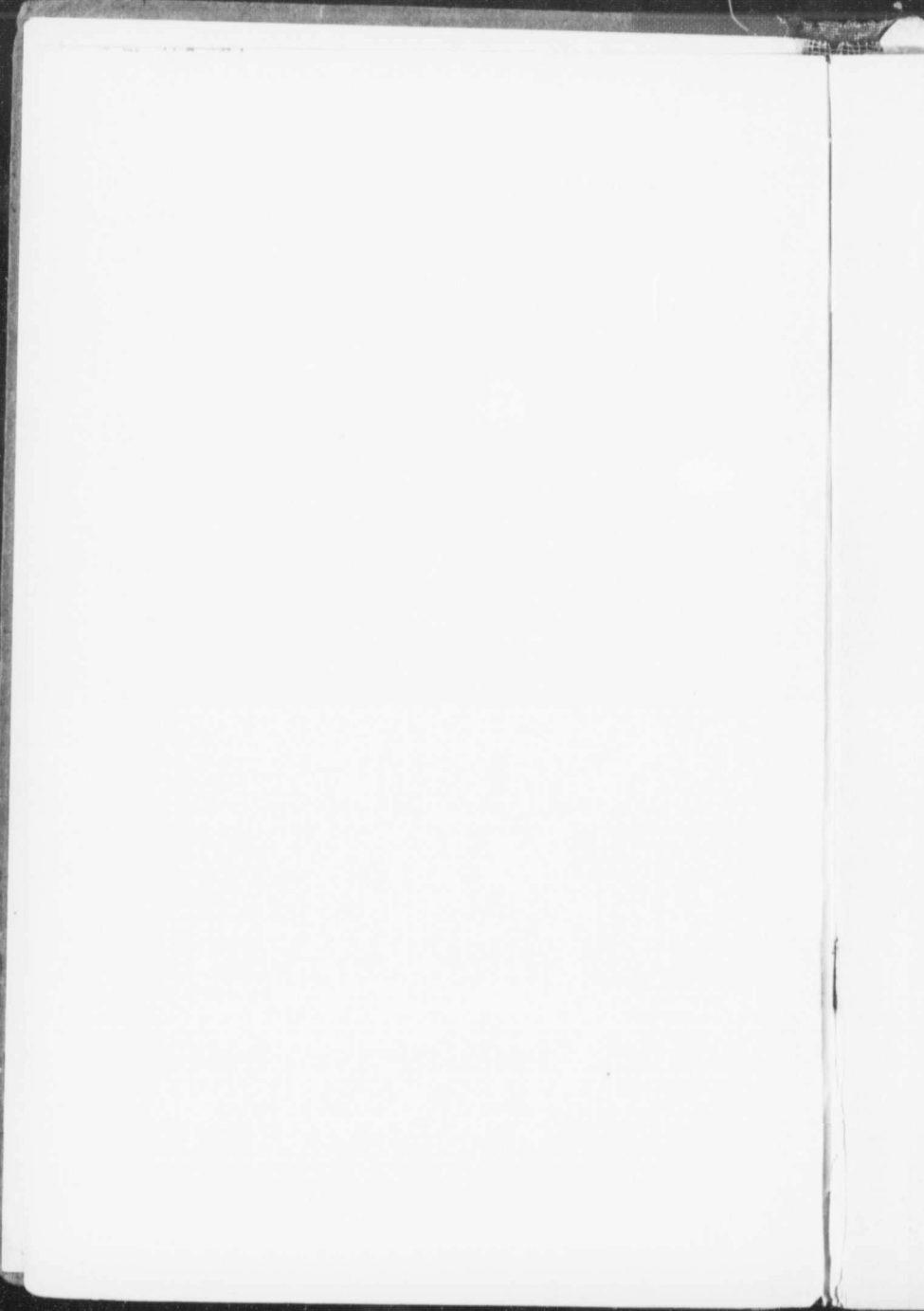


SYNOPTICAL
HISTORY
OF THE
GRAND TRUNK SYSTEM
OF RAILWAYS
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*Synoptical
History ::*

of the

*Grand Trunk System
of Railways*

By R. S. Logan

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March, Nineteen Hundred and Twelve

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SYNOPTICAL HISTORY
OF THE
GRAND TRUNK SYSTEM
OF RAILWAYS.

By R. S. LOGAN.

THE railway era of Canada was inaugurated in 1832 by the incorporation and construction of the Champlain & St. Lawrence Railway, between Laprairie, P.Q., (opposite Montreal) and St. Johns, P.Q., on the Richelieu River, a distance of 17.38 miles, constituting a part of the through rail and water route between Montreal and New York via the Richelieu River, Lake Champlain and the Hudson River. In 1872 this railway was absorbed into the present Grand Trunk Railway, which is generally known as the "Pioneer Railway of Canada". It was chartered in 1852 by the Province of Upper and Lower Canada, preceding by 15 years the Act of Confederation, under which the present Dominion of Canada was created. This charter, with subsequent additions, provided for the construction of the present railway from Riviere du Loup, P.Q., to Sarnia, Ont., and which was completed in 1858. At that time Canada's population was about 3,100,000.

The Atlantic & St. Lawrence Railroad was chartered in 1845, and built from Portland, Me., to the boundary line near Norton Mills, Vt., and upon completion was leased for 999 years to the Grand Trunk, thus affording access to an open winter port, which was available during the closed season for the Canadian ports. On this account the people of Canada granted this Railway valuable aid, by cash and mail subsidies, and otherwise. Its completion provided a

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railway system extending from Portland, Me., from Riviere du Loup and Three Rivers, P.Q., also from Rouses Point, N.Y., through to Montreal, which was reached over the celebrated Victoria Bridge, designed by Robert Stephenson, erected across the St. Lawrence River, completed in 1860, and formally opened the same year for traffic by His Late Majesty, King Edward the Seventh. Thence the System extended westwardly to Sarnia, Ont., forming the chief means of communication to a scattered population settled in Quebec and Ontario.

Owing to the close proximity of the railway to the St. Lawrence River and Lake Ontario, from Quebec to Toronto, a distance of about 500 miles, it has always been handicapped by the cheap water routes thus afforded, during the open summer season—as well as the producing territory to the south being limited by the river and lake. It is thus practically forced to draw local traffic from but one side of the main line, for a considerable portion of its mileage—although that portion extends through the more densely populated section of the country.

The first meeting of the Grand Trunk Railway Company of Canada was held in the city of Quebec on Monday, July 11th, 1853, at which the Board of Directors were elected and the staff of executive officers appointed as follows:—

DIRECTORS.

(In London)

THOMAS BARING, Esq., M.P.
GEO. CARR GLYN, Esq., M.P.
H. WOLLASTON BLAKE, Esq.
ROBERT McCALMONT, Esq.
KIRKMAN D. HODGSON, Esq.
WM. THOMPSON, Esq., M.P.

GRAND TRUNK SYSTEM

DIRECTORS

(In Canada.)

HON. JNO. ROSS.
BENJAMIN HOLMES, Esq., M.P.
HON. FRANCIS HINCKS.
HON. E. P. TACHÉ.
HON. JAMES MORRIS.
HON. MALCOLM CAMERON.
HON. PETER MCGILL.
HON. R. E. CARON.
GEO. CRAWFORD, Esq., M.P.
W. H. PONTON, Esq.,
E. J. WHITTEMORE, Esq.
WM. RHODES, Esq.

OFFICERS.

HON. JNO. ROSS *President.*
BENJAMIN HOLMES, Esq. . . *Vice-President.*
SIR C. P. RONEY *Man.-Director and Secy.-Treasurer.*
ALEXANDER M. ROSS, Esq. *Engineer in Chief.*
S. P. BIDDER, Esq *Chief Superintendent.*
GEO. E. CARTIER, Esq *Solicitor.*
JNO. BELL, Esq. "
W. H. A. DAVIES, Esq. *Chief Accountant.*
SAMUEL KEEFER, Esq. *Assistant Engineer.*
W. M. MOLSON, Esq. *Auditor.*
W. M. WORKMAN, Esq. . . . "
ALFRED LAROCQUE, Esq. . . "
JNO. M. GRANT. *Assistant Secretary.*

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The succeeding Presidents and General Managers served the Company during various terms as follows:—

<i>Presidents' names.</i>	<i>Dates of service.</i>
HON. JNO. ROSS.....	1852-1862
SIR EDWARD WATKIN, Bart.....	1862-1869
RICHARD POTTER.....	1869-1876
SIR HENRY W. TYLER.....	1876-1895
SIR CHARLES RIVERS-WILSON.....	1895-1910
CHAS. M. HAYS (elected).....	1910

<i>General Managers' names.</i>	<i>Dates of service.</i>
SIR C. P. RONEY (<i>Managing Director</i>).....	1853
T. E. BLACKWELL, " ".....	1853-1862
C. J. BRYDGES, " ".....	1862-1874
SIR JOSEPH HICKSON.....	1874-1890
L. J. SEARGEANT.....	1891-1896
CHAS. M. HAYS.....	1896-1901
GEO. B. REEVE (One year).....	1901
CHAS. M. HAYS.....	1902

Mr. Alfred W. Smithers was elected the first "Chairman of the Board" in January, 1910, upon the retirement of Sir Charles Rivers-Wilson from the Presidency.

The construction of the railway, as outlined above, was materially assisted by the subsidies and bonuses voted by the Dominion Government, as well as the aid extended by the Provinces and Municipalities through which the lines extended. The total aid thus afforded amounted to \$13,404,487. The Dominion Government also advanced a loan of \$15,142,633, which is still held as a lien against the property, but following the rights of the holders of the "Ordinary Shares" of the Company, who are entitled to a full dividend of 5% before any repayment is due the Government.

Sir Henry Tyler, who served the Company in the capacity of President from 1872 to 1895, first visited Canada in 1867, and under the instructions of the Board of Directors made a special inspection and report regarding the condition and prospects of the railway. The former Reciprocity Treaty with the United States had previously been abrogated and the resultant decrease in traffic had seriously affected the Company's revenue.

In his report, Sir Henry Tyler stated that the Grand Trunk System then comprised a total length of 1,377 miles. This included the Buffalo and Goderich Railway (now known as the Buffalo & Lake Huron Railway), which was completed in 1858 and is now leased to the Grand Trunk in perpetuity, under lease dated 1st July, 1869.

In addition to the water routes hereinbefore mentioned, the chief competitor in Canada of the company was the Great Western Railway Company, extending from Niagara Falls to Sarnia, Ont., and to Detroit, Mich. As a result of this competition Sir Henry reported (1867) that the rates for freight service averaged 0.92 of a cent per ton per mile—flour being carried between Montreal and Toronto as low as a cent per ton per mile. The average rate on the Grand Trunk System for the year 1910 was 0.69 of a cent per ton per mile.

The average number of freight cars to a train was then reported as 15.5; the average net load of each train as 150 tons.

The records for 1910 show an average of 26.6 freight cars per train, and the average weight of "revenue" freight carried, per train, was 299 net tons.

Owing to the inconvenience and expense suffered by transfer of traffic by means of ferry service over the Niagara River, between Fort Erie and Buffalo, a suitable bridge with swing span to accommodate vessels was commenced in 1870

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and completed in 1873. This bridge was built by the International Bridge Company, a subsidiary Company of the Grand Trunk, chartered in 1857 by the Dominion of Canada and the State of New York. In 1900 this bridge was entirely rebuilt to accommodate the heavier traffic.

The original gauge of the Grand Trunk Railway was 5 ft. 6 ins., except that portion between Port Huron and Detroit, which was 4 ft. 8½ ins., and it is interesting to note that Sir Henry Tyler's recommendation in 1867 was to the effect that the 5 ft. 6 in. gauge be made standard, and the 4 ft. 8½ in. gauge for the 60 miles between Port Huron and Detroit changed to conform thereto. However, in 1874 the gauge of the entire road was changed to the present standard of 4 ft. 8½ ins., to conform to the standard gauge generally adopted by all the North American Railways, with the very many beneficial economies that have since resulted due to the unrestricted car interchange, etc.

Another recommendation made in Sir Henry Tyler's report urged the extension of the railway through to Chicago—then the growing emporium of the great West—recording a population of 220,000 souls in 1867, with "a commerce that was one of the marvels of the age". The present population of Chicago is 2,185,000, and its commerce has increased proportionately.

The Act of Confederation was adopted in 1867, and under agreement with the "Dominion Government", made on the 17th July, 1879, the Government purchased possession of that portion of the railway between Point Levi (opposite Quebec) and Riviere du Loup, for the present Intercolonial (Government) Railway, the Grand Trunk undertaking from the proceeds of said sale to construct or purchase a line from Port Huron, Mich. (opposite Sarnia) to Chicago. Communication between the two lines of railway, across the St. Clair River to be maintained by car ferry

boats, capable of transferring entire trains each trip. This ferry service was continued until the completion of the submarine tunnel in 1891 between Sarnia and Port Huron.

The new line to Chicago, incorporated under the name of the Chicago and Grand Trunk, April 6th, 1880, was completed and opened in December of the year 1881. In the year 1900 it was reorganized under the name of the Grand Trunk Western Railway Company and financed at the same time so as to provide means for constructing the second main track, which was practically completed by December, 1903. Authority was granted by the Michigan Railway Commission in 1910 to increase the bonded indebtedness to \$30,000,000, to provide for completion of double tracks, new shops, increased equipment, etc.

After experiencing severe and unwise competition with the great rival railway line—the Great Western Railway of Canada, which controlled lines extending from the Niagara River to Detroit and Sarnia, as well as the line of the Detroit, Grand Haven & Milwaukee Railway Company, constructed across the fertile State of Michigan, from Detroit to Grand Haven, Mich., a port on the lake opposite the City of Milwaukee, Wis.—the two Systems of Railways, the Grand Trunk and Great Western, were amalgamated into the present System under agreement dated August 12th, 1882.

The capital of the Great Western Railway, which was incorporated March 29th, 1845, was \$13,499,646 Five per cent. Bonds, \$2,461,331 Five Per Cent Preference Shares, and \$29,768,436 Ordinary Shares—all of which were exchanged for Four Per Cent. Guaranteed and Consolidated Stocks of the Grand Trunk, under Act of 1884 of the Dominion of Canada. The capital stock of the Detroit, Grand Haven & Milwaukee Railway (a subsidiary corporation) was transferred to, and is still held by, the Grand Trunk as an asset of the Great Western Railway, thus conveying full ownership and control, and completing one of the important advance movements in the railway history of Canada.

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The mileage of the Great Western Railway at this time was 838 miles, and of the Detroit, Grand Haven & Milwaukee Railway 189 miles—a total of 1,027 miles. The combined system mileage was 2835 miles.

The combined capital of the Grand Trunk at December 31st, 1882, was \$239,416,014. The gross receipts for the same year were \$17,361,554.

The next important step in the formation of the present System—January 1st, 1884—was the leasing by the Grand Trunk of the Midland Railway of Canada, consisting of the line between Port Hope and Midland, together with a number of branch lines occupying the territory between Lake Ontario and the Georgian Bay, a total of 472½ miles. The amalgamation of the Midland Railway with the Grand Trunk was effected under the Act of 1893.

The total securities of the Midland Railway were \$6,600,000 Capital Stock, \$2,550,620 Five Per Cent. First Mortgage Bonds, and \$7,652,833 of Five Per Cent. Thirty Year Consolidated Bonds.

The total mileage of the System railways was 2,912 miles in 1884,—including the Michigan Air Line, leased in 1881.

The Northern Railway of Canada and the Hamilton and North Western Railway Company, which had been worked by a joint Executive Committee under the title of the "Northern and North Western Railway Company," were amalgamated with the Grand Trunk under the Deed of Union of 1888. Its mileage was 482.5 miles, Capital Stock \$1,812,600 Ordinary and \$1,557,333 Preference Stock, Debenture Stock \$1,693,551 and Bonds Five Per Cent. First Mortgage \$3,028,039—Total, \$8,091,523. The lines of the Northern & North Western Railway extended from Port Dover (on Lake Erie) to Collingwood, Ont. (on Georgian Bay)—from Toronto to Collingwood and Meaford—from Colwell to Penetang—from Beeton to Nipissing Junction

(near North Bay), the connection with the Canadian Pacific Railway main lines to the far West. All the above lines are within the Province of Ontario.

In Michigan (United States) the Grand Trunk System was increased during the year 1881 by the leasing and acquiring of stock control of the Michigan Air Line, extending from Lenox to Jackson, Mich.,—105.60 miles—and a further addition was made in 1888, when the Grand Trunk acquired control of the shares of the Toledo, Saginaw & Muskegon Railway, extending from Owosso to Muskegon, Mich., (on Lake Michigan)—a distance of 116.41 miles.

The St. Clair Tunnel Company, the stock of which is all owned by the Grand Trunk, was organized in 1886 for the purpose of constructing the submarine railway tunnel under the St. Clair River (one of the first of this character) between Sarnia, Ont., and Port Huron, Mich.,—a distance of 2.2 miles. The work was completed and put into service September 19th, 1891, being operated by steam power. Owing to serious risks to passengers and employees, and delays to trains, caused by the use of coal burning engines, it was determined to equip the tunnel for operation by the single phase system of electricity. This work was commenced in 1907 and was completed and put into operation in November, 1908, at a total cost of about \$500,000.

The following additional lines were amalgamated into the present system under the Act of 1893.:-

Beauharnois Junction Railway—extending from Valleyfield to Ste. Martine Junction, P.Q.—19 miles.

The Jacques Cartier Union Railway, extending North-West of the City of Montreal, from Lachine, P.Q., to connection with the Canadian Pacific Ry., a distance of 6.54 miles.

The Grand Trunk, Georgian Bay & Lake Erie Railway Company, extending from Port Dover (on Lake Erie) and Simcoe, Ont., to Durham, Owen Sound, and Warton, Ont., on the Georgian Bay—a total distance of 208.29 miles.

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The Cobourg, Blairton & Marmora Railway & Mining Company, extending from Cobourg to Harwood, Ont.—14.5 miles.

The Waterloo Junction Railway Company, extending from Berlin to Elmira, Ont.—11.73 miles.

The total mileage of the combined railway System in 1893 was 4,145 miles.

At December 31st, 1893, the total combined capital was \$345,236,117, while the gross receipts for that year were \$25,433,649.

The Board of Directors of the Grand Trunk Railway, located in London, England (to which city the Directorate had been transferred from Canada in 1862) was reorganized in June, 1895, with Sir Charles Rivers Wilson as President, and Mr. Joseph Price as Vice-President, and on January 1st, 1896, Mr. Charles M. Hays (then Vice-President and General Manager of the Wabash Railroad, at St. Louis, Mo.), was appointed General Manager, with headquarters at Montreal—being the chief executive official in Canada.

One of the first acquisitions, after the new organization had assumed control, was the Central Vermont Railway, with mileage of 513 miles, extending from St. Johns, P.Q., and Rouses Point, N.Y., to Windsor, Vt., with branch lines from St. Lambert, to Waterloo, P.Q., St. Albans to Richford, Vt., Essex Junction to Burlington, and Cambridge Junction—also to Montpelier and Barre, Vt. The Grand Trunk assumed control on May 1st, 1899, after the property had been placed under a Receivership, and its finances and management reorganized. Included with the Central Vermont mileage are the leased lines of the New London Northern Railway, extending from Londonderry, Vt., to New London, Conn.—a port on Long Island Sound—which affords a steamship connection with the City of New York, where valuable ter-

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minal docks are controlled by the Central Vermont Railway. Two modern freight steamships are owned and operated between New London and New York, under the corporate name of the Central Vermont Transportation Company. The mileage of the New London Northern Railway is 159.5 miles. For this portion a rental is paid of \$211,000 per annum, on a 99 year lease, dated December 1st, 1891.

The total combined capital of the Grand Trunk, including the Central Vermont, was \$375,716,994, at December 31st, 1900. The gross receipts for the year 1900 were \$31,003,699.

In 1902 the Grand Trunk Western Railway acquired jointly with the Toledo, St. Louis & Western Railway the entire capital stock of the Detroit & Toledo Shore Line R.R., extending between Detroit and Toledo, including owned mileage of 47.6 miles and leasehold mileage of 31.3 miles; Capital Stock issued \$1,428,000, of which the Grand Trunk Western and Toledo, St. Louis & Western Railways each hold one-half. Bonds to the amount of \$3,000,000 have been issued, bearing 4% interest, dated January 1st, 1903. The Bonds, both principal and interest, are jointly guaranteed by the two railway companies. Under a trackage arrangement, the Detroit & Toledo Shore Line secured running powers over the lines of the Toledo Terminal Railway for a distance of 13.7 miles, connecting with the Terminal Railway tracks at "Boulevard," a suburb of Toledo.

The next important addition to the present Grand Trunk System was the purchase of the Capital Stock of the Canada Atlantic Railway Company, with lines of railway extending from Depot Harbor (on Georgian Bay) to Alburgh Junction, Vt., with Branch Lines from Glen Robertson to Hawkesbury, Ont., from South Indian to Rockland, Ont., and from Golden Lake to Pembroke, Ont., having a total mileage of 457.08 miles. The purchase was consummated on May 16th, 1905, and the Grand Trunk assumed full control on October 1st,

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1905. The Capital Stock of the Company—which is all held by the Grand Trunk—is \$10,200,000. The \$16,000,000 Bonds, authorised, bear 4% interest, and are guaranteed principal and interest by the Grand Trunk. In securing control of the Canada Atlantic Railway the stock of the Canada Atlantic Transit Company was also acquired. This Company owns and operates four Steamships on the Great Lakes, between the Georgian Bay ports terminals of the Grand Trunk—Depot Harbor, Midland, Sarnia, Ont., etc., and Fort William, Duluth, Milwaukee and Chicago. The capital stock is \$1,250,000.

In 1908 the Toledo Terminal Railway was purchased by seven of the principal Railway Companies having leased lines extending to Toledo. The Grand Trunk Western and Toledo, St. Louis & Western Railways (the owners of the Detroit & Toledo Shore Line) both joined in the purchase of the Toledo Terminal Railway. The Grand Trunk Railway is therefore a one-seventh owner of the stock of the Terminal Railway, which has a mileage of 56.84 miles; Capital Stock issued \$4,000,000, First Mortgage 4½% Bonds issued \$4,000,000.

The Chicago & Western Indiana Railway, which affords both centrally located freight and passenger terminals to the Grand Trunk Western Railway at Chicago was organized June 5th, 1879. The Capital Stock issued is \$5,000,000, of which the Grand Trunk Western owns one-fifth, or \$1,000,000, the balance being held in equal shares—one-fifth each—by the Erie Railroad Company, the Wabash Railroad Company, the Chicago, Indianapolis & Louisville Railway and the Chicago & Eastern Illinois Railway. The single track mileage of the Chicago & Western Indiana Railway is 48.5 miles, with second, third and fourth tracks aggregating a mileage of 75.15 miles.

The above named railway companies also control, in like manner, (one-fifth each) the Belt Railway Company of Chi-

cago—forming a belt or transfer railway around the southern portion of that City and having a mileage, of main line 23.3 miles, second track 17.8 miles and sidings 73.3 miles. Capital Stock \$1,200,000.

These two Terminal Railways form as valuable terminal properties as are located in the metropolitan city of Chicago.

The total mileage in 1908 of the entire Grand Trunk system was 5192 miles; with one-half interest in the Detroit and Toledo Shore Line—78.9 miles; a one-seventh interest in the Toledo Terminal Railway—56.84 miles, and a one-fifth interest each in the Chicago & Western Indiana Railway with 48.5 miles and the Chicago Belt Ry. with 21.3 miles of main line of Railway.

The Pontiac, Oxford and Northern Ry., extending from Pontiac to Caseville, Mich., was originally organised under the laws of the State of Michigan in 1889, and was a re-organisation of the Pontiac, Oxford and Port Austin Railroad Company, organized under the laws of the State of Michigan in 1881, and opened for operation in 1883—having a mileage of 100 miles. The Pontiac, Oxford and Northern Railroad was acquired by the Grand Trunk Western Ry. (a subsidiary Company of the Grand Trunk Railway Company of Canada) and possession taken December 1st, 1909. Capital Stock, \$1,000,000, all of which is owned by the Grand Trunk Western Railway; bonds \$400,000, in the hands of the public. Not including these terminal railways the total mileage December 31st, 1910, was 5,292. The gross earnings of the System were \$49,470,156.

SECOND, OR DOUBLE, TRACK.—Of the more important improvements or additions made to the railway, the construction of the second track must take the first position. The double tracked main line now extends from Ste. Rosalie, P.Q.—38 miles east of Montreal—and St. Johns, P.Q., 27 miles south of Montreal—to Chicago, Ill., a distance of 907 miles. The main line from Niagara Falls to Hamilton, Ont., and

Glencoe to Windsor—a total distance of 133 miles—also have been double tracked, making the double tracked mileage for the entire system 1,037 miles at December 31st, 1910. The Grand Trunk now ranks as one of the longest double tracked railways under one management.

The first important section of double track was completed in 1889, from the west approach of the Victoria Bridge (over the St. Lawrence River at Montreal) westwardly to Ste. Annes, P.Q.—a distance of 21 miles—also from Toronto eastwardly to Scarboro Jct., Ont., a distance of 9.03 miles. In 1892 the double track was extended eastwardly from Scarboro Jct., to Port Union, a distance of 8.44 miles. During the next 10 years the second track was extended from Vaudreuil to Port Hope, Ont., a distance of 247 miles—all of which was in service by January, 1899. During 1899 the gap from Ste. Annes to Vaudreuil, involving two expensive bridges over the Ottawa River was completed—a distance of 3.65 miles.

An important step towards completion of the double track between Montreal and Toronto was commenced in 1901, from near Port Hope, Ont., to Port Union—a distance of 46.44 miles. This work involved the revision of several heavy grades and the diversion of the line for four separate sections from the original line, for a total distance of 19 miles. This work was completed in 1903.

The second track between Toronto and Hamilton—a distance of 38.7 miles—was commenced in 1878 and completed in 1896.

From Niagara Falls to Hamilton—a distance of 43.9 miles—the second track was opened for service in May, 1903.

During the next two years—1904-1905—the work of laying the second track was proceeded with as far as Sarnia, being opened for traffic by December, 1905.

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While the Great Western was being operated as an independent company the line from Glencoe to Windsor, Ont., was double tracked and completed for service in October, 1874—a total distance of 79.6 miles.

During the period from October, 1900, when the work was first undertaken, to January, 1904, the laying of the double track on the Grand Trunk Western Railway from the portal of the St. Clair Tunnel at Port Huron, Mich., to Thornton Junction, Ill. (near Chicago) was proceeded with—the line from Thornton Junction to C. & W. I. Ry. Junction having been double tracked in 1892; the total distance being 323 miles.

The line of the Detroit, Grand Haven & Milwaukee Ry. also has a short section of double track, from Milwaukee Jct. to Jefferson Ave. Bridge, Detroit, Mich., a distance of 3.5 miles.

JOINT TRACKAGE AGREEMENTS.—Under terms of contracts, dated September 23rd, 1873, and May 28th, 1884, the Grand Trunk granted the Connecticut and Passumpsic Rivers Railroad Company (now Boston & Maine R.R.) the use of its railroad tracks between Lennoxville, Que., the point of connection, and Sherbrooke, a distance of three miles, including the terminal facilities at the latter place, for a period of 99 years, from November 1st, 1871, or until November 1st, 1970, at a rental of \$1750. per annum, and an additional amount of \$700. per annum for the maintenance of the track between Lennoxville and Sherbrooke.

Effective January 1st, 1896, the Grand Trunk leased, for a term of 99 years, the line between Valleyfield and Beauharnois, Que., 13.25 miles, to the St Lawrence & Adirondack R.R. Company—now controlled by the New York Central. Rental, \$10,000. per annum.

Under terms of agreement, dated May 13th, 1896, the Grand Trunk grants to the Canadian Pacific Railway the

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right to run all classes of trains over its railway line between Bathurst Street Junction, Toronto, and Hamilton Junction, Ont., 36 miles, for a term of 50 years, at an annual rental of \$40,000. Effective May 30th, 1897.

Agreement dated November 25th, 1880, provides for use by the trains of the Credit Valley Railway (now Canadian Pacific Railway) of the Grand Trunk double tracks, Bathurst Street Junction to Brock Street, Toronto, 2285 feet. Rental, \$1500 per annum, and 8c. per freight car.

An agreement, dated 15th May, 1897, with the Dominion Government, provides for the joint occupancy of the Grand Trunk property by the Intercolonial Railway from Ste Rosalie to St. Lambert, Que., the use of the terminals of the Grand Trunk at Montreal, 38.84 miles, and the bridge over the Chaudiere River, and railway connections at Levis, Que., for a period of 99 years, from November 1st, 1897. Rental, \$140,000. per annum. The Grand Trunk retained free running rights over the Intercolonial Railway between Chaudiere Curve and Hadlow, 5.77 miles, under agreement sanctioned May 15th, 1879.

An agreement was entered into with the Wabash Railroad, dated January 24th, 1898, and effective from March 1st, 1898, granting the use of the Grand Trunk Railway lines between Windsor, Ont., and Black Rock, N.Y., via Glencoe and St. Thomas, 228.4 miles, also between Welland Junction—on the latter line—and Suspension Bridge, N.Y., via Allamburg Junction, 17.5 miles, or a total of 245.9 miles, including three ferry boats of the Grand Trunk, plying between Detroit and Windsor, on the Detroit River. Contract period, 21 years; rental \$275,000. per annum for the first five year term, \$300,000. per annum for the second five year term, \$325,000. per annum for the third five year term, and \$350,000. per annum for remainder of term.

Under agreements, dated November 13th, 1878, 17th May and 27th July, 1881, the Lake Shore & M. S. Railway paid \$36,000. for trackage rights, between L. S. & M. S. Junction—West Detroit—and Brush Street Station, Detroit.

CAR FERRIES.—In November, 1905, a modern car ferry line was established by the Grand Trunk across Lake Michigan, between Grand Haven, Mich., and Milwaukee, Wis., under the incorporated name of the Grand Trunk-Milwaukee Car Ferry Co., with a capital stock of the par value of \$200,000, and an authorized issue of Bonds to the amount of \$225,000. The stock is all owned by the Grand Trunk Ry. through the Detroit, Grand Haven & Milwaukee Ry., a subsidiary line. In addition to the original car ferry ("Grand Haven") a second car ferry steamer, the "Milwaukee", was purchased and placed in service in 1908.

A similar car ferry service was also established across Lake Ontario, between Cobourg, Ont., and Charlotte, N.Y., where connection is made with the Buffalo, Rochester & Pittsburg Ry., November 14th, 1907. The Ontario Car Ferry Company is the incorporated name and the Capital Stock is \$500,000, one half of which is owned by the Grand Trunk and one-half by the Buffalo, Rochester & Pittsburg Ry.

An improvement of material advantage to the public was commenced at the national capital (Ottawa) in the spring of 1909 when work was started upon the erection of a new central passenger station and a magnificent modern hotel building, known as the "Chateau Laurier" by the Ottawa Terminal Company, a corporation organized in April, 1907, with a Capital Stock of \$250,000, all of which is owned by the Grand Trunk Ry. All the important railways centering in Ottawa use the central station building for passenger service.

Another important improvement, showing the continued progress of the Company, was completed and put into service early in 1908. This was the establishment of electric traction

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for the operation of the single track tunnel at Sarnia, extending under the St. Clair River to Port Huron, Mich. This work was commenced in September, 1906, and has resulted in the capacity of the Tunnel being increased from 75% to 100%. It was rendered necessary because of the fact that the main lines, both east and west of the tunnel were double tracked to the tunnel portals, while branch lines on both sides of the River, by adding their tonnage and traffic, operated towards creating a congested condition at the Tunnel, resulting in delay to, and consequent loss of traffic.

Among the other extensive improvements added to the System, controlled by the Company, should be mentioned the extensive grain elevator facilities located at the various important tide-water and lake terminals, including Portland, Me., Montreal, Midland, Tiffin, Depot Harbor, Goderich, Sarnia and Fort William, as follows:—

<i>Location.</i>	<i>Name of Company.</i>	<i>Capacity (Bush.)</i>
Portland, Me.	Portland Elevator Company (subsidiary company)	1,000,000
“	“ New England Elevator Co., (subsidiary company)	1,500,000
Montreal, P.Q.	Montreal Warehousing Co., (subsidiary company)	1,080,000
Midland, Ont.	*Midland Elevator Company.	1,000,000
Tiffin, Ont.	*Aberdeen Elevator Company.	950,000
“	“ Grand Trunk Pacific	2,250,000
Depot Harbor, Ont.	Canada Atlantic Company.	1,500,000
Goderich, Ont.	*Goderich Elevator & Transit Co.	1,000,000
Point Edward.	*Point Edward Elevator Co.	500,000
Fort William.	“ Grand Trunk Pac. Elevator Co., Ltd.	3,000,000

The Grand Trunk or its subsidiary companies own the entire capital stock of the companies shown above, with the exception of those indicated by a star, in which the Grand Trunk Ry. has a financial interest only.

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The above elevators have all been erected during the period 1896 to 1910, inclusive.

In June, 1902, the Head or General Offices of the Company at Montreal were removed to the new, modern and fire-proof general office building located on McGill St., occupying an entire block of ground in the centre of the city on land donated by the City for that purpose.

The General Office structure has been supplemented by the erection of an additional building, known as the "Canadian Express Building," immediately opposite the General Office Building on McGill Street—the four lower flats of which are occupied by the Canadian Express Company, a subsidiary of the Grand Trunk Railway System.

The total floor area of the two buildings is 170,000 square feet, and the total cost of the two buildings \$1,050,000. The equipment of the General Offices is complete in every respect, and materially facilitates the handling of the immense detail and clerical work of the System.

BRIDGES.—Extensive additional improvements have also been made, especially to the bridges owned or controlled by the railway company, as follows:—

The Niagara Gorge single span double track bridge, opened for traffic in 1897 replacing the celebrated Suspension Bridge, the first constructed across the Niagara Gorge, in the year 1853.

Total length.....	1,080 feet.
Span of arch.....	550 "
Width of railway floor.....	32 "
" highway floor.....	47½ "
Height of tracks above water.....	245 "
Rebuilding completed July 29th, 1897.	

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Victoria Jubilee Bridge across the St. Lawrence River at Montreal:

Length (including approaches)	9,144 ft.
Number of piers	24
Extreme width (including roadways)	66 ft. 8 ins.
Height from water at centre to underside of bridge	60 "
Total cost (including reconstruction)	\$8,650,000
Rebuilding completed December 13th, 1898.	

The International Bridge across the Niagara River between Buffalo, N.Y., and Fort Erie, Ont., completed in 1873.

Total length	2,404 feet.
Number of piers	10
Height of tracks above water	20 feet
Total cost (including reconstruction)	\$1,300,000
Rebuilding completed in May, 1901.	

Coteau Landing. Bridge across the St. Lawrence River (Canada Atlantic Ry.) This, in reality, is made up of three separate bridges, as the railway tracks cross Giroux and Round Islands in its transit across the St. Lawrence River. There are 18 spans in all, for single track railway.

Total length	4,025 feet.
Height of tracks above water	25 "
Original bridge completed February 19th, 1890.	
Bridge rebuilt, cost	\$ 506,670
Total cost (including reconstruction)	\$1,770,670
Rebuilding completed June 15th 1911.	

The above are the most important of the large bridges that have been renewed, but in addition thereto many additional bridges, having a total length of approximately 18.43 miles, have been rebuilt on modern specifications during a period of 15 years, at a total cost, to December 31st, 1910, of over \$6,550,000.

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The rolling stock has also been greatly improved and increased in numbers and capacity, until the present rolling stock equipment is as follows:—

Locomotives	1,222
Passenger Cars	1,064
Freight Cars	33,525

the tractive capacity of the locomotives being 27,192,424 tons; the capacity of the passenger cars 42,523 passengers, and the capacity of the freight cars 978,465 tons at December 31st, 1910.

Owing to the location of the Grand Trunk terminals in the Western section of Montreal, this Railway Company has suffered a disadvantage in catering for business to and from the large manufacturing industries established in the eastern and northern sections, of which there are a large number already located, and increasing yearly to such an extent as to warrant the Company in building an extension into that portion of the City, connecting with the Jacques Cartier Union Railway, known as the *Lachine, Jacques Cartier & Maisonneuve Railway*, a corporation chartered under the laws of the Province of Quebec, May 7th 1909, and extending around the mountain at Montreal crossing the Can. Pac. Ry., and terminating at St. Catherine and Frontenac Streets. Such progress has been made, that the necessary right-of-way has been secured. The construction of the branch line will be completed in the near future. This will give the Grand Trunk what is practically a belt line around the commercial metropolis of the Dominion, and will place the Company on an equal footing with its other competitors in that portion of the city.

Important terminal improvements have also been commenced (in the spring of 1911) in the large city of Toronto, which, when completed, will provide for separation of all

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highways now at grade. This work extends east of the Humber River, a distance of 4.81 miles to the Union Station, also providing for an elevated viaduct for a distance of 2.84 miles east of the proposed new Union Station. Plans have been prepared for the erection of a modern passenger station, which will be completed in the near future, and it is estimated will cost \$2,000,000, and provide for the passenger business of the large and growing city of Toronto for many years to come.

On January 1st, 1892, the Grand Trunk acquired the Capital Stock of the Canadian Express Company, which operates over its lines of railways on passenger trains, also operating over other railways connecting with the Grand Trunk, such as the Intercolonial and other important railways. Capital Stock, \$1,500,000.

THE GRAND TRUNK RAILWAY OF CANADA SUPER- ANNUATION AND PROVIDENT FUND ASSOCIATION.

This Fund was inaugurated on October 1st, 1874, for the purpose of making provision for the retirement on a pension, of officers and employes who had served the Company faithfully and efficiently for many years.

The revenue of the Fund is derived from a contribution by the members of 2½% of their pay, deducted monthly on the pay rolls, the amount so contributed being augmented by a contribution of an equal amount monthly by the Grand Trunk Ry. Company.

Members are eligible for a pension at the age of fifty-five years, such pension being computed on the basis of one-sixtieth of the retiring pay for each year of membership, the allowance, however, in no case to exceed two-thirds of the average annual pay during the period of membership.

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In the year 1907, owing to the formation of a comprehensive pension scheme for retiring all employees of the Company at the age of sixty-five years, not already members of the Association, an option was extended to members to retire from the Superannuation Fund if they so desired, receiving the same proportionate refund of contributions that would have been paid to them if they had resigned from the service of the Company. Advantage was taken of this option by about 43% of the members. The Fund was closed to new members from the 31st December, 1907.

At June 30th, 1911, the invested funds of the Association amounted to \$1,436,615.41. There were 34 superannuated members whose allowances amounted in the aggregate to \$13,937.28. The amount paid in by the members since the inception of the Fund is \$488,257.92, and a similar amount has been paid in to its credit by the Grand Trunk Railway Company of Canada. There are at the present time 624 members in the Fund.

GRAND TRUNK RAILWAY INSURANCE AND PROVIDENT SOCIETY.

In 1883 the Grand Trunk Railway Company organized the first Employees' Relief Department operated on this continent, under the name of "The Grand Trunk Railway Employees' Insurance Fund," but only as an "Accident Insurance." In 1885 this fund was merged with the Great Western Ry. Provident Society, after the amalgamation of the two Companies, and was reorganized under the name of the "Grand Trunk Railway Insurance and Provident Society," the operations being enlarged to include full life insurance with sick benefits and medical attendance for disablements of all description.

Up to the end of 1910, the total amount paid out of this fund was \$4,167,826.27, and the total amount received from

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members was \$3,837,849.54, and from the Grand Trunk Railway \$361,797.75 in cash besides defrayment of all rentals and working expenses outside those of the secretarial office.

GRAND TRUNK RAILWAY COMPANY OF CANADA PENSION DEPARTMENT.

The Pension Department of the Grand Trunk Railway Company was organized in 1907, and put into operation on the 1st January, 1908, the Company assuming the entire obligation of providing the necessary funds without any expense or contribution from employes, following the general principle of such departments on this continent.

Since the commencement of operation, 692 employes have been pensioned at an average rate of \$268.79 per annum, and up to the end of November, 1911, \$474,655.08 has been paid out.

Out of the above number 108 employes have died, and their pensions, amounting to \$29,305.59 have lapsed, leaving a net number of 584 employes drawing pension at the rate of \$156,698.26 per annum, or an average rate of \$268.31 per annum.

At December 31st, 1910, the total mileage of the Grand Trunk Railway System, in operation, including the Central Vermont Railway was 5,292 miles.

The total mileage of double track main line was 1,040 miles. (This does not include any Grand Trunk Pacific mileage, which is still under construction.)

The gross receipts of the Grand Trunk System for the year 1910 were \$49,470,156. This includes the Central Vermont Railway and other affiliated lines, except the Grand Trunk Pacific Ry., which is under construction.

At December 31st, 1910, the total capitalization of the Grand Trunk, including the Grand Trunk Pacific and all affiliated lines (but not including the terminal Companies) was \$577,356,682.

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Upon the resignation in 1909 of Sir Charles Rivers Wilson, who served the Company as President during a term of 15 years, from 1893 to December 31st, 1909, the present organization was made effective, Mr. A. W. Smithers being elected Chairman of the Board of Directors, and Mr. H. H. Norman, Secretary—resident in London—while Mr. Chas. M. Hays was elected President, with headquarters at Montreal.

By this arrangement, the President of the Grand Trunk Railway Company of Canada becomes a resident of Canada; he is also the Chief Executive Official of the Grand Trunk Pacific, Grand Trunk Western, Central Vermont and all other subsidiary companies which form the Grand Trunk System of Railways.

The extensive territories through which the Grand Trunk System of Railways extends is, of course, very diversified.

The lines through New England serve extensive lumber and manufacturing sections, which afford the chief support for local traffic.

The important Province of Quebec is principally of an agricultural character, including dairying, lumbering, etc.

The great Province of Ontario—which the Grand Trunk principally serves—is also largely agricultural, but its manufacturing and lumbering interests are very large and extending rapidly. The mining developments, which are more recent, also afford considerable traffic for the railways.

The commanding position in Canada of the Grand Trunk System is well illustrated in the service it renders to Ontario. In this premier manufacturing Province of Canada there are 14 incorporated cities, every one of which is located on the tracks of the Grand Trunk Railway. There are 100 incorporated towns, 68 of which are on the Grand Trunk, and 25 of that number are reached exclusively by the

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tracks of the Grand Trunk. The incorporated villages number 66, of which 46 are on the Grand Trunk and 33 are reached exclusively by the tracks of the Grand Trunk.

The extensive Western Provinces of Manitoba, Saskatchewan and Alberta are, as is well known, entirely agricultural and grazing, producing heavy tonnage for the railways of grain and live stock, while the great Province of British Columbia is rapidly forging ahead in the production of lumber and minerals—the principal minerals being gold and coal. These great resources are now being opened up by the construction of the Grand Trunk Pacific Railway, which is subsidiary to and being constructed by the Grand Trunk Railway of Canada, through to the Pacific Coast at Prince Rupert, B.C., being aided by the Government of the Dominion, as well as by the Provinces of Ontario, Saskatchewan and Alberta, so far as the Branch Lines in these Provinces are concerned.

GRAND TRUNK PACIFIC RAILWAY COMPANY.

Second in importance only to the original construction of the Grand Trunk Railway itself is the inauguration and construction of the Grand Trunk Pacific Railway, which was incorporated October 24th, 1903, under contract entered into between the Grand Trunk and the Dominion Government, dated July 29th, 1903, whereby the Grand Trunk Railway and the Dominion Government co-operate in the construction of a line from Moncton, N.B., to Prince Rupert, B.C., wholly within Canadian territory.

The railway is divided into two grand divisions, namely:

The Eastern Division and the Western Division. The Western Division, extending from Winnipeg to Prince Rupert on the Pacific Coast, is sub-divided into the Prairie Section and the Mountain Section, and the entire line is being con-

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structed by the Grand Trunk Pacific Railway Company, and is to be completed by December 1st, 1913. The mileage of the Western Division is 1755 miles.

EASTERN DIVISION.

The Eastern Division embraces main lines east of Winnipeg, comprising 1,804 miles, extending to Moncton, N.B. The main line will be constructed by and at the cost of the Canadian Government, under the supervision of the Commissioners of the Transcontinental Railway, and upon completion will be leased to the Grand Trunk Pacific Railway for a period of 50 years, on the following terms:—

For the first seven years of the said term, the Company shall operate the same subject only to payment of "Working Expenditure," for the next succeeding forty-three years the Company shall pay annually to the Government, by way of rental, a sum equal to 3% per annum upon the cost of construction of the said Division, provided that if, in any one or more of the first three years of the said period of forty- or more of the first three years of the said period of for three years the net earnings of the said Division, over and above "Working Expenditure" shall not amount to 3% of the cost of construction, the difference between the net earnings and the rental shall not be payable by the Company, but shall be capitalized and form part of the cost of construction, upon the whole amount of which cost a rental is required to be paid at the rate aforesaid after the first ten years of the said lease, and during the remainder of the said term.

All the branch lines of the Eastern Division will be constructed by and at the cost of the Company.

WESTERN DIVISION.

The Western Division, both the main line and branches of which will be constructed by the Company, embraces all projected lines west of Winnipeg. The Canadian Government have guaranteed the principal and interest for fifty years of

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three-quarters of the cost of the main line from Winnipeg to the Pacific Coast terminus at Prince Rupert, B.C., but with the limitation that such three-quarters of the cost shall not exceed \$13,000 per mile on the Prairie Section—with no limitation, however, in regard to the cost of the Mountain Section. The Grand Trunk Railway Company of Canada has guaranteed the principal and interest for fifty years of the balance required to complete the main line of the Western Division.

		<i>Mileage.</i>	
Projected:	Main Line.....	3600,	miles*
"	Branch Lines.....	6,149	"
	Total.....	9,749	"
Track laid:	Main Line.....	2,040	"
"	Branch Lines.....	339	"
		2,379	"
Under Construction:	Main Line.....	1,094	"
"	Branch Line.....	670	"
		1,764	
	<i>Rolling Stock.</i>		
	Locomotives.....		153
	Passenger Cars.....		145
	Freight Cars.....		15,432

Capital Stock: \$45,000,000, of which \$20,000,000 may be issued as Preferred. In consideration for guarantees, etc. The Grand Trunk Railway Company of Canada acquire and take the common stock to the amount of \$25,000,000, excepting shares held by Directors, not exceeding, however, 1,000 shares, and may make such disposition thereof as it may deem expedient, provided it shall continue to hold a majority of the stock by such title as shall enable it to control the policy of the Grand Trunk Pacific Company.

Additional construction work on branch lines is being taken up from time to time, as the settlement of the country and the prospects for future traffic seem to warrant.

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The general resources and characteristics of the Provinces of Manitoba, Saskatchewan and Alberta, to be served by the Company's lines, are primarily agricultural and grazing, but are now so well known that a description of same is largely a matter of form of expression.

In addition the Province of Alberta is also liberally supplied with coal areas, which abound chiefly in the wider valleys, and from the superior quality and amount of coal form very valuable coal fields. The foothill belt, although not well prospected, is known to contain many valuable areas, in which a softer grade of coal may be found. East of the foothill area lies a great extent of coal bearing rocks, which are comparatively undisturbed. The coal in this region, through which the Grand Trunk Pacific Railway passes from Edmonton to the Rocky Mountains, is well suited for domestic use, and as it is within the settlement belt—where wood is scarce—a demand for it is assured. These areas are designated as the Edmonton coals, and extend north from near the International boundary to near the Peace River, covering an area of at least 10,000 square miles, and containing an estimated content of 60,000,000,000 tons. The coals in this formation are generally lignites, but in the foothills grade up to bituminous. The foothill coal areas have a length of about 400 miles, and have an estimated area of possibly 2,000 square miles. This has been estimated to have possibly 11,000,000,000 tons as a total content. The area is enormous, embracing a total surface of about 12,000 square miles, and a possible coal content of 71,000,000,000 tons.

A branch line of railway is at present under construction from the main line of the Grand Trunk Pacific Railway west of Edmonton southerly for a distance of about 56 miles into the coal fields of the Pacific Pass Coal Company, and this branch will also serve the mines of the Yellowhead Pass Coal Company, situated at the headwaters of the Pembina, Em-

barras and McLeod Rivers. The construction of a line from Edmonton into the Peace River Country will probably be actively undertaken in the near future.

THE GRAND TRUNK PACIFIC BRANCH LINES
RAILWAY CO.

The position of the Grand Trunk Pacific is rapidly being strengthened by the extensions under construction and projected lines to the principal towns of the great Western Provinces. In addition to Winnipeg, Portage la Prairie, Man., Saskatoon, Sask., and Edmonton, Alta. (on the main line) such cities as Brandon, Man., Regina, Sask., Prince Albert, Sask., Battleford, Sask., Lethbridge, Alta., Calgary, Alta., Victoria, B.C., and Vancouver, B.C., will be reached.

These branch lines are being built under terms of agreements with the Provinces through which they extend, and which provide for substantial Government guarantees of both principal and interest of bonds covering such lines.

The Grand Trunk Pacific Railway Company, through the subsidiary Company, the Grand Trunk Pacific Development Company, has financed, and now controls, the Grand Trunk Pacific Steamship Company, having a fleet of modern steamships, which are conceded to be the largest and best equipped operating on the Pacific Coast, and which run between the Ports of Prince Rupert, the western terminal and port of the Grand Trunk Pacific, and Vancouver, Victoria, B.C., and Seattle, Wash. This fleet is composed of the steamships "Prince Rupert" and "Prince George," each 3,500 tons register, the "Prince Albert," 900 tons, "Prince John," 642 tons, and "Henriett," 762 tons, which operate locally between Prince Rupert, Queen Charlotte Islands ports and Stewart, B.C. The Steamship Company also controls extensive modern steamship docks and facilities at Prince Rupert, Vancouver and Victoria, B.C., and Seattle, Wash.

The population of Canada in 1911 is estimated at 7,100,000.

MONTREAL, September 1st, 1911.

