades have been reduced, but particular mention should be made of the portion between London and Komoka, Ont., a distance of ten miles, which was especially heavy and difficult work, as it involved the reconstruction and raising, about 12 feet, of two large bridges across the River Thames, and also the elevation of the tracks, and building of subways and culverts within the limits of the City of London. The result is a reduction of the former heavy grade between these points from 1.03 per cent to 0.42 per cent. which makes it now possible for an engine to haul a train of uniform tonnage from the Detroit and St. Clair Rivers through to Toronto and the Niagara frontier.

The double tracking of the Grand Trunk Western Railway and improvements in grades on that line have resulted in a reduction of the eastbound grade from 1.04 to 0.4 per cent. and of the westbound grade from 1.33 to 0.58 per cent., and a diversion of the line near Flint has reduced the curvature by 172 degrees.

### **VICTORIA JUBILEE BRIDGE:**

The reconstruction of the Victoria Bridge over the St. Lawrence River at Montreal which resulted in the double tracking of the railway across the bridge as well as the building of two public carriage ways in place of the former single track tubular structure, while an important improvement of itself, was but a section of a general scheme of improvement which provided for the extension of the double track system westwardly from the Bridge through the Company's terminals, and through that part of the City of Montreal, known as Point St. Charles—three tracks being extended—thence across the Lachine Canal (which intersects the City) by means of a heavy double tracked swing bridge, to a connection with the double tracked main line extending westwardly from Bonaventure Station.

### **ST. CLAIR TUNNEL:**

Another unique achievement which was completed and put into service early in 1908 was the establishment of electric traction for the operation of the single track tunnel at Sarnia, extending under the St. Clair River to Port Huron, Mich., which was commenced in September, 1906.

This change has resulted in the capacity of the tunnel being increased from 75% to 100%, and was rendered necessary because of the fact that the main lines both east and west of the tunnel had been double tracked to the tunnel portals, while branch lines on both sides adding their tonnage and traffic, operated towards creating a congested condition at the tunnel, which frequently existed to such an extent as to cause delay to, and consequent loss of traffic.

OCTOBER, 1908.

OFFICE OF SECOND VICE-PRESIDENT

& GENERAL MANAGER,

MONTREAL, P.Q.



