

Canadian Railway and Marine World

September, 1915.

North Toronto Grade Separation, Canadian Pacific Railway.

By B. Ripley, M. Can. Soc. C.E., Engineer North Toronto Grade Separation, Canadian Pacific Railway.

The North Toronto viaduct, construction on which was started in a small way during the autumn of 1912, is nearing completion. The general scheme, which is shown in fig. 1, comprises the elevating of four lines of track between Summerhill Ave. on the east and Dufferin St. on the west, with additional passenger facilities at Yonge St. [The new station was described in Canadian Railway and Marine World for August.—Editor.] During Sept., 1912, a trestle was erected between Poplar Plains Road and Summerhill Ave., and the filling in to make up the embankment was commenced from the trestle. This permitted the work on the subway at Avenue Road to be proceeded with. Fig. 3 shows this subway as completed. During its construction the street traffic was diverted on the property acquired for the purpose just east of the street, which facilitated the handling of the work very considerably, and the traffic was not resumed on Avenue

The work at the Howland Ave. subway was started Aug. 12, 1913, the traffic having been diverted over the tracks at Albany Ave. by means of a temporary wooden bridge erected at that point for the purpose.

The work at Bathurst St. subway was started Aug. 23, 1913. In carrying out the work at this point, it was necessary to remove a portion of the tracks of both the Toronto Ry. and Toronto Suburban Ry. After a portion of the excavation had been taken out, a large pocket of gravel containing water was struck, the water making the work a great deal more difficult. This difficulty was also experienced in alterations to water mains, sewers and the laying of the underground electric wires. The foundations were taken slightly deeper in this case than in any other, in order to eliminate the possibility of disturbance by the installation of other underground utilities, at a later date. The street traffic was handled by means of

work to be done at this point, and the city offered no objections at that time, but many difficulties have arisen to delay the work. During the autumn of 1912 the city applied to the Board to have the south approach made level instead of having the 5% approach which had previously been agreed on. The Board ordered in effect that the city could have this on condition that it pay the extra expense incurred by the C. P. R., giving it a certain period in which to decide as to what it wanted. The level approach idea fell through; the C. P. R. had plans prepared for the carrying out of the work, but it was so late in the autumn of 1912 that the work was held over until the following spring. Meanwhile the city applied to the Board for an order compelling the C. P. R. to build the subway at this point, with an increase in the headroom of 4 ft., making an 18 ft. subway, with a 2½% approach. The Board ordered that the city

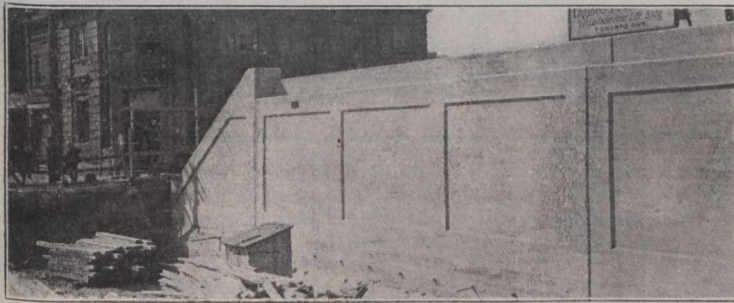


Fig. 2.—West Abutment Wall of Yonge Street Subway.

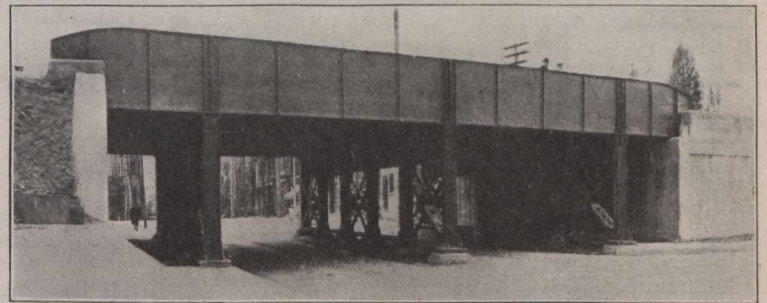


Fig. 3.—Avenue Road Subway as Completed.

Road itself until the whole work, including the paving and sidewalks, was completed. During this period, the Toronto Ry. operated a stub line service from the C. P. R. tracks to the end of the Avenue Road line at St. Clair Ave. [This subway was described in detail in Canadian Railway and Marine World for Sept., 1913.—Editor.]

Other work was not started until early in the summer of 1913, owing to an appeal by the City to the Governor in Council, to change the railway profile west of Avenue Road. Work on Davenport Road subway was, however, started on July 7, 1913. Conditions at this point were somewhat complex, because the subway which was built, and which is known as the Davenport Road subway, really takes both Davenport and Poplar Plains Roads. The general plan, fig. 1, shows the layout at the intersection of these two streets. The alterations necessary to the underground public utilities occasioned thereby involved a large amount of work, the greater portion of which had to be undertaken before the subway could be constructed. The finished subway, viewed from the north, is shown in fig. 5.

The work at Spadina Road was commenced July 19, 1913, the traffic having previously been diverted by a temporary wooden bridge over the tracks at Huron St., at which point also the traffic from Davenport and Poplar Plains Roads was largely handled.

the opening up of a new street between Albany Ave. and Bathurst St., and the erection of a temporary wooden bridge over the C. P. R. tracks at Albany Ave.

The work at the Christie St. subway was started Sept. 16, 1913. The traffic was handled by means of a plank roadway and a temporary wooden bridge over the C. P. R. tracks on the west side of the street. The work at this point is almost completed, the bulk of the paving of roadway and sidewalks being finished.

Work was begun at Shaw St. Oct. 6, 1913, prior to which a temporary street had been opened up between Shaw St. and Ossington Ave. over the Toronto Power Co.'s property. This made it possible to divert the traffic from Shaw St. to Ossington Ave. during construction.

The work at Ossington Ave. was commenced June 15, 1914. A 6 ft. circular sewer, laid bare by the excavation, was lowered to comply with the depression of the roadway.

Work was started at Dovercourt Road subway May 5, 1914. Alterations to the sewer were also made necessary by the depression of the street.

At the Yonge St. subway, although the running of trains on the level was abandoned on May 26, 1914, and all the railway traffic run on a trestle overhead, as shown in fig. 4, the work at this point has not progressed very far. The Board of Railway Commissioners for Canada approved, in 1912, of the

could have this conditional on the additional cost over and above that of a 14 ft. headroom subway being borne by the city. Before anything further was done the city decided to widen the street at this point from 66 to 86 ft., the widening to be done on the west side. The C. P. R. prepared its plans accordingly, and before the work was again got under way, the city decided to make another change, and to have the street widened on the east instead of the west side. The Board of course issued orders accordingly. This made it necessary to take a strip off the front of the C. P. R. property, which it had purchased for a station site. Some difficulties arose over the settlement to be made between the city and the C. P. R. in this connection, and before the work was again got under way the bylaw in reference to the widening of Yonge St. was rescinded, and of course it was impossible to do any work. A new bylaw, however, has been passed expropriating sufficient property to widen the street on the east side throughout the length of the subway, and the work is now being proceeded with.

Fig. 4 shows a temporary trestle and span at this point. The vehicular traffic is carried underneath the steel span, but the pedestrian traffic is carried on the east side of the street underneath the trestle near the small shanty shown in that figure. Fig. 2 shows the south half of the west abutment, which has already been constructed, and it is ex

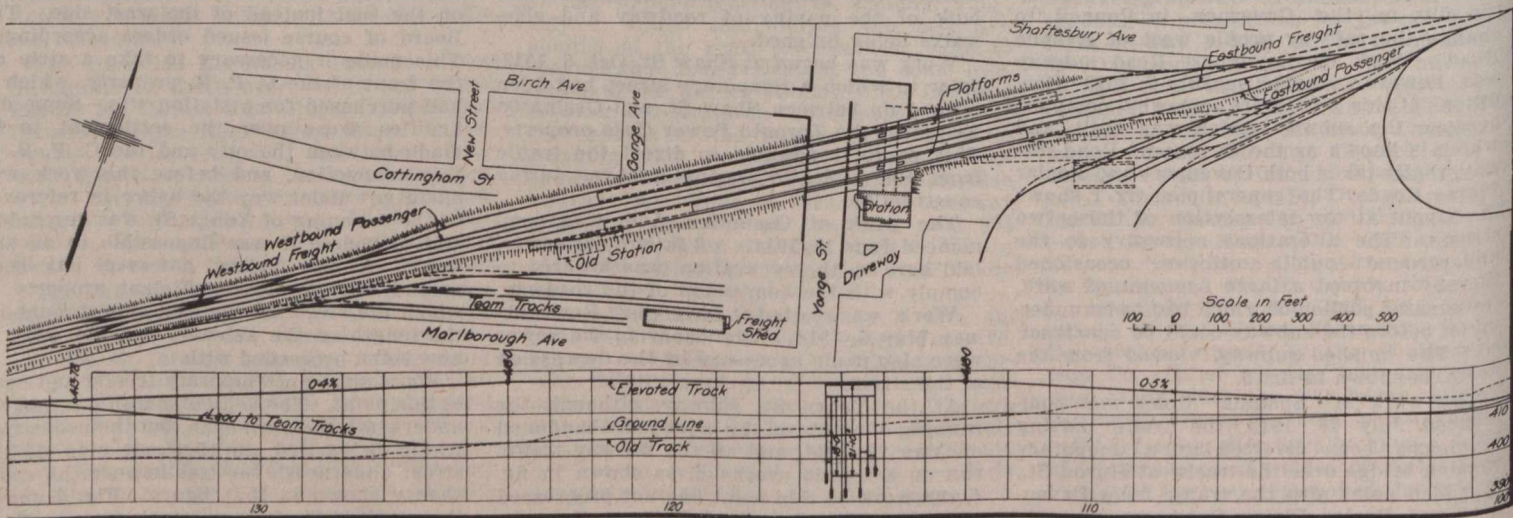
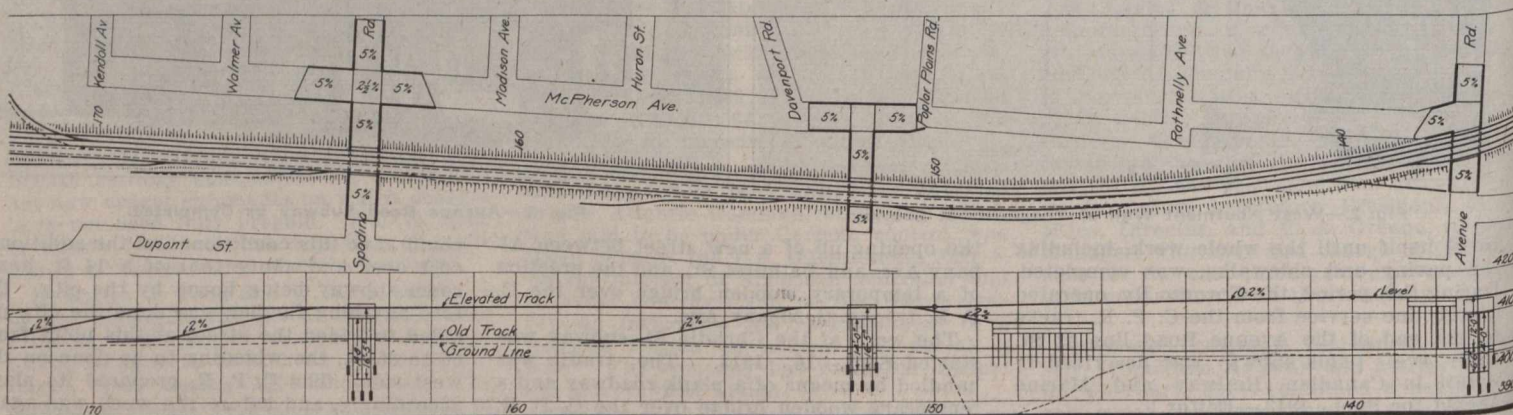
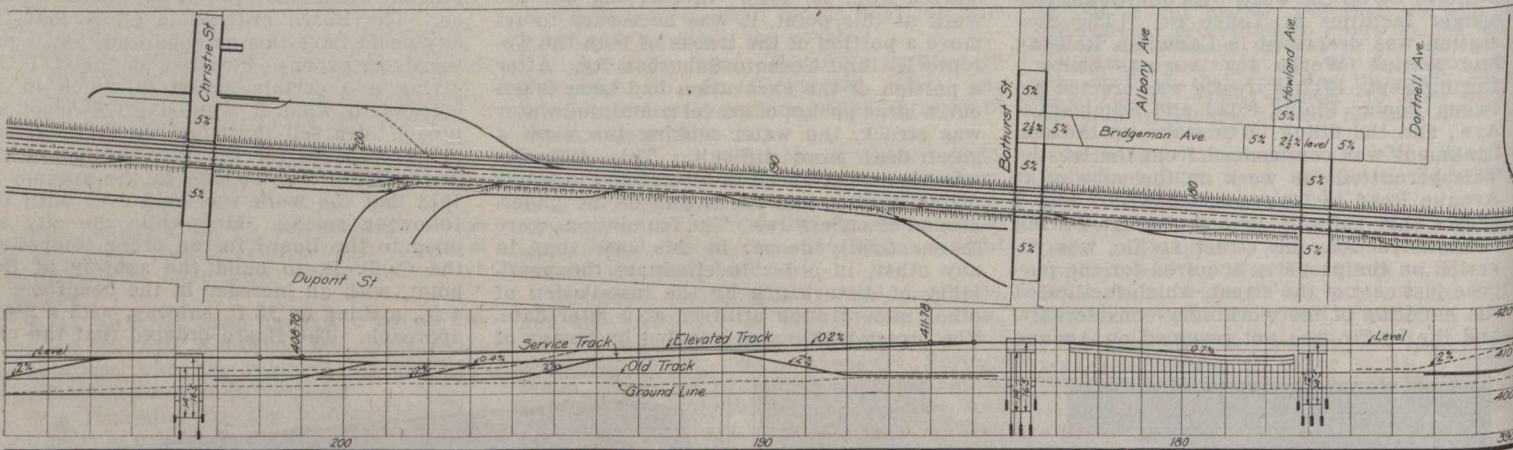
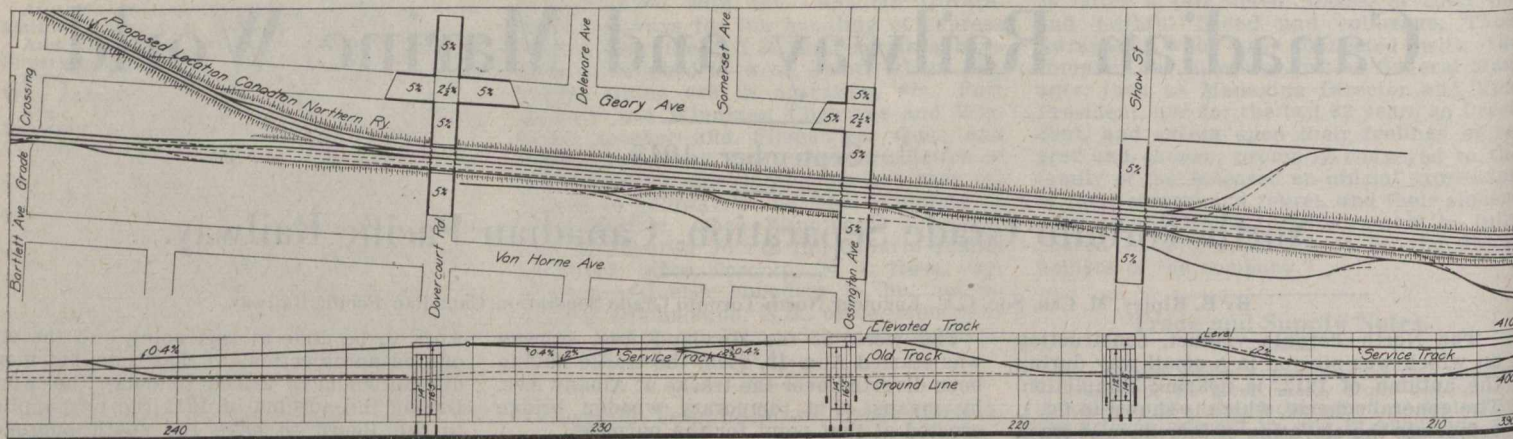


Fig. 1.—Plan and Profile of Track Elevation Across North Toronto.

pected that unless unforeseen conditions arise, the work at this point, which involves heavy expenditures, will be completed, including the paving of the street, before the next freeze up. The depression of the street at this point is 9½ ft., making it necessary to make some very extensive alterations to the underground utilities, which consist of water mains, sewers, power and telephone conduits, and gas mains. To the east of the street and underneath the C. P. R. tracks will be located a driveway to the station and baggage rooms, the latter being located under the tracks. The driveway will be 28 ft. wide, and the baggage rooms will be about 140 x 60 ft. The new station has been located, as is shown in fig. 1, just east of Yonge St., and south of the tracks.

In building up the embankment between the subways, the earth work, about 280,000 cu. yds. of which is already placed, was hauled from Leaside Jct. To the west of Avenue Road, instead of building expensive trestle work, the tracks were pumped up, or lifted in 6 in. lifts, without interfering with the traffic. At the streets where subways were to be built, timber work corresponding to the deck of a standard railway trestle, was placed underneath the tracks on ties, in such a way that when a 6 in. lift

own half of the viaduct, but between Yonge St. and Avenue Road, the portion which includes the passenger facilities will be owned

solely by the C. P. R., but the Canadian Northern Railway will enjoy the facilities by paying a rental.

Birthdays of Transportation Men in September.

Many happy returns of the day to:—

G. W. Alexander, Local Treasurer, G.T.R., Western Lines, Detroit, Mich, born at Lightcliff, Yorks., Eng., Sept. 10, 1859.

H. Bailey, ex-Bridge and Building Master, Dominion Atlantic Ry., now of Huntsville, Ont., born there, Sept. 2, 1879.

W. B. Bamford, Division Freight Agent, Atlantic Division, C.P.R., St. John, N.B., born at Belleville, Ont., Sept. 10, 1863.

G. T. Bell, Passenger Traffic Manager, G.T.R. and G.T.P.R., Montreal, born there, Sept. 7, 1861.

W. H. Bigger, K.C., Vice President and General Counsel, G.T.R., and G.T.P.R., Montreal, born at The Carrying Place, near Trenton, Ont., Sept. 19, 1852.

E. J. Blais, Foreman Tinsmith, Grand Trunk Pacific Ry., Transcona, Man., born Sept. 26, 1876.

E. R. Bremner, ex-Division Freight Agent, Ottawa Division, G.T.R., Ottawa, born at Toronto, Sept. 9, 1875.

sion, C.P.R., Calgary, born at Hull, Eng., Sept. 24, 1869.

J. E. Hutcheson, General Manager, Montreal Tramways Co., Montreal, born at Brockville, Ont., Sept. 15, 1858.

C. B. King, Manager, London St. Ry., London, Ont., born at Galena, Ind., Sept. 12, 1871.

S. King, ex-Superintendent, Canadian Car and Foundry Co., Montreal; Director, National Steel Car Co., Ltd., Hamilton, Ont., now of London, Ont., born at Thetford, Norfolk, Eng., Sept. 12, 1853.

R. E. Larmour, Assistant General Freight Agent, C.P.R., Vancouver, born at Brantford, Ont., Sept. 26, 1868.

H. D. Lumsden, M. Can. Soc. C. E., Engineering Department, C.P.R., Toronto, born at Belhaire, Scotland, Sept. 7, 1844.

G. S. Lytle, Car Service Agent, Manitoba Division, C.P.R., Winnipeg, born at Dennison, Ia., Sept. 23, 1878.

C. D. MacKintosh, Superintendent, District

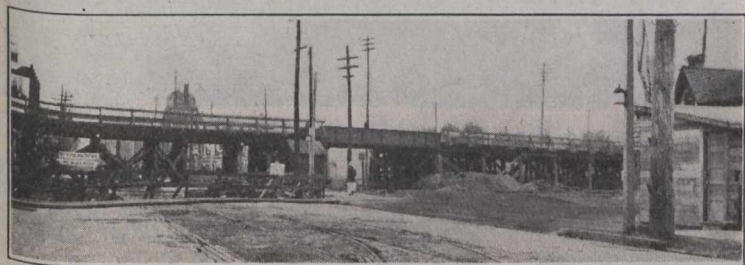


Fig. 4.—Yonge Street Subway Site in Early Stages of Work.



Fig. 5.—Davenport Road Subway as Completed.

was made on the earth work, a 6 in. lift could be made with the deck of the trestle already placed underneath the tracks, by placing ordinary 6 in. sawn railway ties underneath the caps to form cribwork. As the lifting proceeded the cribwork was formed so as to permit driving piles. After the final height or elevation of the tracks had been attained, pile bents were driven, the cribwork was removed, and steam shovel excavation commenced. It was necessary, of course, to drive the piling below the foundation levels, and in some cases on account of the great density of the material encountered, it was necessary to replace the pile bents as many as two and three times, by driving fresh piles.

The substructure of the subway at Avenue Road was built by Jennings and Ross, Toronto, and the superstructure by Canadian Bridge Co. The substructures of subways at Davenport Road, Spadina Road, Howland Ave. and Bathurst St. were built by Wells and Gray, Toronto, and the superstructures by Dominion Bridge Co. The substructures of subways at Christie, Shaw, Ossington Ave. and Dovercourt Road were built by McFarlane, Pratt, Hanley, Ltd., Toronto, and the superstructures erected by Dominion Bridge Co. Wells and Gray have the contract for the substructure of Yonge St. subway, and the superstructure has been awarded to Dominion Bridge Co. The superstructure of Yonge St. involves 2,500,000 lbs. of steel. This is by far the largest amount of steel in any of the subways along the viaduct. It is the C. P. R.'s intention to double track its line between Summerhill Ave. and Leaside Jct., and it is understood that the Canadian Northern Ry. will run into North Toronto over the C. P. R. tracks. To the west of Avenue Road the C. N. R. will

M. H. Brown, Division Freight Agent, Ontario Division, C.P.R., Toronto, born at Victoria Square, Ont., Sept. 2, 1866.

W. B. Bulling, ex-Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, born there, Sept. 16, 1858.

W. E. Burke, Assistant Manager, Canada Steamship Lines, Ltd., Montreal, born at Belleville, Ont., Sept. 23, 1881.

A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, born at Kingston, Ont., Sept. 20, 1864.

A. S. Dawson, M. Can. Soc. C.E., Chief Engineer, Department of Natural Resources, C.P.R., Calgary, Alta., born at Pictou, N.S., Sept. 6, 1871.

W. E. Duperow, Assistant General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, born at Stratford, Ont., Sept. 4, 1872.

W. H. Estano, Traffic Auditor, Intercolonial Ry., Moncton, N.B., born at Halifax, N.S., Sept. 29, 1874.

C. B. Foster, Assistant Passenger Traffic Manager, Eastern Lines, C.P.R., Montreal, born at Kingston, N.B., Sept. 30, 1871.

J. P. Ferguson, representing Galena Signal Oil Co., Ottawa, Ont., born at Drummondville, Que., Sept. 12, 1856.

R. S. Gosset, Auditor of Disbursements, Canadian Northern Ry., Toronto, born there, Sept. 28, 1879.

John Gray, General Agent, G.T.R., Toronto, born at River Beaudette, Que., Sept. 28, 1863.

D. W. Hatch, Travelling Agent, Atchison, Topeka and Santa Fe Ry., Montreal, born at Bedford, Que., Sept. 1, 1841.

W. R. Howard, Chief Dispatcher and Trainmaster, District 1, Atlantic Division, C.P.R., Brownville Jct., Me., born at St. Andrews, N.B., Sept. 14, 1871.

E. Humphreys, Fuel Agent, Alberta Divi-

1, Alberta Division, C.P.R., Medicine Hat, born at Auckland, New Zealand, Sept. 24, 1882.

F. J. Mahon, Inspector of Telegraphs, Saskatchewan Division C.P.R., Saskatoon, born at Montreal, Sept. 18, 1865.

W. A. Mather, Superintendent, District 1, Alberta Division, C.P.R., Medicine Hat, born at Oshawa, Ont., Sept., 1885.

J. F. Mundle, City Freight Agent, C.P.R., Montreal, born at Prescott, Ont., Sept. 20, 1857.

M. B. Murphy, Superintendent, District 2, Central Division, Canadian Northern Ry., Winnipeg, born at Napa, Cal., Sept. 11, 1866.

J. Paul, District Freight Agent, Canadian Northern Ry., Winnipeg, born in Euphrasia Tp., Grey Co., Ont., Sept. 13, 1858.

W. J. Pickrell, Master Mechanic, Ontario Division, C.P.R., Toronto, born at London, Ont., Sept. 15, 1880.

W. D. Robb, Superintendent of Motive Power, G.T.R., Montreal, born at Longueuil, Que., Sept. 21, 1857.

E. W. Taylor, General Freight Agent, Reid Newfoundland Co., St. John's, Nfld., born at Carbonear, Nfld., Sept. 8, 1870.

F. G. Wood, Commercial Agent, Canadian Northern Ry., St. Louis, Mo., born at Toronto, Sept. 15, 1890.

H. A. Young, Ontario Storage and Cartage Co., Ltd., Toronto, born at Brooklyn, N.Y., Sept. 1, 1864.

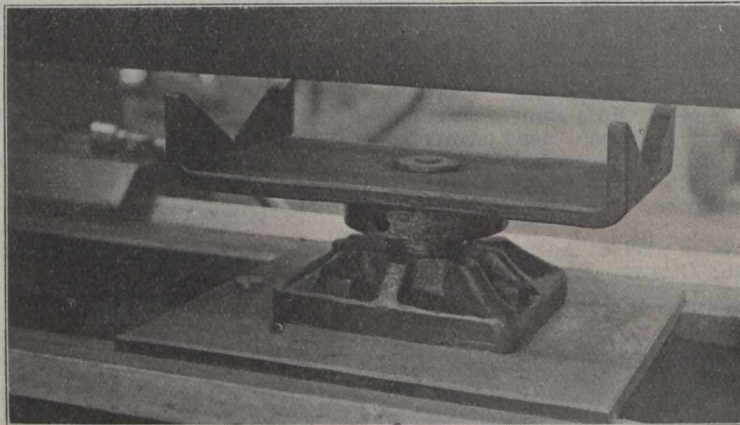
Eastern Canadian Passenger Association.—The monthly meeting of the association was held at Quebec August 3, instead of Montreal, as customary.

The railway mail clerks in the Winnipeg district have offered to the Dominion Government a machine gun, with eight men to operate it.

Railway Mechanical Methods and Devices.

Work Swivel on Lathe in Grand Trunk Railway Stratford Shops.

The swivel stand for swinging work end for end in the lathe, is in use in the G. T. R. shops at Stratford, Ont. A plate with ribs on the underside to guide it along the lathe ways, carries a screw jack base, through which there passes a screw jack. The top of the screw jack carries a V plate, which

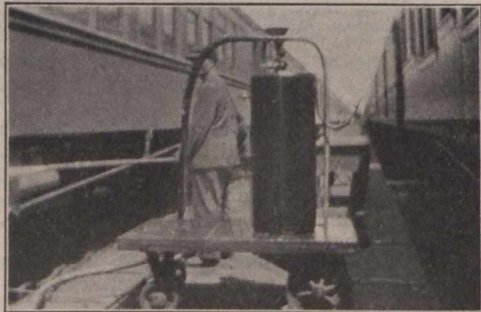


Work Swivel on Lathe.

can be raised up under the work to be turned. The customary practice is to screw the swivel up under the work while the latter is still between the centres, then unscrew the tailstock spindle and swing the work. From the lathe carriage there is a link connection, which may be fastened to the swivel base when it is desired to move the latter along the ways, the wheel of the latter making the moving very easy.

Cleaning Canadian Pacific Railway Car Trucks at Glen Yards, Montreal.

Instead of cleaning passenger car trucks in the common manner with a pail and broom, J. C. Kenny, Car Foreman, Glen Yard, C. P. R., Montreal, has devised the arrangement shown in the accompanying illustrations for accomplishing the task in



Passenger Car Truck Cleaning Outfit.

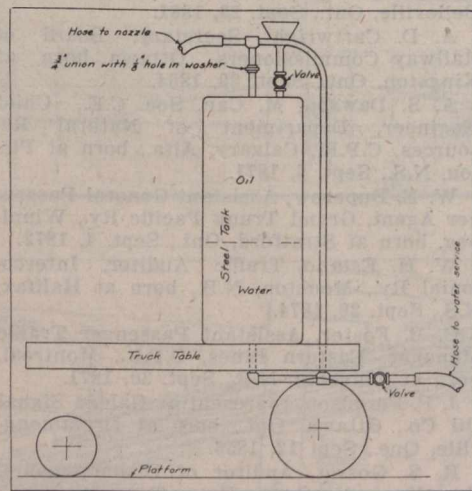
a fraction of the usual time. A steel cylinder, mounted on a truck for transportation through the yard, contains oil and water, the oil on account of its lower specific gravity floating on the water and occupying the upper portion of the cylinder. The tank is piped as shown, water entering at the bottom, a by pass leading up the outside of the tank and across the top, where a connection is made in the top of the tank for drawing off the oil. In this latter connection there is a

$\frac{3}{4}$ in. union, with a brass washer between, pierced with a $\frac{1}{8}$ in. hole, through which the oil is drawn off from the tank. The water pressure on the bottom of the tank, acting in conjunction with the injector action of the water across the top of the tank, causes a steady flow of oil to leave the tank, water replacing the oil drawn off. This flow of oil mixes with the stream of water, which is directed on the truck to be cleaned, a special nozzle being employed. It is claimed for

the outfit that as much work can be performed in a day with it by one man as by 4 men working on the old bucket and broom method.

Air Hose Connection Box in Grand Trunk Railway Car Repair Yards at Stratford.

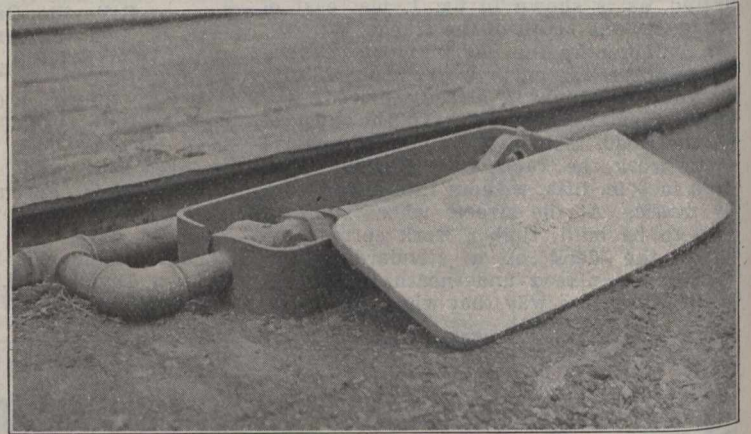
Nearly all the more important car repair yards of the different railway systems have air piped throughout the main trackage area for the use of the car repairers, operating



Passenger Car Truck Cleaning Outfit.

their tools, etc. This is usually done by running a pipe along the surface of the ground, with taps at intervals, with air hose connections at these points, usually at car length intervals. The G. T. R. car repair tracks at Stratford, Ont. have an air main along the full length of the main track. At each of the connections there is a special cast iron box with cover, as shown herewith, of sufficient size to cover valve and hose connection, making it to all practical pur-

cover has a slight flange around the edge to keep it in place. This arrangement is of great value in the winter when the connections become covered with snow and ice, as with this arrangement it is always possible to get at the air supply at any point in the yard. From the safety first standpoint it is also a very desirable feature, as the loose hose attached to the air main is a fruitful source of accident to trainmen when shunting cars, whereas the compact box does not

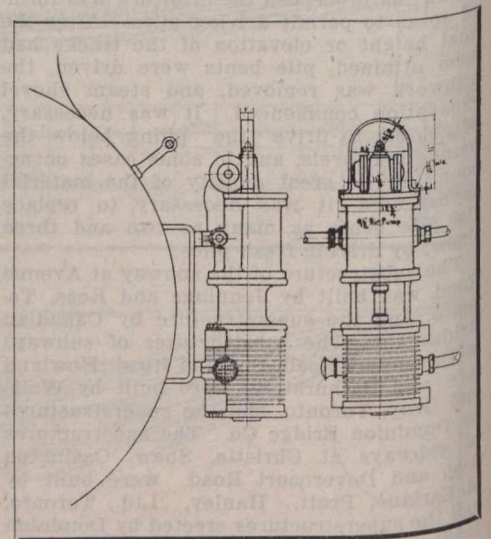


Air Hose Connection Box for Repair Yards.

poses impervious to the weather. The present is great a danger. Other G. T. R. yards are also equipped with the same box.

Air Pump Lifting Yoke on Canadian Northern Railway.

The Canadian Northern Ry. mechanical department has adopted as standard the lifting yoke shown in the accompanying illustration. It consists of a $\frac{1}{2} \times 2$ in. piece of

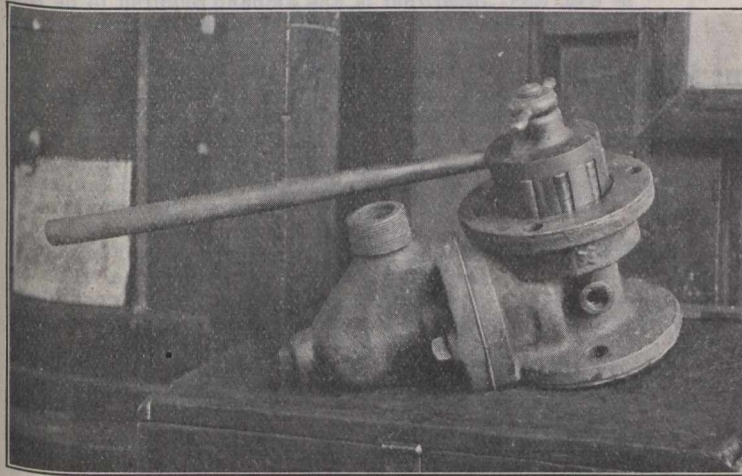


Air Pump Lifting Yoke.

bar iron, bent to a U shape, with right angle feet for attaching to the cylinder head by the latter's bolts. By this simple little device, one of the most awkward jobs encountered on locomotive house practice has been overcome, as it always proved an awkward task slinging the air pump up and down for a locomotive with the limited facilities to be had at such places. With this simple device it is now possible to raise or lower the pump with small loss of time for rigging up.

Triple Valve Bushing Roller in Pere Marquette Railroad Shops.

A speedy method for removing the burr that forms in the end of the triple valve bushing after the valve has been in service for any length of time, has been developed in the Pere Marquette Rd. shops, St. Thomas, Ont. The usual method is to place the bush-



Triple Valve Bushing Roller.

ing in the lathe and take a light cut, thereby removing the burr, or else to scrape out the burr if the latter is not too high. This latter method is often too slow, as the comparatively soft brass of the bushing forms a considerable ridge, several thousandths of an inch high, after continued use. This ridge, it might be observed, causes the valve to knock at the end of its stroke, impairing its efficiency.

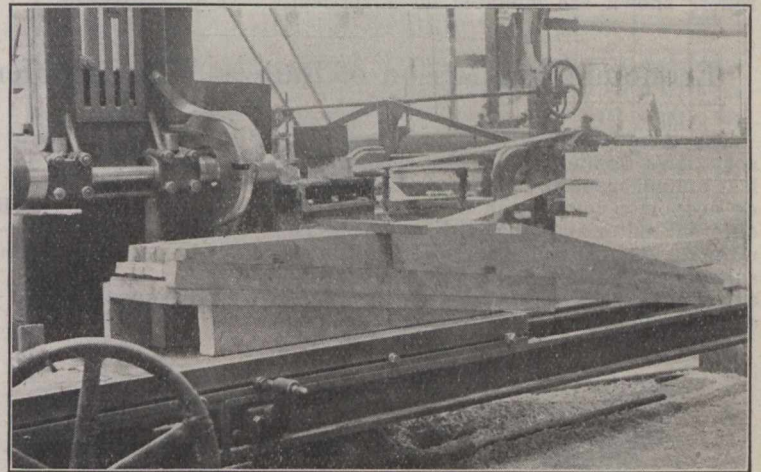
The method employed in these shops is similar to that used in rolling tubes into the tube sheets, a roller of very similar form being used. The roller inserted is shown in the accompanying illustration. It consists of a body slightly smaller than that of the valve around the periphery of which are drilled a number of holes, which break through slightly on the outer face. In these holes are inserted hardened steel tapered rollers, which fit loosely. In the hollow core is a tapered block, the taper of which corresponds to that of the steel rollers. The upper end of this tapered block is reduced and threaded on the end, passing through the top of the body, on the top of which is a hand nut for drawing up the tapered block. The tool is revolved in the valve by a long handle, the inner block being gradually drawn up, forcing out the rollers as the ridge is gradually reduced. Very rapid work is possible with this tool, and it is highly thought of by the men who use it.

Drilling Side Rod Holes in Michigan Central Railroad Shops at St. Thomas.

A rigid tool for drilling side rod holes, in use in the Michigan Central Rd. shops, St. Thomas, Ont., is illustrated herewith. It consists primarily of a plain hollow mill, with added attachments that increase the strength of the tool much beyond the usual capacity of such a tool. The cutting portion of the tool consists of a four edged mill of soft steel, with a tapered shank for fitting in the drill press spindle. The four cutting faces of the tool are equipped with high speed steel cutters, each attached by two small cap screws as shown. Between the shank and the body of the mill the tool is squared as shown. The cylinder on the left

of the tool is the adjunct that increases the capacity of the tool. The lower end of this cylinder is square inside to fit over the squared shoulders of the tool. The upper part of the cylinder slips over the spindle of the drill. Near the top on each side are two grub screws, which when the sleeve is slipped over the spindle and the tool inserted, are screwed in to the drift pin hole through the spindle. By this simple means the main

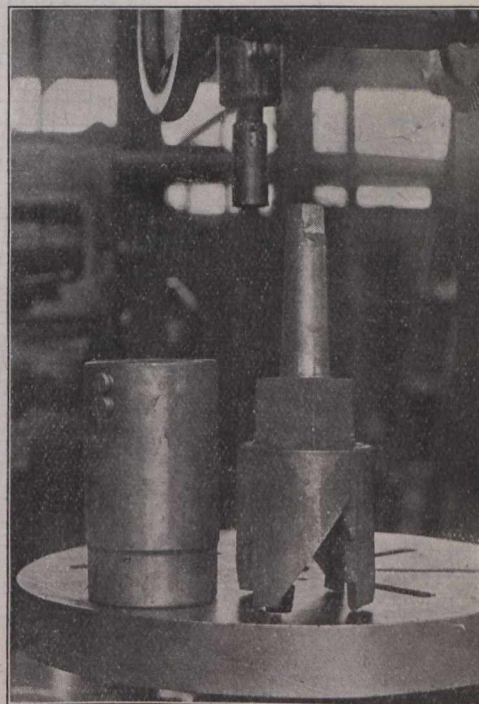
Ont., have a method of handling this, which for repair work leaves little to be desired. The G. T. R. standard car has a standard roof slope, and in consequence the carlines have a corresponding slope. This fact is made use of in the manner shown herewith, where the carlines will be noticed ready for grooving in batches. A wooden jig of the form shown has been made, which fits on the cross planer table, leaving the tapered



Planing Carline Grooves.

torsional strain of the tool is removed from the tang of the tool shank to the four grub screws, which being located at a greater distance from the centre of the spindle than the edges of the tool tang, are better able to carry the heavy strain of the tool. Heavy cuts are possible with this tool without fear

face of the carline parallel with the floor, and the car lines parallel with the travel of the table. The cutter head can then be run across the carlines, cutting out the grooves to the desired size in one or more passes. An added feature of this arrangement is that only one carline need be marked off, as

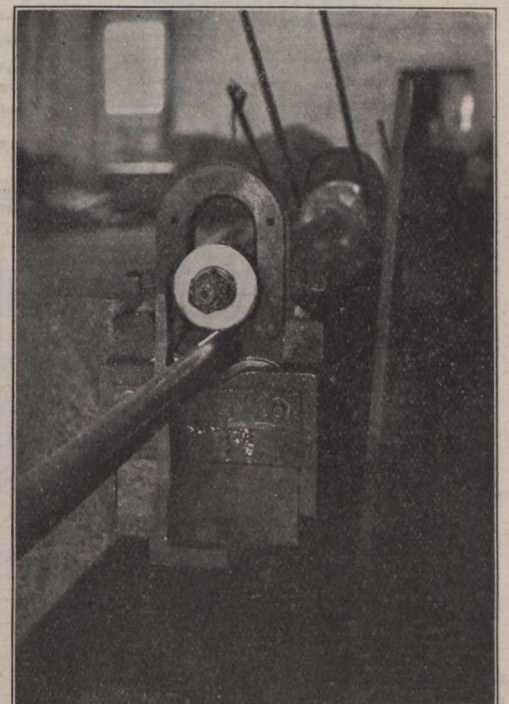


Tool for Drilling Side Rod Holes.

of the tang being twisted off, as is frequently the case with ordinary tools not equipped with an auxiliary drive.

Planing Carline Grooves in Grand Trunk Railway Shops, London.

Instead of shaping up the roof stringer grooves in the top faces of the freight car carlines in the circular saw, or by chiselling them out, the G. T. R. car shops, London,



Machine for Cutting off Tube Ends.

opposed to marking off each one in the old method.

Cutting Off Tube Ends in Michigan Central Railroad Shops at St. Thomas.

A handy tool for cutting off the bad ends of tubes preparatory to safe ending, in use in the Michigan Central Rd. shops, St.

Thomas, Ont., is illustrated herewith. It is mounted on a wooden beam for a frame, the main section being that shown. The tube to be cut is placed on rollers, a pair of which is shown in the foreground; a similar pair is located at the opposite end of the machine. Mounted in journals as shown, is a shaft, with a pulley at the far end, and a revolving disc cutter at the near end, the latter located directly over the rollers. The rollers shown are mounted on a vertically

guided cross head, which can be operated by the lever to the right of the cutter. When the tube is inserted the lever is pressed over, raising the rollers and tube, bringing the latter into contact with the revolving cutter, which rapidly severs the tube end. The action of the latter has a tendency to push the tube off the rollers to the left. This is prevented by the vertical arm shown, which is attached to the front face of the roller crosshead.

is not such a formidable formula if it is divided up into factors which can be taken from compound interest tables. For the use of our tie department and engineers, I have had three diagrams made up showing the value of I+A, from which the annual cost per tie can be taken for ties costing from 40c to \$1.50 and varying in life from 2 to 25 years. These diagrams could be made much easier if they only showed the value of A, that is, the amount required to be subscribed annually to form a sinking fund which would purchase a tie. To this would be added directly the interest on the first cost of the tie. This would have a slight advantage over the present form in a case where the cost of the present tie will differ from the estimated cost of the new tie. The same result, however, can be obtained by taking from the diagram the annual cost, using the estimated value of the new tie, deducting from this the interest per annum at the given rate on this difference. For example, if we estimate that it will cost 80c to renew a tie which cost in place 75c and will

Economic Comparison of Railway Ties of Different Materials.

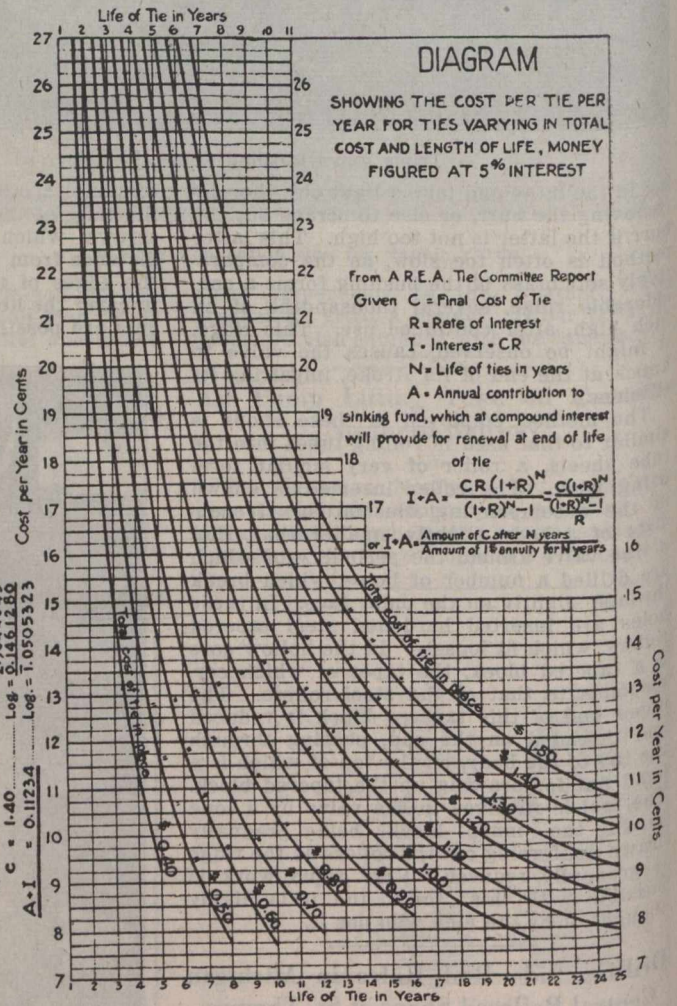
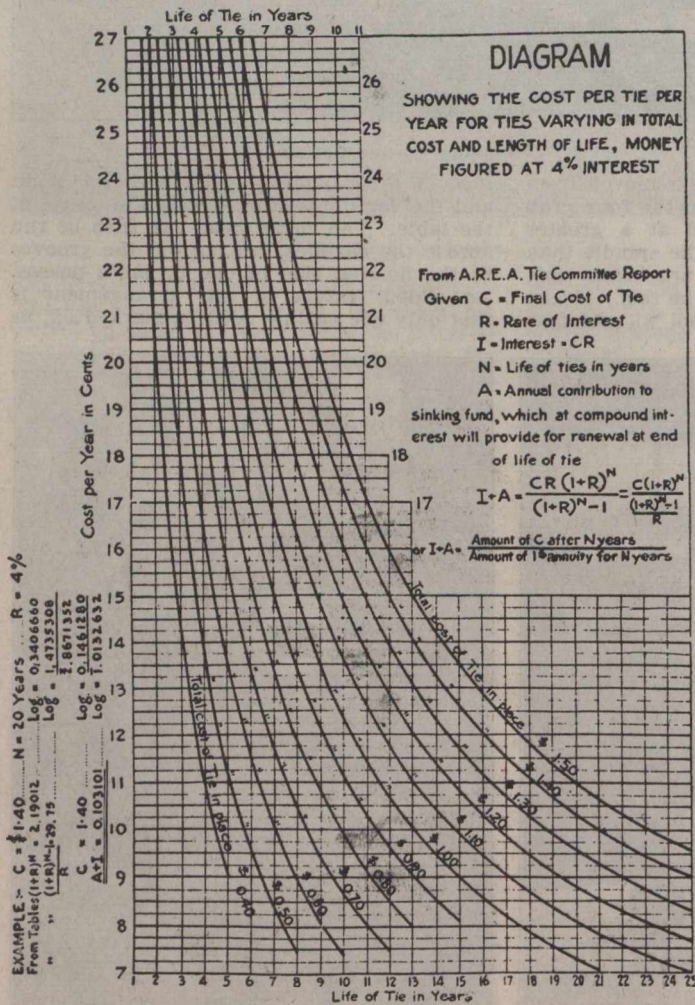
The American Railway Engineering Association's Committee on Ties report at the last annual meeting contained the following on economic comparison of railway ties of different materials. Except in isolated cases ultimate economy in labor and material results from the use of properly treated ties as compared with untreated ties. The economy of any tie of known price and life

the end of the life of the tie. Required, the total cost:

$$I = CR$$

$$A = \frac{CR}{(1+R)^n - 1}$$

$$\text{Total annual cost} = I + A = \frac{CR(1+R)^n}{(1+R)^n - 1} \quad (2)$$



may be determined by the following formulae:

Given C, the first cost of the tie in place; C1 amount at compound interest which will produce interest equaling the first cost of the tie during the life of the tie; R, the rate of interest; n, life of tie in years; and I, the interest on the first cost. Required the total capitalization of the tie:

$$C + C1 = \frac{C(1+R)^n}{(1+R)^n - 1} \quad (1)$$

Given C, the first cost of the tie in place; R, the rate of interest; I, the interest on first cost; and A, the amount of compound interest which will provide for renewal at

the end of the life of the tie; C1, cost of tie in n1 years life. The tie costs are equivalent when the capitalization or annual costs are equal, or

$$C = \frac{C(1+R)^n}{(1+R)^n - 1} \times \frac{(1+R)^{n1} - 1}{(1+R)^{n1} - 1} \quad (3)$$

As printed in the report, two typographical errors occurred, of which J. G. Sullivan, M. Can. Soc. C. E., Chief Engineer, C. P. R., Winnipeg, has sent Canadian Railway and Marine World the necessary corrections, which have been made above. Mr. Sullivan also wrote us as follows:—

"While formula 2 for getting the total annual cost appears a little complicated, it

last 8 years, money figured at 5%, we take from the diagram the annual cost of an 80c tie lasting 8 years, which is 12.4c and deduct from this the interest at 5% on the difference in the actual cost and the estimated cost of the renewal, 5c, which is 0.25c, making the annual cost 12.15c instead of 12.4c."

Other diagrams relating to this article appear on page 335.

The C.P.R. has been awarded a gold medal for its pavilion and contents at the Panama-Pacific Exposition, San Francisco, Cal. The chief feature of the exhibit was a large model of the irrigation dam at Basano, Alta.

24017. July 23.—Approving C.P.R. and Canadian Northern Ry. crossing at Methven Jct., Man., and interlocking plant installed there.
24018. July 23.—Approving crossing of Canadian Northern Ry. by C.P.R. in Lot 56, Portage la Prairie, Man., and interlocking plant there.
24019. July 28.—Ordering Toronto, Hamilton & Buffalo Ry. to make cattle pass for A. Mittelehldt, Wellandport, Ont., by Aug. 31.
24020. July 27.—Approving G.T. Pacific Ry. plan showing clearance between roundhouse doors.
24021. July 29.—Amending order 23985, July 19, re G.T. Pacific Ry. transfer track at Frobisher, Sask.
24022. July 19.—Ordering G.T.R. to move farm crossing northeast of station at St. Hilaire East, Que., to point opposite Ste. Anne St., at expense of St. Hilaire Village, to be completed by Aug. 20.
24023. July 29.—Authorizing Ottawa Electric Co. to erect its wires across C.P.R. on Second Ave., McKellar, Ont.
24024. July 23.—Approving Lake Erie & Northern Ry. revised location at Waterford, Ont., and approving yards and station there.
24025. July 28.—Authorizing Toronto, Hamilton & Buffalo Ry. to build spur at Dunnville, Ont., to connect with G.T.R. branch, serving Dominion Cannery, Ltd.
24026. July 20.—Authorizing C.P.R. to use bridge 41.2 on its Boundary Subdivision, B.C.
24027. July 31.—Approving C.P.R. Supplement 22 to C.R.C. no. E-2900, and G.T.R. Supplement 26 to C.R.C. no. E-3036, both effective Aug. 5, increasing rates on building brick in carloads, minimum weights set out in tariffs, from Cooksville, West Mimico, and Weston to Toronto, and from Port Credit to Toronto, respectively, from 2½c. to 3c. per 100 lbs.
24028. July 29.—Authorizing St. Paul, Man., rural municipality to build highway crossing over C.P.R. on Willis Ave., north of Middlechurch station.
24029. July 28.—Ordering G.T.R. to install gates at crossing at intersection of Barton St. and Ferguson Ave., to be operated by day and night watchmen appointed by City of Hamilton, Ont.; half-interlocker to be rearranged to form part of combined system; 20% of cost of installation to be paid out railway grade crossing fund, \$480 by city, and \$720 by G.T.R.; Hamilton St. Ry. to pay entire cost of plant, which takes care of street railway operation; remainder of cost to be paid:—40% by city and 60% by G.T.R.; 50% of operation to be paid by Hamilton St. Ry. and remainder, 40% by city and 60% by G.T.R.
- 24030, 24031. July 28, 19.—Relieving Toronto, Hamilton & Buffalo Ry. and G.T.R. from maintaining watchmen to operate interlocking plants at crossings in Dunnville, and near Diltz, Moulton Tp., on Sundays and between 8.15 p.m. and 6.45 a.m. on week days.
24032. July 30.—Dismissing application of City of Hamilton, Ont., for order directing Toronto, Hamilton & Buffalo Ry. to provide watchmen and gates at intersection of T.H. & B.R. northerly spur with Barton St.
24033. July 30.—Authorizing Canadian Northern Ry. to build across and divert trail in Sec. 8-43-12, w. 3 m., Sask.
24034. July 30.—Ordering that express companies amend form of taking consignees' receipt for goods delivered, by omitting such words as "in good order," or "in apparent good order," so that receipt required be similar to that given shipper, with liberty reserved to that given consignee, in case of apparent loss or damage, to qualify receipt in accordance with facts.
24035. Aug. 3.—Approving C.P.R. plan X-2-391, showing changed mode of operating gates at crossing of Royce Ave., Toronto.
24036. Aug. 3.—Relieving G.T. Pacific Branch Lines Co. from erecting fences, gates and cattle guards on certain portions of its Tofield-Calgary Branch, between mileage 0 and 201, Alta.
24037. Aug. 3.—Authorizing G.T.R. to operate jointly with C.P.R. over siding on Pardee Ave., Toronto serving premises of Canada Metal Co.
24038. Aug. 3.—Amending order 23974, July 14, re Lake Erie & Northern Ry. crossing of George St., Brantford, Ont., by changing George St. to George Ave.
24039. Aug. 3.—Ordering Canadian Northern Ry. to accept l.c.l. freight from G.T.R. over connection between the two lines at Lyn, Ont., and forward it to destination without further delay.
24040. Aug. 3.—Ordering C.P.R. to amend distributing tariff from Winnipeg, St. Boniface, Paddington and North Transcona, Man., so as to apply same rates to Two Creeks as to Elkhorn, Man.
24041. Aug. 3.—Relieving G.T.R. from providing further protection at crossing immediately north of Howick station, Que.
24042. Aug. 4.—Authorizing G.T. Pacific Ry. to remove regular agent at Gregg, Man.
24043. July 31.—Approving plans and specifications showing work to be done on Mennie drain, under Michigan Central Rd. and Pere Marquette Rd., in Lots 5, 6, 7, 8 and 9, Con. A, Dunwich Tp., Ont.
24044. Aug. 3.—Ordering C.N. Quebec Ry. to build retaining wall to prevent water from drain across old gravel pit spur on W. Mayrand's property on Lot 22, Deschambault Parish, from going on G. Gignac's property.
24045. Aug. 4.—Ordering C.P.R. to install gates at crossing of Symington Ave., Toronto, Ont., to be operated by day and night watchmen; 20% of cost to be paid out of railway grade crossing fund; remainder and cost of operation to be divided equally between city and C.P.R.
24046. Aug. 4.—Rescinding order 22950, Dec. 4, 1914, re diversion of Rue la Verandrye, St. Boniface, Man., by Canadian Northern Ry.
24047. July 26.—Approving agreement between Bell Telephone Co. and North Colchester Tp., Ont., July 9.
24048. Aug. 4.—Ordering Great Northern Ry. within 30 days to fence right of way, on west side, on S. P. Pond's property, Nelson, B.C., mileage 187 to 188; also mileage 185.2 to 188.75, and 189.50 to 191.45; no barbed wire to be used.
24049. Aug. 4.—Authorizing Alberta Public Works Department to build highway crossing over C.P.R. in s. ½ Sec. 32-6-19, w. 4 m.
24050. Aug. 5.—Ordering that gates at Royce Ave., Toronto, be operated by watchmen appointed by C.P.R. and G.T.R.; in case of disagreement, then by the Board as and for the companies; watchmen to act in each instance for and on behalf of company, the passing of whose trains or locomotives requires operation of gates; in case of any accident at crossing, owing to running of train or locomotive, the company operating such shall alone be liable for any negligence of watchman in charge of gates, and shall indemnify and save harmless the other company from all loss, charges, or damages in respect thereof.
24051. Aug. 4.—Ordering Canadian Northern Express Co. forthwith to maintain express collection and delivery service formerly furnished at Athens, Ont., pending formal hearing by Board.
24052. Aug. 5.—Approving Halifax & South Western Ry. Standard Tariff of Parlor Car Tolls, C.R.C. no. S-1.
24053. Aug. 3.—Ordering C.N. Quebec Ry. to place pipe or open box culvert under its railway at ditch on S. Germain's property, Portneuf, Que.
24054. Aug. 9.—Authorizing Montreal & Southern Counties Ry. to operate temporarily, for construction purposes only, over C.P.R., on Lot 34, St. Paul d'Abbotsford Parish, Que.; crossing to be protected by a flagman.
24055. Aug. 6.—Amending order 24029, July 28, re G.T.R. and Hamilton St. Ry. crossings at intersection of Barton St. and Ferguson Ave., Hamilton, Ont.
24056. Aug. 9.—Ordering G.T.R. to build siding for not less than five cars, and to build flag station, with small freight shed attached, at Ratho, Ont.; work to be completed by Sept. 15.
24057. Aug. 6.—Authorizing Toronto Ry. to appeal to the Supreme Court of Canada from Board's order directing it to bear portion of cost of subway at Avenue Road, Toronto.
24058. Aug. 6.—Ordering C.P.R. to bond a further 700 ft. of its track north of Port Burwell Road, Port Burwell, Ont., at mileage 32.7, and to widen the road to 20 ft. for 100 ft. each way from the crossing; municipality to pay \$100, and C.P.R. the remainder.
24059. Aug. 6.—Authorizing G.T.R. to rebuild bridge 180 over Blanche River, District 3, Montreal Division, Plessisville, Que.
24060. Aug. 9.—Authorizing Saskatchewan Highway Commissioners to build highway crossing over Canadian Northern Ry., between n.w. ¼, Sec. 3, and s.w. ¼, Sec. 10, Tp. 34, R. 3, w. 2 m.
24061. Aug. 9.—Ordering G. T. Pacific Ry. Co. to fence its right of way through Latta Brothers' property, North Bulkeley, B.C., by Sept. 1.
24062. Aug. 3.—Prohibiting C.P.R., G.T.R., and Canadian Northern Ry. from blowing steam whistles of any locomotive when approaching highway crossings within limits of the City of Toronto.
24063. Aug. 11.—Extending, to Sept. 15, time within which C.P.R. may install bell at highway crossing, mileage 6.94, Ketepec station, St. John, N.B.
24064. Aug. 11.—Authorizing C.P.R. to remove regular agent at Magaquadavic station, N.B., a caretaker to be appointed.
24065. Aug. 11.—Approving location of Canadian Northern Ry. third class station at Fisher Branch, Man.
24066. Aug. 11.—Authorizing Saskatchewan Highway Commissioners to build a highway crossing over Canadian Northern Ry. in n.w. ¼, Sec. 33, Tp. 14, R. 25, w. 2 m., at C.N.R.'s expense.
24067. Aug. 11.—Authorizing G.T.R. to build spur for Coasts and Lakes Contracting Corporation, Bertie Tp., Ont., to be completed within 3 months.
24068. Aug. 11.—Authorizing G.T.R. to build siding for Dominion Sugar Co., Waterloo Tp., Ont., to be completed within three months.
24069. Aug. 11.—Authorizing G. T. Pacific Branch Lines Co. to build across highway between Secs. 9 and 10, Tp. 45, R. 23, w. 3 m., mileage 47.3.
24070. Aug. 11.—Authorizing Kettle Valley Ry. to cross C. N. Pacific Ry. at Hope, B.C., for construction purposes only, until October 31; all trains to be flagged over crossing by a flagman appointed by C.N.P.R. at expense of K.V.R.
24071. Aug. 12.—Authorizing Toronto Suburban Ry. to cross C.P.R. near Guelph, Ont., temporarily, for construction purposes only, between 6.30 a.m. and 6.30 p.m., pending installation of interlocking plant required by Oct. 15, trains to be flagged by day watchman, appointed by C.P.R. at expense of T.S.R.
24072. Aug. 12.—Authorizing Thorah Tp., Ont., to build highway crossing over C. N. Ontario Ry., between Cons. 2 and 3, C.N.O.R. to bear cost.
- 24073 to 24075. Aug. 12, 11.—Approving Bell Telephone Co.'s agreements with Campbell's Bay Rural Telephone Co., June 29, Zorra Telephone Co., July 22, and North Huron Telephone Co., July 22.
24076. Aug. 12.—Authorizing C.P.R. to build, at grade, its Virden-McAuley branch across Railway Ave. South, McAuley, Man., mileage 36.04.
24077. Aug. 12.—Authorizing C. N. Ontario Ry. to build across Arthur St., Port Arthur, Ont.
24078. Aug. 12.—Relieving C.P.R. from providing further protection at crossing of highway half a mile west of Adamsville station, Que.
- 24079, 24080. Aug. 13.—Authorizing G. T. Pacific Ry. forthwith to proceed with building of interchange track with C.P.R. at the Globe elevator site, Calgary, Alta.; Department of Trade and Commerce will pay G.T.P.R. \$14,000 towards cost; and also to commence forthwith and complete the branch to connect with Board of Grain Commissioners' elevator at Moose Jaw, Sask.
24081. Aug. 13.—Dismissing application of Tilbury North Tp., Ont., for order compelling Bell Telephone Co. to restore telephone office at Stoney Point.
24082. Aug. 13.—Ordering Canadian Northern Ry. to build farm crossing for S. Kilborn, Ochre River, Man.; work to be completed by Sept. 1.
24083. Aug. 13.—Authorizing Montreal Tramways Co. to build second track across C. N. Quebec Ry. on boulevard which the City of Maisonneuve is building on Pie IX Avenue.
24084. Aug. 12.—Extending, to Oct. 15, time within which the C.P.R. may complete extensions to siding of Provincial Reformatory, Guelph Tp., Ont.
24085. Aug. 19.—Approving G. T. Pacific Branch Lines Co.'s plan, dated Aug. 14, showing connection with C.P.R. near the Globe elevator, Calgary, Alta.
24086. Aug. 16.—Authorizing the G. T. R. to build additional track across Queen St. South, Berlin, Ont.
24087. Aug. 14.—Rescinding order 22119, July 2, 1914, re location of Toronto Terminals railway between York St. and Don River, Toronto.
24088. Aug. 5.—Extending, to Sept. 1, time within which G. T. R. was directed to build interchange track with Campbellford, Lake Ontario & Western Ry. (C.P.R.) at Cobourg, Ont.
24089. Aug. 17.—Authorizing C.P.R. to build spur for Hull Iron & Steel Foundries, Ltd., Hull, Que.; work to be completed in three months.
24090. Aug. 13.—Approving C.P.R. plans, 25679-A, July 5, 25679-5, July 16, and 24707, Aug. 2, showing subway at Yonge St., Toronto.
24091. Aug. 12.—Authorizing C.P.R. to build spur across road allowances between Secs. 28 and 21, and across Winnipeg Electric Ry. (transmission line), on s. w. ¼, Sec. 28, and n. e., n. w., and s. e. ¼, Secs. 21, Tp. 14, R. 10, e.p.m., work to be completed within three months.
24092. Aug. 16.—Amending order 24000, July 27, re C.P.R. and G.T.R. bells to be installed at crossing of Eglinton Ave., York Tp., Ont.
24093. Aug. 17.—Authorizing G. T. R. to build extension of spur for Borden Milk Co., Norwich Tp., Ont.; to be completed within three months.
24094. Aug. 13.—Relieving G. T. Pacific Branch Lines Co. from erecting fences, gates, and cattle guards on its Prince Albert Branch from mileage 0 to 64, at different points in Saskatchewan.
24095. Aug. 16.—Relieving Canadian Northern Ry. from erecting fences along its right of way west of Tollerton, Alta., at five points; order to cease when vicinity becomes settled or improved.
24096. Aug. 14.—Relieving Nelson & Fort Sheppard Ry. (G.N.R.) from erecting fences, gates, and cattle guards from International boundary, south of Waneta, to Nelson, B.C.; order to cease when vicinity becomes settled or improved.
- 24097, 24098. Aug. 16.—Approving Bell Telephone Co.'s agreements with Molesworth Independent Telephone Co., Aug. 3, and South Plantagenet Rural Telephone Co., July 27.
24099. Aug. 13.—Approving proposed location of C.P.R. station at Marchwell, Sask.
24100. Aug. 17.—Relieving C.P.R. from erect-

ing fences, gates, and cattle guards along certain portions of its Shore Line Subdivision, Atlantic Division; order to cease when vicinity becomes settled or improved.

24101. Aug. 19.—Approving plans, profiles, and specifications of the Wilton drain No. 2, and detail plans of concrete culvert to be built under Michigan Central Rd., in Aldborough Tp., Ont.

The New Canadian Pacific Railway Station at Quebec.

The foundation stone of the new station which the C. P. R. is building at Quebec as a union station, was laid by the Mayor of the city, Aug. 12. The C. P. R. was represented by F. L. Wanklyn, General Executive Assistant, and other officials, the Lieutenant Governor and the Premier representing the province.

The plans show a building designed in a modern adaptation of the chateaux of the Loire, France, which is calculated to add to the architectural features of the city. The building, which is being erected at the corner of St. Paul and Henderson streets, will have as a frontage a large open paved plaza, approximately 300 x 200 ft., flanked on either side by broad sidewalks leading to the main entrance. Between the sidewalks and the building will be large spaces which will be planted with Lombardy poplars and blue spruce and other shrubs. The main building will be of Argenteuil granite, Deschambault limestone, and Citadel brick, with high sloping roof of copper. The main entrance, which will be from St. Paul St., will be 25 ft. wide. Above it will be a window about 40 ft. in height, of metal sash, divided into seven sections. At the crown of the arch will appear the arms of seven of the historic names of Quebec, viz., Montmagny, who was the first Governor of Canada, from 1636 to 1647; DeTracy, Viceroy of Canada, 1665; Beauharnois, Governor of Canada, 1726 to 1747; Montcalm, one of the French Generals defending Quebec when the English conquered Canada in 1759; Wolfe, the general who led the English to victory on the Plains of Abraham in 1759, and died on the battlefield; Frontenac, Governor of Canada, 1672; Talon, first Intendant of New France, 1665 to 1672. The main facade of the building will be dominated by a central tower with turrets at the angles, at the bases of which will be cartouches, bearing in one case the fleur de lys of France, and at the other the Tudor rose, the thistle and the shamrock of the United Kingdom of Great Britain and Ireland. High upon the roof will be an ornamental clock with a dial 8 ft. in diameter, over which will appear the city's arms.

The building will be L shaped, the central block 175 ft. long, and wing 200 ft. long.

At the entrance will be a lobby approximately 45 x 65 ft. and 60 ft. high, to be entirely of tapestry brick with ornamental work in faience tile. The room will be lighted from the St. Paul St. side and also from the roof, the spaces in the roof being filled with ceiling lights. The central ceiling light will contain a cartoon in leaded glass showing the Dominion of Canada, with the thousands of miles of the C. P. R. dominating the industrial and prairie sections marked in distinct colorings. The ceiling of the dome will be constructed entirely of faience tile with ornamental patterns arabesque in blue, red and gold. The main cornice of the big lobby will also be in faience tile, and will carry a series of cartouches symbolic of the C. P. R., viz., its hotel system, railways and steamships. The main floor will be divided into ticket offices, baggage room, parcel room, Customs offices, transfer, telegraph and news stand. From the vestibule a marble staircase will lead to the offices on the first floor which will be

24102. Aug. 18.—Authorizing London Railway Commission to take, in connection with London & Port Stanley Ry., for erection of repair shop and car barns, the fee simple in Lot 1, on south side of Philip St., and Lot 1, on north side of Trafalgar St., London, Ont.

24103. Aug. 19.—Approving agreement between Bell Telephone Co. and Plummer Additional Tp., Ont., Aug. 6.

occupied by the C. P. R., and space will also be provided for the accommodation of the National Transcontinental Railway. The main concourse will be 65 ft. by 125 ft. and 40 ft. high, constructed of tapestry brick with faience insertings in color. All of the ornamental work in this room will carry the characteristic ornaments of the French Chateaux and Dolphin and Tridents interspersed with the Tudor rose. Opening off the concourse will be the station agent's room and the usual conveniences. Train gates will separate the concourse from the train shed which will be on the same low principle as Windsor St. station in Montreal. There will be 11 tracks and the platforms will be well lighted. In the concourse near the train gates will be installed train indicators electrically illuminated.

The power house will be situated on the St. Paul St. side of the building. It will contain the necessary equipment to supply main station and the freight shed across the tracks towards the river.

The building was designed by M. H. E. Prindel, architect, Montreal, and the construction is being supervised by D. H. Mapes, Engineer of Building Construction, C. P. R., and T. E. Vidette for the contractors, the Downing Cook Co. This description is abridged from the Quebec Chronicle.

National Transcontinental Railway Operation.

The operation of the National Transcontinental Railway by the Dominion Government is raising some questions affecting its connection with the Intercolonial Ry. The first of these is at Moncton, where for several miles the two lines run side by side westerly. It is reported that in order to facilitate traffic, and to reduce cost of maintenance it is proposed to build about a mile of line to connect the two tracks, and to run all the traffic over one of the lines.

The second matter affects St. John, N. B., and was discussed with the Minister of Railways on the occasion of his recent visit there. The Minister is reported to have said that the Department's engineers were studying the problem of better transportation connection with St. John, in connection with the operation of the N. T. R., and the engineers seemed to favor an entrance to the city by the western side of the harbor. When the matter had been further considered, F. P. Gutelius, General Manager, would discuss the matter with the Board of Trade and the City Council. (Aug., pg. 307.)

Rogers Pass Tunnel Contractors' Suit.—In the original hearing of the action brought by McIlwee Brothers, against Foley, Welch and Stewart, general contractors for the construction of the five mile tunnel on the C. P. R. at Rogers Pass, B. C., for \$527,000, the court awarded just over \$30,000 damages. The plaintiffs appealed and judgment was given by the British Columbia Court of Appeal, Aug. 10, under which the plaintiffs become entitled to practically the full amount claimed. It is expected that Foley, Welch and Stewart will carry the case to the Supreme Court of Canada.

American Association of Passenger Traffic Officers.

At the last annual meeting at San Francisco, the following Canadian railway officials were placed on the various committees:

Official Digest of Fares and Divisions—G. C. Wells, Assistant to Passenger Traffic Manager, C.P.R., Montreal.

Adjustments of disputes relative to division of passenger fares—W. P. Hinton, Assistant Passenger Traffic Manager, G.T.R., Montreal.

Printing of folders and other advertising matter and economical distribution thereof—W. P. Hinton.

Additional charge for checking baggage—W. P. Hinton, W. H. Snell, General Passenger Agent, Eastern Lines, C.P.R., Montreal.

Additional fares for sleeping and parlor car passengers and additional charge for passenger occupying section in sleeper—G. T. Bell, Passenger Traffic Manager, G.T.R., Montreal.

Economies in operation of city ticket offices and in passenger service—C. B. Foster, Assistant Passenger Traffic Manager, C.P.R., Montreal.

Committee on adjustment of disputes relative to division of passenger fares—W. P. Hinton, W. H. Snell.

Standing Territorial Committee, Eastern Canadian Passenger Association—W. P. Hinton, C. E. Benjamin, General Passenger Agent, Trans-Pacific Service, C.P.R., Montreal; F. F. Backus, General Traffic Manager, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont. (since appointed Assistant to President).

Territorial Membership Committee, Eastern Canadian Passenger Association—W. H. Snell, W. P. Hinton.

Harvesters' Excursion Rates.—In connection with the annual harvesters' excursion rates to Manitoba, Saskatchewan and Alberta, representations have been made to the railway companies by the Vancouver Board of Trade, asking that these reduced rates be made applicable from British Columbia. H. W. Brodie, General Passenger Agent, C. P. R., Vancouver, replying to the Board, Aug. 8, on behalf of the railway companies interested in the movement of laborers to the Northwest, said that all arrangements were made after consultation with the governments of the three provinces interested. These provinces do not desire excursions run from British Columbia, fearing that there would be an influx of men unsuited to harvest work. The railway companies have suggested that if a shortage of labor be feared, and the prairie provinces will send representatives into British Columbia to select the class of laborers required, the companies will place special rates in effect for their benefit. The statement made during the discussion at the Board's meetings that reduced rates for harvesters were in effect from U. S. points, was incorrect.

Hudson's Bay Co.'s Report.—At the annual meeting in London, Eng., August 5, Sir Thomas Skinner, Chairman, who is also a director of the C.P.R., stated that in view of the unfavorable results of the past year, and the uncertainty regarding the duration of the war, which had caused considerable interference with the company's business, the directors had decided not to recommend a dividend on the ordinary stock.

The Intercolonial Ry. Office Staff at Moncton, N.B., contributed a percentage of their July salaries for the provision of a machine gun for the Canadian Expeditionary Force.

Freight Cars for the Belgian State Railways Being Built in Canada.

As previously stated in Canadian Railway and Marine World, the Railway Executive Commission of the British War Office has ordered 1,200 box cars from the Canadian Car and Foundry Co. for the Belgian State Railways. From the viewpoint of this continent they are very novel in design, as the accompanying illustration shows. They will be of a steel frame, wood sheathed type, with a capacity for 15 metric tons. (A metric ton is slightly less than a long ton, or 2,205 lbs.) The underframe construction will resemble that of the steel frame freight car used on this continent, except that there will be no body bolster arrangement, as the cars will be mounted on two single trucks directly from an intermediate sill, which will be the heaviest member of the underframe. This intermediate sill will be a 10x3 51-64x29-64 ship channel directly over the journals. End sills, the full width of the car, will be

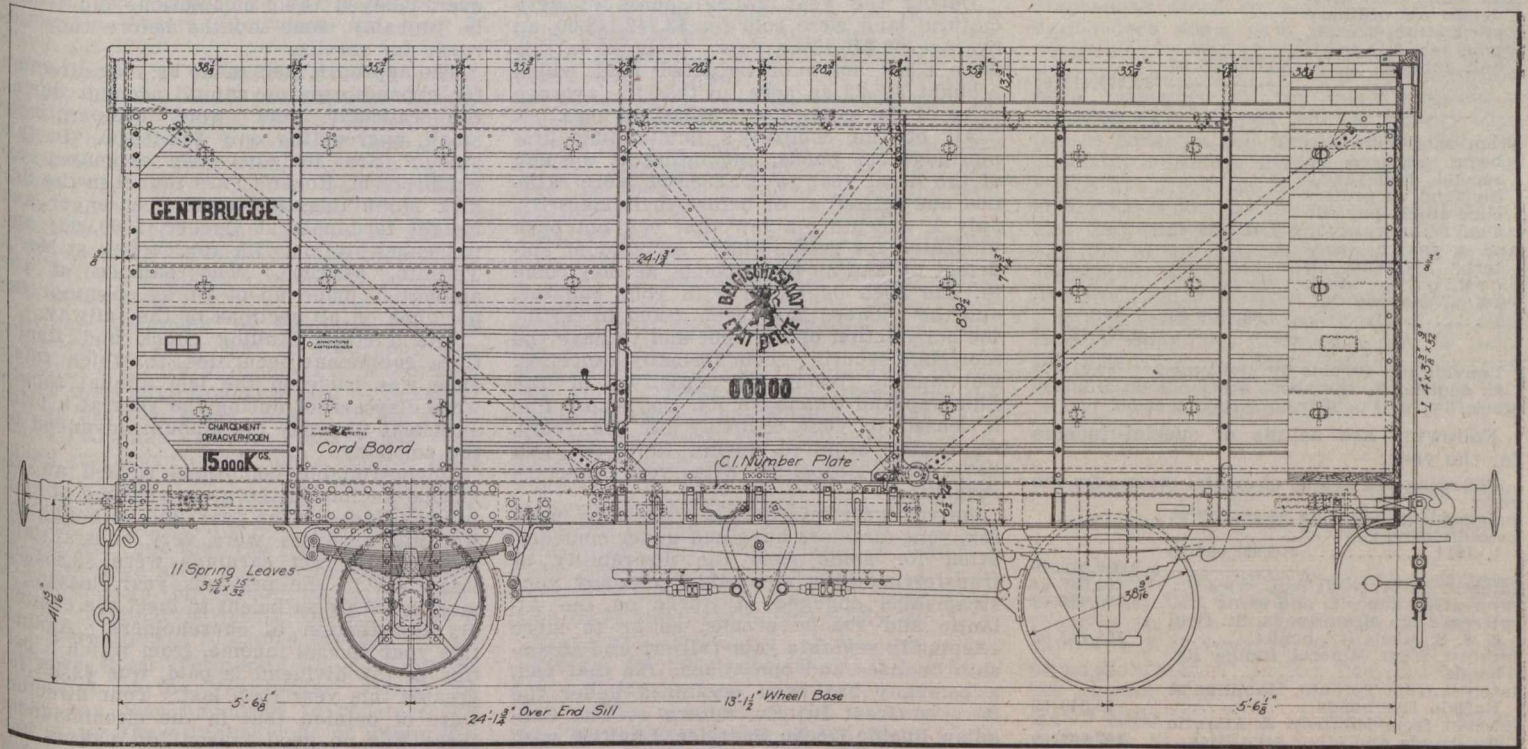
transmitted to the wheels through an 11-leaf spring of 3 15-16x15-32 in. steel plate, through brackets and links from the under side of the intermediate sill, and then to the journals. The brake rigging will be of the hand type, braking on one side of the car only. Two curved links suspended under the centre of the car will have on their inner lower faces two blocks, which, when depressed by the brake lever running to the end of the car, will force out the arms, applying the brake shoes to the wheels. The couplings will be on the screw arrangement, as shown at the righthand end of the illustration. The drawbar pull will be transmitted through the car by a central rod, which will have a clear passage between the centre sills. A cushioning action for the draught equipment will be placed on this rod behind the end sill, and will consist of a volute spring.

The end posts will be 4x2 47-64x17-64 in.

St. John and Quebec Railway Taken Over by the New Brunswick Government.

Under the provisions of the act relating to the St. John and Quebec Ry. passed by the New Brunswick Legislature last session, which came into force upon proclamation June 9, the company was required within 20 days thereafter to make arrangements satisfactory to the Government for the completion of the line. The company failed to make such arrangements, and an order-in-council was passed Aug. 4, and made public, Aug. 18, putting in force the various provisions of section 4 of the act. Under this section, the order-in-council declares:—"That all shares of common stock of the company issued prior to the publication of this order vest in the Crown, to be held in behalf of the province, free from all liens, etc., except that in favor of the Prudential Trust Co., in respect of 17,947 shares, with power to transfer such shares or any of them."

The directors and officers of the company



Elevation of 15 Metric Ton Freight Car for Belgian State Railways.

10x3 19-32x19-32 ship channel, and will support the buffers, placed 5 ft. 7 in. centres at 41 15-16 ins. above the rail. The centre sills will be 3x1 15-16x5-16 in. channels, extending from end sill to end sill, flange inward, at 17 1/4 ins. back to back of web. These central sills will be reinforced by similar channel sections on either side, running diagonally from the juncture of the intermediate and end sills to the centre sill, about a third the length from the end, passing alongside the centre sill, to which they will be riveted in the central section, and branching off diagonally to the other corner. The side sills will be 3x3x5-6 in. angles. Following are the principal particulars of the cars:

Capacity	15 metric tons
Gauge	4 ft. 8 1/2 ins.
Trucks	Single
Wheels	38 in. rolled steel
Wheel base	13 ft. 1 1/2 ins.
Length over end sill	24 ft. 1 1/2 ins.
Height of car body	8 ft. 9 1/2 ins.
Width inside	8 ft. 4 1/2 ins.
Width over side sills	8 ft. 6 3/4 ins.

The rolled steel wheels will be carried on steel axles. The car weight will be

beams, and the side posts 2 13-32x1 1/4x11-32 in. channels. The side sheathing will be yellow pine or Douglas fir, bottom board 1 3/8 ins. thick, second and third boards 1 3/8 ins. thick, balance 1 in. thick. The end lining will be yellow pine or Douglas fir 1 3-16 ins. thick. The side frames will be braced by diagonals. The roofing will be 13-16; in. white or red pine, or Douglas fir, covered with canvas, and supported on steel channel type carlines. There will be a side door on each side, supported on bottom rollers. A step will be provided at each door. Delivery is to commence at an early date.

Railway Lands Patented.—Letters patent were issued during July for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary and Edmonton Ry.	2,069.00
Canadian Northern Ry.	1,608.57
Grand Trunk Pacific Ry.	6.10
Qu'Appelle, Long Lake, and Saskatchewan Rd. and Steamboat Co.	3,835.00
Total	7,518.67

acting heretofore are disseized of their offices, and the following are appointed to act on behalf of the Province, until the holding of the annual meeting:—President, Irving R. Todd, St. Stephen; Secretary, E. Girouard, Moncton; Treasurer, J. D. Palmer, Fredericton; additional directors, W. S. Fisher, St. John, and Richard Leary, Richibucto.

Steel Rails for Alberta.—In Canadian Railway and Marine World for August it was stated in a shipping letter from Fort William that a contract had been made for the delivery of about 45,000 tons of steel rails there. We have since ascertained that these are for the J. D. McArthur Co., Limited, contractors, Winnipeg, who have ordered from 40,000 to 50,000 tons 60 lbs., A.S.C.E. section, from the Algoma Steel Corporation for use principally on the Alberta and Great Waterways Railway. At least 35,000 tons will be used north of Edmonton, but some portion of the order may be sent to British Columbia. They will be shipped from Sault Ste. Marie to Fort William by water.

Canadian Pacific Railway's Annual Report.

Following is the report for the year ended June 30, addressed to the shareholders over the signature of the President, Sir Thos. G. Shaughnessy:—

The accounts for the year ended June 30, show the following results:—

Gross earnings	\$98,865,209 78
Working expenses	65,290,582 49
Net earnings	\$33,574,627 29
Deduct fixed charges	10,446,509 83
Surplus	\$23,128,117 46
Contribution to Pension Fund	125,000 00

Deduct net earnings of Pacific Coast steamships, commercial telegraph, and news department, transferred to special income account	1,494,151 49
	\$23,003,117 46

From this there has been charged a half-yearly dividend on preference stock of 2%, paid April 1 \$ 1,605,412 80	
And 3 quarterly dividends on ordinary stock of 1¼% each, paid Jan. 2, April 1, and June 30	13,650,000 00
	15,255,412 80
	\$ 6,253,553 17

From this there has been declared a second half-yearly dividend on preference stock, payable Oct. 1	\$ 1,613,638 42
And a fourth quarterly dividend on ordinary stock 1¼%, payable Oct. 1	4,550,000 00
	6,163,638 42

Leaving net surplus for the year \$ 89,914 75
In addition to the above dividends on ordinary stock, 3% was paid from special income.

Following are details of special income for the year:—

Following are details of special income for the year:

Balance June 30, 1914	\$5,046,812 46
Less dividend paid Oct. 1, 1914	1,950,000 00
	\$ 3,096,812 46
Interest on proceeds land sales	64,587 54
Interest on deposits and loans	1,466,096 67
Interest from Minneapolis, St. Paul & S. S. Marie Ry. bonds	159,720 00
Interest from Mineral Range Ry. bonds	50,160 00
Interest from Toronto, Hamilton & Buffalo Ry. bonds	10,840 00
Interest from Montreal & Atlantic Ry. bonds and other securities	107,902 09
Interest from Berlin, Waterloo, Wellesley & Lake Huron Ry. bonds	17,040 00
Interest from St. John Bridge & Ry. Extension Co. bonds	6,200 00
Interest from Esquimalt & Nanaimo Ry. bonds	193,280 00
Interest from Dominion Atlantic Ry. extension debenture stock	56,940 00
Interest from Dominion Atlantic Ry. second debenture stock	36,986 67
Interest from Hull Electric Ry. ..	75,000 00
Dividend on Esquimalt & Nanaimo Ry. stock	125,000 00
Dividend on St. John Bridge & Ry. Extension Co. stock	70,000 00
Dividends on Minneapolis, St. Paul & S. S. Marie Ry. common stock ..	890,645 00
Dividends on Minneapolis, St. Paul & S. S. Marie Ry. preferred stock ..	445,326 00
Dividends on West Kootenay Power & Light Co. common stock ..	55,000 00
Dividends on West Kootenay Power & Light Co. preferred stock ..	3,850 00
Dividends on Consolidated Mining & Smelting Co. stock	209,520 00
Dividend on Berlin, Waterloo, Wellesley & Lake Huron Ry. stock ..	12,500 00
Earnings from ocean steamships and hotels	4,370,280 41
Revenue from interest in coal mine properties	544,294 26
Extraneous mail earnings	364,733 61
Net earnings of Pacific Coast steamships, commercial telegraph, news department	1,494,151 49

Space rented in office buildings.... 139,277 95

	\$14,066,144 15
Less payments to shareholders in dividends: Jan. 2, April 1, and June 30	5,850,000 00
	\$ 8,216,144 15

From this a dividend has been declared payable Oct. 1

1,950,000 00
The working expenses for the year were 66.04% of the gross earnings, and the net earnings 33.96% compared with 67.32 and 32.68%, respectively, in 1914.

Four per cent. consolidated debenture stock to the amount of £611,797 was created and sold, and the proceeds were applied to the acquisition of the securities of other railway companies whose lines constitute a portion of your system, the interest on which had, with your sanction, been guaranteed by your company. Four per cent. preference stock to the amount of £504,914 was created and sold for the purpose of meeting capital expenditures that had previously been sanctioned by you.

During the year 231,297 acres of agricultural land were sold for \$3,742,115.00, an average of \$16.17 an acre. Included in this were 6,550 acres of irrigated land which brought \$55.22 an acre, so that the average price of the balance was \$15.04 an acre.

All of the company's outstanding first mortgage 5% bonds, amounting at the end of the fiscal year to £2,638,900, were satisfied and retired at or before their maturity, July 1, excepting a few that had not been presented for redemption. An amount sufficient to take up these bonds, as they come in, has been deposited with your bankers, and the trustees have been asked to certify the satisfaction of the debt and to have the mortgage securing them formally cancelled. Outstanding bonds of £233,200, of the Shuswap and Okanagan Ry. Co., whose line is leased to your company for 999 years, were also acquired during the year, and have been deposited with your treasury securities.

As you were informed at a previous meeting, your directors have had under consideration for some time the desirability of transferring to a steamship company your steamships engaged in traffic on the Atlantic and Pacific oceans, so as to more effectually separate your railway and steamship finances and operations. To that end, a company has been organized under the laws of Great Britain, known as The Canadian Pacific Ocean Services, Limited, with an authorized capital of £2,000,000 sterling, having for its purpose, amongst other things, the acquisition and operation of ocean steamships and the interchange of traffic with your railway lines and others. The requisite extension of your company's charter powers has been secured to enable it to hold stock and securities of the Canadian Pacific Ocean Services, Ltd., and to guarantee payment of the principal and interest of such securities as may be issued with your consent. It is proposed that the Canadian Pacific Ocean Services, Ltd., shall purchase and take over your interest in all of the steamships and their appurtenances engaged in ocean traffic, as well as those of the Allan Line Steamship Co., which has been under your control for some time. A moderate estimate of the value of the steamship property involved in the transaction, after making due allowance for depreciation, is \$23,500,000. Your directors recommend that as a consideration for the steamships and their appurtenances to be sold and delivered by your company, and for the capital stock of the Allan Line Steamship Co., carrying with it all that company's steamship and other properties,

you accept as fully paid the capital stock of the Canadian Pacific Ocean Services, Ltd., namely, £1,962,910, being all excepting the shares necessary to qualify the directors of the steamship company, and in addition, 5% first debentures or debenture stock of the Canadian Pacific Ocean Services, Ltd., to the amount of £2,865,860 sterling. The transaction has been completed on this basis, subject to your approval.

Six of the company's older class steamships, namely, the Montrose, Mount Royal, Montezuma, Montcalm, Tyrolia and Ruthenia were taken by the Imperial Government in November last, at a price that has not yet been fixed by the Admiralty, and the steamship Empress of India, after 25 years service on the Pacific Ocean, was sold for £85,000 and converted into a hospital ship. Two large modern steamships that were under construction at Belfast were purchased by the company at a cost of about £700,000, for delivery in July and October of this year. Pressure of other work, however, delayed their completion, and it will be probably some months before they are ready for service.

The appropriations made by your directors for expenditures on capital account during the calendar year were comparatively small, aggregating only \$3,546,600. In this amount are included the estimated expenditure on Roger's Pass tunnel in the Selkirk Mountains, \$1,350,000; passenger and freight terminals at Quebec, \$300,000; and passenger station with approaches, at North Toronto, \$400,000. The balance of the amount is made up of works of minor importance on all sections of the railway.

The Victoria Rolling Stock and Realty Co.'s equipment securities, to which reference was made in the last annual report, were disposed of during the year at a price sufficient to repay the amount advanced by the company.

Uncontrollable conditions caused an abnormal decline in the gross revenue of your railway lines for the year, and, although the working expenses were very substantially reduced, the net earnings were \$8,851,300 less than in the previous year, leaving a margin barely sufficient to meet the customary distribution to shareholders. Against this your special income, from which a portion of the dividend is paid, was \$2,381,461 greater this year than last. Your directors were of opinion that in the circumstances there was no good reason for making any change in the rate of dividend, and acted accordingly.

Vice President McNicoll, after more than 40 years continuous connection with the company and one of its acquired lines, was compelled by failing health to relinquish the arduous duties of his office, and he, therefore, resigned in December last. The resignation was accepted after the directors had expressed in a most pronounced way their high appreciation of Mr. McNicoll's services to the company, and their personal esteem and regard for him. George Bury, Vice President in charge of the company's western lines, was promoted to fill the vacancy caused by Mr. McNicoll's retirement, and he was also elected a member of the board of directors.

The under mentioned directors will retire from office at the approaching annual meeting. They are eligible for re-election:— Sir William C. Van Horne, R. B. Angus, Sir Edmund B. Osler, Sir Herbert S. Holt.

The Canadian Pacific Ry. has not killed a passenger in a train accident during the past two years.

Railway Development.

Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta and Great Waterways Ry.—Grading is reported to have been completed from the end of steel mileage 135, or 21 miles beyond Lac La Biche, Alberta, for 60 miles, to tp. 75, range 8, west of the 4th meridian. The route is said to be nearly all through muskeg for this distance, but there is a fall towards Christiana Lake. The ballasting of the line from Carbondale to Lac La Biche is reported to be practically completed. The ballast is obtained from a pit at mileage 84. It is expected a regular service by means of a gasoline car will be put in operation over the line to Lac La Biche, towards the end of September. (June, pg. 213.)

Alma and Jonquieres Ry.—The Department of Public Works is being asked to approve of plans of a bridge across the Little Discharge of Lake St. John, near St. Joseph d'Alma, Que., under the provisions of the Navigable Waters Protection Act, Sec. 7. (May, pg. 170.)

Athabasca and Vermillion Ry.—We are officially advised that preliminary survey work for this projected railway is well under way. The railway is projected from Athabasca to Fort Vermillion, about 50 miles above Peace River Chutes on Vermillion Falls. A direct line between these two points is 300 miles, and the present survey is for securing the shortest and best route. F. P. Wilson is engineer in charge, and F. D. Rice is assistant engineer. (Aug. pg. 304.)

British Columbia to Portland, Ore.—A press report says that a statement was made, in evidence by General J. M. Ashton, before the Pierce County Board of Equalization at Tacoma, Wash., Aug. 8, to the effect that a Canadian railway company had completed arrangements to build a railway from British Columbia to Tacoma and Portland, with large terminal facilities in Tacoma, that the arrangements were interfered with by the war, but that the negotiations were to be resumed after the conclusion of peace. The options to the Tacoma property required for terminal purposes, General Ashton said, were allowed to expire July 31.

Fraser River Terminal Co.—A special committee of the Vancouver Board of Trade has been appointed to consider the project for the establishment of union terminals for passengers and freight for all railways entering Vancouver, B.C. The project is being put forward by the Union Terminal Co. of Seattle, Wash., representatives of which had a meeting with the committee in Vancouver, Aug. 2. (May, pg. 171.)

Intercolonial Ry.—The Intercolonial Ry. and the National Transcontinental Ry. run parallel for about 11 miles out of Moncton, N.B. As the latter line is being operated under Government management, it is proposed, according to press reports, to connect the two lines at mileage eleven for convenience of operation and economy in maintenance. The connection will necessitate the construction of about 0.75 mile of new track, involving one cut and one fill. Nothing has been decided as to when the work will be done. The Minister of Railways informed representatives of St. John, N.B. City Council, on his recent visit of inspection that there was no money available for the undertaking of any new works anywhere along the line.

The Main St. subway under the I. R. C., forming part of the track elevator works in Moncton, N.B., has been completed, and was used for pedestrian traffic Aug. 10. (Aug., pg. 304.)

Kettle Valley Lines.—We are officially advised that a contract has been let to A. Guthrie & Co., Inc., for building 7,500 lineal feet of snow sheds on the section of the line along the Coquihalla River Valley. About 13,000,000 ft. of lumber will be required for the erection of the sheds. The construction will be of the hillside style, which is for passing the snow over the track on its course to the valley below. The contractors are on the ground, and work has been started. The same contractors, it is reported, will also put in on the section the concrete abutments and one pier for a bridge to consist of two steel spans having a total length of 285 ft. (Aug., pg. 304.)

Lake Huron and Northern Ontario Ry.—In Canadian Railway and Marine World for August, reference was made to a press report that this company had given a contract to the National Engineering Co. of Cleveland, Ohio, to build a line from Sault Ste. Marie to a junction with the National Transcontinental Ry., but that the same would not go into effect until finances had been arranged. It was also stated that we were advised that the report was premature. We are now officially advised that no such contract has been made, and as far as the management knows, none will be made.

Pacific Great Eastern Ry.—Press reports state that at July 30, track had been laid to a point 14 miles beyond Lillooet, from Squamish, B.C., and that the bridge work between that point and Clinton was being pushed forward rapidly. It is expected to have the track laid to Clinton early in the fall, and to Hundred Mile House by the end of the year. The grading on 438 miles between Squamish and Fort George is reported to be 98 per cent. completed. Nothing is being done at present on the line between North Vancouver and Squamish, 39.7 miles beyond the present track end, 12.7 miles from North Vancouver, on which a train service is being operated. A train service is also being operated from Squamish to Lillooet, 120 miles. (July, pg. 255.)

Peace River Tramway and Navigation Co.—We are officially advised that it has been definitely decided not to proceed with the construction of either of the tramways at the Peace River Chutes or the Slave River Falls this year. The right of way for the power tramway will, however, be cut this fall. (July, pg. 255.)

Reid Newfoundland Co.—Train services have now been put in operation on the extensions to Heart's Content and Trepassey. (July, 1914, pg. 324.)

St. John and Quebec Ry.—Construction on what is called "the missing link" on this railway is being proceeded with in Fredericton, N.B. The work was undertaken after considerable negotiations between the company and the Intercolonial Ry. officers and C.P.R. interests. The estimated cost was \$50,000, and it was expected that the work would have been completed early in August. The work is reported to be proceeding slowly, that it is not now expected it will be finished until Nov., and the cost is reported to have gone up to over \$60,000.

On his recent visit to St. John, N.B., the Minister of Railways is reported to have said the cost of the proposed bridges across the St. John and the Kennebecasis Rivers would be very heavy. The best plan for completing the line might prove to be the extension of the line to Welsford and then on to the city. A Fredericton, N.B., press

report quotes the Premier of New Brunswick as stating that borings for the proposed bridge at The Mistake would be started immediately at Gordon's Bluff. (June, pg. 212.)

Van Buren Bridge.—The bridge across the St. John River between St. Leonards, N.B., and Van Buren, Me., together with its railway connections in Canada and Maine, has been taken over for operation by the Bangor and Aroostook Rd., and the jurisdiction of the officials of that company has been extended over it in their respective departments. (July, pg. 257.)

Traffic Orders by the Board of Railway Commissioners.

Cleaning and Disinfecting Stock Cars.

General order 147. July 29. Re application of Toronto Livestock Exchange, Livestock Shippers' Association of Ontario, and others, for an order disallowing a charge of \$2.50 a car for cleaning and disinfecting single-deck stock or box cars, and \$4 for double-deck stock cars, which the railway companies proposed to collect by tariffs published and filed, the said tariffs having been suspended by the Board pending a hearing. It is ordered that the railway companies collect a toll not exceeding 75c. for cleansing and (or) disinfecting any car in which live stock has been carried when the said work is done by the railway companies; and that the said toll may lawfully be an addition to the charges, as published in the companies' tariffs, for transportation of the live stock unloaded from the said cars. And it is also ordered that any tariffs of the said railway companies showing a toll, or tolls, for cleansing and (or) disinfecting live stock cars in excess of the toll of 75c. a car, be disallowed; and that order 23927, July 2, be rescinded.

Progress of Rogers Pass Tunnel Construction, Canadian Pacific Railway.

The following table shows the progress made from July 1 to July 29, also the total progress to July 29, for which we are indebted to J. G. Sullivan, M. Can. Soc. C. E., Chief Engineer, C. P. R. The figures give the number of feet.

	Progress.	Total.
EAST END.		
Pioneer heading	612	10,740
Main heading	532	6,544
Main tunnel	660	5,216
WEST END		
Pioneer heading	639	8,870
Main heading	868	7,469
Main tunnel	722	3,754

The Canadian Pacific Ry.'s Freight Department, Ontario Division, has removed its offices from Union Station, Toronto, to the 12th floor of the C.P.R. building at King and Yonge Streets, the officials who have removed being M. H. Brown, Division Freight Agent; L. Mulkern, District Freight Agent; G. D. Robinson, Export and Import Freight Agent; C. W. McMullen, City Freight Agent; J. Jolly, W. Hollyman and D. McColl, Soliciting Freight Agents, also the rate clerk and the tracing clerk.

The Canadian Ticket Agents' Association will hold its 29th annual meeting at Denver, Col., Oct. 18 to 21, both inclusive. The business meeting will be held Oct. 18, and in the evening of that day there will be the customary social gatherings. For the following three days there will be a number of sight seeing trips and perhaps a day's excursion into the mountain region.

Maintenance Labor on Western Lines, Canadian Pacific Railway.

By D'Alton C. Coleman, Assistant General Manager, Western Lines, Canadian Pacific Railway.

The C. P. R. western lines, comprising 7,140 miles of single main track and 973 miles of double main track, have the divisional organization. The district superintendent is responsible for all maintenance of way work, and the resident engineer, bridge and building master, roadmaster and signal supervisor on a district report to him.

European laborers are employed mostly for maintenance of way work, these consisting of Galicians, Scandinavians, Italians and Russians. The remaining portion of our maintenance of way laborers are Canadians, Americans, Scotchmen, Irishmen and Englishmen. The laborers are collected in such cities as Montreal, Winnipeg and Vancouver through private labor agencies. No employe of the company is kept at these private labor agencies to accept shipments of men for employment nor is there a company labor bureau. The custom in busy seasons has been to ask the labor agency to supply a cer-

tain number of men for extra gang or track section work. These men are transported free to the point of work in charge of a constable, who remains in charge until the men are turned over to the roadmaster under whose direction they are to work. The men's pay begins when they actually commence to work.

pass to the nearest town and free transportation in baggage cars for the necessities of life. The following transportation privileges also apply to the maintenance of way employes and his direct dependents:

After 6 months service, pass annually over the district;

After 1 year service, pass annually over the division;

After 3 years service, pass annually over the system;

After 5 years service, pass over foreign lines.

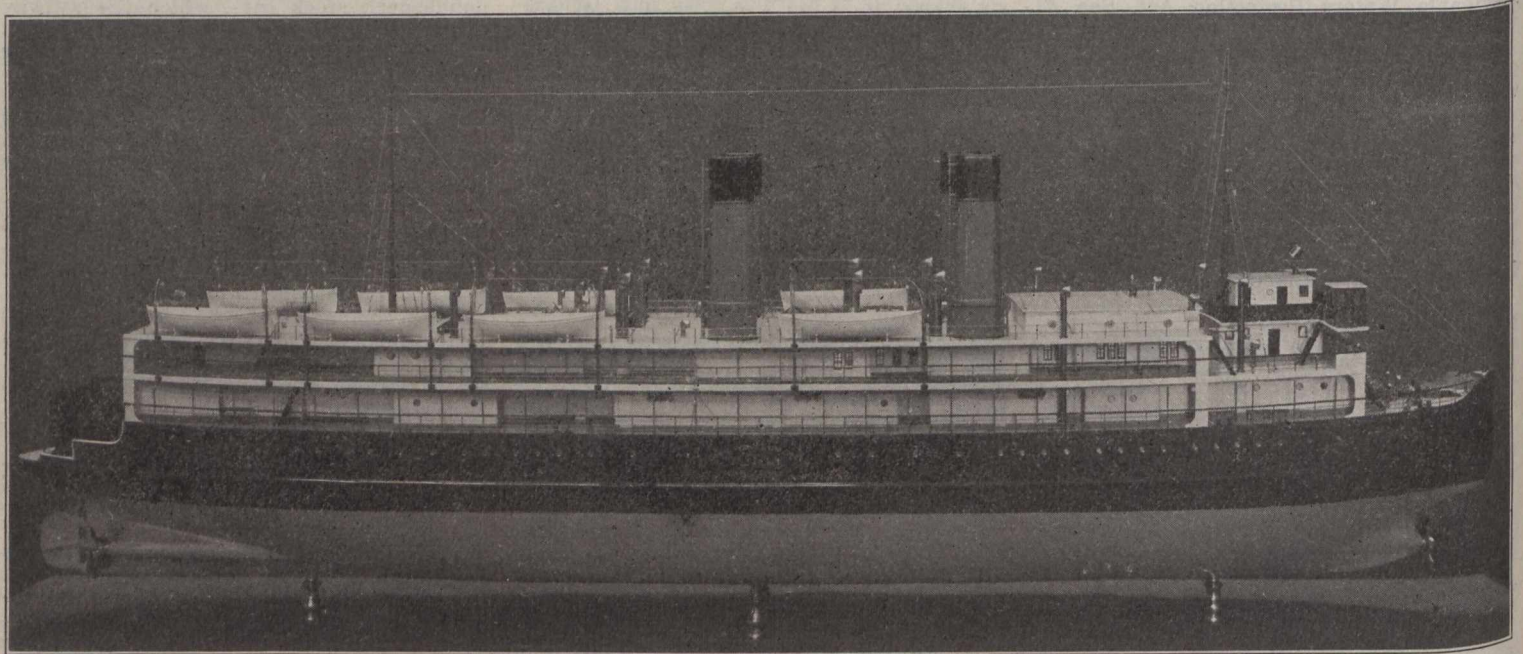
The section foreman is allowed to use old ties for fuel and is provided with a deep well, pipe line connection, or suitable water storage facilities where it is practically impossible to obtain water by drilling or other means. Water for the storage facilities is provided by way freight trains. Permanent employes also have the benefit of the pension rules and regulations as a reward of long

should he be retained in the service after such date. For example, if an employe has been in the service for 40 years and received on an average \$60 a month for the last 10 years, the pension allowance will be 40% of \$60, or \$24 a month. No pension allowance is authorized less than \$20 a month, however.

If a section foreman wishes to purchase a motor engine, the company stands the expense of installation on a reinforced hand car and supplies the foreman with 10 gallons of gasoline a month with which to operate his car. The foremen furnish their own repair parts. Power hand cars are not used on mountainous portions of the line. Section men are furnished a bunkhouse, where they provide their own food in many cases. A good many of the section foremen provide table board for the men on their sections.

It is not the custom to retain all of the section force in the winter as in the summer, but a man who is laid off on account of reduction is given preference when taking on additional men in the spring.

For promotion it is the practice to have each superintendent furnish a list of men



Model of Screw Ice Breaking Railway Ferry Steamship Prince Edward Island.

This vessel, which has been built for the Dominion Government by Sir W. G. Armstrong Whitworth & Co., Ltd., Newcastle-on-Tyne, Eng., will be operated by the Canadian Government Railways, across Northumberland Strait between Cape Tormentine, N.B., and Carleton Point, P.E.I., about nine miles. The Government has acquired the New Brunswick & Prince Edward Island Ry. from Sackville to Cape Tormentine, and is building a short branch of the Prince Edward Island Ry. to Carleton Point. It is the intention to widen the P.E.I.R. to standard 4 ft. 8½ ins. gauge from its present 3½ ft. gauge, so that goods may be transported in cars between the mainland and the island without transfer. Complete descriptions of the vessel, with plans and profile, were given in Canadian Railway and Marine World for Sept., 1913, pg. 444, and Nov., 1914, pg. 518, and the issue of Aug., 1915, contained exterior and interior views.

tain number of men for extra gang or track section work. These men are transported free to the point of work in charge of a constable, who remains in charge until the men are turned over to the roadmaster under whose direction they are to work. The men's pay begins when they actually commence to work.

The section foreman is provided with a substantially built house of 6 rooms, generally constructed on a concrete foundation and affording a basement. A rental of \$5 a month is usually charged, which amount is absorbed in the maintenance expense of the dwelling from time to time. Seventy five per cent. of the section foremen are provided with section houses. The section foreman is also allowed the privilege of using any ground on the right of way in the vicinity of his house for garden purposes. At outlying points the foreman is allowed a market

years of faithful service. This system calls for no contributions from the employes themselves. The company considered that voluntarily establishing a system under which a continued income will be assured to those who after years of continuous service are by age or infirmity no longer fitted to perform their duties, and without which they might be left entirely without means of support, would tend to build up amongst them a feeling of permanency in their employment and thus create an enlarged interest in the company's welfare and a desire to remain in and devote their best efforts and attention to the company's service. The pension allowance authorized is granted upon the following basis: For each year of service an allowance of 1% of the average monthly pay received for the 10 years preceding retirement, or preceding the date upon which the company employe attained the age of 65 years,

whom he considers would qualify as foremen. The work and habits of these listed men are carefully watched by maintenance of way officers, and promotions are made from among them, due consideration being given to seniority.

The extra gangs are comfortably housed in boarding cars and supplied with wholesome food, usually furnished by a boarding car contractor at a very reasonable rate per week. Such a contractor has his own traveling inspector, who investigates any complaint that may be made. The company's local officers also give this commissary feature close supervision, as it is realized that good food tends to make more satisfactory labor conditions and consequently helps greatly in prosecuting betterment or construction work.

The bridge and building crews have similar privileges to those of section and

extra gang men. The commissary end of the boarding cars of these crews is frequently undertaken by the foreman of the crew, each man paying his share of the expense or else paying a fixed weekly charge to the foreman for his provisions and other services. Pumpmen are provided with cottages near the pump houses at a nominal rental.

All officers concerned with maintenance of

way work are impressed with the fundamental truth that in order to derive maximum results at a minimum cost, frequent and intelligent supervision is essential over the constantly changing organization of the members of the section crews, many of whom have but a scant knowledge of the English language.—Railway Engineering and Maintenance of Way.

Edmonton, Dunvegan and British Columbia Railway Freight Tariffs.

Sir Henry L. Drayton, Chief Commissioner, Board of Railway Commissioners, gave the following judgment, Aug. 2, respecting the Edmonton, Dunvegan & British Columbia Ry. freight tariffs:—

"This case was first heard at Edmonton, May 28. The tariffs in question had already been dealt with by an interim judgment of the Board, of Mar. 26, further consideration being required by the judgment which adopted the tariffs then filed, and which were based on the Mountain Scale. Copies of the judgment and notices of the hearing were sent to all parties who appeared to be interested. No objections to the company's proposals were advanced on behalf of anybody at the hearing at Edmonton. That place is, of course, largely interested in the development of the northern country served by this railway, and its Board of Trade wrote this Board as follows,—

"In reference to your communication of May on the above subject, I beg to advise that this matter was submitted to a general meeting of the Edmonton Board of Trade to-day. The meeting was very representative of the commercial interests of Edmonton, and the members had been specially advised by mail that the E.D. & B.C. tariffs would be submitted for consideration. After somewhat exhaustive consideration, it was decided by resolution that this Board of Trade would make no protest at present against the tariffs recently filed by the E.D. & B.C.R. and temporarily approved by the Board of Railway Commissioners. A resolution to this effect was carried unanimously."

"The company operates under a Dominion charter, but is one which is being financed largely by guarantees of the Province of Alberta, which province is of course directly interested in the opening up and colonization of its northern territory. The Provincial Government was notified of the hearing at Edmonton, but took no part, leaving the whole question in the Board's hands. Apart from any objections, the Board was of the view that very special reasons would have to be advanced as to why the Mountain Scale should be used. It was recognized, of course, that with a new line running into a new country and enjoying no through business, that the ordinary Prairie Scale would, in the first instance, be too low, and the Board's Chief Traffic Officer worked out an intermediate scale between the Prairie and the Mountain scales. A copy of the rates worked out on this scale was given to the company's officials to say whether or not they could operate on the reduced scale. In addition to this the company was instructed that in any event special commodity rates must be filed on the articles which the country could produce, such as grain, hay, forest products, dairy and packing house products, cordwood, building material, etc., and the hearing was adjourned to be resumed at Calgary on June 9. The position taken by the company's officials at the later hearing was that it would be impossible to operate under any lower tariff than the Mountain Scale, but that lower rates on grain than suggested by the Board could be given with the company operating generally on the reduced scale.

"The Company has filed special commodity rates applying locally on grain, forest products, dairy and packing house

products, vegetables, live stock, hay, straw, coal, cordwood, and building material. These tariffs are based on the Prairie Scale. They are satisfactory and are as low as can be required. The company has also filed a proper and appropriate distributing tariff on general merchandise, applying from Edmonton, the rates in this case, however, being scaled down from the Mountain Scale. The matter has stood awaiting the company's filing of through grain rates to the head of the Lakes, as promised. The Board is today in receipt of a letter from Mr. McDonald, the Railway's Traffic Expert, in which he advises the Board that rates will be put in effect by the company so as to permit movement from Jarvie to Lake Superior ports at 29c. per 100 lbs., from High Prairie 36c., McLennan 37c., and from Fowler, the terminus, 38c. These rates are higher than the first rates I suggested at the hearing, which was a rate from shipping point to destination of 0.395c. per ton per mile, with 1c. per 100 lbs. added as an extra to cover cost of transferring at Edmonton. On the higher possible basis discussed, the rate from High Prairie, however, would be 39½c. This rate was thought by the Board to be very high, so high indeed that it represented the limit that could be considered. While the rate submitted of 36c. is not as low as the first rate considered, it is 3½c. lower than the other possible combination, and I think may be adopted as satisfactory until traffic conditions are developed so that the actual results may be fully considered.

"The company has received a guarantee from the province of \$20,000 a mile. The province is satisfied that under its supervision this money has actually been expended. The evidence supplied by the company is to the effect that the capital stock of \$250,000 is not watered. Large advances have been made to the company to enable it to carry on its work. The Provincial Treasurer, who has kept closely in touch with the company's operations, advises that the company has received from the J. D. McArthur Co. \$790,000 in connection with advances, or for work representing the unpaid accounts on the grading contract, and that a further sum of \$900,000 has been invested in the road which the railway company obtained through its bankers, all of which Mr. Mitchell is advised is guaranteed by the J. D. McArthur Co. and by Mr. McArthur personally.

"Under all the circumstances, I am of the opinion that the Board should allow the tariffs as filed. It must, however, be clearly understood that the Board's present action is not in any sense final. The conclusions are arrived at in advance of the development of traffic, and it well may be that the rates now in effect, and which the company's officials claim are merely sufficient for the actual operation of the road, may prove to be too high. The rates now allowed cannot be in anyway looked upon as possible of any general application. They are only allowed in view of the fact that the railway is a colonization road; has but little developed traffic and in effect bears to the transcontinental systems the relation of a branch line."

Railway Rolling Stock Notes.

The National Transcontinental Ry. has ordered a wrecking crane of 100 tons capacity from F. H. Hopkins and Co.

Canadian Explosives, Ltd., has received 3 all wood box cars, 4,000 lbs. capacity, 36 ins. gauge, from Canadian Car and Foundry Co.

The Edmonton, Dunvegan & British Columbia Ry. has ordered 10 stock cars from National Steel Car Co.

The G.T.R. has received 50 steel underframe express refrigerator cars, 41 ft. 0-3-8 in. long, from Canadian Car and Foundry Co.

The Intercolonial Ry. has received 6 steel frame first class passenger cars, 74 ft. long, from Canadian Car and Foundry Co., and one switching locomotive from Canadian Locomotive Co.

The Canadian Locomotive Co. is reported to be making locomotive trucks for the Baldwin Locomotive Works, which has received some large orders for locomotives for some of the allied Governments.

The Grand Trunk Pacific Ry. has received two express refrigerator cars, nos. 6048 and 6049, from Canadian Car and Foundry Co.

The Canadian Northern Ry. has received 5 steel underframe second class passenger cars, 72½ ft. long, from Canadian Car and Foundry Co.

The Intercolonial Ry. has received 1 steam shovel, 2 all steel centre ballast unloaders, 2 Lidgerwood unloaders and 2 rail unloaders, from F. H. Hopkins & Co.; 6 first class cars from the Canadian Car and Foundry Co., and 156 all steel gondola dump cars, from the Eastern Car Co.

The G. T. Pacific Ry., as a result of experiments in the use of oil fuel on locomotives, has equipped its locomotives with the necessary apparatus to enable liquid fuel to be used throughout the Mountain Division. Canadian Railway and Marine World has already published details of the oil storage plants located at various points along the line in this connection.

J. D. McArthur and Co., Winnipeg, have ordered from the Canadian Car and Foundry Co., 50 all wood box cars for the Edmonton, Dunvegan and British Columbia Ry., and 50 for the Alberta and Great Waterways Ry., for delivery in October. Following are the principal particulars:—

Capacity	60,000 lbs.
Length over end sills	36ft. 9¾ins.
Width over side sills	9ft. 0¾ins.
Width inside	8ft 6ins.
Length inside	36ft.
Height top of rail to top of running board	13ft. 5½ins.
Side door opening	6ft.
Air brakes	Westinghouse KC 812
Bolsters and brake beams	Simplex

The Timiskaming and Northern Ontario Ry. has ordered 2 steel first class passenger cars and 2 steel baggage and express cars from the Pullman Co. The passenger cars will be 71 ft. long over the end sills, and the baggage cars 60 ft. long. They will be equipped for electric light, the power being generated from the axle, and in addition there will be a storage battery system for supplying light when the cars are not in motion. Heating will be by a combination vapor and pressure system of steam heat. The cars will have fish belly centre sills in the underframes with combined cast steel bolsters and platforms. The superstructures will be entirely of steel with an exterior finish of steel plates. Six wheel trucks with cast steel frames are to be used, and an anti-telescoping device, and the cars will, in all respects be duplicates of those ordered and placed in service in 1914, and described in Canadian Railway and Marine World for July, 1914, pg. 320.

Freight Rates on Gravel for Road Making in Western Ontario.

Sir Henry L. Drayton, Chief Commissioner, Board of Railway Commissioners, gave the following judgment recently:

"The issue in this case concerns the movement of gravel to points in the counties of Lambton, Kent, Essex, and Middlesex, from Sarnia, Courtright, Rondeau, and Leamington, as well as movements from other water points. The question was first brought to the attention of the Board at the instance of J. D. Armstrong, M.P., who desired that low commodity rates should be extended by the companies to the movements of gravel, so as to enable the many municipalities affected to proceed with the work of general road improvement at a reasonable expense.

Gravel moves under the Freight Classification as 10th Class, but takes a special mileage rate of 2½c. a 100 lbs. for distances up to 10 miles; 3c. for distances over 10 up to 20 miles; 3½c. for distances over 20 up to 30 miles; 4c. for distances over 30 up to 40 miles; 4½c. for distances over 40 up to 50 miles; 5c. for distances over 50 up to 60 miles; 5½c. for distances over 60 up to 70 miles; 6c. for distances over 70 up to 80 miles; 6½c. for distances over 80 up to 90 miles. For distances over 100 miles the rate, of course, is scaled on; but, owing to the length of haul for the movement contemplated, it is unnecessary to consider the rates for greater distances. The Board required the companies to propose commodity rates as requested by Mr. Armstrong; and under the proposition that the companies then made gravel could move for distances up to 10 miles at 2c.; up to 20 miles, 2¼c.; up to 30 miles, 2½c.; up to 40 miles, 2¾c.; up to 50 miles, 3c.; up to 60 miles, 3¼c.; up to 70 miles, 3½c.; up to 80 miles, 3¾c.; and up to 90 miles, 4c. These rates were unsatisfactory to Mr. Armstrong and the different municipalities he represented; and he made application for rates based upon a gross return to the companies of 1c. per ton per mile.

"The application was heard by the Board in Petrolea. At the hearing, Mr. Armstrong, in developing the case, made the great public necessity of improving the highways in the interested counties abundantly clear, as well as the great corresponding benefit that good roads would mean, not only to the farmers in the first instance using them, but also to all kinds of industry, including the railways. The proposed rates were sought to be justified by comparison of rates on other commodities which the railways themselves had granted, and also on the results of railway operation expressed in the per ton mile rate, as shown by governmental statistics. Mr. Armstrong showed that the municipality could buy gravel from the Caldwell Stone & Gravel Co. delivered either at Point Edward or at Sarnia at 35c. a yard; for Courtright delivery, 40c.; for Wallaceburg delivery, 50c.; for Chatham delivery, 75c., and for Windsor delivery 90c. The Wallaceburg price would seem to be entirely out of line with the Windsor price; and, in view of the difference of the rates at both points, Courtright and Sarnia would seem to be the two shipping points that could be the more economically taken advantage of by the municipalities. Cheap gravel is also obtainable at Rondeau and at Leamington. The commodities referred to, and which Mr. Armstrong instanced as having low rates, were manure, coal, cement, and hay. Emphasis was laid on the fact that the rate in the case of all these different commodities on the movements given was less than 1c. a ton per mile. Mr. Armstrong also read into the record statistics of

revenue per ton for the year ended June, 1914, as follows:

Canada Southern Ry. ....	.625c
Intercolonial Ry. ....	.600c
Canadian Pacific Ry. ....	.753c
Grand Trunk Ry. ....	.687c
Grand Trunk Ry. (Canada Atlantic) ....	.598c
Grand Trunk Pacific Ry. ....	.641c
Canadian Northern Ry. (in Quebec)	1.227c
Canadian Northern Ry. (outside of Province of Quebec) ....	.749c

"The freight statistics are obtained as a result of calculations covering the total movements of all freight on the railways in question; and as gravel, rated as it is in the 10th Class, belongs to the group of commodities representing the lowest earnings, Mr. Armstrong's argument was that in any event it would not be unreasonable to apply to gravel rates yielding 1c. a ton per mile, that being a higher rate than that which the statistics show to be the average of the whole. Consideration of the usefulness of these ton mile earnings as a basis on which to predicate rates becomes necessary. Of all the companies whose statistics are given, probably the one doing at the present time the most unsatisfactory business is the Canadian Northern, in so far as its eastern lines are concerned. The system is new, is as yet uncompleted, and has not a worked-up or balanced traffic. Nevertheless, its earnings as expressed in return of tonnage per ton per mile are the greatest of those submitted. This apparent anomaly disappears when it is realized that before the ton per mile rate can be any index at all, the tonnage moved must be in the first instance of sufficient volume, and in the second instance the hauls must be of sufficient length to insure proper remuneration.

"The Canadian Pacific is often regarded as a line with a well-balanced traffic and obtaining good returns. Its return, however, of .753c. a ton per mile looks small as compared with the operations of the Canadian Northern in Quebec, resulting in a rate of 1.227c. On its face, the return to the Canadian Pacific is but little over 7-12ths of that enjoyed by the Canadian Northern in Quebec, while the fact is that the lower rate is the result of a really remunerative operation on the one hand against an undeveloped operation on the other. It is fundamental that the rate per ton per mile decreases as the length of the haul increases, with a result that the rate per ton per mile on a long haul of a high grade commodity carrying a high classification, might be lower than the rate per ton per mile on the commodity taking the lowest rating moving but for a short distance. This apparent anomaly is due, of course, to the fact that on a short haul the terminal expenses, which have to be added to the road haul, and which are comparatively constant, very largely increase the rate when expressed by miles. It has been shown, so far as the Canadian Pacific is concerned (and the results of other companies only differ in degree, depending on terminal operations and road haul on the one hand, and volume of traffic on the other), that 35% of the general transportation expenses are terminal expenses. The average revenue as returned to the Government of .753c. is, of necessity, based on the average haul, which has been shown to be 380 miles. Mr. Moule, the Statistician of the Canadian Pacific, in another case showed that while of the transportation expenses 35% were terminal expenses, that an estimate based on the locomotive mileage of the company showed that 15% of all its expenses would be assigned to terminals, with a result that approximately 28% of all the company's expenses were terminal costs, the

company's earnings per ton per mile being, as was shown, practically 7½ mills. These earnings, assigning them in the proper proportion as between terminal service and rail haul as fixed by the expenses, result to the company for road haul in 5.4 mills, and the balance, 2.10 mills, for terminal activity. Based on this 380 mile haul, the company averaged a return of \$2.85 for every ton of freight moved, and of this sum 80c. represents terminal operation. The result, therefore, is that on the characteristic average C.P.R. road haul rate as applied to hauls differing in length from 50 to 400 miles, a haul of 50 miles gives a ton per mile return, based on the terminal return of 80c. and the portion of the earnings attributable to road haul, of 2.14c.; for 100 miles, 1.3c.; for 200 miles, .9c.; for 300 miles, .8c.; for 400 miles, .74c. A rate per ton per mile of 1c. for a haul of only 50 miles in length would not cover the average terminal earning.

"As instancing the high rates on road material, Mr. Armstrong quoted the Grand Trunk rate from Guelph to Petrolea of 8c. per 100, or \$1.60 a ton, for 124 miles. This movement represents a return of 1.29c. a ton per mile. From St. Marys the rate is 6½c., or \$1.30 a ton, for a distance of 74 miles, equivalent to a rate of 1.756c. a ton per mile. As compared with the Canadian Pacific rate for 100-mile movements, 1.3c., including as it does all classes, this rate would seem to be high for a low grade commodity. As stated by Mr. Armstrong, there are specially low manure rates out of Toronto. These rates have been in the past justified on the ground of the necessity of getting rid of the material from the centre and bringing it to farming districts, which otherwise would not be properly cultivated, and the benefit to the railways of the return loads of fruit from orchard districts, which otherwise would not have been enjoyed. The railways have recently made application to have these rates raised, alleging that they are unremunerative. They are blanket commodity rates and are not at all of necessity related to the length of the haul. For example—the special commodity rates from Toronto to Stoney Creek, 46 miles, is 3¼c., and the rate is exactly the same to Beamsville, 60 miles. The rate to a greater distance of 83 miles, the maximum distance covered by the movement, that is to the Falls, is only 3c. As rates, manure rates are out of line and were never rates which appeared to have been properly scaled. It may be observed, though, that a rate of 3¼c. to Stoney Creek gives a per ton mile return of 1.41c., and the rate to Beamsville 1.09c. a ton per mile, yielding in each instance a higher rate than the rates would yield which are now asked for. I should also observe that those interested in the manure movement claim that the rate is really much higher, owing to the fact that the possible minimum loading of 30 tons cannot in most instances be obtained, owing to the condition in which the manure is received; also that the actual return to the company expressed in tons is much greater than the tariff shows.

"The bituminous coal rate relied on by Mr. Armstrong, from Detroit to Petrolea, of 65c. a ton for 76 miles, is a lower rate; but this rate again does not represent the sum of the railway activity or the railway earnings, as the coal in question does not originate at Detroit, and the rate relates back to the original movement from the mines. A like condition applies to the movement of bituminous coal from the

Niagara Frontier to Petrolea of \$1 a gross ton for 176 miles.

"There remains to be considered the hay rates quoted. Hay moves under 10th Class; and the 10th Class rate for a distance of over 15 miles and under 20 miles, is 5c. The rate is not advanced in the next 25 mile group; remaining at 5c. It is quite true that a better loading could be obtained of gravel than of hay, but it may be remarked that for a movement from Sarnia to Petrolea the special mileage rate applicable to gravel and on which gravel hitherto has moved, is only 3½c. A rate of 1c. a ton per mile, assuming the distance from Petrolea to Sarnia to be 20 miles, would require the hay rate which is quoted to be reduced from 5c. to 1c. per 100 lbs.

"The Board cannot order the companies to put in unremunerative rates, nor a rate so low as to be unfairly out of line with rates which are necessary to be maintained in order to permit the continuance of satisfactory operation of railways, due regard being had to proper consideration of the value of the commodities shipped and the service performed. It is, of course, manifest that the 80c. for terminal service, which is the result of the C.P.R. standard figure of 7½ mills, has no more to do with the actual terminal costs of a low grade commodity such as gravel, loaded and unloaded as it is by the shipper, than the rate enjoyed from an average haul of 380 miles has anything to do with the short hauls in question. It is, however, impossible for the Board to say that the rates proposed by the railways on gravel are excessive or unfair. The Board is bound to go this length before interfering with the rates which are in the first instance made by the railway companies. In its consideration of rates, the Board also cannot take into account matters of business policy and company administration. While, therefore, I felt that it was impossible for the Board to make any order, the Board has urged upon the companies the advisability of recognizing a public interest and the benefits which would result to the companies themselves from a proper system of good roads. The Ontario Government has also intervened, and is very desirous of obtaining extremely low rates, with a view to aiding the present campaign for good roads. The companies are insistent that they require more revenue, and that their rate returns as a whole are inadequate and insufficient; and, in the first instance, took the position that while they admitted the need of good roads, that, in view of their present necessities and of their present application for increase in freight rates, no concessions could possibly be made by them, as this would be construed as evidence that an increase in rates generally was not required. The railways have been assured that no such construction will be made by the Board. Sec. 341 of the act specifically provides—'Nothing in this act shall be construed to prevent—(a) the carriage, storage, or handling of traffic, free or at reduced rates, for the Dominion, or for any provincial or municipal Government.'

"I am glad to say that the railways now state that, regarding the question in the light of public policy and the possibility of increased railway business as a result of the added prosperity, and with the understanding that the rates offered are not to be regarded as indicating sufficient rates for similar commercial service, they will carry in the territory in question gravel that the municipalities require at a flat blanket rate of 50c. a ton for any distance up to and including 50 miles; the rate to be a carload rate and cars to be loaded to their full stencilled carrying capacity; the gravel to be consigned to the clerk of the municipi-

pality and to be used for the purpose of road making; and the railway companies to be notified in advance of the number of carloads required, so that special instructions may be issued in each case. It is anticipated that 50 miles will be the maximum haul; but should municipalities at further distances require the gravel the rate will be scaled down in the usual manner for greater distances. It was represented that at this rate, in the more distant districts, there would be no difficulty in proceeding with road construction; and there is no reason why municipalities which are situated nearer the source of supply should experience any greater difficulty. I should point out that under the Freight Classification hay takes a 3c. rate for any distance not exceeding 5 miles. The rate which will now go into force on gravel is but 2½c. for distances not exceeding 50 miles. The hope is expressed that the action of the railways will be considered by the municipalities in the same way that it is being considered by the Board, and that the benefit to the public from road construction will more than repay the railways for the concessions they are making."

Railway Finance, Meetings, Etc.

Algoma Central and Hudson Bay Ry.—The receivers of this company, acting on behalf of the bondholders' committee in London, England, have prepared and submitted a report on the property, and it is announced that a plan of financing the operation of the line is being considered.

Buffalo and Fort Erie Ferry and Ry. Co.—Tenders will be received by the Master in Ordinary, Toronto, to Oct. 4, for the purchase of the property and assets of this company, under proceedings in the action of Grobe vs. the company. The property is being offered as a whole, or in five parcels, viz:—Parcel 1, the steam railway including right of way, track, franchises, rolling stock and equipment, including 500 shares of International Ferry Co.'s stock, which operates the ferry steamboat Niagara Frontier between Buffalo, N. Y. and Fort Erie, Ont., and all lands, buildings, etc. of the company, except the land sold to the Canadian Niagara Power Co., and the lands and buildings offered for sale in parcels 2 and 3; parcel 4 consists of 20 shares in the Lake Shore Natural Gas Co., and parcel 5 of the furniture and office fixtures at Buffalo, N. Y.

Canadian Northern Ry.—An issue of \$11,500,000 two year collateral notes, dated Sept. 1, bearing interest at 5% per annum, has been sold to W. A. Read and Co., New York, and has been issued to the public at 98%. These notes are secured by the deposit of \$15,333,334 of Canadian Northern Ry. general mortgage 4% bonds due in 1934, principal and interest unconditionally guaranteed by the Dominion Government, and are convertible at par into bonds at 85 on, or before, maturity. At the issued price, the notes give about 5.75% on the investment.

Glengarry and Stormont Ry.—There has been deposited with the Secretary of State at Ottawa duplicate original of the agreement between the company and the C.P.R. for the lease by the latter of the G. and S. Ry., from St. Polycarpe, Que., to Cornwall, Ont.

New York Central Rd.—There have been filed with the Secretary of State at Ottawa several documents dated Feb. 1 and Feb. 2, being duplicate originals of agreements with the Guaranty Trust Co. of New York, supplemental to lease dated Feb. 15, June 8 and Nov. 23, 1910; Jan. 1 and April 2, 1912; Jan. 15 and Dec. 31, 1913; Mar. 30 and Nov.

18, 1914. The N.Y.C. Rd. is for the purpose of the agreement described as the successor by consolidation of the New York Central and Hudson River Rd., the Lake Shore and Michigan Southern Ry., the Michigan Central Rd., the Cleveland, Cincinnati, Chicago and St. Louis Rd., the Pittsburgh and Lake Erie Rd., and the Toledo and Ohio Central Ry. The reason for the filing of these agreements at Ottawa is that the N.Y.C. Rd. owns the Ottawa and New York Ry. and the St. Lawrence and Adirondack Ry., and through the Michigan Central Rd. owns the Canada Southern Ry.

St. Lawrence and Adirondack Ry.—The shareholders will be asked at the annual meeting in Montreal, Sept. 1, to sanction the execution of a lease of the company's property and undertaking for 21 years to the New York Central Rd., to sanction by-laws changing the location of the head office from Montreal to Ottawa, and changing the date of the annual meeting from the first Wednesday to the third Tuesday of September.

Temiscouata Ry.—Gross earnings for June \$15,801; expenses \$14,532; net earnings \$1,269. The net earnings for June 1914 were \$7,513.

Toronto, Hamilton and Buffalo Ry.—A special meeting of shareholders has been called to Hamilton, Ont., for September 8, to authorize the issue of bonds up to \$10,000,000.

White Pass and Yukon Route.—Gross earnings from Jan. 1 to July 14, \$581,307 against \$623,287 for same period 1914.

Grand Trunk Railway Betterments, Construction, Etc.

Mimico Station.—The Board of Railway Commissioners ordered, Aug. 4, that the station at Mimico, Ont., is to be removed to its original position on the south side of the tracks.

London, Ont.—It is said that an arrangement is nearly concluded for the building of a spur line by the G. T. R., across the C. P. R. to the sugar factory in the western limits of London, Ont.

Port Huron Freight Sheds.—We are officially advised that no decision has been reached as to the character of the freight sheds to be built at Port Huron, Mich., to replace those destroyed by fire July 6. (Aug., pg. 312.)

Detroit United Ry.—The draft contract for the purchase of the lines of the Detroit United Ry. in Detroit, by the City Council, has been approved of the Board of Street Railway Commissioners for Michigan, and was considered by the directors of the company Aug. 2. The agreement is to be finally ratified by a three-fifths majority of the ratepayers, and possession of the property is to be given at once. If possession is not given the city may within 60 days institute suit for specific performance, possession to be given within 30 days thereafter. The purchase price, which is to be paid out of earnings, is to be fixed by the circuit judge of Wayne County. The city will assume the mortgage debt of the company to the amount of the purchase price, and will pay off the balance, if any, of the mortgage indebtedness, pledging for this purpose two per cent. of the assessed value of the city. The first mortgage on the railway is due 1916, but the great bulk of the indebtedness is not due until 1932.

Montreal Tramways Co.—Press reports state that the company is preparing to issue a further \$1,000,000 of common stock at par to existing holders.

Mainly About Railway People Throughout Canada.

George Bury, Vice President C.P.R., returned to Montreal August 1, after a tour of inspection of the company's western lines.

W. R. Butler, who has been Professor of Civil Engineering at the Royal Military College, Kingston, Ont., for the past eighteen years, has retired.

J. H. O'Dowd, who has been connected with the management of the C.P.R. Chateau Frontenac for twelve years, latterly as assistant manager, has resigned.

Lieut. R. Baker, who is with the 11th C. M.R. at Vernon B.C., and who is leaving shortly for the front, is a son of **R. P. Baker**, Paymaster, C.P.R., Vancouver, B.C.

D. R. McLellan, station agent, Halifax and Southwestern Ry., Shelburne, N. S., was killed there, Aug. 9, in removing a negro, who was taking a free ride, from the train.

S. Devlin, foreman, C. P. R. freight sheds, Guelph, Ont., died there suddenly from heart failure, Aug. 12. He had been stationed at Guelph for 30 years.

Hon. F. Cochrane, Minister of Railways and Canals, returned to Ottawa at the end of July after an extensive inspection tour of the Government railways in the Maritime Provinces.

S. C. Long, General Manager, Operating Department, Pennsylvania Rd., Philadelphia, Pa., visited Winnipeg, Aug. 8, on his return home from the Panama-Pacific Exposition at San Francisco.

G. H. Ham, of the C.P.R. head office staff, was entertained to dinner at Montreal, Aug. 23, by a number of old friends and associates, of the C.P.R., in honor of his 68th birthday.

Davidson & McRae, financial agents, who were connected with a number of enterprises closely allied to the Canadian Northern Ry., have dissolved partnership, A. D. McRae having withdrawn.

N. P. Dalziel, formerly of Mackenzie, Mann & Co.'s engineering staff Toronto, and latterly on their Comptroller's staff there, has resigned to undertake duties in the British War Office's service in Canada.

W. N. Riggs, baggage master, Prince Edward Island Ry., Charlottetown, P.E.I., died there July 21, after a short illness. He was born at Charlottetown, Dec. 11, 1847, and entered P.E.I.R. service Oct. 19, 1891.

T. C. Chalmers, station agent, G. T. Pacific Ry., Prince Rupert, B. C., has enlisted for active service in the transport section of the Canadian Expeditionary Force, and will leave for Europe shortly.

L. A. Roberge, who died at St. Lambert, Que., Aug. 12, aged 77, was interested in railway construction some years ago, and built the railway which used to run on the ice between Montreal and Longueuil.

W. A. Moore, local manager, Canada Railway News Co., Stratford, Ont., died there, Aug. 18, aged 54, after an illness lasting five weeks. He had occupied the position for 30 years, and was well known throughout the G.T.R. system.

E. H. Williams, Locomotive Foreman, Canadian Northern Ry., Brandon, Man., whose birthday occurred Aug. 26, was, through a typographical error, mentioned in our last issue as having been born in 1844, instead of 1884.

T. H. Roberts, who died at Walkerville, Ont., July 22, aged 71, was born in County Meath, Ireland, and came to Canada in 1868, when he entered G.T.R. service. He was subsequently appointed Mechanical

Superintendent of the Detroit Branch, G.T.R., which position he held on his retirement from active service in 1897.

W. R. Smith, Superintendent Great Northern Ry., Everett, Wash., spent a portion of his annual holiday in Ontario, and returned west Aug. 3. About eighteen years ago he was in C.P.R. service as a freight brakeman.

Mrs. C. P. Mullins, who died at Toronto, Aug. 22, was mother of **W. E. Mullins**, General Manager, Costa Rica Division, United Fruit Co., San Jose, and formerly of the G. T.R., and of **T. Mullins**, City Passenger Agent, C.P.R., Ottawa.

Capt. Jas. Turnbull, of the C. P. R. s. s. Empress of Britain, who was given the temporary rank of Commander, R. N. R., when the Admiralty took over the vessel at the commencement of the war, has been promoted to Commander on the active list, in charge of a patrol flotilla.



L. C. Fritch, General Manager, Eastern Lines, and Assistant to the President, Canadian Northern Railway.

J. M. Cameron, who was recently appointed General Superintendent, Alberta Division, C.P.R., Calgary, removed his family there early in August from Vancouver, B.C., where he was formerly stationed as Assistant General Superintendent of the British Columbia Division.

H. Foster Chaffee, formerly Passenger Traffic Manager, Canada Steamship Lines, Limited, has been elected an honorary member of the American Association of Passenger Traffic Officers. **H. G. Elliott**, formerly General Passenger Agent, G.T.R., has been nominated for honorary membership in the association.

H. T. Meldrum, Secretary, Canadian Manufacturers Association, Montreal branch, has resigned and gone to London, Eng. It is said that he has been given an appointment in connection with purchasing war supplies for the Allies, which is being carried on under E. FitzGerald, Assistant General Purchasing Agent, C.P.R., who is devoting his whole time to War Office service.

F. M. Spaidal, General Superintendent Quebec Grand Division, Canadian Northern Ry., Montreal, who has been off duty for some months on account of illness, during which he underwent an operation, and who has been at Lake Edward, Que., lately, has returned to Montreal, where he is seriously ill.

Thos. Henry, Passenger Traffic Manager, Canada Steamship Lines; **J. F. Pierce**, General Passenger Agent, Canada Steamship Lines; **A. C. Shaw**, General Passenger Agent, Western Lines, C.P.R., and **W. H. Snell**, General Passenger Agent, Eastern Lines, C.P.R., have been elected members of the American Association of Passenger Traffic Officers.

F. P. Brady, General Superintendent, National Transcontinental Ry., Quebec to Winnipeg, has bought a house, 308 Oxford St., Winnipeg, and has removed his family there from Moncton, N. B. His office for the present remains at Cochrane, Ont., but he also has an office in the Union Station, Winnipeg, and it is possible that his headquarters will be removed there.

Lieut.-Colonel A. E. Hodgins, who is organizing a body of men with railway construction and general mechanical experience in British Columbia, for active service in Europe, was, until his resignation in 1907, Division Engineer on Construction, National Transcontinental Ry., Kenora, Ont., and has latterly been connected with the British Columbia Public Works Department.

Sir William Van Horne, K.C.M.G., underwent a serious operation for an abdominal abscess at the Royal Victoria Hospital, Montreal, on Aug. 23, at 2.30 a.m., the operating surgeons being Doctors Armstrong and Hamilton, who issued a bulletin that he had stood the operation very well. Sir William was born in Will County, Illinois, Feb., 1843, and first came to Canada as General Manager, Canadian Pacific Ry. in Dec., 1881.

Henry S. Hawley, President of the Railroad Supply Co., Chicago, Ill., who died at Saunderson, R.I., towards the end of July, was born at Bridgeport, Conn., Aug. 12, 1851, was engaged for some years in railway contracting, and built a section of the G.T.R. from Valparaiso, Ind., to Thornton, Ill., and later purchased the Chicago and Southern Rd., which is now owned by the Chicago and Grand Trunk Ry.

Sir Percy Girouard, who, at the commencement of the war, resigned his position as one of the Managing Directors of Armstrong Whitworth & Co., in order to place his services at the disposal of the British Government in connection with the organization of the supply of munitions, has resumed his former position, the organization having been completed. His firm is the largest manufacturer of munitions in Great Britain.

William G. Connolly, whose appointment as City Passenger and Ticket Agent, G. T. Pacific Ry., Vancouver, B.C., was announced in our last issue, was born at McAdam Jct., N.B., May 28, 1889, and entered railway service July 1, 1906, stenographer and ticket clerk, G.T.R., Ottawa, Ont.; March 9, 1909, to June 1, 1910, ticket clerk, G.T.R., Montreal; June 1, 1910, to June 1, 1915, Assistant City Passenger and Ticket Agent, G.T. Pacific Ry., Vancouver, B.C.

Frederick Ernest Whelpley, who has been appointed Assistant Treasurer, Canadian Government Railways, Moncton, N.B., was born at St. John, N.B., Aug. 20, 1861, and entered transportation service May 1, 1893,

since when he has been, to Dec. 1, 1893, clerk, Hamburg-American Steamship Co., Montreal; Dec. 1, 1893 to May 1, 1903, outward freight clerk, Dock Department, same company, Hoboken, N.J.; May 1, 1903 to June 1, 1915, cashier, Canadian Government Railways, Moncton, N.B.

Fred Carey, who has been appointed Master Mechanic, Division 2, Intercolonial Ry., Campbellton, N.B., was born at Painsec Jct., N.B., Oct. 18, 1878, and entered I.C.R. service Sept. 1, 1893, since when he has been, to March 4, 1901, clerk in the Traffic Auditor's Office, Moncton, N.B.; March 4, 1901, to Oct. 7, 1910, locomotive fireman, Moncton, N.B.; Oct. 7, 1910, to May 1, 1912, Night Roundhouse Foreman, Moncton, N.B.; May 1, 1912, to May 19, 1915, locomotive driver, Moncton, N.B.; May 19 to July 19, 1915, Acting Master Mechanic, Division 3, Moncton, N.B.

J. G. Thomson, who has been appointed Commercial Agent, Chicago, Milwaukee & St. Paul Ry., Victoria, B.C., was born in Galt, Ont., and entered railway service with the C.P.R. at Chicago, Ill., where he remained fifteen years. He then moved to Winnipeg, representing the Minneapolis, St. Paul & Sault Ste. Marie Ry. there, and was later in West Shore Rd. service in New York. Eight years ago he entered Chicago, Milwaukee & St. Paul Ry. service, and for four years was travelling Passenger Agent at St. Paul, Minn., leaving there four years ago for Seattle, Wash., where he was engaged in advertising and publicity work for the company.

A. D. Provand, who died at Edinburgh, Scotland, recently, aged 76, will be remembered as the representative of the trustees of the bondholders of the Chignecto Marine Transport Ry. Co., who visited Ottawa frequently of recent years in the interests of the project. The object of the company was to build a railway for the transport of vessels across the isthmus dividing the Bay of Fundy from the Northumberland Strait in Nova Scotia. The Dominion Government in 1899 refused to grant any further extension of time for the carrying out of the project on which, it was claimed, some \$4,000,000 had been spent.

William Cuthbertson, General Assistant to the European Traffic Manager, G.T.R., Liverpool, England, died at his home July 12, and was buried at Birkenhead July 15, the funeral being attended by F. C. Salter, European Traffic Manager, G.T.R., London, and a representative from each of the various G.T.R. staffs throughout the United Kingdom. He was born at Caerlaverock, Scotland, March 8, 1851, and served on the Caledonian Ry. in Scotland, and the London and North Western Ry. at Liverpool. He entered the service of the Canadian Express Co. in Liverpool, May 19, 1873, and he was agent of that company when it was taken over by the G.T.R. He had held the position of General Assistant, G.T.R., for some time prior to his death.

Charles Samuel Moss, A. M. Can. Soc. C. E., who has been appointed Resident Engineer, Maintenance of Way, C. P. R., Moose Jaw, Sask., was born at Toronto, Dec. 17, 1865, and entered C. P. R. service in 1891, since when he has been, to 1894, rodman on survey and construction in British Columbia; 1894 to 1897, instrument man in West Kootenay, B. C.; 1897 to 1898, Resident Engineer on construction, West Kootenay, B. C.; 1898 to 1899, instrument man, West Kootenay, B. C.; 1899 to 1900, instrument man, in Western Ontario; 1900 to 1903, Resident Engineer on construction, Vancouver, B. C.; 1903 to 1905, transit man, Maintenance of Way, Revelstoke, B. C.; 1905 to 1906, Assistant Engineer on Construction, Spence's

Bridge, B. C.; 1906 to 1912, Resident Engineer, Maintenance of Way, Nelson, B. C.; 1912 to May 1915, Assistant Engineer of Double Track, Kamloops, B. C.; May to July 1915, Assistant Engineer, Maintenance of Way, Nelson, B. C.

Louis Charlton Fritch, Assistant to the President, Canadian Northern Ry., Toronto, who has also been appointed General Manager, Eastern Lines, was born at Springfield, Ill., Aug. 11, 1869, and took a course in civil engineering at the University of Cincinnati, and subsequently a law course, and was admitted to the bar in Ohio. He entered railway service in 1884, as supervisor's assistant, Ohio and Mississippi Ry., and was, from Jan. 1, 1886 to Oct. 1892, Assistant Engineer, same road; Oct. 1892 to Nov. 1, 1893, Engineer Maintenance of Way, same road; and was also Chief Engineer in charge of construction, Cincinnati and Bedford Ry.; Nov. 1, 1893 to Sept. 1, 1899, Division Engineer, Baltimore and Ohio Southwestern Rd., which absorbed the Ohio and Mississippi Ry.; Sept. 1, 1899 to Nov. 1902, Superintendent, Mississippi Division, same road; Feb. 1904



The Late J. W. Eber.

to Mar. 1, 1905, engaged on special work, Illinois Central Rd., Chicago, Ill.; Mar. 1, 1905 to Nov. 1906, Assistant to General Manager, same road; Nov. 1906 to Mar. 1, 1909, Assistant to President, same road; Mar. 1 to Nov. 15, 1909, Consulting Engineer, same road; Nov. 15, 1909 to Mar. 31, 1914, Chief Engineer, Chicago Great Western Rd., Chicago, Ill., since which latter date he has been Assistant to the President, Canadian Northern Ry., Toronto. He is a member of the American Society of Civil Engineers, American Institute of Electrical Engineers, American Railway Engineering Association, American Association for the Advancement of Science, Western Society of Engineers and the Geographical Society. He was President of the American Railway Engineering Association in 1910, a director from 1905 to 1913, and a member of the rail committee in 1913; a member of the railway committee of the American Institute of Electrical Engineers from 1910 to 1913; chairman of the committee on engineering of the American Railway Association in 1913; a member of the committee on electrical working, of the American Railway Associa-

tion from 1910 to 1913, and a member of the committee on electricity of the American Railway Engineering Association from 1910 to 1913.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those for 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,594,300	\$1,163,800	\$430,500	x \$83,800
Aug.	1,367,700	1,123,000	244,700	x 163,900
Sept.	2,109,900	1,519,000	590,700	65,800
Oct.	1,895,300	1,332,100	563,200	x440,900
Nov.	1,670,200	1,123,100	547,100	x417,700
Dec.	1,329,100	908,000	423,100	200,900
Jan.	950,800	773,000	177,800	x175,100
Feb.	1,105,100	823,700	281,400	42,800
Mar.	1,379,000	956,000	423,000	62,600
Apr.	1,429,000	940,000	489,000	74,800
May	1,193,900	871,000	322,900	x158,700
June	1,201,300	866,000	335,300	x128,000
	\$17,225,600	\$12,396,900	\$4,828,700	\$1,523,000
Decr.	\$5,475,100	\$3,952,100	\$1,523,000	.....

Approximate earnings for July, \$1,156,190 against \$1,594,300 for July, 1914, and for two weeks ended Aug. 14, \$508,900 against \$673,900 for same period, 1914.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$10,481,971.72	\$6,708,525.89	\$3,773,445.83	\$383,347.35
Aug.	8,917,764.38	6,554,606.68	3,373,157.70	597,981.54
Sept.	10,754,139.67	6,387,091.28	4,367,048.39	48,530.30
Oct.	9,282,923.49	5,361,600.13	3,921,323.36	2,281,529.43
Nov.	8,057,358.89	5,413,286.72	2,644,072.17	2,244,173.89
Dec.	7,443,962.43	5,244,438.62	2,199,523.81	2,027,297.90
Jan.	6,109,026.94	4,968,793.64	1,140,233.30	140,059.24
Feb.	6,735,678.49	4,756,663.87	1,979,014.62	507,433.16
Mar.	7,552,989.67	4,879,974.94	2,673,014.73	x126,224.14
Apr.	7,455,859.54	4,768,104.33	2,687,755.21	657,109.81
May	7,261,495.63	4,818,493.44	2,443,002.19	x520,009.52
June	7,512,033.93	4,834,002.95	2,678,030.98	x657,593.92

\$98,865,209.78 \$65,290,582.49 \$33,574,627.29 x\$8,851,300.39
Dec. \$30,949,614.05 \$22,098,313.66 \$8,851,300.39
xDecrease.

Grand Trunk Railway Earnings, Etc.

The following figures show the earnings for the G.T.R. (including the Canada Atlantic Ry.), the G.T.W.R. and the D.G.H. & M.R. for July:

	1915	1914	Incr.	Decr.
G.T.R.....	\$22,122,925	\$24,243,868	.....	\$2,120,943
G.T.W.R.....	4,115,617	4,064,487	\$51,130	.....
D.G.H.&M.R..	1,453,091	1,399,721	53,370	.....

Totals \$27,691,633 \$29,708,076 2,016,443
Approximate earnings for two weeks ended Aug. 14, \$1,998,185, against \$2,175,533 for same period 1914.

Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section, 916 miles, for July, were \$221,507 against \$343,987 for July, 1914. The earnings which have hitherto been published were for the Prairie Section and the Lake Superior Branch, but as the Lake Superior Branch is now being operated by Canadian Government Railways, the earnings from its operation are not now quoted.

Canadian Northern Ontario Ry. Contractors' Suit Settled.—A settlement has been effected between Foley Bros., Patrick Welch and J. W. Stewart, trading as Foley, Welch and Stewart, against the C.N.O. Ry., and Mackenzie, Mann & Co., Ltd., arising out of the construction of the Ruel-Port Arthur section of the company's line. The terms of the settlement were not made known at the time the action was dismissed by consent.

M. B. Douglas, heretofore local manager, Great North Western Telegraph Co., North Bay, Ont., has been appointed local manager at St. Catharines, Ont., vice T. E. Dudley, resigned.

The Great North Western Telegraph Co. has not closed its office at Neepawa, Man., as announced in our last issue owing to incorrect advice.

Canadian Northern Railway Construction, Betterments. Etc.

Montreal-Ottawa-Port Arthur Line.—We are officially advised that the section of the line between Ruel and Port Arthur, Ont., is receiving the finishing touches, and that it is expected to start a regular freight service over it early in September. This will enable the company to operate through freight traffic from Quebec, via Montreal, Ottawa, and Toronto, to Port Arthur, Winnipeg and all other points on the Canadian Northern Ry. The short line from Montreal to Hawkesbury, and the line from Ottawa to North Bay are not fully completed. These sections form part of the Montreal-Ottawa-Port Arthur line for the building of which the Dominion Parliament and the Ontario Legislature made special provisions.

A through freight reached Winnipeg from Toronto, July 29.

Canadian Northern Ontario Ry.—In connection with the company's application to the Board of Railway Commissioners for approval of a project for car ferry terminals at Cherry St., Toronto, we are officially advised that the plans for the same have not been completed. The company does not expect to be able to do anything further in this matter in the immediate future.

Orders have been given for building three frame constructed 100-ton capacity standard counter balanced bucket coaling plants at Rideau Jct., Capreol and Fitzbach, Ont. They will be similar to the plant erected at Trenton, Ont., which was described and illustrated in Canadian Railway and Marine World for June.

Canadian Northern Ry.—The new agreement between the Port Arthur, Ont., city council and the company, to replace the one disapproved of by the ratepayers at the municipal elections in January, was practically settled, Aug. 13. The subject matter of the agreement has to do with the transfer of Dock 5 to the city.

We are officially advised that the company is adding two miles of track in the yards at Port Arthur and Fort William, Ont.; and is putting in new sidings and extending the yards at various points on the line between Port Arthur and Winnipeg.

The line from Winnipeg to Grand Marais, Man., is, we are officially advised, being extended to Victoria Beach, 15 miles. The grading, bridging and track laying are to be completed this year. J. H. Higgins, Winnipeg, is the contractor.

Westerly from Winnipeg the company is ballasting about 120 miles of main line, and a considerable mileage on branch lines. About 80 miles of the main line west of Kamsack, Sask., is being relaid with 80 lb. steel; considerable filling in is being done on trestle work, and two miles of bridge decks are being awarded west of Dauphin, Man.

The Thunderhill branch extends from Thunderhill Jct., Man., to Preeceville, Sask., 72 miles, and is being extended beyond that point. The grading on a line from Canora to connect with the Thunderhill branch at Sturgis, two miles east of Preeceville, 21 miles, was completed in 1914. The track laying and ballasting is, we are officially advised, to be completed this season.

The grading of a branch line from Wroxton, Sask., mileage 227 from Winnipeg, via the Neepawa-Russell-Ross Jct. line, into Yorkton, Sask., 26 miles, was completed in 1914, and we are officially advised that track will be laid and ballasting completed during this year.

The company has in operation a line from Delisle to Tichfield, Sask., which is projected easterly to Findlater on the Regina branch, and is in operation from Tichfield westerly

to Elrose, about 40 miles. The branch is projected to be extended towards Edmonton, a further distance of about 250 miles. On this grading was completed for 35 miles to Easton, on which, we are advised, tracklaying and ballasting will be completed this season. The Cowan Construction Co. is grading a further distance of 30 miles.

Track will also be laid this year, and ballasting done, we are advised, on the extension from Bienfail to Estevan, Sask., 9 miles, which was graded in 1914.

The projected line from Calgary to MacLeod, Alberta, is 103 miles long. About 17 miles of grading was completed in 1914, and we are officially advised that it is expected to complete the grading this year. It has not been decided whether any track will be laid this year. The grading is being done by the Northern Construction Co.

A line is under construction from Edmonton south easterly, and is already completed to Camrose, 47 miles. An additional 60 miles of grading has been completed to Battle River, but it has not been decided whether track will be laid this year.

On the line under construction from Oliver to St. Paul de Metis, Alberta, 110 miles, D. F. McArthur has the contract for grading 75 miles, which it is expected will be completed this year. The question of laying steel on this line this year has not been decided.

Automatic locomotive coaling plants of 200 tons capacity each are to be built at Kindersley, Sask., and Big Valley, Alta.

Canadian Northern Pacific Ry.—M. H. MacLeod, Chief Engineer and General Manager, returned to Winnipeg, Aug. 1, from a trip of inspection as far as the Albreda Summit, B. C. He is reported to have stated that ballasting and other finishing up work on the line from the Alberta-British Columbia boundary to the Summit was expected to be completed by Sept. 1.

F. C. Gamble, Chief Engineer, British Columbia Department of Railways, in a late report to the Government, states that the line is fully completed from the bridge at New Westminster to mileage 190; the portion between mileage 190 and 245 was expected to be fully ballasted and completed by the end of August. From Kamloops, mileage 245, the line had been completed for 125 miles northerly, with the exception of a second lift of ballast on 15 miles. The ballasting on the remainder of the line to mileage 413 was expected to be completed in September; thence to the British Columbia-Alberta boundary the line was completed. The buildings at the divisional and terminal points were all being gone on with, and the stations at intermediate points were being built. All the bridge structures had been completed, but after the line is opened three temporary bridges across the Thompson River, beyond mileage 316 will be replaced by permanent steel structures.

We are officially advised that division yards have been located at Port Mann, mileage 4; Boston Bar, mileage 118; Kamloops, mileage 244; Blue River, mileage 383; and Lucerne, mileage 494, all from New Westminster bridge. At Port Mann, there has been erected a 15-stall locomotive house, a 60 ft. turntable, large machine shop, two large boarding houses, an 80,000 gal. steel tank and other buildings. At Lucerne there are 10-stall locomotive house, and other buildings; at Boston Bar, Kamloops and Blue River it is contemplated to put up 5-stall locomotive houses and other necessary buildings, this year, the work on some of which is being done. All the division yards are being laid out with a view to future de-

velopments, sufficient trackage being laid for present purposes, but so as to permit of additions on previously arranged plans. Six station buildings, viz., at Langley, mileage 14.7; Matsqui, mileage 30.5; Sumas, mileage 35.9; Arnold, mileage 41.4; Rosedale, mileage 52.7 and Laidlaw, mileage 63.2, are in course of erection. The work is being done by the company's own staff.

False Creek Terminals, Vancouver.—The company's officials have made a protest to the Vancouver City Council against the city's plans for the seawall at False Creek flats. The question is whether the plans, which provide for slips, are in accordance with the terms of the agreement. (Aug., pg. 311.)

Dominion Government Railway to Hudson Bay.

A weekly accommodation train is being operated on the Dominion Government Railway to Hudson Bay from Pas, Man., to the bridge at Armstrong Lake, 210 miles. The line has only been completely ballasted for the first 90 miles from Pas, and ballasting is in progress along the remaining 120 miles. Grading is fully completed to the Manitou Rapids on Nelson River, 15 miles from Armstrong Lake. Track is expected to be laid to the Nelson River during September. The substructure of the bridge is being put in, and it is expected that the bridge will be completed by Dec. 31. It will be of cantilever construction, the main span being 600 ft. Grading is practically finished for the next 50 miles to Kettle Rapids on the Nelson River, where another cantilever bridge will be erected next spring. Tracklaying will be started on this section next spring. Beyond the Kettle Rapids grading is in progress, and it is expected to have it fully completed to within 40 miles of Port Nelson by the end of the year.

At Port Nelson a short narrow gauge railway has been built southerly to bring in sand and gravel for use in making concrete and in filling the cribwork of the docks which are being built. W. E. Hawes is in charge of the dock construction work at Port Nelson. It is said that as soon as the wharves and docks are completed a grain elevator will be built. Three dredges are deepening the approaches to the harbor. (Aug., pg. 304.)

Canadian Freight Association, Western Lines.—At the thirteenth annual meeting at Winnipeg, Aug. 5, the following officers and standing committees were elected for the current year,—President, A. E. Rosevear, General Freight Agent, Grand Trunk Pacific Ry.; Vice President, W. C. Bowles, General Freight Agent, C. P. R.; Executive Committee, A. E. Rosevear, W. C. Bowles and G. Stephens; Inspection Committee, W. G. Manders, G. H. Smith, F. R. Porter and P. H. Burnham; Car Service Committee, H. J. Humphrey, J. P. Driscoll, T. P. White, W. B. Harris and G. P. Clarke; Weighing Committee, W. C. Bowles, O. C. Walker, G. Stephen, J. P. Driscoll, A. E. Rosevear and F. R. Porter; Classification Committee, W. B. Lanigan, G. Stephen, A. E. Rosevear, W. G. Manders, F. R. Porter, P. H. Burnham and W. C. Bowles. The Secretary-Treasurer is W. E. Campbell.

Cascade Scenic Ry., Banff, Alberta.—We are officially advised that the surveys for this projected railway are still in progress, and that, until all the data are obtained, it is impossible to decide finally on the details of construction. T. R. Deacon, Winnipeg, is interested in the project, and H. S. Johnson is in charge of the surveys. (April, pg. 137.)

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TORONTO, CANADA, SEPTEMBER, 1915.

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Canadian Pacific Railway Construction, Betterments, Etc.

British Columbia Division.—A press report states that a heavy rock slide covered a portion of the C. P. R. tracks near Golden, B. C., Aug. 3, and that as engineers reported there was no prospect of clearing the slide, a temporary track was built over the debris, and will, it is said, be made into a permanent one. (Aug., pg. 303.)

Extension from Foremost East.—On what is known as the Weyburn-Lethbridge branch from Weyburn, Sask., to Lethbridge, Alta., the line is in operation at the west end from Lethbridge to Stirling, 18.9 miles, and from Stirling east to Foremost, 49.2 miles, a total of 68.1 miles. In 1914 an extension was graded easterly from Foremost for 25 miles to Pakowki. As a result of Vice President Bury's inspection trip in the west recently and a subsequent trip made over the route of the extension by Vice President and General Manager Grant Hall, and Chief Engineer Sullivan, it has been decided to lay rails on the 25 mile extension at once. The work will be done by the company's own forces and is expected to be completed by Oct. 1.

Great Northern Railway Lines in Canada.

Kootenai Valley Ry.—Some years ago the Great Northern Ry. built a line under this title from Bonners Ferry, Idaho, to the International boundary at Porthill, and subsequently extended the line into Canada under the title of the Bedlington and Nelson Ry. The line was laid out to cross the C. P. R. at Creston Jct., and touch it again near Sirdar, and then reach Kootenay Lake at Kuskanook, B. C., from which point a steamboat service was to be operated to Nelson, making connection there with a branch of the Great Northern Ry., running from Marcus, Wash. The line as finally built and operated extended from the International Boundary to Creston, and from Sirdar Jct., to Kuskanook, 15.20 miles, running rights being arranged for over the C. P. R. between Creston and Sirdar Jct., 8.7 miles. The line was operated with varying success from 1901 until about two years ago, when it was closed up. G. N. R. workmen are now reported to be dismaterial to Bonner's Ferry. The right of way mantling the line and removing all usable is reported to have been acquired by the British Columbia Government, for highway purposes.

Vancouver Terminals.—We are officially advised that the company's engineers are preparing plans for the passenger station and other terminal facilities at the projected terminals at False Creek, Vancouver. As soon as they have been prepared they will be submitted to the Board of Railway Commissioners for approval. (Aug., pg. 308.)

Toronto Terminal Railway Company's Union Station.

An Ottawa press report, Aug. 10, stated that the basis of an arrangement had been reached between the Dominion Government and the Toronto Terminal Railway Co., under which the Government will bear the cost of the eastern wing of the new building. This wing will contain the Government offices and the section to be devoted to post office purposes. This is said to be the last obstacle, except the financial one, to the prosecution of the actual work of construction. The financial situation is reported to have been eased by an arrangement with the Bank of Montreal, by which advances up

to \$4,000,000 will be made on account of the work. The contract for the larger portion of the work was let last year to the P. Lyall Construction Co.

The viaduct work from near Bathurst St. to Cherry St., while not a part of the new station building project, hinges considerably on it. Whether the two works will be gone on with concurrently has apparently not been decided.

North Toronto Station, Canadian Pacific Ry. In the article on this station in Canadian Railway and Marine World for August, B. Ripley, M. Can. Soc. C. E., Engineer of Grade Separation, C. P. R. should have been mentioned as having charge of the track elevation work, which includes extensive baggage room and midway construction under the tracks. The contractors for this work were Wells & Gray Limited, Toronto.

Ottawa Car Manufacturing Co., Ltd.—W. M. Arnold, heretofore Assistant General Manager, has been appointed Manager, and Purchasing Agent, and W. K. Jeffrey, heretofore General Manager, has been appointed General Superintendent.

ASSISTANT ENGINEERING EDITOR
wanted for Canadian Railway and Marine World during the absence of its Engineering Editor on active military service.
Must be competent to write on both mechanical and civil engineering, to do draughting and take photographs for illustration purposes.
State fully experience, age, references and pay expected to Managing Director, Canadian Railway and Marine World, 70 Bond Street, Toronto, Canada.



Department of Railways and Canals

Car Ferry Terminal, Carleton Point,
Prince Edward Island.

NOTICE TO CONTRACTORS

STATION, WATER TANK, ENGINE HOUSE,
ETC.

SEALED TENDERS, addressed to the undersigned and endorsed "Tender for Station, Water tank, etc., Carleton Point," will be received at this office until 12 o'clock noon on Wednesday, September 8th, 1915, for the construction of station, water tank, engine house, transfer platform, standpipe pit, ashpit and turntable foundations for the Carleton Point Car Ferry Terminal, Prince Edward Island.

Plans, specifications and form of contract may be seen at the offices of, and forms of tender obtained from, the Chief Engineer, Department of Railways and Canals, Ottawa, the Chief Engineer, Canadian Government Railways, Moncton, N.B., and the Engineer in charge, Car Ferry Terminals, Carleton Point, P.E.I.

An accepted bank cheque for the sum of \$1,500.00, made payable to the order of the Minister of Railways and Canals, must accompany each tender, which sum will be forfeited if the party tendering declines entering into contract for the work at the rates stated in the offer submitted.

The cheque thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque of the successful tenderer will be held as security, or part security, for the due fulfilment of the contract to be entered into.

The lowest or any tender not necessarily accepted.

By order,
J. W. PUGSLEY,
Secretary.

Department of Railways and Canals,
Ottawa, August 17th, 1915.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.—84408. 6363

Transportation Appointments Throughout Canada.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canadian Government Railways.—B. A. BOURGEOIS, heretofore chief clerk to the Comptroller and Treasurer, has been appointed Assistant to the Comptroller and not Assistant to the Comptroller and Treasurer, as announced in our last issue. Office, Moncton, N.B.

F. E. WHELPLEY, heretofore Cashier, has been appointed Assistant Treasurer, as reported in our last issue. It is not the present intention to appoint a successor to his former position. Office, Moncton, N.B.

See also Intercolonial Ry. and National Transcontinental Ry.

Canadian Northern Ry.—L. C. FRITCH has been appointed General Manager of all lines east of Port Arthur, Ont. He also continues in his duties as Assistant to President. Office, Toronto. The circular announcing this appointment was issued by D. B. Hanna, Third Vice President, and approved by Sir Wm. Mackenzie, President.

T. C. HUDSON, Division Master Mechanic, Quebec Grand Division, has had his jurisdiction extended over the Car Department, Quebec Grand Division. Office, Joliette, Que.

H. J. WHITE, heretofore General Foreman, Car Department, Quebec Grand Division, Joliette, Que., has been appointed Supervisor of Car Work on all lines east of Port Arthur, Ont. Office, Toronto.

J. H. McALPINE, heretofore Locomotive Foreman, Winnipeg, has been appointed Master Mechanic, with jurisdiction over territory between Parry Sound, Port Arthur and Cedar Lake, Ont. Office, Parry Sound, Ont.

Other appointments appear on another page, showing changes in Canadian Northern Ry., Ontario Division organization.

Canadian Pacific Railway.—T. G. CONNON, heretofore Chief Dispatcher and Car Accountant, British Columbia Electric Ry., Vancouver, B.C., has been appointed Agent, C.P.R., Windsor, Ont., vice F. T. Leversuch, resigned to enter London and Port Stanley Ry. service.

G. J. FOX, heretofore General Yardmaster, Swift Current, Sask., has been appointed General Yardmaster, Fort William, Ont., vice Donald McDonald, assigned to other duties.

S. J. BERRINGER, heretofore Yardmaster, Kenora, Ont., has been appointed yard foreman, Fort William, Ont.

DONALD McDONALD, heretofore General Yardmaster, Fort William, Ont., has been appointed yard foreman there.

J. J. McGUIRE, heretofore chief clerk, Royal Alexandra Hotel, Winnipeg, is reported to have been appointed Manager, vice W. Detlor, appointed Manager, Chateau Frontenac, Quebec.

C. S. MOSS, heretofore Engineer of Grade Revision, Kamloops, B.C., has been appointed Resident Engineer, District 2, Saskatchewan Division, vice J. V. McNab. Office, Moose Jaw.

J. H. BAKER, heretofore Roadmaster, Kenora, Ont., has been appointed Roadmaster at Medicine Hat, Alta., vice H. O. Whitney, who has left the service.

J. V. McNAB, heretofore Resident Engineer, Moose Jaw, Sask., has been appointed Roadmaster, Calgary Subdivision from Bassano to Calgary, Alta., and also the Gleichen Subdivision.

H. SHALER has been appointed Locomotive Foreman, Crownsnest, B.C., vice J. A. Maddick, who has left the service.

Dr. J. A. MACDONALD has been appoint-

ed acting Medical Officer, Cascade Division, British Columbia Division, Vancouver, vice Dr. A. P. Proctor, who has been granted extended leave of absence, on his appointment as Surgeon Major with the British Columbia Field Hospital.

T. PENNEY, heretofore cashier, has been appointed Wharf Agent, Victoria, B.C., vice H. F. Bishop.

Chicago Great Western Rd.—C. A. FULLLEN, General Agent, Winnipeg, Man., has had his jurisdiction extended to include the territory of the agency at Fargo, N.D.

Chicago, Milwaukee and St. Paul Ry.—J. G. THOMSON, heretofore engaged in the company's publicity work at Seattle, Wash., has been appointed Commercial Agent, Victoria, B.C., vice C. A. Solly.

Grand Trunk Pacific Ry.—The work heretofore separately performed by the mechanical and car departments has been consolidated at all points, except Transcona, the locomotive foreman being directly responsible, reporting to the superintendent. A district locomotive foreman has been assigned to each superintendent's territory, who will generally supervise the mechanical and car work, under the jurisdiction of the superintendent, to whom he will report. The time of all employes engaged in such work will be kept in the superintendent's office.

J. L. HODGSON, Master Car Builder, having resigned, C. E. BROOKS, acting Superintendent of Motive Power, will, until further advised, assume the duties of that position in addition to his own. Mr. Hodgson has apparently been transferred to the National Transcontinental Ry. Service.

W. J. STURGES, Storekeeper, Transcona, Man., has had his jurisdiction extended over the line to Prince Rupert, B.C., including branch lines. Requisitions for special material are sent to him at Transcona, and for standard material, hitherto sent to D. Robertson, who has enlisted for active service, are sent to C. Argyle, storeman, Edmonton, Alta.

A. A. TISDALE, formerly Superintendent, Lake Superior Division, Fort William, Ont., who has been on leave of absence, has been appointed Superintendent, Regina Division. Office, Regina, Sask.

J. F. MOFFATT, formerly Road Foreman of Locomotives, Wainwright, Alta., who was appointed General Locomotive Foreman over territory from Fort William, Ont., to Transcona, Man., recently, has resumed his former position, on the taking over of the line east of Winnipeg by the Canadian Government Railways.

A. ANDERSON, heretofore Roadmaster, Fort William, Ont., has been appointed Roadmaster, Edson, Alta.

A. KILPATRICK, heretofore Superintendent, Lake Superior Division, Fort William, Ont., has been appointed Superintendent at Smithers, B.C., vice J. H. Todd.

H. R. BULLEN, heretofore Soliciting Freight Agent, Regina, Sask., has been appointed City Passenger Agent, G.T.R. and G.T.P.R., San Francisco, Cal. Through an error in our advice from the company, an incorrect title was given in a recent issue.

The following station agents have been appointed,—Landis, Sask., C. H. LeGallais; Reford, Sask., T. Larner; Mawer, Sask., W. Norman; Irma, Alta., J. T. Kerr.

Grand Trunk Ry.—G. H. FRITH has been appointed acting Assistant Engineer, Belleville Division, Ontario Lines, vice G. A. Butler, resigned. Office, Belleville.

E. J. WEARING has been appointed acting General Assistant, G.T.R. and Canadian Express Co., Liverpool, England, vice W. Cuthbertson, deceased.

The following station agents have been appointed,—Britton, Ont., Mrs. J. Miles (passenger); Joe Lake, Ont., F. Folkard; Brockville, Ont., outside agency, J. W. Ridgeway.

Intercolonial Ry.—T. W. HENNESSY, heretofore Master Mechanic, Campbellton, N.B., has returned to his former position as locomotive driver, and is located at Truro, N.S.

F. CAREY, heretofore acting Master Mechanic, Division 3, Moncton, N.B., has been appointed Master Mechanic, Division 2, vice T. Hennessy. Office, Campbellton, N.B.

W. E. BARNES, formerly Master Mechanic, Division 2, and who was assigned to other duties in June, has resumed the position of Master Mechanic, Division 2, vice F. Carey, acting Master Mechanic, transferred to Campbellton, N.B. Office, Moncton, N.B.

E. MOORE is reported to have been appointed station agent, Moncton, N.B., vice C. Bovard, reported transferred to National Transcontinental Ry. service.

See also Canadian Government Railways.

Lehigh Valley Rd.—The appointment of G. H. LEE as General Passenger Agent reporting to the Traffic Manager, as announced in our last issue, does not affect the position of C. S. LEE, who continues as Passenger Traffic Manager.

National Transcontinental Ry.—The following is a complete list of officials between Quebec and Winnipeg, including the G.T. Pacific Ry. Lake Superior Branch, as far as we have been officially advised to date. The list includes a number of officials whose appointments have already been mentioned in Canadian Railway and Marine World. General officers,—F. P. BRADY, General Superintendent; L. G. ROBLIN, General Master Mechanic; W. A. COWAN, Division Engineer; A. H. WILLET, Assistant Division Engineer; A. J. LEGERE, General Car Inspector, all with offices at Cochrane, Ont.; District 1, Quebec to O'Brien, including O'Brien,—A. J. GORRIE, Superintendent; J. J. McMANUS, Assistant Superintendent; J. E. LePAGE, District Freight and Passenger Agent; A. BABIN, Resident Engineer, with offices at Quebec, Que.; P. J. HENSELWOOD, Bridge and Building Master; M. CASEY, Roadmaster; A. BEAUSEIGLE, acting Roadmaster, with offices at Parent, Que.; District 2, O'Brien to Superior Jct., not including yard,—W. B. WAY, Superintendent, Cochrane, Ont.; H. A. RYAN, Assistant Superintendent, Grant, Ont.; A. DEVINE, District Master Mechanic, Districts 1 and 2; H. A. LAIRD, District Freight and Passenger Agent; J. E. GIBAULT, Resident Engineer; W. J. CHISHOLM, Bridge and Building Master; W. P. HOUSTON, Roadmaster from mileage 1, O'Brien Subdivision, to mileage 109.5 Cochrane Subdivision, with offices at Cochrane, Ont.; J. WILSON, Roadmaster from mileage 109.5 Cochrane Subdivision, to mileage 63.4 Grant Subdivision, Grant, Ont.; J. E. LOGAN, Roadmaster from mileage 63.4 Grant Subdivision to mileage 131.8, Armstrong Subdivision, Armstrong, Ont.; District 3, Superior Jct. to Winnipeg, and Lake Superior Branch, G.T. Pacific Ry., R. S. RICHARDSON, Superintendent; A. MacGILLIVRAY, Resident Engineer, with offices at Fort William, Ont.; W. A. HILL, Chief Dispatcher, Graham, Ont.; R. A. POSTANS, Roadmaster, Fort William, Ont.; P. BERNARD, Roadmaster, Graham, Ont.; H. McCORMICK, Roadmaster, Transcona, Man.; J. BIRSE, District Master Mechanic; A. POSSNETT, Car Foreman; D. CAMPBELL, Bridge and Building Master, with offices at Fort William, Ont.; J. A. MITCHELL is General Foreman of Shops, Transcona, Man.; A. J. ROBERTS is Loco

Changes in Canadian Northern Railway's Ontario Division Organization.

Effective Sept. 1, the Ontario Division will be operated and organized as follows:—

	Miles.
TORONTO DISTRICT—	
TORONTO TERMINALS	5.6
TRENTON SUBDIVISION	105.0
RIDEAU SUBDIVISION	146.2
MAYNOOTH SUBDIVISION	117.6
Ormsby Jct. to Coe Hill	7.2
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PICTON SUBDIVISION	124.8
IRONDALE SUBDIVISION	30.6
TWEED SUBDIVISION	51.9
KINGSTON SUBDIVISION	54.5
BROCKVILLE SUBDIVISION	18.6
MUSKOKA SUBDIVISION	44.4
ORILLIA SUBDIVISION	143.6
Udney to Orillia	10.2
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Total	735.4
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LAKE SUPERIOR DISTRICT—	
SUDBURY SUBDIVISION	127.9
Key Jct. to Key Harbor	6.2
Sudbury Jct. to Sudbury	3.2
Algoma Connection	2.4
Garson Jct. to Garson	3.7
<hr/>	
Total	145.4
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NORTH BAY SUBDIVISION	83.0
RUEL SUBDIVISION	148.3
Capreol to Foleyette	5.2
Sellwood Jct. to Sellwood	153.5
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Total	328.5

J. IRWIN is appointed Superintendent, Toronto District. Office, Rosedale, Toronto.

GEO. COLLINS is appointed Superintendent Branch Lines, with jurisdiction over Picton, Maynooth, Tweed, Irondale and Kingston subdivisions, reporting to Superintendent. Office, Trenton.

W. R. KELLY is appointed Assistant Superintendent with jurisdiction over Parry Sound, Orillia, Toronto Terminals, Trenton, Rideau and Brockville subdivisions. Office, Rosedale, Toronto.

W. C. MOORE is appointed Master Mechanic with jurisdiction over Toronto District, reporting to Superintendent. Office, Trenton.

G. P. MACLAREN is appointed Division Engineer with jurisdiction over Toronto District, reporting to Superintendent. Office, Rosedale, Toronto.

P. H. FOX is appointed Chief Dispatcher with jurisdiction over Toronto District. Office, Rosedale, Toronto.

W. J. CURLE is appointed Superintendent with jurisdiction over Lake Superior District (except Nipigon Subdivision). Office, Capreol.

J. E. NELSON is appointed Superintendent with jurisdiction over Nipigon Subdivision. Office, Port Arthur.

A. J. GAYFER is appointed Trainmaster, with jurisdiction over Ruel, Oba, Long Lake and Nipigon Subdivisions. Office, Hornepayne.

A. J. GAYFER is also appointed Division Engineer with jurisdiction over Lake Superior District. Office, Hornepayne.

J. H. McALPINE is appointed Master Mechanic with jurisdiction over Lake Superior District, reporting to Superintendent. Office, Parry Sound.

J. E. CATHER is appointed Chief Dispatcher with jurisdiction over Lake Superior District (except Nipigon Subdivision). Office, Capreol.

T. J. BROWN is appointed Chief Dispatcher with jurisdiction over Nipigon Subdivision. Office, Port Arthur.

The Maintenance of Way Department organization will be as follows:

R. A. BALDWIN—Engineer Maintenance of Way, jurisdiction over Ontario Division, reporting to General Superintendent. Office, Toronto.

TORONTO DISTRICT.
G. P. MACLAREN—Division Engineer,

jurisdiction, Toronto District, reporting to Superintendent. Office, Rosedale, Toronto.

E. MYERS—Supervisor of Track, jurisdiction, Toronto Terminals, Parry Sound and Trenton Subdivisions. Office, Rosedale, Toronto.

O. OGDEN—Supervisor of Track, jurisdiction, Rideau and Brockville Subdivisions. Office, Trenton.

O. KERR—Supervisor of Bridges and Buildings, jurisdiction, Parry Sound, Trenton, Rideau and Brockville Subdivisions. Office, Rosedale, Toronto.

J. McDONALD—Supervisor of Track, jurisdiction Maynooth, Picton, Irondale and Tweed Subdivisions. Office, Trenton.

J. D. EVANS—Supervisor of Bridges and Buildings, jurisdiction Maynooth, Picton, Irondale and Tweed Subdivisions. Office, Trenton.

LAKE SUPERIOR DISTRICT.

A. J. GAYFER—Division Engineer, jurisdiction Lake Superior District, reporting to Superintendent. Office, Hornepayne.

W. M. JACKLIN—Supervisor of Roadway (including track, bridges and buildings), jurisdiction Nipigon and Long Lake Subdivisions. Office, Hornepayne.

E. AUDET—Supervisor of Roadways (including track, bridges and buildings), jurisdiction Ruel and Oba Subdivisions. Office, Capreol.

E. HAYSTEAD—Supervisor of Track, jurisdiction Sudbury and North Bay Subdivisions. Office, Capreol.

F. McKAY—Supervisor Bridges and Buildings, jurisdiction Sudbury and North Bay Subdivisions. Office, Capreol.

G. T. R. Employes and the War.—Employes of various divisions of the G.T.R. system are forming associations for the organization of systematic and permanent methods of contribution for war purposes. The G.T.R. Patriotic Association of Toronto has been organized with the following officers:—President, H. E. Whitemberger; Chairman, G. E. Pepall; Vice Chairman, W. S. Wilson; Secretary, J. A. Murphy, and Treasurer, J. Gray. The Barrie Division Railwaymen's Patriotic Association has also been formed, with P. J. Lynch as Chairman. Sub-committees will be arranged to establish a system of monthly collections until the end of the war, the amounts realized being expended on such articles from time to time as are decided to be desirable.

motive Foreman, Transcona, Man.; C. H. MOULTON, Locomotive Foreman, Redditt, Ont.; T. W. PALOS, Locomotive Foreman, Graham, Ont., and C. E. STEWART, Locomotive Foreman, Mission, Fort William, Ont.

The locomotive and car shops at Transcona, Man., built by the N.T.R. Commission and heretofore operated by the Grand Trunk Pacific Ry., have been taken over with the N.T.R. line east of Winnipeg for operation as part of the Canadian Government Railways, and all the officials of the shops appear to have been transferred to the N.T.R. service, except C. E. Brooks, who remains with the G.T.P.R. as acting Superintendent of Motive Power and also in charge of the G.T.P.R. Master Car Builders' work. J. L. Hodgson, Master Car Builder, G.T.P.R., appears to have been automatically transferred to the N.T.R. service, but no official announcement has yet been made, and the various foremen and employes in both the car and locomotive departments have been similarly transferred.

C. BOVARD, station agent, Intercolonial Ry., Moncton, N.B., is reported to have been appointed Assistant Superintendent, N.T.R., Edmundston, N.B.

C. R. MACKENZIE, heretofore General Superintendent's Assistant, Canadian Government Railways, Moncton, N.B., has been appointed chief clerk to General Superintendent. Office, Cochrane, Ont.

T. H. GILMOUR, K.C., has been appointed Solicitor and Claims Agent, Winnipeg to Armstrong, on main line, and Lake Superior branch, Lake Superior Jct. to Fort William. Office, 402 Lindsay Building, Winnipeg.

B. S. WOODS, frog shop foreman, Transcona, Man., has enlisted to active service in Europe. No appointment had been made to the position at the time of writing.

See also Canadian Government Railways.

Thousand Islands Ry., Oshawa Ry.—We are officially advised that no appointment has been made to fill the vacancy caused by the death of J. F. Chapman, Manager. H. W. COOPER, Secretary-Treasurer, is in full charge of the affairs of both companies for the present. Office, Gananoque, Ont.

Toronto Suburban Ry.—H. T. HAZEN, M.Can.Soc.C.E., District Engineer, Mackenzie, Mann & Co., Limited, and Consulting Engineer, Toronto Suburban Ry., has taken over the duties of Chief Engineer of the latter, vice E. T. Wilkie, A.M.Can.Soc. C.E.

First through train on Canadian Northern Ry. to Pacific Coast.—Sir William Mackenzie, President, C.N.R., left Toronto Aug. 22 by a special train over the company's main line via Sudbury, Port Arthur, Winnipeg, Edmonton and the Yellowhead Pass to New Westminster, the present Pacific Coast terminus of the line. He was accompanied from Toronto by Lady Mackenzie, Sir Glenholme Falconbridge, Chief Justice of the King's Bench of Ontario and Lady Falconbridge, D. B. Hanna, Third Vice President, C.N.R., A. J. Mitchell, Comptroller, Mackenzie, Mann & Co., and Assistant to Vice President, C.N.R., and John Aird, Assistant General Manager, Canadian Bank of Commerce. At Winnipeg the party was joined by Mrs. Hanna, M. H. MacLeod, General Manager, and the principal heads of C.N.R. departments there. It is said to be the intention to start a freight service between Toronto and Winnipeg during September. During Sir William's present trip to the coast a decision will probably be arrived at in regard to the operation of the line in British Columbia.

The Pennsylvania Rd. System carried approximately 180,000,000 passengers in the year ended June 30, and not one was killed in a train accident.

Electric Railway Department

Regulations for Winnipeg Electric Railway to Prevent Damage by Electrolysis.

In July, 1913, the Winnipeg City Council applied to the Manitoba Public Utilities Commissioner to compel the Winnipeg Electric Ry. Co. to establish measures of prevention of damage to underground cables and mains by electrolysis by electrical currents from the company's railway system. In June, 1914, the Greater Winnipeg Water District asked that consideration be given to the matter of electrolysis in so far as it might in any way affect the proposed pipe line for water supply and the distribution systems connected therewith. In the same month the Manitoba Government Telegraph Commission submitted a brief claiming that damage was being done to its underground cable system by electrolysis from stray currents of the Winnipeg Electric Ry. The railway company submitted a brief maintaining that every due precaution was being taken by it to mitigate all damage due to electrolysis. The Commissioner of Public Utilities appointed A. F. Gans to investigate the matter and after receipt of his recommendations made the following order to go into effect on Aug. 12:—

1. Every rail joint in the tracks of the electric railway system shall be so constructed and maintained that its resistance does not exceed the resistance of 8 ft. of continuous rail. Tests of the resistance of rail joints shall be made and recorded at least once every year, and when defective joints are found they shall be promptly repaired.

2. The 2 rails of every single track in the said system, and the 4 rails of every double track, shall be maintained adequately cross-bonded, and all special track work shall be spanned by copper wire jumpers of adequate current-carrying capacity.

3. All conductors which connect the tracks of the electric railways in the said system to the direct-current supply stations shall be insulated from the earth.

4. No metallic connections shall be permitted by the Company in its system between water, gas or other underground pipes and any part of the electric circuit of the electric railway.

5. The rails or other metallic conductors forming parts of current carrying electric circuits of the electric railway system, which are not insulated from earth, shall be designed, constructed, operated and maintained, so that the average potential difference during 10 consecutive minutes between any two points 1,000 ft. or less apart on said rails or other metallic conductors will not exceed 1 volt, and, further, so that the average potential difference during any 10 consecutive minutes between any two points more than 1,000 ft. apart on said rails or other metallic conductors within the area comprised by Winnipeg (including Elmwood) and St. Boniface, will not exceed 7 volts, (approximately the value adopted by the British Board of Trade.)

On account of the concentration and great importance of the underground structures in the neighborhood of the corner of Portage Ave. and Main St., Winnipeg, all feeders connecting to the tracks within a radius of 1,500 ft. from that corner shall be so proportioned as to maintain their connection points in the tracks at the same or slightly lower potential than the tracks at that corner during peak load. Owing to the proximity of the city water works, and of the important water main leading to the

said works, to substation 8 on Logan Ave., at McPhillips St., all feeders from the said station to the tracks shall be proportioned for substantially the same voltage drop during peak load. The track voltage requirements of this recommendation are to apply only to normal operating conditions on a business day, and not to occasional abnormal conditions in street railway traffic brought about for example by fires, storms, or holiday crowds. If at any time such difference of potential exceeds the above the company shall take immediate steps to bring it below such limit.

6. Potential wires insulated from earth shall be installed by the company in the district of every substation whereby contact may be made to the tracks at each point where a return feeder from this station connects to the tracks, at the feeding limits of each substation on the principal track lines where these terminate within the limits of Winnipeg (including Elmwood) and St. Boniface, and at the points where principal track lines cross the limits comprising Winnipeg (including Elmwood) and St. Boniface. These potential wires shall terminate in the substations in such a way that they can be conveniently connected to an indicating voltmeter and to a 24-hour recording voltmeter. One voltmeter of each type shall be provided for each direct-current supply station, so arranged that the potential difference between any two of the above described points in the track system can be measured or automatically recorded. A potential wire shall also be connected to a nearby water pipe by means of which the potential of the negative bus-bar referred to earth may be measured or recorded.

7. By means of the potential wires and voltmeters provided for in clause 6 above, the following measurements and records shall be obtained: The average potential difference between the tracks at a feeder connection point near the substation and each other feeder connection point, shall be determined from readings of the indicating voltmeter taken and recorded for a period of about 5 minutes during the peak load hour, once every month. From such test the point in the tracks which is at the lowest potential shall be determined. A 24 hour record of the potential difference between each point in the tracks at the feeding limits or at the city boundary and the tracks at the point of lowest potential shall then be determined once every month, on a normal business day. The potential difference between the negative bus-bar and a nearby city water pipe shall also be obtained at least once every day during peak load. If this potential difference should fall at any time to such a low value as to indicate grounding of the negative bus-bar, steps shall be taken by the said company to remove the ground connection.

8. All records of the tests described in the foregoing clauses, as well as the recording meters and meter charts shall be open to inspection from time to time by an authorized representative of the Commission. True copies of all records, as soon as completed, shall be forwarded by the company, to the Commission, as also recording meter charts, within 24 hours after the taking of such records and charts.

9. After the work required by clauses 1, 2, 3, 4, 5 and 6 of this order has been done, in every case all drainage connections from

underground lead cable sheaths to railway return circuit in Winnipeg, shall in every instance be opened and kept open, and tests of the potential of these cable sheaths referred to other structures and of current on the cable sheaths, shall (on 24 hours' written notice to the owner of such cable sheaths of the time and place at which the test is to be made), be made by the company to determine the electrolysis condition of such cable sheaths. If, in such case, cable sheaths shall be found to require additional protection, a limited amount of electrical drainage may be applied by the company upon application to this Commission on notice to the owner of the cable sheath, and subject to such directions as may be then given by this Commission. Such drainage connections must be arranged to apply equally to all of the underground cable systems, so as to avoid setting up serious potential differences between the lead sheaths of the different cable systems. They must also be so arranged and maintained as to drain off the least current consistent with the complete protection of the cables and without setting up dangerous voltages to other underground structures. A suitable fuse, a knife switch, and an ammeter, shall be installed in each drainage connection, and daily readings of the current drained from the cables during the peak load hour shall be obtained and recorded. The drainage connection must be opened whenever the station is not in operation.

10. In future constructions and reconstructions of direct current electric railways employing the running tracks as part of the electric circuit, such track construction shall be employed, in addition to that already required by the previous clauses, as will give the greatest practicable resistance between tracks and earth for the existing conditions. Without limiting the foregoing this must be done particularly where such railways cross or run close to underground pipe or cable lines.

Note.—Clauses 1, 2, 3 and 4 of the foregoing are to apply to the railway lines of the company, as far as these lines are supplied with direct current from the substations located within or near the limits of Winnipeg. Clauses 5, 6 and 7, however, are not made to apply to the lines extending beyond the limits of Winnipeg and St. Boniface, because these lines are generally located on country roads where the tracks can be substantially insulated from ground, and where there are at present no underground structures which could be affected by electrolysis.

11. In future constructions or reconstructions by the company (within the Province of Manitoba, but excepting the cities of Winnipeg and St. Boniface, which are covered by the previous clauses) of direct current electric railways employing the running tracks as part of the electric circuit, clauses 1, 2, 3 and 4 shall be complied with by the company, and, in addition, such track construction shall be employed by the company as will give the greatest practicable resistance between tracks and earth in the existing conditions. If such electric railways operate within limits where there is valuable underground property which may be endangered by electrolysis, the track voltage limitations, the potential wires for measuring these voltages, and the periodic

tests of these voltages, as required in clauses 6, 7 and 8 hereof, shall be complied with within the limits affected.

12. The company shall prosecute the herein specified work and equipment to completion by Oct. 31, 1916. Immediate action shall be taken by the company to prosecute the work and monthly progress reports shall be delivered by the company to the Commission. The work accomplished from month to month, after this order goes into effect, must be such as to show that all diligence is being wrought to execute this order. In the event of want of diligence from month to month, as aforesaid, by the company in carrying out the work hereby ordered the city may apply to this Commission for the imposition of penalty for delay or for such other order as may appear proper. The company shall, in the construction, maintenance and operation of its electric railway system, continuously observe and perform all the directions contained in this order.

13. In the design and construction of the insulated return feeder system as required under this order, the company shall employ a safety factor of 1.5, that is to say in determining the amount of copper required in the return feeders to reduce the voltage drop to the limit prescribed under clause 5, which will be estimated theoretically under the normal peak load conditions, such amount shall be increased by 50% of itself to insure the fulfilment of the requirements under varying operating conditions.

14. In the installation of insulated return feeders and potential wires along Portage Ave. from Victoria St. to the St. James station, and on Main St. from Graham Ave. to Sutherland Ave., all wires and cables shall be placed underground in conduits of the company laid in streets as either already existing, or (as to Main St.) to be constructed according to the plans heretofore approved for that purpose by the City Council.

15. In the event of the herein specified work and equipment not being completed by midnight of Oct. 31, 1916, the company shall pay a penalty of \$50 for each and every day that the default continues after the specified time.

The Electric Railway Accident at Queenston.

The coroner's jury which enquired into the accident on the Niagara Falls Park & River Ry. at Queenston, Ont., July 7, in which a number of persons were killed and a larger number injured, returned the following verdict:—"We find that H. J. Partridge and others came to their death on July 7 from excessive speed causing car 685 to derail and overturn. Said car was driven by Motorman Sidney Boyt, and in charge of Conductor George Caswell. Excessive speed was caused by the ineffective working of the brakes on a wet and greasy rail. We find also that the motorman did all in his power that was possible for him to do with the equipment at hand to control the car. We still further find a very slack observance of rules of the company by the officers and operators regarding equipment, which includes sand and loading."

On Aug. 4 R. R. Dickson, Vice President and General Manager, International Ry., which controls the Niagara Falls Park and River Ry., was arrested on a charge of criminal negligence in connection with the accident. The magistrate admitted him to bail of \$20,000 to appear at St. Catharines, Ont., Sept. 1.

The Jitney Situation in Canada.

There is apparent all over Canada a general diminution of the number of cars engaged in the jitney business. In Montreal and Saskatoon, Sask., the business has practically ceased, while in Toronto, Winnipeg and other places the number of cars running has been considerably reduced. In a few of the smaller cities and towns of Ontario, in particular, a beginning has been made with a jitney service, but in nearly every case it is being run to give connection with outside points, and not as a continuous service on schedule routes within the town.

The Toronto Jitney Association, which was incorporated May 12, has decided to go out of business. In fact the business practically left the company, the owners and drivers of jitneys claiming that they could do better for themselves, than with the association, which charged members \$2.50 a week, in return for which certain services were given, in connection with the routing of cars, making up schedules, etc. Another feature claimed for the association was that through it the members would be able to buy supplies and repairs at reduced prices. The members say the association failed to live up to this part of its promise, but, however this may be, it was not the chief cause of the failure of the association, which can be laid at the door of the non-association jitney owners and drivers, who cut in on routes when travel was brisk, made their routes long or short just as it suited them, and never bothered about schedules. The result was that the owners of the cars decided to save the \$2.50 a week. The bailiffs were put in possession of the association's office for rent, July 27, and the business ceased. However, the jitneys have not yet disappeared from Toronto, although they are very much fewer in numbers. The wet weather of the past month or so has also hit the business severely. It was expected there would be a considerable revival of the business during the Toronto Exhibition, which opened Aug. 28.

The regulation of the jitney business in Hamilton, Ont., comes under the bylaw licensing and regulating licensed omnibuses, which is dated June 24. The term licensed omnibus in the bylaw means "every licensed vehicle used in what is known as the jitney service, and used or intended to be used for the public conveyance of passengers who are carried without any pre-arrangement in vehicles other than those used as cabs" within the meaning of the bylaw of Oct. 14, 1910. Licenses under the bylaw of 1910 shall not entitle the owner of the vehicle to operate it as a jitney. No license will be given a car carrying less than five adults; the license fee payable being \$2 a seat a year, exclusive of the driver's seat; and the vehicle cannot be used otherwise than as a jitney. The regulations specify the form of application for the license, the care of the car, the conduct of the driver (who must not, under any circumstances, be a female) while in charge of the car, etc. The licenses may be revoked at any time by the Board of Police Commissioners without giving any reason therefor, and breaches of the bylaw are punishable by a penalty of not less than \$1 nor more than \$20.

A bylaw regulating jitney traffic in Berlin, Ont., has been passed, and a press dispatch Aug. 8, said:—"Berlin's sole jitney owner was fined \$1 for operating a jitney service contrary to the provisions of the bylaw." It was stated the decision would be appealed as the jitney was not being operated on a fixed route but was used to convey passengers to towns outside Berlin.

A jitney service is being operated in

Owen Sound, Ont., three ordinary five passenger cars being operated by A. J. Frost. He proposes to put on a regular jitney automobile if a satisfactory model can be bought. Owen Sound has no electric railways.

A jitney bylaw has been put in operation in the St. James district near Winnipeg, Man., with a license fee of \$5 a year. Eight licenses were at once taken out, but some 50 car owners were subsequently warned that they must take out licenses before operating in the district. They picked up passengers in the area, but did not collect any fares until the car got out of the Assiniboia limits.

As soon as the jitney bylaw became effective in Saskatoon, Sask., the three jitney cars operating in the city stopped running. The only jitney running is that from Sutherland into Saskatoon, and it is considered doubtful whether the bylaw can be put in operation against it, so long as it only carries back to Sutherland the passengers it takes into Saskatoon.

The bylaw passed by the Edmonton, Alberta, City Council, to regulate the jitney traffic came into effect Aug. 1. The jitney owners are forming an association for the protection of their interests.

The New Westminster, B.C., City Council has passed a bylaw regulating jitney traffic. There are very few jitneys operating in the city limits, the principal traffic being interurban with Vancouver. One of the regulations provides that no Asiatic or negro may enter a car in which there are already white passengers. Drivers must not solicit passengers either directly or indirectly on the public streets. The council may from time to time designate routes to be used and may say where cars shall be allowed to stand. Every owner of a car for hire shall put up a bond, but the amount of the bond has not yet been fixed.

A bylaw for the regulation of the jitney traffic came up for consideration by the Victoria, B.C., City Council, Aug. 8, being very similar to the one in force in Vancouver. Consideration of the bylaw was postponed in order that a committee of council and the jitney association could meet and agree to details, so that it could be passed at the next meeting of the council as an unopposed measure.

Edmonton Radial Railway Operating Results.

Following is a comparative statement for six months ended June 30, 1915 and 1914,—

	1915.	1914.
Earnings	\$267,097.40	\$324,610.81
Expenses—		
Maintenance	26,013.57	45,346.82
Operating	125,487.28	164,920.63
Power	48,922.67	75,282.40
Total expense, exclusive of fixed charges	200,423.52	285,549.85
Capital charges	114,423.36	113,157.00
Depreciation	27,972.92	50,981.28
Gross expense	342,819.80	449,688.13
Deficit	75,722.50	125,077.32
Average expense per car mile	35.5c.	42c.
Power per car mile	3.2kw.	3.5kw.
Passengers carried	5,486,472	7,537,760

Detroit United Ry. The stockholders approved the proposed purchase contract with the city, Aug. 2. About 80% of the stock was voted. The contract is now before the City Council, and after a lapse of 30 days, the ratepayers will vote on the proposal.

The production of briquetted fuel in the United States in 1914 amounted to 250,635 short tons valued at \$1,154,678, an increase of 37.82% over the production of 1913.

Answers to Questions on Electric Railway Topics.

Following are questions submitted to the American Electric Railway Association's question box, with replies thereto by Canadian electric railway officials:

Car Operation. What effect does the variation of the centre of gravity have on the riding of a car?

H. M. Lloyd, Equipment Engineer, British Columbia Electric Ry., Vancouver, B. C.—Raising the centre of gravity has an effect similar to lengthening the pendulum, and would tend to lessen the violence of oscillation due to uneven track, and of the side shock resulting from "nosing" at high speeds; consequently a high centre of gravity tends to easier riding.

Shop Cleaning. What disposition do member companies make of shop cleaning, such as paper, waste and shop sweepings?

H. M. Lloyd, Equipment Engineer, British Columbia Electric Ry., Vancouver, B. C.—All sweepings which can be burned we consume in the sand-drying stove. Machine shop sweepings, such as steel turnings, etc., we have been using to fill in under a wharf close to the shop.

Car Headlight Location. Where is the best place to locate the headlight on an interurban car, on the dash, or on the hood?

H. M. Lloyd, Equipment Engineer, British Columbia Electric Ry., Vancouver, B. C.—Placing the headlight on the hood has the advantage in foggy or rainy weather that the beam is above the driver's line of vision, but in the case of an arc lamp, it is not so accessible as on the dash, and dangerous for the men who have to handle the lamp. After one or two men had fallen off the end of the car, while reaching up with the lamp, we changed the location. Our cars are all multiple unit, with end doors, and we now hang the lamp on the door, about 3 ft. from the floor, or a little over 7 ft. above the track. The ground connection is made through the door hinges, and the connecting receptacle is on the door post, about 6½ ft. up. In this position the lamp can be handled with safety and is readily accessible for inspection, as the door can be swung inward with the lamp lighted. The illumination of the track in this position is quite satisfactory.

Oil Consumption. How often do you oil journals, and what is the consumption per 1,000 car miles on a 40 ton car with 5 by 9 in. journals?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., Montreal.—Our experience is that if a car journal box is reasonably dust proof and water proof and is carefully packed, it only requires attention twice a year. We find that a general overhaul of journal boxes in the spring and autumn in addition to the repacking of journal boxes when wheels are changed, takes ample care of the situation. The above refers to cars in city service.

Calgary Municipal Railway Earnings.

Following is a comparative statement of the revenue, expenditures, etc., for June, 1915, and June, 1914:

	1915.	1914.
Revenue	\$45,098 00	\$63,976 25
Expenditure	27,723 44	39,815 76
Balance	17,374 56	24,160 49
Capital charges	45,098 00	63,976 25
Miles operated	212,062	266,536
Passengers carried	1,066,356	1,547,235
Revenue per car mile	21.266c	24.033c
Expenses per car mile	13.073c	14.938c
Power per car mile	2.960c	3.337c
Expenses to gross revenue	61.5%	62.2%

Interurban Cars for the Toronto Suburban Railway.

Some details were given in Canadian Railway and Marine World for July, pg. 273, of the 6 interurban cars which the Toronto Suburban Ry. has ordered for service on its Toronto-Guelph line, now under construction. They will be of the centre entrance type with the under frames and sides entirely of steel. The entrance and exit doors will be under the control of the conductor, who will stand in the centre of the car, and there will be no steps protruding beyond the side of the car. Three of the cars will have two compartments, the forward one being for smokers; and three cars will have three compartments, half of the smoking compartment being utilized as a baggage compartment. The cars will be 59 ft. long over all, mounted on two four wheel trucks with 34 in. rolled steel wheels at 6½ centres. There will be four 110 h.p. motors for each car, and also air brake equipment. The couplers will be automatic, with air couplers combined.

The seats in the main passenger section will be upholstered in green plush, and in the smoking compartment in leather. Lavatory accommodation will be provided off the main compartment. The main compartment will be 25 ft. long, the entrance vestibule 6 ft., and the smoking compartment 21 ft., which in the cars which have the baggage compartment, will be reduced to 11 ft. The weight of each car will not exceed 850 lbs. per seated passenger. The cars are being built by the Preston Car and Coach Co.

Toronto and York Radial Railway Operation on Yonge Street, Toronto.

The Ontario Railway and Municipal Board has approved of the company's plans regarding a switch, or deviation from Yonge St., Toronto, westerly into the company's property, south of Farnham Ave., subject to any modifications that may appear proper to be made after hearing the City's objections on engineering grounds. The City objected to the Board's jurisdiction to entertain the application, which, it claimed, raised the question of the company's right to lay the proposed tracks on Yonge St., as, if the company had that right, the Board might approve its plans and authorize the lawful execution of the work. The determination of this question, it is claimed, necessitates a consideration of the statutory powers of the company and its rights under various statutes and agreements.

In delivering judgment, D. M. McIntyre, Chairman, after going into the details of the acts of incorporation of the Metropolitan Ry. Co. and the Toronto and York Radial Ry. Co., and the various agreements concerned, summed up the position as follows,—

"The company under various statutes and agreements has constructed and is lawfully operating its railway on the portion of Yonge St. in question; the company owns a parcel of land abutting on that portion of Yonge St. upon which admittedly it has the right to erect terminal buildings and tracks; it seeks authority to connect its tracks so lawfully being in Yonge St. with its terminal proposed to be erected on its abutting parcel of land so that the purposes of its undertaking may be conveniently and effectually carried out, but the city objects on the ground that the company has no right in law, by statute or agreement to make the connection. Surely, after all these enabling acts and solemn agreements designed to bring into being a legal entity clothed with powers to discharge specific functions in the

transportation of persons and things, and after large expenditures made on the faith of them, the company might well complain of the denial of a right so vital. Indeed, upon a consideration of the facts and in view of the inconvenience and embarrassments which must be suffered by the public using Yonge street at the point in question by reason of its virtual adoption as a terminal by the company, the Board would rather have anticipated an application by the City to compel the company to provide a suitable terminal on its own property connected up with its tracks in the customary way."

The city has decided to appeal the case to the Imperial Privy Council.

The Street Railway Situation in St. Thomas, Ont.

In connection with proposals that the London and Lake Erie Ry. and Transportation Co. take over the municipally operated street railway in St. Thomas, and run it in connection with its own line, the St. Thomas Journal comments as follows: "Municipal ownership and operation so far as the St. Thomas street railway system is concerned has been a miserable failure. Countless aldermen and paid officials have been in charge of the local road and failed to make good. Perhaps the fault was not their own but the fact remains that the deficit incurred by the operation of the line is increasing by leaps and bounds and the patience of the people has been exhausted. The London and Lake Erie Ry. and Transportation Co. is said to be desirous of taking over the St. Thomas system with the idea of operating it in conjunction with its own line from London to Port Stanley. If satisfactory terms can be arranged then there seems no reason why the city should not hand over the line to that company, and furthermore the local authorities should not be too particular in coming to terms. The ratepayers of St. Thomas are thousands of dollars out of pocket every year by reason of the street railway deficits. Almost any kind of a bargain with the company to operate the road should be satisfactory. Let the burden be taken off the shoulders of the taxpayers. The London & Lake Erie people in proposing to take over the road apparently see where it might be operated to advantage in connection with their own system, and, no doubt, they have considered the situation from all its aspects before making overtures toward securing the use of the lines and rolling stock. Operated by the company, we would naturally expect the local system to be of secondary importance in the company's estimation and run as such. What else may we ask? The whole province knows the deficit history of the St. Thomas railway. It is useless to deny that the system is a white elephant. Let us turn it over to some one else with the best terms that can be secured under the circumstances."

Equipment for Toronto Civic Railway.—

The Toronto City Council accepted tenders recently for equipment for the St. Clair Ave. car line as follows:

McGuire-Cummings Manufacturing Co., 1 single-truck sweeper body, \$1,695; Canadian Westinghouse Co., Ltd., 4 no. 533 commutation poles, \$593 each; 1 set of resistance for one motor, \$36; 1 lighting arrester, \$4; 2 circuit breakers, \$23; Canadian General Electric Co., Ltd., 2 K-10 controllers, \$126.75 each; 1 R-28 controller, \$89.45; 1 set of resistance for 2-motor car equipment, \$32; 300 ft. no. 6 B. & S. car wiring, double braid covered copper cable, 04.825 cts. per ft.; 150 ft. no. 14 B. & S. double braid rubber covered copper cable, 01.325 cts. per ft.

Montreal Tramways Company's Annual Report.

Following is the report for the year ended June 30, submitted at the annual meeting, August 3:

Gross earnings	\$6,525,231 67
Operating expenses	3,113,996 44
Net earnings	\$2,811,235 23
From which deduct:	
City percentage on earnings	\$414,149 31
Interest bonds and loans	825,415 12
Interest debenture stock	800,000 00
Taxes	92,800 00
	2,132,364 43

Net income	\$ 678,870 80
Dividends	278,880 00
Surplus	\$ 399,990 80
Less:	
Transferred to contingent renewal account	275,000 00
Transferred to general surplus	\$ 124,990 80

The gross earnings have decreased during the year \$617,572.52, or 8.65 per cent., the operating expenses \$492,118.13, or 11.70 per cent., and the net earnings \$125,454.39, or 4.27 per cent. The ratio of operating expenses to earnings is 56.92 per cent., compared with 58.89 per cent. last year. \$212,731.80 has been charged to contingent renewal account during the year, representing expenditures made for special renewals. \$666,429.90 has been expended in the maintenance of the properties, plant and equipment, and charged to operating expenses. This, together with \$212,731.80 charged to renewal account, makes a total expenditure during the year on the upkeep of the properties of \$879,161.70. During the year there has been expended on capital account \$621,125.05. The company under its trust indenture is entitled to issue bonds on its capital expenditures equal to 75 per cent. thereof, and under this provision it is now entitled, when it shall so desire, to have bonds certified to an amount of \$742,477.11. During the year there has been redeemed and cancelled \$144,906.65 of the underlying bonds. The underlying bonds redeemed to date amount to \$983,513.24.

It will be noted that owing to the war and the general financial depression, this company has suffered a considerable decrease in its gross revenue, this being partly offset by a saving in operating expenses. In accordance with the desire of the City of Montreal to remove as far as possible the overhead wires in the streets, the company is now proceeding at considerable expense to place its overhead feed wires in the municipal conduits which have so far been provided for that purpose. Keeping in view the future growth of the city, the company has been working on a plan to rearrange its power distribution in order to make the power from the different stations interchangeable. This work will take some time to complete, but will place the company in a better position to handle the future traffic of the system. The property has been maintained in a high state of efficiency and is in excellent condition.

The company regrets having to report the death of Alexander Stewart, Auditor for the last eleven years. Pending the election of an Auditor, J. J. Robson was appointed to fill the vacancy to the end of the fiscal year.

In conclusion, your directors desire to place on record their appreciation of the valuable and faithful services rendered by the officers and employes of the company.

Statistics.	
Passengers carried	153,576,271
Car earnings per passenger	4.13
Transfers	53,316,530
Total passengers carried	206,992,801
Car earnings per passenger total carried	3.07

Assets.	
Cost of road and equipment to June 30, 1914	\$36,601,388 87
New construction for the year	621,125 05
	\$37,222,513 92
Accounts receivable	333,799 66
Stores	355,124 69
Cash in bank and on hand	68,810 93
Underlying securities redemption fund	163,486 76
Investments	921,222 04
	356,262 50
	\$38,499,998 46

Liabilities.	
Capital stock (common) subscribed ..	\$3,000,000 00
Less unpaid and subject to call	36,030 00
	*\$ 2,963,970 00
Debenture stock	16,000,000 00
First and refunding mortgage 5% gold bonds due July 1, 1941	13,335,000 00
Underlying bonds:	
4½% due Aug., 1922	681,333 33
4½% due May, 1922	1,500,000 00
4½% due May, 1922	2,238,666 67
	\$4,420,000 00
Less redeemed and cancelled to date..	983,513 24
	\$3,436,486 76
Mortgages	21,863 00
	\$35,757,319 76
Accounts and wages payable	\$409,399 21
Accrued interest	232,606 38
Accrued tax on earnings	295,923 64
Employees' securities	21,255 58
Unclaimed dividends	1,956 57
Unredeemed tickets	171,918 55
Suspense	91,353 41
Dividend payable Aug. 1	74,100 50
	1,298,613 84
Capital reserve	600,000 00
Contingent renewal reserve	179,899 21
Surplus	664,165 65
	1,444,064 86
	\$38,499,998 46

*Includes amount due on shares not yet exchanged.

In presenting the report, the President, E. A. Robert, commented on the results of the year's operations, which in spite of war conditions showed a very fair balance. The directors, for whose services during the current year, \$32,000 was appropriated, were re-elected as follows.—President, E. A. Robert; Vice Presidents, J. W. McConnell and F. H. Wilson; Hon. J. M. Wilson, J. M. McIntyre, P. J. McIntosh, W. C. Finley, G. G. Foster, K. C., and W. G. Ross. J. J. Robson was appointed Auditor.

Increased Car Fares in Great Britain.—The Corporation of Birmingham has advanced all street railway fares 10% on account of war conditions. It is believed that this will produce about \$300,000 a year additional revenue. At present the tramway lines carry a passenger two miles and 600 yards for a penny fare. Under the new scale the average penny zone will be reduced to one mile, 1,200 yards. Outside this zone there will be an increase of a halfpenny on the present rates. The workingmen's fares will go up a halfpenny on each return ticket. As showing the effect of war conditions the receipts of the Glasgow tramways for the last year were £1,070,353, a decrease of £8,083 from the preceding year.

Interurban Cars for Toronto Suburban Ry.—In the description of the new cars for this company's Toronto-Guelph line, in Canadian Railway and Marine World for July an error was made in stating that each car would be equipped with four 80 h.p. motors. They will each have four 110 h.p. motors.

Sudbury-Copper Cliff Suburban Electric Railway Construction.

It is expected that this company's line from Sudbury to Copper Cliff, Ont., will be placed in operation by Oct. 1, the major portion of the line now being completed and ready for operation. The line at present under construction extends from Sudbury to Copper Cliff, commencing in Sudbury at Ramsay Lake, following John, Station, Durham, Cedar, Liscair and Elm Sts., the latter being the main street of Sudbury, to the outskirts of the town, following the highway alongside the C.P.R. Soo line to the Canadian Copper Co.'s property in Copper Cliff, which it will skirt into the town. The line will follow the border of this property in order that the slag filling which the company is making in the low land of its property, will not interfere with the railway location, so that no relocation will be required.

In Sudbury, 0.43 mile of line was laid last year on a six-inch concrete base in order that the permanent pavement being laid by the municipality might be carried out. To date, track has been laid on three miles of the line towards Copper Cliff, and the balance of the seven miles between the two municipalities has been graded ready for track laying, the steel and overhead work being ready for placing. The line is being laid with 80 lb. T rail on cedar ties, at 20 inch centres. Three inch gravel ballast is being used, and the rails are being electrically bonded. The maximum grade will be 3½ per cent., with practically no curvature outside the towns. There will be no bridges, and only three timber pile culverts of 15 ft. span.

The overhead construction in the towns will be tubular steel poles, with cross spans, and in the country, bracket construction on wooden poles. The trolley wire will be 4-0 copper. Six hundred volt d.c. will be used, power being obtained from the Wana-pitei Power Co. at 2,300 volt, 3 phase, 60 cycle a.c. A 300 k.w. induction motor generator set is to be installed at Ramsay Lake in the municipal pumping station and electric lighting plant, where the power will be received from the power company and converted. Tenders are now being received for this electrical equipment.

Tenders are also being received for three 20 ton double truck steel frame passenger cars, with general and smoking compartments, a package freight car, and a snow plough. It is the intention to use electric locomotives for freight service at a later date, but nothing definite has been done in this regard.

Two ten mile extensions to the lines are contemplated, both from Sudbury, one to the Coniston Mines, and the other to the Creighton Mines.

The directors are: President, J. J. Mackey; Vice President, J. H. Morin; other directors, D. M. Morin, T. E. Smith, C. McCrea, M.L.A. Secretary, M. J. Powell.

The Running Board on Toronto Ry. Cars.—The Mayor of Toronto, in conjunction with the Street Railwaymen's Union, obtained a summons against the Toronto Ry. Co., Aug. 24, for endangering the lives of its employes by operating cars on its lines having a running board along one side. The application for the summons stated that during this year one man had been killed and 14 men injured as a result of such operation. The matter has been under discussion for some time, and recently the Ontario Railway and Municipal Board declined to compel the company to abolish the use of these cars, chiefly owing to general conditions owing to the war.

Lake Erie and Northern Railway Electrification.

Canadian Railway and Marine World for August contained general particulars about the electrification of this line which is being built from Galt to Port Dover, Ont., about 51 miles. The line will operate at 1,500 volts d.c. At Galt connection will be made with the Galt, Preston and Hespeler St. Ry., which runs through to Berlin, and now operates at 600 volts d.c.

The substation equipment for the Lake Erie and Northern will consist of permanent substations at Simcoe and Brantford, and a portable substation located for the present at Galt. This will give a substation spacing between Galt and Brantford of 20 miles, and between Brantford and Simcoe of 24 miles, with a stub end feed from Simcoe substation to Port Dover of 7 miles. Each of the three substations will have, for the present, one 500 k.w., 1,500 volt rotary converter, and 555 k.v.a., 3 phase transformer. The transformers may be connected so as to step down from 26,400 volt, 13,200 volt or 6,600 volt, 3 phase, 25 cycle circuits, to the desired a.c. rotary voltage. At the Simcoe and Brantford substations the incoming line will be 26,400 volt, 25 cycle, and at each station will go to the transformer primaries through the usual disconnecting switches, choke coils, and k. 21 oil switches, with overload relays for automatic trip.

The rotaries will be started from half voltage taps in the transformer secondaries, the starting switch being mounted on a small separate panel. The d.c. rotary and feeder panel will differ materially from the standard 600 volt panel. It will be 99 ins. high, of marble with black marine finish; and the circuit breaker and knife switch, in the positive lead, which will be at the top of the panel, will each be operated through bell cranks and rods from oil switch operating handles mounted at a convenient height on the front of the panel. The negative lead will be grounded direct from the rotary. The circuit breaker will be provided with low voltage release and auxiliary alarm switch. The d.c. ammeter with insulated cover will be mounted on the panel, and on a swinging bracket will be mounted a 2,000 v. scale d.c. voltmeter with insulated cover, and an a.c. ammeter and power factor indicator. A three phase aluminum cell lightning arrester, complete with horn gap, disconnecting switches and charging resistance, will be provided for the 26,400 volt circuit, and a s.p. d.c. aluminum lightning arrester for station use, with fuse and balancing resistance used across the 1,500 volt d.c. side. The rotary converter will be of special interest in view of its unusual overload capacity to meet the heavy peak loads of short duration incident to railway operation. While the normal full load rating at 1,500 volts is 333 amperes, it will carry 1,000 amperes for one minute, successful commutation being obtained by the use of commutating poles and pole face windings.

The portable substation will, it is said, be the first of its kind in Canada. All the equipment will be mounted on a standard steel flat car. The transformer will have no housing, but the rotary oil switch and other apparatus will be housed in. For service at Galt the transformer on the portable substation will be connected for 6,600 volt primary, but the connections may be readily changed for primary voltage of 13,200 or 26,400 volts for operation at other points along the line. The complete equipment for the three substations is being manufactured by the Canadian General Electric Co. at its Peterborough works, and the manufacturers will install the appar-

atus at the Simcoe and Brantford substations and equip the portable substation at the Peterborough works.

The L. E. & N. R. has ordered from the Canadian Westinghouse Co., Hamilton, Ont., two 60-ton, 1500-volt direct current locomotives, six 1500-volt quadruple car equipments, equipment for two trailer cars, and new universal air brakes for both motor and trailer cars. The locomotives are designed to operate on 1500-volts direct current with the following characteristics: swivel truck, standard gauge, diameter driving wheels 36 ins.; truck centre distance 17 ft. 8 ins.; height from top of rail to top of cab 12 ft.; width over all 10 ft.; tractive effort 9200 lbs., with average of 600 volts at motor.

Each of the six 1500-volt motor car equipments will consist of four 85 h.p. ventilated type motors and AB unit switch type of control. A new and improved type of automatic brake will be used, embodying the features made possible by the use of a universal valve which will be the mechanism that will operate to apply and release the brakes and charge the reservoirs, and it will so far correspond to the triple valve in common use. The universal valve will be of the built up type, a simple form of triple valve being the base. This will make it possible to install and operate the equipment, if desired, in stages by adding to the simplest form of valve, without discarding any of the valve portions, other valve portions as they are demanded by an advance in service requirements, up to the complete form of the device, which will be electro-pneumatically operated. The brake valve, type M-23, will embody improved features as compared with the ordinary automatic brake valve, such as limiting of brake pipe reductions to the predetermined desirable amount for service applications; prevention of overcharge of the equalizing reservoir; and quick response of brake pipe reduction by the combination of direct and equalizing piston exhaust ports. A supplementary reservoir is to be used to give high emergency brake cylinder pressure and graduated release as well as to assist the brake pipe in recharging the auxiliary reservoir. The compressor will be driven by a 1500-volt d. c. motor and is known as the D. K. type. It is of the same general design and construction as other Westinghouse compressors, but is especially rugged and adopted to meet severe operating conditions. The Westinghouse governor synchronizing system will be used to insure equal division of compressor labor, thereby securing reliability of air supply and low expense for compressor maintenance. This will also be used on the locomotives. The brake equipment for the electric locomotives will be the Westinghouse no. 14 EL.

The Toronto Ry. and its proportion of cost of Subways.—The Board of Railway Commissioners has granted the Toronto Ry. permission to appeal to the Supreme Court against the Board's order to contribute to the cost of the subway built by reason of the elevation of the C. P. R. tracks across Avenue Road. The permission is granted on the following questions,—Whether the Board had power to make the order under the agreement of the Toronto Ry. with the City of Toronto of 1891; whether the company is not entitled to have the city furnish the company, in the exercise of its running powers, a street or highway known as Avenue Road, and whether, if such was the effect of the agreement, the company should have been ordered to contribute to the cost of the construction of the subway.

Winnipeg, Selkirk and Lake Winnipeg Electric Railway.

This company, which is a subsidiary of the Winnipeg Electric Ry., owns and operates a line from the northern boundary of the city of Winnipeg to Selkirk, near Lake Winnipeg, 21.44 miles; and a branch line, completed at the end of 1914, from Middlechurch to Stonewall, 16.67 miles, a total of 38.11 miles. The main line to Selkirk passes along the west bank of the Red River, while the branch line which was completed to Stony Mountain in 1913, and to Stonewall in Dec., 1914, runs in a nearly straight line northeasterly from Middlechurch, passing through the rural municipalities of St. Paul and Rockwood. For about five miles into Stonewall it parallels the C. P. R.

The right of way of the branch varies from 45 to 90 ft. in width and it is practically all owned by the company. At Stony Mountain there is a grade of 2.6% which is practically the only one on the line except for the Masters Junction subway. There are few curves on the branch, the most important being two of 16 degrees each. The only bridge structure is a subway at Masters Jct., which provides a crossing under the C. P. R. Lake Winnipeg Branch. This subway is about 250 ft. long, and is of heavy construction. The reinforced concrete work rests on pile foundations placed at 3½ ft. centres. The abutments are reinforced with steel rails. The subway is provided with 5% grades at either end, necessitating a drain of about half a mile long to the Red River. The track is laid with 60 lb. rails, A. S. C. E., specifications, laid on tamarack ties spaced 27 in. centres, with gravel ballast. The transmission system is carried on 45 ft. cedar poles. Power for both the main and branch lines is obtained from the Winnipeg Electric Ry. Co. at 2,200 volts, and is stepped up to 13,200 volts for transmission to the three substations located at Middlechurch, Lockport and Stony Mountain. At these stations the current is converted into d. c.

Connection is made at the northern limits of Winnipeg with the Winnipeg Electric Ry. lines.

Regina Municipal Railway Earnings, Etc.

Operating results for June, compared with those for June, 1914:

	1915.	1914.
Revenue	\$12,311 85	\$19,722 53
Operating expenses	13,658 46	17,368 14
Capital charges	9,137 58	7,476 52
Operating deficit	1,346 61	2,354 39
		(Surplus.)
Passengers carried	257,994	397,087
Expenses per car mile, without power	13.93c	15.02c
Expenses per car mile, with power	18.09c	20.03c
Power per k.w.h	2.08c	2.00c
Platform wages per car hour	74.17c	76.52c
Expenses percentage of earnings, less capital charges	110.94%	
Expenses percentage of earnings, with capital charges	185.15%	

Rumored Purchase of the Chatham, Wallaceburg and Lake Erie Ry.—In regard to persistent rumors to the effect that the Hydro Electric Power Commission of Ontario was negotiating for the purchase of the Chatham, Wallaceburg and Lake Erie Ry. as a part of its projected electric railway scheme, Sir Adam Beck, Chairman of the Commission, is reported to have stated, recently, that no negotiations had been carried on and none were under way, in connection with the railway mentioned.

The Montreal Tramways Company's Franchise.

The litigation in connection with the proposal to grant a new franchise to the Montreal Tramways Co. includes the original injunction proceedings; the application to convict the Mayor and certain of the controllers for contempt of court; the appeal against these proceedings; the quo warranto proceedings against Controller Herbert, and certain proceedings against Controller Macdonald. Negotiations are proceeding with the object of having all the cases heard together in the fall. Meanwhile affidavits and other declaratory documents are being filed in one or other of the causes, and the affair is being brought forward upon one technical point or another. The main result of the proceedings is that the injunction restraining the Board of Control and the City Council from discussing the franchise question until the hearing of the injunction application "on the merits" is binding.

Fare Reductions on British Columbia Electric Railway and the Jitney Traffic

Full particulars of the fare reductions made in Vancouver and Victoria, and between Vancouver and New Westminster, have been given by Canadian Railway and Marine World in previous issues. The results are of very general interest and for purposes of comparison we will give the April and June monthly figures. The reductions went into effect in Vancouver and Victoria May 1, and between Vancouver and New Westminster May 17. Following are the figures:—

Gross earnings:	April, 1915.	June, 1915.
Vancouver City	\$88,592 71	\$87,445 05
Victoria City	25,859 60	26,874 03
District 1, interurban	13,869 10	14,936 22
Passengers carried:		
	April, 1915.	June, 1915.
Vancouver City	1,788,025	2,249,951
Victoria City	523,323	720,181
District 1, interurban	144,181	153,036

Increases and decreases in earnings per car mile as between April and June results:

	Per car mile.
Vancouver City, decrease	0.70c
Victoria City, decrease	2.41c
District 1, interurban, increase	0.91c

From the above figures it will be seen that while in Vancouver the company carried approximately 20% more passengers in June than in April, the earnings per car mile showed a decrease. In Victoria both earnings and passengers carried showed an increase, while the earnings per car mile showed a decrease owing to additional car miles operated. On District 1, interurban, a slight increase was shown.

While the months of May and June have been used for comparison purposes these figures do not show exactly the true situation respecting the revenue. For instance, prior to the reduced fare being put into effect the revenue traffic curve showed a downward tendency, and it was not until after the tango tickets were put into force that this curve commenced to show an increase—and at present the daily earnings are higher than they were at the time of inaugurating the reduced fare.

The jitney situation on the mainland as well as on Vancouver Island has improved to some extent due, it is thought, to reduced fares adopted by the B. C. E. R. Co., and not as a consequence of regulations put into effect by the city of Vancouver, which were of very little practicable assistance to the company. From the following figures it will be seen that the daily average number of

jitneys operating in Vancouver commenced to decrease after the first week the tango tickets were in effect; a decrease is also noted in Victoria:—

Week ended:	Vancouver.	Victoria.
May 1	294	125
May 8	301	124
May 15	297	105
May 22	229	98
May 29	276	114
June 5	241	125
June 12	226	94
June 19	229	93
June 26	236	126
July 3	218	114
July 10	226	94
July 17	220	85
July 24	216	110

The jitney operators will, of course, find the summer months the most profitable, but with the coming of the autumn and winter months, it is expected that the reduced fare tickets will result in a much larger number of passengers being carried on the electric railway cars.

Fares on the Winnipeg, Selkirk and Lake Winnipeg Railway.

The Public Utilities Commissioner of Manitoba, H. A. Robson, made an order recently in regard to the Winnipeg, Selkirk and Lake Winnipeg Ry. and its owning company, the Winnipeg Electric Ry., which modified an order made April 1, 1914, in respect to fares in the rural municipality of West Kildonan, which adjoins Winnipeg on the north. Following is a summary of what is substituted for clause 1 of the previous order:—

In the division described as A in the previous order, viz., between the north limit of the City of Winnipeg and Templeton Ave. the Winnipeg, Selkirk and Lake Winnipeg Ry. shall sell to any person on its cars in the division for 25c. each strips or parcels containing 4 combination tickets, that is to say, 8 tickets, 4 of which shall be good each for one fare for one passenger on the Selkirk line in the division, travelling either way, and the other 4 of which shall be good each for one of the trips on the Winnipeg line following: Going south on entering the car at the north limits of Winnipeg, on the Main St. line only, with a right to a transfer as in case of the ordinary city fare. Going north, on any car of the Winnipeg system going to the north limit on Main St., or if the car is not so destined, then with a transfer only to a car bound for the north limit of Winnipeg.

To school children travelling on the said line in the said division, the company shall sell for 10c. each, strips each containing five tickets, each ticket to be good for one trip, on any day in either direction on the company's lines within Division A in the municipality.

The present rate available in the municipality, of 25 tickets for 50c. is cancelled, and there are substituted tickets, each good for one adult fare within Division A as follows: Six white tickets, good at any time, for 25c. Eight red tickets good on Sundays in all hours, and on week days, before 8 a.m., and between 5 and 6.30 p. m.

In respect of through traffic between points in the City of Winnipeg and Kildonan Park, which is owned by the city, but is situated west of Kildonan, there shall be established upon the lines of the two railway companies a joint rate over the said lines available to the public, in the months of May, June, July, August and September, of each year, on Saturdays and Sundays, and every Dominion or Provincial holiday, and every half or whole municipal holiday, and after 5 p.m. on every other day, represented by tickets to be sold on the cars at 5 for 25c., each ticket to be good for one journey

from any point in Winnipeg to Kildonan Park or return, and to consist either of two portions, one for use on the Winnipeg line, (with a transfer if requisite, to a line going to the north limit of Winnipeg or Main St.), and one for use on the Selkirk line or to consist of one ticket good for the part of the journey in Winnipeg (and such transfer if requisite) and a transfer good on the Selkirk line, and the return trip may be made likewise by means of a two-part ticket, one part good for the fare on the Selkirk line, and the other part good for the fare on the Winnipeg line, with one transfer, and during the said days children under 5 years of age, accompanied by parents or guardians, be carried free on the lines, and children over 5 and under 12 years of age, be carried on the same basis as adults, but with 7 two-part tickets instead of 4. The companies are to join in establishing arrangements for the care of such traffic and are at all times to furnish adequate car accommodation for the traffic.

Montreal Tramways Mutual Benefit Association.

Following are extracts from the report for the year ended April 30, 1915:

Members disabled through sickness or injury	1,236
Visits made by physicians to disabled members	792
Consultations given by physicians to disabled members	7,509
Prescriptions issued	5,704
Paid for sickness and injury	\$11,407.80
Paid for medicine	1,758.18
Paid for pensions	891.00
Paid for withdrawals	588.36
Paid for death and burial insurance ..	9,200.02

The committee is pleased to report the expression of gratitude from the beneficiaries of deceased members of the Association for the prompt payment of the death and burial benefits. During the year five members requested to have their benefits commuted, which was agreed to by the committee.

The eleventh annual picnic under the Association's auspices netted a profit of \$7,699.40. The committee gratefully acknowledges a special donation of \$3,000 from the Montreal Tramways Co., making the total contributions received from the company \$19,015.82, which amount, added to the fees and dues received from the members, viz.—\$19,140.50, and the proceeds of the picnic, and the interest of investments and bank deposits, amounting to \$16,005.11, makes a total revenue for the year of \$54,161.43, and the expenses being \$33,854.43, leaves a surplus of \$20,307.00.

Revenue.	
Accumulated reserve from preceding years	\$136,454.40
Members' fees and dues	19,140.50
From company fees, \$390; dues, \$9,375.25; special donation, \$3,000.00; expenses of management, \$6,250.57.	19,015.82
Picnic	7,699.40
Interest on investment	7,827.77
Interest on bank deposits	477.94
	\$190,615.83

Expenditure.	
Sickness and injury	\$ 11,407.80
Deaths and burials	9,200.02
Medicine	1,758.18
Medical attendance	3,600.00
Medical examination	158.50
Withdrawals	588.36
Pensions	891.00
Management expenses	6,250.57
	\$ 33,854.43

Accumulated reserve	156,761.40
In bank	11,871.81
Invested	144,889.59
	\$190,615.83

J. E. Hutcheson, General Manager, is President of the Association, and Patrick Dubee, Secretary-Treasurer of the Company, is also Secretary-Treasurer of the Association.

The Calgary Municipal Railway Investigation.

The presentation on Aug. 17 of Mr. Justice Simmons' report of his recent investigation into a series of charges made by Alderman Frost, against T. H. McCauley, Superintendent, Calgary Municipal Ry., effectively disposed of a matter which has been the cause of considerable discussion for several months. The charges made were 14 in number, and were as follows:—(1) Breach of faith with the men; (2) Ignoring instructions of the City Council; (3) Discrimination by suspension or dismissal of "round robin" men upon trumped-up charges, while ignoring the same offences on the part of others; (4) Failure to dismiss or suspend pets although guilty of serious offences; (5) Interfering contrary to agreement with the grievance committee by blocking its decisions; (6) Adopting the German espionage system; (7) Condoning the presence of street railway employes in uniform in bars by not enforcing the rules prohibiting this; (8) Constituting it an offence for certain employes to be seen speaking to Aldermen Frost, Crandell or Jennison; (9) Influencing witnesses; (10) Bringing reproach upon the Mayor, aldermen and civic administration by unseemly conduct before the City Council, the Street Railway Association and at other public places; (11) Receiving salary for weeks of lost time while at Banff; (12) Interfering with and seeking control of the Employes' Sick Benefit Association; (13) Incompetency—(a) By allowing illiterate and unskilled foreigners to handle electric current; (b) By wasting current through defective construction, and (c) By destroying watermains through unnecessary electrolysis; (14) Seriously jeopardizing the city's interests by re-employing men who were involved in an accident on the line in which two lives were lost.

It will be seen that the majority of these charges covered the relationship existing between the Superintendent and the men, while the remainder had to do with the Superintendent himself. Of these latter, the charge was withdrawn, and no evidence was offered upon section c of charge 13. Evidence was given in support of Alderman Frost's allegations by 37 witnesses, and by 24 witnesses on behalf of Superintendent McCauley. The evidence showed that all the charges in which the employes were concerned centered around some half dozen men, who sought to dominate the men's association, and to dictate to the management. The association is independent of any federated body of street railway employes, and it has been and continues to be the policy of the management to keep it free from outside interference,—the railway being owned by the city, and the employes all duly qualified provincial constables. The half dozen or so trouble-makers were got rid of in February, and from that time, until the investigation was ordered in June, Alderman Frost kept making complaints, which it was finally thought desirable to have a stop put to by a judicial enquiry. The evidence showed that the whole affair was of the most trivial description, and the findings, even where any of the complaints appear to have had some cause, show that the Superintendent has been doing his work well and conscientiously in accordance with the free hand which he has had in the management of affairs since the railway's inception.

The findings in which it is said there is some ground for complaint against Mr. McCauley are:—(1) He was wrong in requiring the men who had signed the "round robin" to sign an application again acknowledging that they had no right to appeal. (2) The only discrimination against the signers of

the "round robin" was as in finding to complaint one. On section B of complaint 13, Mr. McCauley must share the blame along with the engineering and public works departments of the city service for poor construction on the bases for the railway on certain streets laid during a "period of reckless prodigality," when "quantity" rather than "quality" of work was the policy of the administration. These, it will be seen, are minor points, even when the character of the whole charges are considered. The judge exonerated Mr. McCauley on all the other charges. The final results:—Charges made, 14; of which one is sustained; section two of charge 13 is sustained to some extent; one charge is withdrawn, and all the others are dismissed.

The judge's report contained a second part making some observations upon the working of the railway, for the purpose of creating discussion. It will be taken up at an early meeting of the City Council.

Since the removal of the half dozen or so men in February the relationship between the management and the employes has been most harmonious, as is evidenced by the fact that among other things the employes have contributed the cost of a machine gun for the Canadian troops, and that they are contributing to the patriotic funds, and assisting with comforts, those of their own body who have enlisted for overseas service.

Brantford Municipal Railway Half-Yearly Report.

The commissioners appointed under the provisions of the Brantford, Ont., city by-law, have submitted a report for the six months ended June 30, the details of which are as follows:

Gross revenue	\$42,505 79
Expenditure	34,221 89
Net revenue	\$8,283 90
Bond and mortgage interest..	\$3,257 75
Debtenture interest on \$200,000	5,000 00
	8,257 75

The commission has assumed the following charges:

Local improvement and tax for interest on pavements, first instalment.	\$ 1,251 00
Sinking fund	2,214 00
	\$ 3,465 00

The net result, after payment of interest and assuming the taxes and sinking fund, is a deficit for the six months of

\$ 3,438 85

The commissioners express the hope that during the current half year, the line may come to be on a self sustaining basis. The rate per car mile earned on the city lines has increased from 14.7 to 17, and the bettered service, the extension to Eagle Place and the southern suburbs of the city, together with the traffic consequent on the acquirement of Mohawk Park, should all conduce to a larger earning in the future.

A system of accounting for all stores and supplies has been inaugurated, and the management is carefully watching all details tending to a reduction of operating expenses.

The expenditure for improvements and betterments during the six months was \$78,253.81, of which, the following are the chief items:

Eagle Place loop	\$23,847 01
New cars	14,607 53
Paris power plant	5,496 55
Rebuilding, etc., old cars	15,076 01
Grand Valley Ry., betterment	7,828 99
Rebuilding power house for terminal.	5,898 86
Completing Paris station	1,054 00
Sundries	4,118 55

The total valuation of the property under the commission, is \$455,327.11, with a liability including city pavement and tax account, of \$458,765.96. Practically all the funds, \$270,000, provided under bylaw, have

been expended, and further extensions cannot be undertaken until additional funds are provided.

The system is now operated entirely by hydro electric power furnished by the Hydro Electric Power Commission of Ontario, at Brantford, Paris and Galt, and through the facilities afforded by the improvements at the old power house, Brantford's street car and lighting utilities are virtually working together under one manager, although under two commissions.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry., and allied companies.

	June 1915	June 1914	July 1, 1914 to June 30, 1915	July 1, 1913 to June 30, 1914
Gross earnings	\$498,093	\$661,333	\$7,306,563	\$8,789,287
Expenses	494,315	509,417	5,994,212	6,440,825
Net earnings	3,778	150,966	1,312,351	2,348,462

The directors have announced that owing to the large decrease in the earnings, they are unable to recommend any further dividends on the preferred and deferred ordinary shares for the year ended June 30. It will be noticed in the foregoing table that the net earnings decreased by \$1,036,111, as compared with the previous year, this being a little over 44%. Rather more than two-thirds of this decrease took place during the first half of 1915.

Hamilton St. Ry. The gross earnings for the quarter ended June 30, were \$130,627.77 against \$154,846.57 for the same period 1914. The amounts paid to the city as percentage on these earnings were \$10,450.21 and \$12,387.72 respectively.

London St. Ry.

	June 1915	June 1914	Jan. 1 to June 30, 1915	Jan. 1 to June 30, 1914
Gross earnings	\$38,301.11	\$33,456.05	\$186,260.51	\$177,829.10
Expenses	23,473.71	23,572.55	134,613.26	128,906.60
Net earnings	9,827.40	9,883.50	51,647.25	48,922.50

	July 1915	July 1914	Jan. 1 to July 31, 1915	Jan. 1 to July 31, 1914
Gross earnings	\$36,795.52	\$34,134.48	\$223,056.03	\$211,963.58
Expenses	23,666.38	24,278.04	153,279.64	153,274.64
Net earnings	13,129.14	9,856.44	64,776.39	58,688.94

Toronto Ry., Toronto and York Radial Ry., and allied companies.

	June 1915	June 1914	Jan. 1 to June 30, 1915	Jan. 1 to June 30, 1914
Gross earnings	\$787,553	\$861,988	\$4,810,063	\$5,025,926
Expenses	388,013	445,150	2,540,317	2,614,259
Net earnings	399,545	416,788	2,269,746	2,411,667

Toronto Ry.—Under the trust deeds of Sept. 1, 1892, 306 of the 4½% sterling bonds, and 79 of the 4½% currency bonds were drawn for payment, Aug. 31.

The receipts of the Toronto Ry. from Jan. 1, and the percentages paid to the city, for 1915, compared with those for 1914, are as follows:

	1915		1914	
	Receipts	City percentage	Receipts	City percentage
Jan.	\$ 471,226	\$ 70,486	\$ 501,844	\$ 75,277
Feb.	440,814	67,047	461,274	72,060
Mar.	488,468	93,141	530,751	102,150
Apr.	467,702	93,540	501,435	100,287
May.	468,953	93,790	534,465	106,803
June.	450,582	90,116	525,033	105,106
July.	449,086	88,821	495,882	103,772
	\$3,236,331	\$596,941	\$3,550,634	\$665,546

Winnipeg Electric Ry.

	June 1915	June 1914	Jan. 1 to June 30, 1915	Jan. 1 to June 30, 1914
Gross earnings	\$255,549	\$35,012	\$1,753,356	\$2,091,552
Expenses	170,904	187,570	1,130,612	1,213,702
Net earnings	84,645	147,442	622,744	877,850

The Public Service Corporation of Quebec, which was incorporated under the Quebec Companies Act in June with an authorized capital of \$3,000,000, has bought at sheriff's sale the Dorchester Electric Co.'s plant and business and intends distributing electric power in the City of Quebec and its vicinity. We are officially advised that it has no intention of building any railway. The officers, J. C. Smith, President; H. Murray, Vice President; W. S. Hart, Treasurer; and Jas. Wilson, Secretary, are all connected with the Shawinigan Water & Power Co.

Electric Railway Projects, Construction, Betterments, Etc.

Electric Railway Notes.

Brantford Municipal Ry.—Power supplied by the Hydro Electric Power Commission of Ontario is being used for the operation of the Brantford Municipal Ry., the contract with the Western Counties Electric Co. having been terminated July 31. (July, pg. 277.)

Calgary Municipal Ry.—We are officially advised that the paving work on a quarter of a mile of track in the city is in progress. T. H. McCauley is Superintendent. (Aug., pg. 318.)

Chatham, Wallaceburg and Lake Erie Ry.—We are officially advised that the company is contemplating the building of two sidings, each 300 or 400 ft. long, on the main line near Cedar Springs, Ont., for the loading of sugar beets, etc., and a freight shed, about 90 by 24 ft., in Chatham. W. Norris, Chatham, Ont., General Manager.

Edmonton Radial Ry.—We are officially advised that 6,400 ft. of permanent track is being laid on Portage Ave., Edmonton, Alberta. L. E. Smeaton is acting Superintendent. (Aug., pg. 318.)

Hydro Electric Power Commission of Ontario.—The village of Port Dover, Ont., has joined the Greater Hamilton and Lake Erie branch of the Ontario Hydro Electric Railway Association, with the object of promoting the building of an electric railway from Hamilton to Port Dover.

Following up the reported negotiations with the Chatham, Wallaceburg and Lake Erie Ry., and with the Toronto Suburban Ry., it was reported from Hamilton recently that there was an idea of the Dominion Power and Transmission Co.'s electric railways and power plant being taken over, but the Vice President, W. C. Hawkins, is reported to have stated, Aug. 4, that no negotiations were going on. (Aug., pg. 318.)

Montreal and Southern Counties Ry.—We are officially advised that the company has placed an order with the Canadian Westinghouse Co., Hamilton, Ont., for a synchronous motor generator set and transformers. The company is building a sub power station at Granby, Que., for the operation of the extension now under construction from St. Cesaire, Que. (Aug., pg. 318.)

Niagara, Welland and Lake Erie Ry.—The ratepayers of Welland, Ont., have sanctioned an agreement between the Town Council and the company, by which the latter is to pay \$60,000 in 20 annual instalments as its share of the cost of street paving. (May, pg. 190.)

Quebec Ry., Light and Power Co.—The Quebec City Council is considering steps to compel the company to extend its lines in Limoilou, Beauport and Charlesbourg. The city attorney has advised the Council that the city has power under the agreement to compel the company to build its lines to the city limits. (Aug., pg. 318.)

Sandwich, Windsor and Amherstburg Ry.—We are officially advised that the company has under construction half a mile of double track on London St., Sandwich, Ont. (July, pg. 277.)

Saskatoon Municipal Ry.—The removal of the street railway track on Lansdowne Ave., Saskatoon, Sask., from the side to the centre of the street was reported to have been completed Aug. 12. About 1,000 ft. of track has been removed.

St. John Ry.—Commissioner Potts reported to the St. John, N.B., City Council, July 31, that the company had made considerable repairs on the Mill St. line. Subsequently repair work was started on Douglas Ave., and arrangements made for doing other

work on the several lines which the Commissioner reported as needing immediate repair, July 26. (Aug., pg. 318.)

The Galt, Preston and Hespeler St. Ry. has protested to the Berlin, Ont., City Council against the charge of \$75 a month proposed for the use by the G., P. and H. S. R. for rights on King st. from the city limits to Water St., and along Wilmot St. The matter is being considered by the Council committee in charge of the operation of the Berlin and Waterloo St. Ry., in consultation with M. N. Todd of the G., P. and H. S. Ry., with a view to an amicable settlement. It is reported that in the event of a settlement not being reached the company will use a branch line running to Waterloo exclusively, and erect a station on Queen St. South for the accommodation of city passengers. (April, 1914, pg. 184.)

The Toronto Ry. applied to the Ontario Railway and Municipal Board, Aug. 20, for permission to extend its Yonge St. line north through the subway under the C.P.R. and up to Farnham Ave., the present southern terminus of the Toronto and York Radial Ry.'s Metropolitan Division. In consequence of the city's opposition the hearing of the application was postponed until Aug. 26.

Toronto Civic Car Lines.—Tenders are under consideration for the rods and plates and for special track work on the Lansdowne Ave. extension of the civic car lines, and for machine shop equipment at Danforth Ave. car barns. (Aug., pg. 318.)

The Windsor, Essex and Lake Shore Rapid Ry., we are officially advised, is doing some paving work along its lines in Essex, Ont. (July, pg. 277.)

Regina Municipal Railway, History and Statistics.

A Municipal Manual for 1915 compiled by the City Clerk of Regina, Sask., gives the following particulars:

The construction of the street railway as a municipal enterprise was projected in 1910. Actual construction began in the early part of 1911 and operation of cars was commenced July 29, 1911. At that time the system consisted of about 6 miles of track and 6 cars. Now there are about 30 miles of track within the city limits, 14 1/4 miles of this being in pavement. The rolling stock is as follows: 34 passenger cars, 2 sweepers, 1 motor haulage car, 30 freight cars.

Total expenditure up to Dec. 31, 1914, was \$1,723,830.00, of which \$266,065.00 was for cars and car equipment.

Operation statistics for the year 1914 are as follows:

Revenue passengers carried	4,677,542
Transfer passengers carried	626,905
Total	5,304,447
Passenger car mileage	1,081,996
Other car mileage	37,313
Total	1,119,309
Passenger revenue	\$200,500 77
Other revenue	18,415 10
Total	\$218,915 87
Operating expenditure	\$224,806 39

"An adequate service is given to and from all parts of the city. At present, on account of the concentration of the greater part of the population within easy walking distance of the retail business district, a comparatively low percentage of the people are making use of the street cars. However, with the city's development this utility will prove to be one of its most valuable assets."

Superintendent T. H. McCauley, in a report to the City Commissioners, Aug. 13, recommended certain alterations in routes of cars on the Calgary, Alberta, Municipal Ry., estimated to effect a saving of \$50 a day in operating expenses.

The ratepayers of Rockwood, Man., voted by a majority of seven to one, Aug. 10, in favor of the operation of electric cars on Sundays within the area of tp. 13, two and three east. Stonewall municipality will vote on a similar bylaw in the near future.

A board of conciliation is considering the question of the wages of British Columbia Electric Ry. employes. The board consists of Justice Macdonald, chairman; A. C. McCandless representing the company, and J. H. McVety the men.

The investigation into the relations between the officials and employes of the Calgary Municipal Ry., which was begun before Justice Simmons, July 8, was brought to a close, as far as the examination of witnesses was concerned, Aug. 2.

The Toronto and York Radial Ry. Metropolitan Division employes held their annual picnic at Bond Lake, Aug. 13, when there were about 800 present. The employes' executive committee has contributed \$100 from the picnic fund to the North Toronto Red Cross auxiliary.

The operation of the Saskatoon-Sutherland electric line is being discussed by the authorities of Saskatoon and Sutherland, Sask. It is understood that in addition to the approval of the ratepayers of these two towns, the approval of the ratepayers of Cory, through which the line passes, will be necessary.

The Edmonton City Council has appointed a committee to assist the Commissioner of Utilities in the operation of the Edmonton Radial Ry. until the special committee appointed to investigate the situation makes its report. The committee consists of Alderman Frith, chairman; Aldermen McArthur, Douglas and Sheppard.

Ontario Accident Compensation to Electric Railway Employes.—The first fatal case of injury to a Toronto Ry. employe since the Ontario Workmen's Compensation Act went into force was that of Frank McMullen, a conductor who died in July from injuries received by falling from the running board at the side of a car while collecting fares. He left a widow and three children. The compensation fixed by the Ontario Workmen's Compensation Board and which is payable by the company through the Board is as follows:—To the widow, \$75 for funeral expenses and an allowance of \$20 a month. Should she marry again she would receive a bulk sum of \$480, equal to two years compensation. For the children, \$5 a month each till they reach the age of 16 respectively.

Ontario Government Aid to Hydro Electric Railways.—In speaking at the dinner at London, Ont., after the opening of the electrified London and Port Stanley Railway, the Attorney General, Hon. I. B. Lucas, said that subsidies had been mentioned by the Chairman and that upon this he spoke with reserve. The highest patriotism, as well as the highest prudence, demanded that they keep in mind Mr. Lloyd George's statement that the last hundred million dollars might decide the issue of the war. While the war and unsettled economic conditions remained the Government was not prepared to undertake large capital expenditures.

The Prince Edward Island Ry. Employes are giving a machine gun for use in the Canadian Expeditionary Forces.

Freight Tonnage Carried by Electric Railways.

Returns to the Dominion Department of Railways for the year ended June 30, 1914, show the following number of tons of freight as carried by electric railways:

Berlin, Waterloo, Wellesley and Lake Huron Ry.	180,801
Brantford and Hamilton Ry.	4,943
British Columbia E.R.	356,013
Calgary Municipal Ry.	2,701
Canadian Resources Development Co., Chatham, Wallaceburg and Lake Erie Ry.	5,000
Cornwall E.R.	109,157
Edmonton Radial Ry.	74,690
Grand Valley Ry.	11,630
Guelph Radial Ry.	298
Hamilton and Dundas E.R.	23,130
Hamilton, Grimsby and Beamsville E.R.	21
Hamilton Radial Ry.	40,931
Hull Electric Co.	14,195
Levis County Ry.	12,332
London and Lake Erie Ry. and Transportation Co.	3,250
Montreal Tramways Co. (1911 figures).	6,629
Montreal and Southern Counties Ry.	302,307
Niagara Falls Park and River Ry.	8,431
Niagara, St. Catharines and Toronto Ry.	2,833
Oshawa Ry.	365,810
Port Arthur E.R.	170,019
Quebec Ry., Light and Power Co. (Citadel Div.)	14,190
Regina Municipal Ry.	1,140
Sandwich, Windsor and Amherstburg Ry.	14,200
Sarnia S.R.	2,554
Suburban Rapid Transit Co.	15,911
Toronto and York Radial Ry.	573
Windsor, Essex and Lake Shore Rapid Ry.	62,334
	39,840
Total	1,845,923

Edmonton Radial Railway Superintendent Resigns.

For some time past there has been evidence of friction in the management of the municipally owned Edmonton Radial Ry. The matter has been frequently discussed at council meetings, and a few months ago it was decided that the Superintendent was to be given a free hand in the operation of the line, with the view of pulling the loose ends together, reducing the operating cost and at the same time giving an efficient service. Subsequent discussions in the council appeared to indicate that the free hand which was to be given was, to a great extent, withheld, and that there was considerable aldermanic interference in the management. This culminated in a notice of motion calling for the Superintendent's resignation, and suggesting that if it was not forthcoming, his services be dispensed with at the earliest legal date, and he be granted leave of absence until then, and also suggesting that the duties be undertaken by the Commissioner of Public Utilities, with a committee of the Mayor and not more than four aldermen to act in an advisory capacity, until an investigating committee reports, when a permanent policy would be adopted.

The motion was not made, but against the wishes of the Mayor, the resignation of the Superintendent was handed in.

J. H. Larmonth, who was appointed Superintendent of the Edmonton Radial Ry. in March 1914, had been, prior to going west, General Manager of the Electric Power Co., owning the Peterborough Radial Ry., the construction of which he was placed in charge of in 1904, and managed along with the electric light and gas plants at Peterborough, Ont., until the property was purchased by the Electric Power Co. in 1910, when he was appointed General Manager. Subsequently he was for some time Secretary of the Canadian Electrical Association. On Aug. 5, Mr. Larmonth, on the eve of leaving Edmonton for Toronto, was presented with an address and an engraved silver

turen, by the radial railway employees.

On another page in this issue is given a comparative statement of the operating results for the first six months of 1915 and 1914. The actual net operating result for that period increased from \$39,060.96 to \$66,673.88, even with a drop in the number of passengers carried, of from 7,537,760 to 5,486,472. For the 1914 period there was a deficit of \$125,077.32, while for the 1915 period this was reduced to \$75,722.50.

Mainly About Electric Railway People.

J. J. Hackney has ceased to occupy the position of Commissioner of Utilities at Port Arthur, Ont.

H. T. Hazen, M. Can. Soc. C. E., District Engineer Mackenzie, Mann & Co., Ltd., Toronto, and Consulting Engineer, Toronto Suburban Ry., has taken over the duties of Chief Engineer of that line, vice E. T. Wilkie, A. M. Can. Soc. C. E.

P. Hamel, Secretary, Quebec Ry., Light, Heat and Power Co., Quebec, Que., has been appointed a captain in the 69th regiment for overseas service, and is at present in



F. T. Leversuch,
Traffic Manager, London and Port Stanley
Railway.

Montreal assisting in enlisting recruits for the service.

F. Morton Morse, Secretary-Treasurer, Winnipeg Electric Ry., returned to Winnipeg at the end of July, after a trip to Great Britain for the benefit of his health. He was a passenger on the s. s. Orduna, which was unsuccessfully attacked by German torpedoes.

G. R. G. Conway, M. Inst. C. E., M. Can. Soc. C. E., who resigned the chief engineering of the British Columbia Electric Ry. Co. and the Vancouver Power Co. recently, has opened an office at 409 Royal Bank Building, Toronto, for consulting practice in civil and hydraulic engineering.

Sir John Gibson, director, Dominion Power and Transmission Co., Hamilton, Ont., and former Lieutenant-Governor of the Province, was advised, Aug. 22, of the death, while on active service in Flanders, of his youngest son, Lieut. F. M. Gibson, who was wounded earlier in the war, but had recovered and returned to duty.

Frederick Thomas Leversuch, whose appointment as Traffic Manager, London and Port Stanley Ry., London, Ont., was an-

nounced in our last issue, was born at Shrewsbury, England, Nov. 24, 1884, and entered railway service in May 1905, since when he has been, to June 1910, in General Freight Department, Michigan Central Rd., St. Thomas, Ont.; June 1910 to Oct. 1911, assistant agent, C. P. R., Windsor, Ont.; Oct. 1911 to Dec. 1913, freight agent, C. P. R., Windsor, Ont.; Dec. 1913 to July 15, 1915, Agent, C. P. R., Windsor, Ont.

James J. Callahan, whose appointment as Manager of Operation, London and Port Stanley Ry., London, Ont., was announced in our last issue, was born at New Glasgow, Que., Feb. 25, 1875, and entered electric railway service, Apr. 27, 1897, since when he has been, to 1901, motorman, Montreal Park and Island Ry., Montreal; 1901 to 1908, Inspector and Chief Instructor, Montreal St. Ry., Montreal; 1908 to 1909, Chief Inspector, New York and Queens County Ry., Long Island, New York; 1909 to July 1915, Superintendent of Transportation, Montreal and Southern Counties Ry., Montreal.

The Ottawa Electric Railway Bulletin, the first number of which is dated August, and which is to be issued on the 20th of each month, consists of four pages of reading matter, each 8½ x 11 ins. Its chief function at present is to print important bulletins posted during the month previous to the issue, and also to give articles of general interest to those engaged in electric railway service in Ottawa. It urges efficiency, safety and courtesy, and devotes considerable space to hints on those points. The bulletins are published with comments, and one or two rules are printed with explanations pointing out their most important features. The Bulletin, which is no doubt largely the handiwork of F. D. Burpee, Superintendent, will be a valuable means of communication between the management and the employees.

Lloyd's Register for 1915-16 contains much information of considerable interest concerning the state of the world's shipping tonnage during war times. Notwithstanding the heavy losses of tonnage which have occurred during the war, there is an actual increase of 172,217 tons, in the vessels of more than 100 tons. The number of steamships increased from 24,444 of 45,403,877 tons, to 24,508 of 45,729,208 tons. There was a decrease in the sailing vessels, the numbers being 6,392 of 3,685,675 tons in the previous year, and 6,212 of 3,532,561 for the current year. The total tonnage of the British Empire increased from 21,045,049 to 21,274,068, being greater than the aggregate tonnage of the next seven countries. The second place in the list, which has been held for several years by Germany, is now taken by the United States, with a total of 5,892,639 tons, an increase of 524,445. Germany takes third place with 4,706,027 tons, a decrease of 753,269.

Canada Steamship Lines Ltd., has formed a War Contribution Committee, with F. P. Smith, Secretary of the company, as Secretary, for the following purposes, to assist by contributing machine guns and to encourage enlistment amongst the company's employees. At the inauguration meeting, it was announced that J. W. Norcross, Managing Director, and R. M. Wolvin, had each promised one machine gun.

Ontario Car Ferry Co.'s Car Ferry No. 2.—A preliminary trial trip of the Ontario Car Ferry Co.'s car ferry, Ontario No. 2, took place at Toronto, Aug. 28. This vessel, which is stated to be the largest yet built on Lake Ontario, is under construction by Polson Iron Works, Ltd., Toronto, and was fully described in Canadian Railway and Marine World for April, 1914.

Marine Department

The Grand Trunk Pacific Railway's Dry Dock at Prince Rupert, British Columbia.

The dry dock and ship repairing plant, which the G. T. P. R. has built at Prince Rupert, B. C., as a part of its railway and marine terminal facilities, was announced to be ready for business, Aug. 1. The selection and survey of the site was made in 1910, and the actual work of construction was commenced early in 1912. The dock is in three units, with a total lifting capacity of 20,000 tons. All the units are interchangeable, and each is complete in itself, with pumps and air compressors. The two end sections are each of 5,000 tons capacity, and the middle one of 10,000 tons capacity. When all three are joined, the dock will be capable of raising a vessel 600 ft. long of 20,000 tons.

The dock has an overall length of 604 ft. 4 ins. on the keel blocks, a clear width of 100 ft., and a width overall of 130 ft. The lifting power is the aggregate of 12 pontoons of timber construction, each 130 ft. long, corresponding to the width of the dock, 44 ft. wide in a direction corresponding to the length of the dock, and 15 ft. deep. These pontoons are united by steel side walls or wings 38 ft. high, 15 ft. wide at the bottom, and 10 ft. wide at the top, the walls being divided so that the whole structure may be used under ordinary conditions as three separate docks, one of 6 pontoons with an overall length of 269 ft., and two of 3 pontoons each, with an overall length of 164 ft. each. The machinery for pumping the dock consists of centrifugal pumps operated by electric motors, the capacity of the equipment being sufficient to pump the entire lifting power of the dock in two hours. The structure as a whole is secured to the shore by the engagement of clamps on the dock with a vertical truss secured to the pile platform or pier in such a way that it is free to rise and fall with the tide, and when being raised or lowered with the ship. The location of these attachments is such that when it is desired to use the dock in separate sections, the bow section may be detached and moved round the corner of the pier work located alongside the platform and secured in the same manner as provided in the original position. To make the other two sections available as separate docks it is only necessary to detach the middle section, comprising 6 pontoons, from the pier work and advance it the length of the detached section, when the sliding clamps upon the wings will coincide with those used for the previous section when the dock was operated as a whole. This will allow ample space between the centre and stern sections for the overhang without interference of vessels that may be docked in them.

The pumping machinery consists of 24 12 in. centrifugal pumps one in each end of each pontoon. They operate at approximately 275 r.p.m., being driven by a vertical shaft. All pumps on each side of each section are driven through gearing and horizontal shafting by one electric motor. Thus for the two smaller sections of three pontoons each there are four 100 h.p. motors, and for the larger section of 6 pontoons there are two 200 h.p. motors. These motors are of the alternating current, 3 phase, 25 cycle, 550 volt, with wound rotors and slip rings for variable speed control. The armature shaft is extended at both ends and operates the distri-

bution shafts through reduction gearing at approximately 275 r.p.m.

The power house has all the boilers and power plant required for the supply of all the electric current for the dry dock, shop equipment, compressed air plant and electric lighting equipment, under one roof, covering an area of 15,392 sq ft. There are six 400 h.p. water tube boilers with automatic stokers, chain grate type. The two main engines are of 900 h.p. each. The generators are 600 k.w., 3 phase, 25 cycle, 550 volt, alternating current, and two steam driven exciters, one of 50 k.w. and one of 25 k.w. capacity, direct current, 220 volts. There is also a motor driven exciter of 25 k.w. capacity, the motor for this being 35 h.p., 3 phase, 25 cycle, 550 volt alternating current, squirrel cage type. The air compressors have an air displacement of 1,580 cu. ft. of free air per minute, when operating at 150 revs., and are designed for a steam pressure of 175 lbs. a sq. in. and an air pressure of 100 lbs. a sq. in.

The boiler and blacksmith shop is 76 by 150 ft., the central part being 33 ft. wide, provided with a 15 ton travelling crane. The design is of the usual steel frame shop construction, with flooring of concrete, with complete and up to date tool equipment.

The machine shop is of similar design and built from the same plans as the boiler and blacksmith shop, the flooring also being of concrete with special foundations for heavy tools. The large tools are driven by individual motors, and the smaller tools are arranged for group driving. The building shed and woodworking shop are under one roof, and divided in two sections, the building shed being 86 by 300 ft. with a clear height under cranes of 50 ft. and under girders of 56 ft. The shop section is 80 by 300 ft., the ground floor being used for machinery and the upper floor for laying out. The office and administration building is 40 by 100 ft., of wood, 2½ stories high.

Complete details and plans of the dry dock and shops were given in Canadian Railway and Marine World for February, 1912.

Furness Withy and Co.'s Report. The report for the fiscal year ended Apr. 30, shows profits, including the amount brought forward from the previous year, of £806,195 19s. 1d. After charging directors' fees and income tax, there remains £784,876 17s. 3d., an increase of £32,927 7s. 8d. over the previous year. Three quarterly dividends at the rate of 10%, in addition to the usual half yearly preference dividend have been paid, leaving an available balance of £599,724 4s. 5d. Of this balance, £350,000 has been transferred to depreciation account, £15,000 to a superannuation fund just inaugurated, £10,000 divided among masters, officers and engineers of the fleet, in recognition of the extra strain and vigilance necessary during the war, £50,000 in payment of the fourth quarterly dividend at 10%, and £141,446 carried forward to the current year's accounts. The directors applied for £50,000 of the war loan issued in Nov. 1914, and have also applied for an additional £150,000 of the June loan. Subsidiary companies also applied for amounts in the war loans, making a total subscribed by Furness Withy and Co. and its subsidiaries, of £550,000.

The Loss of the s.s. Cabot.

An enquiry was held at Sydney, N.S., recently, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. R. MacDonald and A. J. Morrison, as nautical assessors, into the foundering of the Dominion Coal Co.'s s.s. Cabot, in the Strait of Northumberland, off Prince Edward Island, on June 24.

The master, Jas. Lintlop, stated that the Cabot was a schooner rigged, single screw, steam vessel of 162 net tons and 465 tons gross, capable of a speed of about 8 knots, about 8 years old, and was equipped with triple expansion engines, and drew 12 ft. forward, 11½ ft. aft, light, and 18½ ft. forward and 13 ft. aft when loaded. He left Charlottetown, P.E.I., on the morning of June 14, light, for Sydney, and was on deck practically all the time. The weather was clear with light winds. He rounded Point Prim, and shaped a course to pass Indian Reef, after which the course was altered to clear Bear Point, about 4 miles. At 6 p.m. fog came on at intervals and remained so up to the foundering of the vessel. He left port without filling tanks, as was customary in fine weather; but about 9 p.m. he gave orders to fill them, which was done with the help of the pumps. The vessel listed slightly, as she ordinarily did when that operation was performed, and came back on an even keel; but again listed, and as this was unusual the tanks were sounded, when it was seen that there was about 18 inches of water over no. 2 tank. The pumps were operated, but without avail, the vessel continuing to list. In view of this, he ordered the boat lowered, and called all hands on deck, the ship having a list of some 40 degrees when the crew got in the boat, the rail of the poop on the port side being nearly awash. He stated that whilst hanging on to the davit guy, which had been freshly painted that day, he was swung overboard, and that is the reason he found himself in the boat. Upon being recalled, he averred that when in the boat he found there was one man left aboard the ship, and he returned in the dory with three others to get him off. The ship sank about 11 p.m., and they kept the boat before the wind, and were finally picked up by a schooner, after about 12 hours adrift. Questioned as to a statement made by the second engineer, he said that to his knowledge there was no leak in no. 2 tank, nor were the pumps used every six hours to empty that tank. He positively asserted that the ship never touched bottom nor struck any object, and therefore, his theory was that in the head sea prevailing the vessel strained herself and started some rivets, gradually increasing the injury so that a considerable flow of water took place, and that it was due to that that the ship foundered.

The second officer stated that he held no certificate, but had considerable experience at sea. He had been on deck on watch from 12 to 4 and 6 to 8 the day of the foundering; but not on the bridge, as the captain kept his watch while he was busy about the decks. He noticed nothing unusual, that the weather thickened intermittently from 6 p.m. until he went below. Upon being called on deck he found the vessel had listed to a sharp angle, and he went in the boat with the others. He was positive the ship did not strike whilst he was on watch.

The chief engineer deposed that he joined

the ship in March last; that the machinery was in good order; that he was on watch from 6 p.m. until the ship foundered. When he noticed the ship taking an unusual list he sent the fireman to call the second engineer, the steam diminishing in the meantime. He came on deck without shutting the valve, knowing that the engine would stop on account of the diminution of the steam. It took from 1½ to 2 hours to fill the tanks, which held 32 tons of water. Questioned as to the water which remained in no. 2 tank, occasioning pumping, he was of opinion that it was due to the fact that some water must necessarily stay in the tanks as the pump did not reach so close to the floor, and again it might be due to some dirt impeding the efficient working of the valves, and the probabilities were that the pipe joining the peak tank might be leaking at the joint. Upon being recalled, he denied in toto the assertion of the second engineer that the no. 2 tank had to be pumped every six hours for five minutes, if not regularly at least frequently.

The second engineer stated that he holds a fourth class certificate, that he had been on the Cabot for seventeen months. In his opinion the ship was leaking somewhere in the vicinity of no. 2 tank, that frequently, or almost every six hours, the pumps were in action for five minutes on that tank. Questioned as to the amount of water which could be pumped in five minutes, he could not say off hand. He could throw no further light on the matter, and his statement was not considered extremely satisfactory, being refuted by the chief engineer, and also by his predecessor, who had been acting in that capacity for about two years prior to March. The master also denied that such was the case, and stated that if pumping had been done, he was absolutely ignorant of it.

The court having carefully weighed the evidence adduced, which proved unsatisfactory in every respect, confesses that it remains in the dark as to the actual causes which brought about this casualty. In reviewing the evidence of the master, though he navigated his vessel inside of Point Prim buoy, nothing indicates that the vessel grazed the reef, thereby weakening the hull under no. 2 tank, and if she had touched and injured that part of her hull it is evident she would have received more serious damage further aft, as she was down by the stern. The court has questioned his action upon seeing the ship filling, for not steering toward the land instead of keeping her head on to the sea. Though, in our point of view, such method would have been a preferable one to adopt, is was only as a tentative way of trying to place the ship in shallow water, but owing to the water invading the engine room, steam being low, no speed could have been attained, and therefore, in view of these circumstances, we cannot condemn the master for his action in this respect. We look with askance at the fact that he was not the last man to leave the ship; that the wheelman was left on board; even though he went back to his rescue. Owing to lack of other evidence, we are bound to accept his statement that he was swung overboard, and the davit guy slipped through his hand. It was providential that the boat happened to be handy. With regard to the second engineer's evidence, which was contradicted by three witnesses, we are compelled to term his statement as an exaggeration. We are aware that the tanks cannot be thoroughly emptied; that there is a sweating process taking place within the ship; that leakages are bound to occur from connecting pipes, increasing gradually the volume of water. The ship had been thoroughly inspected in the spring, and a certificate

of seaworthiness given. No reports were ever made by anyone from the ship to the company as to defects. As no evidence was given to shed the least light on this matter, the court has to make its own conjectures, based on the nautical experience of each member of which it is composed. At some time during that voyage the vessel must have struck or grazed some submerged object, dislodging the heads of rivets, unknown to the crew; that no effects were seen till the vessel, encountering a head sea, increased the injury the ship had already sustained. This was accelerated by the fact that the tanks were empty, and were not filled until after the ship encountered the head seas which it was said were prevailing at the time. It appears that it was customary to leave port with the ballast tanks empty, this having been done by other masters who were previously in command of this vessel. While we condemn that system, we cannot say that it was the direct cause of the foundering, but it helped considerably, as had the tanks been full it would have served as a strengthening protection to the hull of the ship at moments of straining. Yet, if our theory is correct as to the possibilities of some rivets being loosened through unknown reasons, a leak would have sprung up later. For lack of contradiction of the evidence adduced as to the way the ship foundered, while we question the methods adopted, it is our present duty to allow the benefit of the doubt. With regard to leaving port without the tanks being filled, while the vessel had no cargo, we consider the method unseamanlike, especially owing to the peculiar construction of the vessel, and the time it took generally to fill the tanks, viz.: two hours. We cannot overlook this phase of the disaster, and as we have before stated that this contributed to the foundering, we shall be lenient in our dealings with the master, owing to the fact that it was a customary thing to do during the summer, and therefore suspend his certificate for three months from July 15.

Cruiser Sterns on Merchant Vessels.

C. H. Nicholson, Manager Grand Trunk Pacific Coast Steamship Co., Ltd., Vancouver, B.C., writes Canadian Railway and Marine World as follows:—"In your August number you quote from some New York shipping paper that 'the only correct cruiser sterns built on merchant vessels up to the present are the Canadian Pacific steamships Empress of Russia, Empress of Asia, Metagama, Missanabie and Princess Irene, and the Allan Line steamships Alsatian and Calgarian,' to which apparently you have added 'The C.P.R. Princess Margaret, a sister vessel of the Princess Irene, should be added to this list.'

"Knowing your desire that statements made in your paper should be correct, I beg to inform you that as far as my knowledge goes the first instances of cruiser sterns being installed in merchant vessels were on the Grand Trunk Pacific steamships Prince Rupert and Prince George, built by Swan, Hunter & Wigham Richardson, Ltd., Newcastle-on-Tyne, in 1910. The cruiser stern was adopted for our ships after exhaustive tank tests, with the result that the cruiser stern gave one half knot an hour more speed with the same power than the ordinary round stern, and as the results of these tests were made public I assume the other lines have seen the advantage and copied the idea from the Grand Trunk Pacific."

The New York Central Rd. is reported to have decided to build a reinforced concrete dock at Buffalo, N. Y., at a cost of \$30,000.

The Loss of the Canadian Northern s.s. Royal Edward.

The British Admiralty announced, Aug. 17, that the s. s. Royal Edward had been torpedoed and sunk by the Germans in the Aegean Sea towards the approach to the Dardanelles, Aug. 14, while transporting reinforcements for the troops engaged on the Gallipoli peninsula. The reports indicate that there were about 1,000 lives lost.

The Royal Edward, which had been operated on the Atlantic route, between Montreal, Quebec and Avonmouth, in the summer, and from St. John in the winter, by Canadian Northern Steamships Ltd. since the commencement of 1910, was requisitioned by the Admiralty in Nov. 1914, and was one of the vessels engaged in transporting the Canadian Expeditionary Force to England. After this service, she was used for some time as a prison vessel for interned Germans, until such time as other arrangements ashore could be made. Since then she has been engaged in various services, latterly in transporting troops to the Dardanelles, this being her second voyage.

She was formerly known as Cairo, was originally built for the Mediterranean trade, and with her sister vessel, Heliopolis, was acquired by Canadian Northern Steamships Ltd. in 1910. They were returned to the builders to have certain alterations made, which were considered necessary for Atlantic service, and their names changed to Royal Edward and Royal George, special permission having been obtained for the use of the word Royal. She was of steel, her length was 545 ft., breadth 60¼ ft., depth to shelter deck 38 ft., with the hull divided into 10 watertight compartments and with cellular double bottom from stem to stern. There were seven decks and the whole vessel was luxuriously equipped. The propelling machinery consisted of compound steam turbines supplied with steam by four double ended and four single ended boilers of the cylindrical return tube type.

Lieut. Wootten, R. N. R., who had been in command of the vessel since her acquirement by the C. N. S. Ltd., was on board as navigator, and, at the time of writing, his name has not appeared as one of the survivors.

Toronto Harbor Contracts. The Minister of Public Works, when in Toronto, Aug. 11, conferred with members of the Canadian Stewart Co., relative to complaints as to the quality of the work done under certain sub contracts in Toronto harbor. The Minister is reported to have stated that Government inspectors had failed to report deficiencies, such having been reported by the Chief Engineer of the Toronto Harbor Commission, who was well within his province in reporting. The defective work was not trifling, but was not so extensive as to be alarming. An investigation of the defective work is being made and the report will be submitted to the Department in due course.

Jitnev Ferries at Toronto.—In order to cope with what is considered to constitute a danger, a clause was inserted in the Toronto city bylaws for regulating and licensing ferries, providing that no ferry boat not heretofore having received a license from the city shall hereafter be licensed unless its Government certificate entitle it to carry at least 300 passengers. During the discussion of the bylaws, the section quoted was dropped, and the bill passed without it. A considerable ferry business of the "jitnev" type has grown up between Toronto and Toronto Island, small gasoline boats being utilized for the purpose.

Shipping Letters From the Head of the Lakes.

F. and W. Jones, brokers, Fort William, Ont., have issued weekly letters as follows:

July 31.—Eight cargoes of coal were unloaded during the past week, six bituminous and two anthracite; four were in U.S. bottoms, and four in Canadian bottoms. One cargo of anthracite is now being unloaded; it is a U.S. bottom. Two Canadian steamers, both with bituminous coal, are reported en route, one goes to the C.N.R. dry dock and one to the Fort William coal dock. There has been no marked increase in shipments to the west, but they will undoubtedly pick up considerably in the near future, as dealers in the west will soon have to replenish stocks in view of winter's demands, and it is expected that this movement will start when cars are demanded in the west for the new grain crop. The taking over of the Lake Superior Branch of the G. T. Pacific Ry. and terminals by the Dominion Government has now become effectual, and two cargoes of coal have arrived, billed to the Canadian Government Railways. A U.S. steamer loaded a cargo of coal screenings (about 3,000 tons) at the Canadian Pacific dock this week; the cargo was billed to a Lake Michigan port. One cargo of ore was shipped this week in a Canadian steamer, and was consigned to Cleveland. No further charters are reported. Seven vessels have loaded cargoes of grain since last Monday, four of which were passenger vessels, all of these cargoes were billed to Canadian ports. The elevator stocks are reported as 3,394,147 bush. of all grains, thus showing only moderate decrease from last week's report. Arrivals from the west have been only moderate. The eastern shipments have totaled 1,412,174 bush. At this rate a steady depletion of stocks is evident, and very little grain will be held in elevators by the time new crop arrives. Weather conditions throughout the west have considerably modified, and are generally considered satisfactory for harvesting. Reports to hand denote a moderate percentage of damaged crops, which will probably have the effect of reducing the Government grading of a portion of the crop. This, however, will in no way effect the total crop results. It is understood that exporters have already commenced figuring on a volume available for export beyond any previous records. Harvesting will commence early in August, and is expected to become general throughout the west by the 20th. In view of this, railway companies have already lined up their car supplies at easily available western points.

Stocks on hand, receipts, and shipments during the week:

	Stocks.	Receipts.	Shipments.
Wheat	1,667,472	624,797	998,449
Oats	476,427	265,080	369,891
Barley	44,306	28,844	27,620
Flax	1,205,942	28,115	16,215

Aug. 7.—Coal arrivals show a slight falling off during the first week of August, only six cargoes arriving, as against eight in the last week of July; five of them were bituminous, and one anthracite. Three were carried in U.S. bottoms, and three in Canadian. One steamer with anthracite coal is waiting turn, and four are reported en route, all with bituminous coal. There is no change in the western coal situation. Car shipments are still very light, and no big movement is looked for until the grain begins to move down to these ports freely. No ore was shipped east this week. One charter is reported to load during the early part of next week, probably for Cleveland. There will likely be another load the end of next week or early the week later, but no definite charter is reported. Seven ves-

sels have loaded grain cargoes during the week, all of which were billed to Canadian ports. This is the second week in succession which has been marked by an absence of U.S. billing. The total amount shipped east is reported as 862,670 bush., and shows a considerable decrease on the past several weeks. Elevator stocks at the two ports stand at 3,124,271 bush. of all grains, and show a slight steady decrease. Receipts from the west are also steadily declining. There appears to be no disposition on the part of shippers to make any great movement with the balance of old stocks, all attention is directed to the prospects of the new crop, and in consequence enquiry for lake space is weak and uninteresting. The week under review opened up with most favorable weather conditions all through the western provinces; later, however, there was more or less unsettled conditions, followed with rain and slight frost in Saskatchewan. This has by no means affected the optimistic feeling among grain men; a full crop is considered as now assured, whilst it is conceded that there will probably be a percentage of low-grade grain in consequence of the unsettled weather conditions. Harvesting will be in progress generally throughout the west by the 20th of the month. During the coming week harvesters' trains are scheduled to arrive from the east carrying all available help for the various western centres, and whilst help will not be in excess, there is not expected to be any lack of harvesters. The new crop movement is now expected to be well on its way early in September.

Stocks on hand at date, receipts and shipments during the week:

	Stocks.	Receipts.	Shipments.
Wheat	1,363,817	372,777	676,431
Oats	504,998	151,296	122,825
Barley	63,051	46,519	28,734
Flax	1,194,455	13,653	25,180

Aug. 14.—Coal receipts brightened up during the second week of August. 9 cargoes were unloaded, as against 7 last week, 7 of these were bituminous and two anthracite. Four were carried in Canadian steamships and five in U. S. Two steamships are reported as en route, one anthracite and one bituminous. The western coal situation is practically unaltered, the only change being an increase in the shipment of steam coal, which is used in harvesting. As the harvesting becomes more general the shipments will become heavier and will naturally decrease the stocks of bituminous coal at the head of the lakes. Two cargoes of ore were shipped east during the week, one to Cleveland, the other to Cleveland and Buffalo. They totaled about 8,000 tons. No further charters are reported.

Eleven vessels have loaded grain during the past week, two of which were billed to Buffalo and were U. S. bottoms. The total amount reported as shipped east was 1,062,611 bush. of all grains, being a considerable increase over last week's shipments. Receipts from the west continue to show steady decline, only 276,744 bush. having arrived during the week. Elevator stocks are in consequence becoming materially depleted, only 2,340,739 bush. being reported as held in store at time of writing. All reports arriving of the crop prospects are most optimistic and it is confidently felt that a bumper harvest is assured. Weather conditions have been most favorable, universally warm throughout the west accompanied with only moderate rain fall. Commencement of harvesting is placed at from Aug. 19 to 21, according to districts, but will be general throughout the provinces by the latter date. Large quantities of machinery

and general supplies are being rushed forward in anticipation, it is also estimated that ample help is now in sight. General movement of the crop to the head of the lakes should be in progress early in September. Market prices continue firm and it is expected that farmers will market their crop at good prices, and a wave of prosperity is looked for in the west, which should put things generally on a most satisfactory basis. Stocks on hand at date, receipts and shipments during the week:

	Stocks.	Receipts.	Shipm'ts.
Wheat	616,606	168,073	915,284
Oats	490,535	82,942	97,405
Barley	36,771	16,155	42,760
Flax	1,196,827	9,574	7,162

Canadian Pacific Ocean Services, Ltd.

The announcement of the incorporation of Canadian Pacific Ocean Services Ltd. has already been made in Canadian Railway and Marine World. The company has an authorized capital of £2,000,000, and has power to acquire and operate ocean steamships, and to interchange traffic with railways. The company is subsidiary to the C. P. R., and the latter's charter has been extended to enable it to hold stock and securities of the new company, and to guarantee payment of principal and interest of such securities as may be issued with the consent of C. P. R. shareholders. Canadian Pacific Ocean Services Ltd. will take over the C. P. R. interest in all steamships engaged in ocean traffic and also those of the Allan Line Steamship Co., which has been under C. P. R. control for some time. A moderate estimate of the value of the steamship property involved in the transaction, after making due allowance for depreciation, is \$23,500,000. It is proposed that in consideration for the steamships and appurtenances acquired from the C. P. R., and for the capital stock of the Allan Line Steamship Co., carrying with it all the company's steamships and other properties, the C. P. R. shall accept the fully paid capital stock of the Canadian Pacific Ocean Service Ltd., viz. £1,962,910, being all the shares except those necessary for directors' qualifications, and in addition shall accept 5% debentures, first debentures or debenture stock of the steamship company for £2,865,860.

The s.s. Midland Queen, owned by Canada Steamship Lines, Ltd., and under charter to the Dominion Iron and Steel Co., was torpedoed by the Germans, Aug. 3, while en route to Newport, Monmouth, Eng. She was built at Dundee, Scotland, in 1901, and was a steel vessel equipped with triple expansion engines with cylinders 18 x 30 x 50 x 36 ins., supplied with steam by 2 Scotch boilers at 170 lbs. pressure. Her dimensions were, length 249 ft., breadth 42 ft. 7 ins., depth 20 ft. 6 ins.; tonnage, 1,993 gross. 1,349 register. She was formerly owned by the Midland Transportation Co., Midland, Ont., which was absorbed by Inland Lines, Ltd., which in turn was absorbed by Canada Steamship Lines, Ltd.

The special crew which were engaged last April, at Halifax, N. S., to take the ice breaking steam tug J. T. Horne, to Archangel, Russia, returned to Halifax at the end of July. They report that the icebreaking s. s. Canada (formerly Earl Grey) has done good work in the harbor at Archangel, but broke down and had to be sent to England for repair. She is again in service.

Navigation on the Rideau River this summer has been seriously interfered with owing to low water. The Rideau Queen, which was running on the route has been taken off on this account.

Grounding of the s.s. Haddington.

A formal investigation into the grounding of the Canada Steamship Lines s.s. Haddington on the eastern reef of Red Island, in the River St. Lawrence, June 4, was held at Kingston, Ont., recently by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. T. O'Connor and Jas. Murray, as nautical assessors. The chief witness, Joseph Blais, who was in charge of the Haddington at the time of the casualty, as sailing master, although summoned by his principals on instructions from the Wreck Commissioner, did not appear.

It appeared from the evidence that the master, R. J. Wilson, holds a master's certificate for inland waters, and a mate's certificate for coasting waters, and owing to his lack of qualifications as master coasting, his owners engaged, through the representatives of the Anticosti Island Agency, a man named Joseph Blais, holding a certificate in the coasting trade, who was signed on the articles as sailing master. The Haddington was loaded with 1,908 tons of coal, and was bound from Ashtabula to Gaspe. After passing Cape Salmon, the master left the deck, giving instructions that he be called if the weather became thick. The weather was then perfectly clear and calm. He was later awakened by a shock, and immediately went on the bridge, the vessel having stopped in the meantime by order of the officer on the watch. The sailing master appeared excited, and gave as a reason for the grounding the excuse that he thought he had allowed sufficient in shaping his course to clear the reef. It being flood tide, the vessel floated off, and when soundings were taken it was found that no. 1 hold was filling rapidly, and later no. 3 was found to be leaking. The officer of the watch and wheelsman gave corroborative evidence, and the court, considering that sufficient had been submitted, adjourned sine die in the hope that the sailing master would put in an appearance. As, however, no word had been received from him, the court gave judgment as follows, on July 23:

The master and his officers were strangers in the River St. Lawrence below Quebec, and the owners of the Haddington, in order to relieve them of the responsibility of navigating the ship, on the recommendation of the Anticosti Island Agency, accepted the services of a man fully qualified in so far as he possessed a proper certificate, to assume the navigation of the ship into the Gulf, and such being the case, we are of opinion that the master, in view of the exceptionally fine weather prevailing,

was within his rights in securing as much rest as possible in order to be in a fit state to take charge in case of emergency, having left proper orders before leaving the bridge. The first officer, also a stranger in that locality, depended altogether upon the so-called pilot and there was nothing to cause him to be suspicious of the efficiency of the pilot and the effectiveness of the courses given. Everything being in full sight, there was no cause for interference or remarks on his part. Therefore, for the foregoing reasons, we hold that neither the master nor the first officer in charge are to blame for this casualty, and exonerate them from blame. With regard to the sailing master, whose evidence has not been heard, but who was undoubtedly in full command at the time of the stranding, we hold that in view of the strong flood tide running at the time, he did not allow sufficient margin for the effect of such tide on his vessel. This in itself is considered an error of judgment. Had it happened in misty weather, when objects are indistinct, this court would have been inclined simply to censure him, but in this case, objects were visible plainly, but evidently bearings do not seem to have been taken, and estimation of distances were neglected. In view of this we are of opinion that proper seamanship and good judgment were not exercised, and therefore suspend the master's certificate of Joseph Blais, sailing master of the Haddington, for four months; for his contempt of court he is liable to imprisonment, but the court will use the power which it has under statute, and further suspend his master's certificate for two months, which in all precludes him from navigating a vessel as master or officer of any grade from July 8, 1915, to Jan. 8, 1916. By this finding we hope to cause all those who may be called upon to appear before the Wreck Commissioner's court at a specified date, to obey the summons, whether given directly under the hand and seal of the Wreck Commissioner or through the principals, or agents, or owners of vessels, casualties to which are being investigated.

Port Dalhousie-Toronto Car Ferry.—With reference to the Canadian Northern Ry.'s intention to establish a car ferry service between the Niagara, St. Catharines & Toronto Ry.'s Lake Ontario terminus at Port Dalhousie and Toronto, we are advised that nothing will be done before the autumn. The C.N.R. was in negotiation with the C.P.R. for one of the car ferries used formerly between Windsor and Detroit, and also in regard to some other car ferries, but no purchase has been made.

Quebec Harbor Commissioners Report for 1914.

The report for 1914 covers the work accomplished during the year in connection with the general improvement of the harbor facilities. The new administration building on Point a Carcy wharf was completed and occupied. The revenue was \$287,194.39, an increase of \$54,859.66 over 1913, and the expenditure chargeable to revenue was \$267,835.54, leaving a surplus of \$19,358.85. There is included in the revenue a charge of \$50,000 against the Dominion Government for building used by the Immigration Department. The expenditure on capital account on approved estimates out of advances made by the Government was \$1,994,960.03, and out of money at the Commissioners' disposal, \$17,341, making a total capital expenditure of \$2,012,301.03. The increase of railway traffic in the port necessitated the purchase of an additional switching locomotive. During the year, 53,907 cars were handled, of which the car ferry handled 18,485. The immigration and ocean passenger traffic required 5,560 passenger and baggage cars. The number of vessels arriving and departing from the dock was, inward 387, of 1,569,426 register tons; outward, 131 of 692,649 register tons. The grain handled at no. 2 elevator was, oats 531,815 bush.; wheat 43,233 bush.; corn 179,080 bush.; barley 12,000 bush., a total of 766,128 bush. Of a total of 98,834 passengers landed at Quebec during the year, 7,819 were first class, 35,407 second, and 55,608 third class.

The shed space available for ocean vessels is 5,000 ft. long, averaging 91 ft. wide. The river remained clear of ice until Dec. 9, by which time vessels were in their winter quarters.

U. S. Marine Policy and U. S. Shipping on the Great Lakes.—A Chicago vessel owner in commenting on the Seaman's Act, which comes into force in the U. S., Nov. 4, writes to the press, partly as follows,—"Unless the seaman's bill is modified the Great Lakes lines are practically forced out of business after Nov. 4. We have built up the finest passenger and packet freight service in the U. S., all tending to maintain lower railway rates, only to see the service annihilated or handed over to Canada, by Senate bill 136. Our most substantial point of opposition to this bill is that it fails to discriminate between, for example, a Great Lakes excursion steamer, always in sight of land, travelling in shallow water, and with passing ships invariably in sight, and the seagoing liners travelling from New York to Bombay."

List of Steam Vessels Registered in Canada During July, 1915.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner
137,926	Ebess	Chatham, N.B.....	Chatham, N. B. 1915	62 4	16 3	7 0	63	16	16 sc..	F. M. Tweedie, Chatham, N.B.
134,547	Grenville.....	Ottawa, Ont.....	Toronto..... 1915	155 0	30 9	10 9	497	232	75 sc..	Minister of Marine and Fisheries, Ottawa
134,499	Laval.....	Quebec, Que.....	Middlesbrough, Eng.. 1914	120 0	26 0	13 2	287	124	159 sc..	Quebec Harbor Commissioners, Quebec, Que.
134,498	Q. H. C. Dredge No. 2.	Quebec, Que.....	Renfrew, Scotland.... 1914	152 0	34 1	11 8	520	264	54 sc..	Quebec Harbor Commissioners, Quebec, Que.

List of Sailing Vessels and Barges Registered in Canada During July, 1915.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner
134260	Dredge Primrose...	Midland, Ont.....	Dredge.....	Welland, Ont..... 1915	136 5	42 0	10 1	767	Canadian Dredging Co., Midland, Ont.
137928	H. L. Fiolet.....	Chatham, N.B.....	Schr.....	Caraquet, N.B..... 1915	36 0	12 0	4 7	10	H. L. Fiolet, Caraquet, N. B.
134185	Nigadoo.....	St. John, N.B.....	".....	Orland, Me..... 1876	105 5	28 1	8 7	199	Bathurst Lumber Co., Bathurst, N. B.
157875	Sunny Day.....	Lunenburg, N. S.....	".....	West Dover, N.S.... 1915	38 4	10 5	5 4	11	D. Publicover, M. O., West Dover, N. S.

Repair Work, Etc., in Shipbuilding Yards.

The following information has been supplied in response to our enquiries:

Davis Dry Dock Co., Kingston, Ont.—The present season is quieter than usual, partly due to war conditions and the removal of several boats from the lakes, and also to the careful navigating by the masters of boats on account of the extraordinarily low water level. Not since 1895 has the water been as low as during this season, and, while it has remained at practically the one level since the opening of navigation in 1915, it would seem as though there was little possibility of it receding to any great extent. This may be noted as a very good indication that the water has reached its low level, and there is a possibility that in the spring of 1916 vesselmen will note somewhat of a rise in it. Repairs in our dry dock during June and July were as follows: Steamboat Hinckley, owned by Hinckley-Cornwall Forwarding Co., Alexandria Bay, N.Y. Steamboat T. J. Waffle, owned by Capt. A. Foster and W. J. Waffle, Smiths Falls, Ont., repairs to stem, damage caused by running into lock sill. Docking of steamboat New Castanet, of Alexandria Bay, breaking her wheel and shaft; no serious damages, further than this. Steam barge Isabella H., owned by Hinckley-Cornwall Forwarding Co., Alexandria Bay, N.Y., slight repairs. Motor boat Kalolah, owned by Dr. Nichols, New York. Motor cruiser Aurora II., owned by Dr. J. J. Harty, Kingston. The latter two docked for cleaning and painting of hulls. Sailing scow Granger, owned by Capt. La Rush of Kingston, docked for installation of auxiliary 10 h.p. engine.

Western Dry Dock and Shipbuilding Co., Ltd., Port Arthur, Ont.—During the past month we have docked for extensive bottom repairs the s.s. Paliki of the Algoma Central Steamship Line, and the s.s. Glenfinnan of the Great Lakes Transportation Co. These were both fair sized jobs and have required approximately the last month to complete. The prospects for new work appear very poor at present, and the same holds good in regard to repair work, owing to the fact that so many of the lake boats have been removed to the Atlantic coast. The shipyard department is very quiet, but we are keeping our shops busy manufacturing shells for the government, and also are manufacturing light farm tractors.

Yarrows, Limited, Victoria, B. C., July 6 to August 6:—s. s. Princess Adelaide, docked, cleaned and painted; old propeller blade removed and a new spare one fitted; zincs renewed and engine room copper pipes repaired. s. s. Princess Sophia, docked, cleaned and painted; new propeller blade fitted; zincs renewed. s. s. Princess Victoria, made and supplied 4 new boat davits. Sir John Jackson Ltd. tug no. 10, docked, new cast iron propeller made and fitted; copper sheathing on keel renewed. Lobnitz Rock Breaker no. 1, docked, cleaned and painted; machinery overhauled and hull repaired. Dredge Mudlark, docked, cleaned and painted; machinery overhauled and hull repaired. Yacht Nooya, docked, cleaned and painted; new propeller shafting installed with reversible blades. s. s. Llandudno, docked on Government drydock, cleaned and painted; tail shaft drawn; stern tube rewooded; rudder pintles trued up and gudgeons rebushed. s. s. Leebro, docked, cleaned and painted and general deck and engine repairs. Barge Baroda, extensive repairs and alterations for converting her into coal carrying barge. s. s. Queen City, docked, cleaned and painted; boiler repairs. Sundry work and supplies for Naval Yard.

Stranding of the s.s. Henry B. Hall.

An investigation into the causes of the stranding of the George Hall Coal Co.'s s.s. Henry B. Hall, near the Stone Pillars in the St. Lawrence River, June 10, was held at Montreal recently, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. F. Nash and J. C. Cain as nautical assessors.

The master, D. H. Kiah, stated that the vessel is registered in the United States, and had a crew of 17, including two certificated officers, with United States licenses. On leaving Quebec, a licensed tour de role pilot, Lucien Lachance, was engaged to pilot the vessel to St. Simeon and back to Quebec, and being instructed by his agents that the pilot was taking charge, he left the navigation of the vessel entirely in the pilot's hands, he and the other officers being practically strangers to these waters. On the night in question the weather was calm, but slightly smoky, though objects could be seen plainly for four miles. Carrying the impression that the pilot had full charge, he felt relieved of all responsibility, and remained in his room. The pilot did not make enquiries as to the error of the compass, nor as to the peculiarities of the vessel. The compass was practically correct, but the one on the bridge was not used, and therefore he did not know of any error existing. When he felt the vessel bump he went to the bridge and found it was the last of the ebb tide, and that an order for full speed astern had been given and countermanded. With the rise of the tide the vessel was floated off in about half an hour. No observations were taken to ascertain the exact position of the grounding, but soundings were taken.

In response to the court, the master said that he was told the pilot was in charge, and naturally felt that he was not interested in the navigation of the vessel in waters to which he was a stranger. He had been sailing as master on the Great Lakes for about ten years.

The second officer, J. E. Norman, stated that the pilot was sober and awake, or apparently so. It being practically clear weather, he steered by the lights without regard to courses.

The following judgment was delivered:

The court, having carefully considered the evidence adduced, cannot help stating that it is absolutely disgusted with the

manner in which this vessel was piloted and navigated. This is not the first case which the court has been called upon to adjudge, where the evidence has shown a most disgraceful disregard of responsibilities. A light is seen, and it is at once accepted as being the one sought for, and courses are either altered or maintained, as the case may be, without first assuring themselves of the position and exact nature of the light. There is not even a half system adopted of steering courses and taking bearings, but the ship is steered in any manner, very erratically, until it fetches bottom and meets with disaster, and it is realized that a mistake has been made. It has been the policy of this court, in the past, to temper justice with mercy, and allow some margin in a generous degree to faults and errors of judgment which human nature is heir to, and also to the numerous responsibilities which a ship master and a pilot have to shoulder; but in the face of such glaring, culpable misconception of the duties incumbent on the pilot, especially knowing that he, owing to the absence of the master and officer of the ship from the deck, was bearing the full responsibility of the navigation of this vessel. Hence, we emphatically declare that in this case there has been no error of judgment, nor is there anything in the evidence, which has been carefully reviewed, that indicates the least idea of adopting safe measures was ever entertained by the pilot. The reputation of the St. Lawrence has, for many years been attacked, due to the laxity of some of the pilots in giving ordinary attention to their duties. The River and Gulf of St. Lawrence are beautifully lighted, and when the weather is clear, or nearly clear, there is no reason whatever for such casualties occurring. As already stated, this court has always been inclined to leniency, but owing to the frequency of such inexcusable conduct, it wishes that it be recorded far and wide that the utmost severity will be exercised henceforth, and we trust by this announcement that those who are invested with responsibilities and accept same will exercise the caution and precaution which it demands. We have dealt leniently with a former case of a similar nature, and though in this instance the ship suffered no apparent injury and little delay, we declare that the evidence shows that Lucien Lachance was neglectful in exercising the functions of a pilot, and his

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during July.

ARTICLES	CANADIAN CANAL	U. S. CANAL	TOTAL
Copper..... Eastbound	Short tons 2,417	17,601	20,018
Grain	Bushels 1,548,861	840,801	2,389,662
Building stone	Short tons 226,700	539,090	765,790
Flour	Barrels 333,866	6,691,285	7,025,151
Iron ore	Short tons 6,454	74,004	80,458
Pig iron	" 1,778,218	2,160,148	3,938,366
Lumber	" 11,353	26,816	37,669
Wheat	Short tons 3,985	3,819	7,804
General merchandise	"	"	"
Passengers	"	"	"
Coal, hard	Westbound Short tons 4,018	311,356	315,374
Coal, soft	" 48,700	1,710,478	1,759,178
Flour	Barrels		
Grain	Bushels		
Manufactured iron	Short tons 669	19,731	20,390
Iron ore	"		
Salt	Barrels 2,940	62,293	65,233
General merchandise	Short tons 31,919	116,015	147,934
Passengers	Number 3,581	4,010	7,591
Summary.			
Vessel passages	Number 507	2,464	2,971
Registered tonnage	Net 919,753	6,788,870	7,708,623
Freight—Eastbound	Short tons 466,728	6,999,869	7,466,597
—Westbound	" 85,716	2,166,924	2,252,640
Total freight	" 552,444	9,166,793	9,719,237

contempt of this court's orders to be present indicates a lack of mentality. Moreover, having at heart the good name and fame of the St. Lawrence, and with a view to preventing reflection being cast on the reputation of the qualified members of the Corporation of Pilots, in fairness to them, and for the other reasons as stated above, we suspend the license of Lucien Lachance for one year from this date. We reiterate that in all future cases of a similar nature no mercy will be shown, and a cancellation of the license will be the result and decision.

With respect to the master and second officer, they being U. S. citizens, this court cannot deal with them, but for their benefit, as well as others, we will state that we are simply astounded at the lack of interest shown as to their responsibilities. Knowing that their vessel was chartered for the season to ply in the same waters, one would naturally suppose that they would familiarize themselves somewhat with the names of the lights, courses, etc. If, as Capt. Kiah stated, he was informed that the pilot would take charge, some excuse can be formed for him, and a degree of blame attached to the officer who made such statement and led the master into a false sense of security. We will abstain from reprimanding the master or officer, or censuring their conduct, in view of the circumstances, but we maintain that it is their own duty, for their information and security, to check the various courses which the pilot gives, by bearings and reference to the chart.

Atlantic and Pacific Ocean Marine.

The Canada Steamship Lines s.s. Parima, operating on the New York-West Indies service, was damaged by fire at New York, July 29.

The White Star-Dominion Line steamships Megantic and Northland, which have been operating on the St. Lawrence route, have been taken over by the British Admiralty.

The s.s. Jacona, which was torpedoed by the Germans recently, was formerly the Bellona, and was owned by the Thomson Line and operated in the Canadian trade.

The Norwegian steamship Fimreite, under charter to the Nova Scotia Steel and Coal Co., was torpedoed recently, when one day out from Swansea, Wales, for Wabana, Newfoundland, with ore.

Pickford and Black are reported to have secured the steamships Atlantis and Jose for their service with Cuba and Jamaica, the former being due at St. John early in September, and the latter towards the end of the month.

The British s.s. Romney, which was damaged through stranding on Green Island reef in the St. Lawrence River, June 24, left the Davie Shipbuilding and Repairing Co.'s dock at Levis, Aug. 1, and proceeded to Montreal.

The s.s. Easington, owned by Furness, Withy & Co., and engaged in the Canadian trade, is reported sold to British buyers for about £24,000. She was built at Newcastle, England, in 1907, and is 1,387 tons gross, 863 register, with deadweight capacity of 2,100 tons.

The recently built s.s. Aitearoa, owned by the Union Steamship Co. of New Zealand, which was launched at Glasgow, Scotland, June 20, for service between Australia, New Zealand and Canada, has been taken over by the British Admiralty, and is announced to have been renamed Avenger.

Furness, Withy & Co. are reported to have purchased the s.s. Lord Lonsdale for £85,

000, and to have renamed her Annapolis. She is 4,567 tons gross, 2,895 register, with 7,500 tons deadweight capacity, built on the Isherwood system at Glasgow, Scotland, in 1911. She has a speed of 11½ knots.

The Ulster Steamship Co. (Head Line) s.s. Bengore Head and the Dominion Coal Co.'s s.s. Batiscan collided Aug. 1, near Hare Island, about 81 miles below Quebec. The Batiscan, although damaged about the bow, proceeded on her trip to Montreal, while the Bengore Head, as she was making considerable water in no. 2 hold, was beached.

The s.s. Huntress, which is being operated under special charter from the British Government, by the Peninsular and Oriental Navigation Co., and which was at Montreal early in August, was formerly a German vessel, owned by the Hamburg American Line, and named Frisian. She is of 10,000 gross tons, and was on her maiden trip when captured by Great Britain.

The Mayor and corporation of the city of Quebec, together with representatives of the transportation and business interests, welcomed the captain of the American-Hawaii Steamship Co.'s s.s. Missourian, and presented the vessel with a silver cup, Aug. 3, on the first visit of the vessel to the port. The Missourian, which is now engaged in transporting horses to France for war service, was the first cargo vessel to pass through the Panama Canal.

In connection with the recent reports that the Pacific Mail Steamship Co., operating in the trans-Pacific trade out of San Francisco, is to abandon its business on the coming into force of the Seamen's Act in November, P. Manson, General Manager of the Atlantic Coast line, who recently returned from a trip to the Orient, is reported to have stated that the company will not go out of business, and that there is no chance that the company will sell out.

The Pacific Mail Steamship Co. is reported to have sold five of its vessels, viz.—China, Korea, Manchuria, Mongolia and Siberia, to the Atlantic Transport Co. of West Virginia, a subsidiary of the International Mercantile Marine Co. It has been reported, denied and reiterated that the company will go out of business on the coming into force in November, of the Seaman's Act, which, it is claimed, will militate against the paying operation of U. S. owned steamships in cross ocean traffic.

The Marine Transportation Service Corporation has been incorporated in New York with \$1,000,000 capital, to operate steamships from New York to California and Puget Sound ports, via the Panama Canal, and also to South American ports. It was announced that the Pacific Coast Line would be inaugurated during August with the sailing of the s.s. Eureka from New York, and that six vessels would be utilized in the service. The General Manager of the company is G. J. Hammell, New York.

The Osaka Shosen Kaisha s.s. Hawaii Maru was expected to arrive at Victoria, B.C., Aug. 31, on her maiden trip from Japan, direct from Yokohama. It was originally announced that she would call at Hong Kong, China, but owing to delays with the builders, the call was dropped from the schedule for the initial trip. At her trials, over a measured course, she developed 16.8 knots, and was expected to complete the run from Yokohama in 13 days. The s.s. Manila Maru will not be ready for service until September, and is expected to arrive at Victoria about Nov. 9.

A final disposition of the s.s. Dacia was made in the French courts Aug. 4,

when it was declared that the vessel was a legal prize, and the seizure perfectly valid. It will be remembered that the s.s. Dacia was acquired from the Hamburg-America line by a United States citizen of German descent, with the object of shipping freight to Germany. This so-called sale was declared by Great Britain not to be in accordance with the international rules, which do not recognize the transfer of vessels belonging to belligerents during war. Great Britain also announced that the Dacia would be considered as open to capture as a German vessel if she came into the open sea. Her dispatch from the United States port was considerably delayed while the matter was being debated, but the British attitude remained unaltered. The vessel eventually sailed with a cargo of cotton, and was captured by a French vessel and dealt with by the prize court there.

Maritime Provinces and Newfoundland.

The name of the steamboat Isaac N. Veasey, no. 116,742, registered at Halifax, N.S., as owned by C. A. Larder, New Ross, N.S., has been changed to La Have.

An order in council has been issued amending the Halifax, N.S., pilotage district bylaws to provide that the amount payable to a pilot on superannuation shall be increased from \$500 to \$600 a year.

The icebreaking steamship Bruce, which the Russian Government purchased from the Reid Newfoundland Co. recently for ice-breaking services in the port of Archangel, arrived there Aug. 23.

The steamboat Premier, which was wrecked about a year ago, when running from St. John, N.B., to Nelson, N.B., where she was to be operated as a ferry, has been purchased by T. McCoy, St. John, who is having her overhauled for operation on the St. John River for general purposes.

The Newfoundland sealing vessel Neptune, which was used in the Scott expedition to the far north about two years ago, has been sold to a moving picture company for an expedition to the Arctic regions. She was built at Dundee, Scotland, in 1872, and is 684 gross tons.

Canada Steamship Lines s.s. Kenora, which for the past few weeks has been engaged in the coasting trade, was reported to be fast ashore at Low Point, in the harbor entrance at Sydney, N.S., August 5. She was driven ashore during a heavy gale, and is reported to be considerably damaged.

We are officially advised that the Canada Atlantic and Plant Steamship Co. has discontinued a portion of its service calling at Hawkesbury, N.S., and Charlottetown, P.E.I., for the present, owing to small tourist travel, but will probably resume it in September, if autumn business warrants it. The service between Halifax, N.S., and Boston, Mass., continues as heretofore.

A proclamation has been issued declaring Dipper Harbor, N.B., to be a port to which part XII. of the Canada Shipping Act shall apply. The harbor includes all the waters of the Bay of Fundy inside a line of 20 fathoms at low water, and between lines due north and south through points one nautical mile due east and west respectively, of the lighthouse on Campbell Island, in the entrance to Dipper Harbor.

Reference was made in Canadian Railway and Marine World for August, to a contract having been made by the Prince Edward Island Government for the operation of the s.s. Senlac on a service between the Island and the main land, for the remainder of the year. It should have

stated that the contract was made by the Department of Trade and Commerce of the Dominion Government, and not by the Prince Edward Island Government.

The Myrtle Leaf Navigation Co., Ltd., has been incorporated under the Dominion Companies Act, with \$64,000 capital and office at Apple River, N.S., to take over the schooner named Myrtle Leaf, to own and operate steam and other vessels, and to carry on a general navigation business. The incorporators are M. G. and E. A. White, Sussex, N.B.; G. W. Smith and E. Wasson, Apple River, N.S.; E. K. Merriam, Port Greville, N.S.

F. P. Gutelius, General Manager, Canadian Government Railways, when in St. John, N. B., early in August, is reported to have stated that a number of improvements will be undertaken in the harbor, as soon as the financial situation improves. These improvements will include the construction of two new piers, each 750 ft. long, and the replacing of the grain elevator which was destroyed by fire some time ago. The elevator will not be built on the old site, as it has been decided to use that for other purposes.

The steamboat Avonlea, operated on the ferry service across the Mira River at Mira Gut, N.S., was removed from the service at the end of July, owing, it is stated, to the objection that the engineer in charge was not a duly qualified man. The owners stated that the regular engineer had left on account of ill health, and a thoroughly competent man was in charge, but he had no certificate. No qualified engineer was available in the vicinity, and the income from the traffic, even together with the subsidy, was insufficient to cover the cost of engaging expensive outside assistance.

A New York shipping paper purports to give some information of certain changes in shipping routes regarding Canadian vessels, which, to say the least of it, is very misleading. It states: "The gradual withdrawal of trans-Atlantic steamers from St. John's because of the transport needs of the British Admiralty and the requirements of British trade has reached a point where only three small steamers are now plying between St. John's and Liverpool." It is evident that when mentioning St. John's, it is St. John, N.B., that is meant; St. John's is in Newfoundland. It may be taken from this that the only steamship service which is being operated between Canada and Great Britain at present is that between St. John and Liverpool, consisting of three small vessels, with no passenger accommodation. For main trans-Atlantic services, St. John has been for many years used as a winter port only, the summer traffic coming up the St. Lawrence to Quebec and Montreal. It also states that the Allan Line service which has been carried on for nearly fifty years between St. John, Halifax, Philadelphia and Glasgow, has been discontinued, and the vessels so engaged transferred to the service between Montreal and British ports. No doubt, when the St. Lawrence navigation season closes, these vessels will use the winter ports as heretofore.

Province of Quebec Marine.

The s.s. Prefontaine, owned by J. Malo, Montreal, was driven ashore at Port Platon, near Quebec, August 4.

The depth in the Montreal harbor at Aug. 12, was 29 ft. 7 ins., a decrease of 3 ft. since April and of 2 ft. since May. The depth of water at Aug. 12, 1914 was 30 ft.

The Montreal Harbor Commissioners have completed the forming of a new river chan-

nel in the neighborhood in St. Helen's Island, with the object of lessening the current outside the harbor proper.

The Dominion Government s. s. Montcalm returned to Quebec, Aug. 10, after a month of touring the various lighthouse stations in the Gulf of St. Lawrence with provisions, etc.

The Imperial Oil Co. is arranging with the Quebec Harbor Commissioners for the construction of oil storage tanks on a portion of the Commissioners' property, with the view of facilitating the supply of oil to ocean vessels.

A sub contract has been given for the construction of the power house in connection with the Dominion Government dry dock at Lauzon, Que. The power house will be 120 by 100 ft., of brick and steel. The general contractors are M.P. and J. T. Davis.

The Montreal Harbor Commissioners' tug Sir Hugh Allan collided with the Dominion Government steamboat Levis in the St. Lawrence River, Aug. 21, sinking her in a few minutes. The Levis was on her way to Three Rivers, with a number of laborers from Government dredges. All were safely landed, as the accident occurred in shallow water. The Minister of Public Works was on board the Sir Hugh Allan.

The sale is reported of the s.s. Sindbad, owned by F. E. Hall and Co., Montreal, for about £6,850. She was built at Newcastle, England, in 1883, and is an iron vessel with double bottom for watertight ballast, and three watertight bulkheads. She is equipped with fore and aft compound engines with cylinders 27 x 54 x 33 ins., supplied with steam by one Scotch boiler at 75 lbs. pressure. Her dimensions are, length 216 ft. 2 ins., breadth 31 ft. 2 ins., depth 16 ft. 2 ins.; tonnage, 897 gross, 539 register.

The return of vessel passages, etc., through the Lachine Canal for July show that there were 1,143 vessel passages, 429 less than in July, 1914. The tonnage operated was 593,509, against 842,087; passengers carried, 12,162, against 34,818; cargo tonnage 452,033, against 715,628. A number of lake vessels usually engaged in traffic through the Lachine Canal, are at present being operated in the coasting and ocean trades, but some of them are expected to return to the lake service in time for the removal of the grain crop.

An order-in-council has been issued amending the regulations for the working and management of the dry dock at Levis, fixing the following charges: For all vessels up to 1,000 tons, \$300 for the first day of docking and \$50 a day for each subsequent day; for all vessels between 1,000 tons and 2,000 tons, \$350 and 4½c per ton per day; for all vessels above 2,000 tons, \$400 and 4½c per ton per day up to 2,000, and 2c per ton per day on all tonnage over 2,000. When a vessel is docked solely for painting and scraping or repair to propeller, the tariff is suspended, and a straight rate of \$50 is charged for pumping out the dock, and 5c per ton per day, not exceeding four days, and small repairs to the vessel's bottom, not exceeding \$50, will be allowed under this charge. When two or more vessels of the same owner are docked together for painting or repairs to propeller, only \$50 is to be charged for pumping out, but each vessel will be charged \$50 a day should the tonnage of each at 5c a ton per day not amount to that sum. Should a vessel for such minor work remain in dock beyond four days, then the full rates will be charged, including the charges for the first day. Cargoes will be charged the same as tonnage, but no charge will be made for ballast, and coal will be classed

as cargo. In no case will the charge be less than \$50 a day for lying in dock during the season of navigation, and no charge will be made for Sundays, unless work be done on the vessel.

Ontario and the Great Lakes.

The Northern Navigation Co.'s s. s. Noronic, which grounded on a sandbank in the Detroit River, July 31, was released Aug. 3, without damage.

A press report states that the British Government is about to place an order at Port Arthur, for the building of two steel coaling vessels.

The U. S. ferry steamboat Clarence Fix, operating on the ferry service between Buffalo, N. Y., and Erie Beach, Ont., while under the charge of the Canadian customs officers recently for an infraction of the customs regulations, was removed by means of a truck at the end of July, and taken back to Buffalo.

Canada Steamship Lines s. s. Calgarian in arriving at Port Weller, Aug. 6, with a cargo of piling to be used in construction of harbor works there, is the first vessel to enter the port, which is under construction by the Dominion Government at the outlet of the Welland Ship Canal into Lake Ontario.

In addition to the vessels equipped with wireless telegraphy by the Marconi Wireless Telegraph Co. of Canada, as mentioned in our last issue, the steam tug Harrison, owned by J. Harrison and Sons, Owen Sound, and the steam tug Fischer, owned by the Reid Wrecking Co., Sarnia, have been equipped.

The Marine Department has given notice that the new gas lighted beacon at the outer end of the west pier at Cobourg will be placed in operation Sept. 1. It is an occulting white light, placed 20 ft. back from the outer end of the pier, and elevated 40 ft. It will be visible for 11 miles from all points of approach.

Toronto, Hamilton and Buffalo Ry. representatives waited on the Minister of Public Works at Ottawa, Aug. 12, to urge the development of Port Maitland as a lake port. The company proposes to operate car ferries and ore vessels between Port Maitland and Erie, Pa. An expenditure of \$20,000 on the port for the current year was asked.

The Port Severn locks at the Georgian Bay end of the Trent Valley canal, were opened for traffic July 26. The Trent Valley canal has been in progress for many years, and as stated at the opening, it is expected that it will be completed in a year or two. The canal will be 222 miles long, the highest point being Lake Simcoe. From Georgian Bay, the rise is 318 ft., and from Lake Ontario 470 ft.

The United States s. s. W. H. Wolf has been libelled at Detroit, Mich., by the Cleveland Grain Co., on a claim for damages of \$34,274 for a cargo of oats from Fort William, which it is alleged was damaged through the vessel springing a leak after striking the bank in the Livingstone Channel in Nov. 1913. It is stated that the steering gear was faulty and obsolete, and was the cause of the accident.

The Northern Navigation Co.'s steamships are now calling at Detroit and Windsor for passengers for the head of the lakes. It has not been decided whether this will be permanent or not. An announcement made by the President of the Windsor Board of Trade, states that the change will be of considerable benefit to that city, as well as to the company. It is not intended, as inti-

mated, in the daily press, to remove the headquarters of the company from Sarnia.

The steamships Owego, George F. Brownell and Binghampton formerly owned by the Erie Railroad Lake Line, a subsidiary of the Erie Rd., have been sold to New York parties for coasting and ocean service, as a result of the Interstate Commerce Commission's decision that the company, as operating a railway must sever its connection with any steamboat lines. These vessels are cut in two to allow of their passing through the Welland Canal, and are again joined at Montreal.

The Georgian Bay Coal Co., Ltd., has been incorporated under the Dominion Companies Act, with \$100,000 capital and office at Toronto, to acquire coal and other lands, to carry on a general mining business, and in connection therewith to own and operate steam and other vessels, docks, wharves and other transportation facilities. The incorporators are, R. C. Vaughan, L. W. Mitchell, F. J. Buller, G. N. Limpriht and F. C. Allen, all of whom are officials of, or are associated with, the Canadian Northern Ry.

The U. S. Lake Survey reports the levels of the Great Lakes in feet above tidewater for July as follows,—Superior 602.29; Michigan and Huron 579.92; Erie 572.08; Ontario 245.13. Compared with the average July levels of the past ten years, Superior was 0.19 ft. below; Michigan and Huron 1.12 ft. below; Erie 0.75 ft. below, and Ontario 1.83 ft. below. It was anticipated that during August, Superior would rise 0.2 ft.; Michigan and Huron would remain stationary, and that Erie would fall 0.2 ft., and Ontario 0.3 ft.

The s. s. Alexandria, owned by Canada Steamship Lines, Ltd., while en route from Montreal to Toronto with general cargo, was driven ashore at Scarborough, near Toronto, Aug. 3, during a storm, and became a total wreck. The crew were saved with considerable difficulty. The Alexandria was built at Montreal in 1883, of oak, and was of the following dimensions,—length 173 ft. 7 ins., breadth 30½ ft., depth 8 ft. 4 ins.; tonnage, 863 gross, 508 register. She was formerly owned by the Ontario and Quebec Navigation Co., Picton, Ont., one of the companies absorbed by Canada Steamship Lines, Ltd., and until recently had been operated as a passenger vessel.

The U. S. Lake Survey, in relation to traffic in the St. Marys River above the locks, announces that a signal has been provided on the northwest pier above the third lock, consisting of a cylinder 4½ ft. diam. by 5½ ft. high, with west front painted yellow and showing a yellow light at night. When traffic in the canal leading to the third lock is congested, this signal will be hoisted about 35 ft. above water. When so hoisted it will indicate that down bound vessels loaded for the third lock should anchor north of the ranges until the signal is lowered. The absence of the signal will indicate that pier space is available in the canal. Vessels loaded to pass the Poe lock will not be governed by this signal.

Manitoba, Saskatchewan and Alberta.

The ferry service which has been operated for several years across the Assiniboine River, between Charleswood and Assiniboia, will be discontinued as soon as the bridge, now nearing completion across the river, is ready for traffic.

The Hudson's Bay Co.'s s. s. Fort McMurray is reported to have been sunk at the Bouillion Rapids in the Peace River, by striking a rolling boulder which crushed in the bottom. It is stated that repairs would

be completed and the vessel running again by the end of August.

The material for the construction of the Peace River Tramway and Navigation Co.'s steamboat is rapidly being assembled at Peace River Crossing, and as soon as the balance, which is on the way from Vancouver, arrives, construction will be commenced and continued until the vessel is completed. This is hoped to be accomplished by the reopening of navigation in May 1916. It will be 165 ft. long, 35 ft. beam, with accommodation for 110 cabin passengers and 300 tons of freight. The engine cylinders will be 20 by 84 ins., developing about 800 n.h.p. D. A. Thomas, who is at present in Canada representing the British Government on the munitions of war matters, is chiefly interested in this company, the head office of which is at Vancouver, B. C.

British Columbia and Pacific Coast.

Vancouver harbor, as defined by the Vancouver Harbor Commissioners Act, covers 98.4 miles of water front, and an area of 49.08 square miles.

The Grand Trunk Pacific Ry. has deposited with the Minister of Public Works at Ottawa, a description of the site with plans of a wharf and warehouse to be built at Burrard Inlet, Vancouver.

The s. s. Grahamland, which was at Victoria, B. C. recently for lumber for Great Britain, was formerly the German collier Josephena, and was captured from the Germans during the sea fight at the Falkland Islands, during the earlier stages of the war.

The s. s. Leelanaw, owned in New York, which was recently sunk by the Germans in the North Sea, was formerly owned by the Dunsmuir interests at Victoria, B. C., and has had a very varied career since leaving her builders' hands at Newcastle, England, in 1886.

The Pacific Cable Board's cable ship Strathcona has been wrecked on an unknown reef, near Suva in the southern Pacific, while bound from Auckland, New Zealand to Fanning Island with supplies. The crew were rescued by the cable ship Iris.

The Victoria Board of Trade is taking up the matter of increased dry dock facilities there, on instructions from the council, on account of several vessels having to be taken to U. S. ports for repairs owing to lack of adequate accommodation for vessels of large size at Victoria.

McFee Henry and McDonald, Ltd., has been incorporated under the British Columbia Companies Act, with \$50,000 capital and office at Vancouver, to carry on a general dredging business, and in connection therewith to own and operate all kinds of vessels and vessel operating facilities.

The Dominion Public Works Department is dredging a channel 300 ft. wide and 10 ft. deep at low water, on the north side, and 400 ft. from the jetty recently built along the north shore of Iona Island over Sturgeon bank, to facilitate the construction of a dredged channel into the North Arm of the Fraser River.

The Norwegian s. s. Thor, operating between Nanaimo, B. C., and San Francisco, California, with coal, under charter to the Western Fuel Co., San Francisco, ran ashore in Umatilla reef, 672 miles north of San Francisco, at the end of July. She was subsequently taken to Victoria for examination and repairs.

Considerable progress has been made on the construction of the Government dock at

the foot of Salisbury St., Vancouver. The last of the cribs for the foundation has been placed, and rather more than half of the surmounting wall has been finished. The balance of this, and the filling in of the interior, will, it is expected, be completed by November. The sheds which are to be erected will run the full length of both sides of the dock, which is about 800 ft. long. On the filled in portion, will be placed seven railway tracks, three of which are to be utilized for the grain elevator. The work on the foundation of the elevator is well in hand, and it is stated that the whole will be complete in readiness for handling this year's crop. Two grain galleries will run the full length of the dock.

Mainly About Marine People.

Capt. Jos. Rinfret has been appointed to the command of the Canada Steamship Lines s. s. Quebec, vice Capt. L. R. Demers resigned.

W. Carruthers, who died at Toronto, at the end of July, was the second son of James Carruthers, President, Canada Steamship Lines Ltd.

Capt. F. G. Cook, who was well known as a master mariner in the earlier days of shipping in the Maritime Provinces, died at Central Chebogue, N. S., Aug. 16, aged 98.

Ethelbert Furness has been elected a director of Furness Withy and Co., Ltd., to fill the vacancy caused by the death of Sir Stephen Furness.

Capt. H. W. Lloyd, master of Furness Withy and Co.'s s. s. Eagle Point, died at Gaspe, Que., at the end of July, where the vessel was taking on a lumber cargo. The funeral took place at Montreal.

R. G. Allan, who died at Liverpool, England, recently, was grandson of Capt. Alex. Allan, the founder of the Allan Line. He was, from 1884 to 1904, a member of the Mersey Dock and Harbor Board, but had not been connected with the Allan Line for several years.

John Fleetwood, who retired from the position of Passenger Manager at Liverpool, England, for the American Line and the White Star-Dominion Line, at the end of 1914, died there recently aged 64. While with the company he was in charge of the Canadian services.

Commander E. Outram, R.N.R., who was in command of the Allan Line s.s. Alsatian prior to the war, and who has been continued in the command since the vessel has been utilized as an auxiliary cruiser by the British Admiralty, has been given the Distinguished Service Order for services with the patrol cruisers.

Capt. L. R. Demers, who has resigned from the command of the Canada Steamship Lines s. s. Quebec, was appointed a pilot in 1862. He took charge of the Dominion Government s. s. Druid on buoy service in 1869 and resigned in 1894 to return to the pilot service. Prior to taking command of the s. s. Quebec, he was master of the Quebec Steamship Co.'s s. s. Campano for 12 years.

The funeral of Miss Gwen Allan, one of the two daughters of Sir Montagu Allan, who lost her life as the result of the torpedoing of the s. s. Lusitania by the Germans, took place at Montreal, July 27. The body of the other daughter has not been recovered. Sir Montagu Allan was not present, as he was unable to leave England, where he is with Lady Allan, who was also a passenger on the vessel, and has not yet sufficiently recovered from injuries she received.