

Canadian Railway and Marine World

November, 1916.

Railway Location and Construction Through Muskeg Swamps.

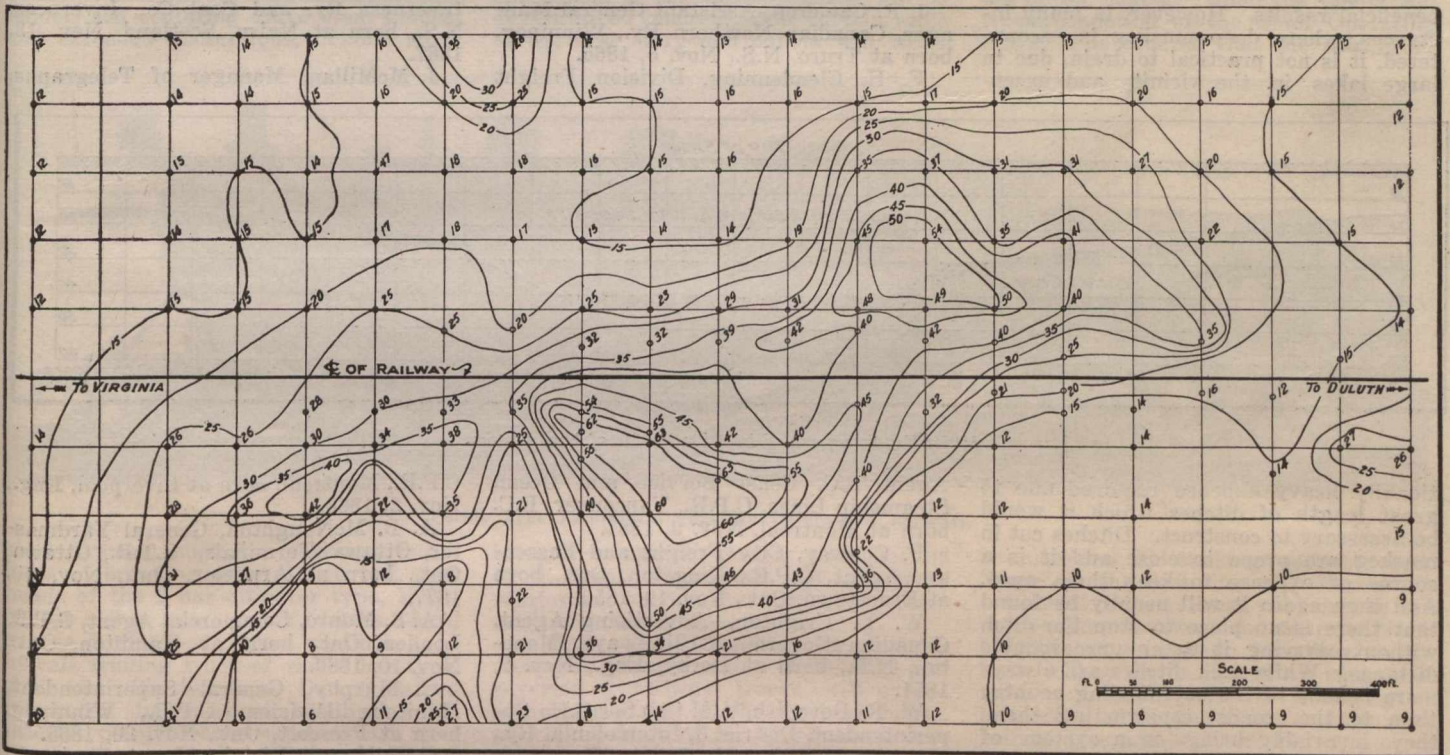
By J. L. Pickles, Chief Engineer, Duluth, Winnipeg & Pacific Railway.

In locating roads over muskeg country, it is well to have a slight knowledge of the geology and the accepted theory of this formation. When the continental ice cap receded, it left vast quantities of glacial drift, composed of all sorts of material, varying in size from huge boulders weighing several hundred tons down to an impalpable powder forming clay. It is owing to this glacial invasion that the surface differs from the normal type in the minor topography and drainage. The whole plateau is deeply covered with glacial deposits, which have disarranged the drainage so that there are abundant

tions over these swamps that a thorough investigation should be made to determine contours of the hard bottom. We are too apt to take it for granted that the muskeg is but of a shallow formation, and trust to our road to be supported by the decayed vegetation rather than to accept the country surrounding these swamps, which is invariably covered with very thick vegetation. There is a great temptation to run our lines through the open country, in order to avoid a more difficult location on higher ground, in which the regularities are apparent. In locations over such swamps, it would be

doubtedly cause a great deal of criticism of his location, it would in some instances be a very great economy to do so.

I have made a study of the vegetation covering these swamps, with a view to ascertain if the growth was in any way indicative of the depth of the swamp. Generally speaking, it will be found that the smaller the tree growth and the more luxuriant the growth of the moss, the deeper will be the muskeg, but I have not as yet been able to ascertain anything more than a very approximate depth by such observations. The areas found void of tree growth should be re-



Miller Trunk Swamp, Feb. 1913. Contour Map Showing Conditions of Hard Bottom. Contour interval 5 ft. A depth less than 15 ft. supports traffic.

lakes, swamps and muskegs. Overlaying the glacial drift and under the swamp is usually found a stratum of impervious blue clay. As the ice melted, the materials were deposited, as an over-mantle of glacial drift, in moranes and in a very irregular manner, so that the topography of the country did not conform to the usual regularity presented by country formed by the erosive action of water. Huge quantities of ice were left embedded, afterwards melting, which formed large circular depressions or kettles. These became filled with water in form of lakes. The muskeg is of recent formation and is composed of decayed moss and various vegetable growth, which, by constant decay and renewal, gradually filled the depressions until we have what are known today as muskeg swamps.

As the added formation does not bear the regular contours usually found, it is very necessary in determining loca-

well for the engineer to proceed in the same manner as he would in locating over frozen lakes, and not trust the moss covering to support his line until he has thoroughly tested the same and ascertained what the bearing value of the soil is. In testing it will quite often be found that the surface is floating and the lake is not yet filled to the bottom. In such cases disaster is sure to follow unless adequate measures are taken to support the track. Another weakness that is often met with in such locations is the desire to obtain long tangents. It would be much better to introduce curvature in the alignment, in order to keep the location over shallow swamps, than to produce long tangents crossing over deep pockets. It would, of course, take a great deal of stamina on the part of any engineer to introduce apparent reversed curves on what appears to be level ground; and while this would un-

garded with suspicion, as this usually indicates deep and recent formation and quite often indicates floating bog.

It has been found in some of the lines already constructed, that had adequate soundings been made previous to final locations, a great deal of money would have been saved over what was necessarily spent to bring the road up to the required standard after operation was begun. As a concrete example, I would like to draw attention to the accompanying plan. As constructed, the line at this point was first heavily corduroyed, which broke through before traffic was started. Soundings taken on centre line after failure showed a depth of about 60 ft. to apparently hard bottom. About 83,000 yards of material were required to again bring the track above water. A great deal of time and money was lost, due to the failure of the surface. All of this would have been avoided had adequate

soundings been taken during the location, and the time and money lost in this one instance would have been much more than required for adequate sounding of the entire line.

In railway construction over muskeg swamps, the methods in general use are: (1) To follow out the usual form of construction, laying the track directly on the surface and afterwards ballasting up to grade. (2) To corduroy or crossway the surface, using long timbers, laying them in alternative layers parallel and transverse to the line, afterward bringing the track to grade with ballast. (3) By excavating ditches along the side of the line, using the material excavated to form embankment. (4) The use of sawdust, cinders, or other light material, floating the line over and depending on the buoyancy of the muskeg for support. (5) Fill to the bottom with logs and timber (6) Fill with excavated material. (7) By bridging. (8) Where considerable embankment is to be carried over the swamp, piles have been driven on about 4 ft. centres capped with grillage and the fill constructed on the same.

Drainage is often resorted to with very beneficial results. However, in many instances, where deep muskeg is encountered, it is not practical to drain, due to large lakes in the vicinity and excep-

Birthdays of Transportation Men in November.

Many happy returns of the day to—

F. W. Alexander, A.M.Can.Soc.C.E., Division Engineer, Alberta Division, C.P.R., Calgary, born at Fredericton Jct., N.B., Nov. 22, 1878.

J. O. Apps, General Baggage Agent, C.P.R., Montreal, born at Tara, Ont. Nov. 9, 1877.

A. B. Atwater, Assistant to President, lines west of Detroit and St. Clair Rivers, G.T.R., Detroit, Mich., born at Sheffield, Ohio, Nov., 1845.

H. E. Beasley, General Superintendent, Esquimalt and Nanaimo Ry., Victoria, B.C., born at Hamilton, Ont., Nov. 10, 1862.

O. H. Becker, District Freight Agent, C.P.R., Portland, Ore., born in Norfolk County, Ont., Nov. 19, 1873.

C. C. Bonter, General Baggage Agent, Canada Steamship Lines, Ltd., Montreal, born at Toronto, Nov. 13, 1884.

G. B. Burchell, General Manager, Colonial Coal Co., North Sydney, N.S., born at Sydney, N.S., Nov. 1, 1877.

J. R. Cameron, Assistant General Manager, Canadian Northern Ry., Winnipeg, born at Truro, N.S., Nov. 5, 1865.

F. H. Clendenning, Division Freight

Agent, District 1, National Transcontinental Ry., Quebec, Que., born at St. Jerome, Terrebonne County, Que., Nov. 16, 1887.

H. E. Haanel, Trainmaster, District 1, Saskatchewan Division, C.P.R., Regina, born at Cobourg, Ont., Nov. 2, 1880.

Grant Hall, Vice President and General Manager, Western Lines, C.P.R., Winnipeg, born at Montreal, Nov. 27, 1863.

John L. Hodgson, General Car Foreman, National Transcontinental Ry., Transcona, Man., born at Simcoe, Ont., Nov. 15, 1858.

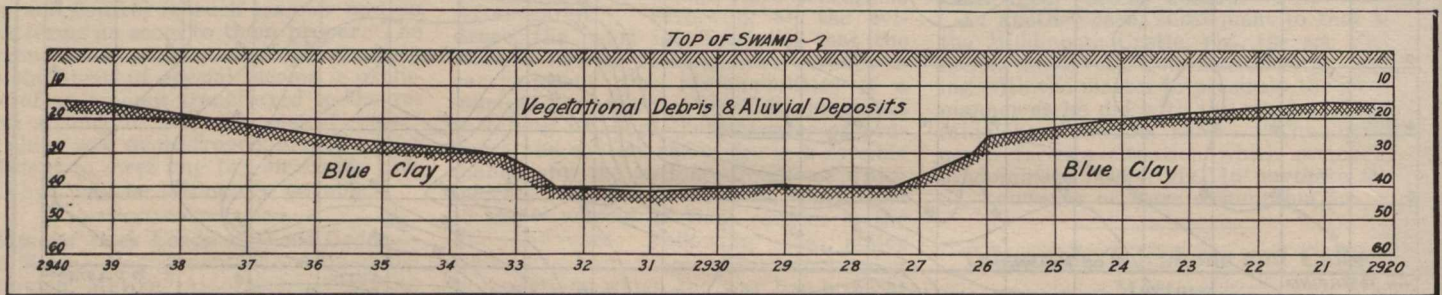
W. M. Hood, Travelling Passenger Agent, Canadian Northern Ry., Toronto, born at Harrow, Ont., Nov. 25, 1872.

N. B. Jones, Car Foreman, C.P.R., Kenora, Ont., born at St. John, N.B., Nov. 9, 1869.

W. E. Ladley, Superintendent of Motive Power, Reid Newfoundland Co., St. John's, Nfld., born at Leeds, Eng., Nov. 1875.

J. McGillivray, Receiver and Manager, Inverness Ry. and Coal Co., Inverness, N.S., born at Nairn, Scotland, Nov. 13, 1867.

J. McMillan, Manager of Telegraphs,



Miller Trunk Swamp, Feb. 1913; Profile of hard bottom.

tionally heavy expense required due to great length of ditches which it would be necessary to construct. Ditches cut in muskeg are prone to close and it is a source of expense to keep them open. And then again it will usually be found that there is no place to stop the ditch without carrying it to an unreasonable distance. While such ditches are always more benefit to the surrounding country than to the roads constructing them, they invariably bring on a system of suits in which the company is usually the loser. It is for this reason alone that many of the swamps in the northern part of Minnesota are not drained.

Whatever the construction decided upon, it must be borne in mind that a good foundation must be obtained, otherwise there will be a constant source of expense and trouble from rail running, causing broken rails, derailments, and a constant settlement, which will result in very heavy maintenance charges.

In locations over this country, it is well to always keep the grade as near the surface as good drainage will permit, in order not to overload the surface by the weight of heavy embankments, which are apt to break through the surface and sometimes will cause rupture through the underlying stratum into the substratum, which is of an older formation but not yet solidified sufficiently to carry the increased load.

Swamps are like wrecks—there are no two of them alike, and they are very good things to avoid if at all possible.

Agent, B.C. Coast Service and Ocean Steamship Lines, C.P.R., Vancouver, B.C. born at Montreal, Nov. 9, 1881.

F. Conway, City Freight and Passenger Agent, C.P.R., Kingston, Ont., born at Ernestown, Ont., Nov. 19, 1850.

W. L. Crighton, Advertising Agent, Canadian Government Railways, Moncton, N.B., born at Derby, Eng., Nov. 9, 1871.

W. R. Devenish, A.M.Can.Soc.C.E., Superintendent, District 3, Intercolonial Ry., Moncton, N.B., born in County Tipperary, Ireland, Nov. 21, 1882.

A. C. Douglas, acting Assistant General Purchasing Agent, C.P.R., Montreal, born at Montreal, Nov. 10, 1881.

W. Downie, ex-General Superintendent, Atlantic Division, C.P.R., now of Whitby, Ont., born at Rock Currie, Ireland, Nov. 12, 1850.

Jos. Dubrule, jr., Manager, Canadian Pacific Car and Passenger Transfer Co., and President, Prescott and Ogdensburg Ferry Co., Ltd., Prescott, Ont., born at Spencerville, Ont., Nov. 14, 1872.

R. L. Fairbairn, General Passenger Agent, Canadian Northern Ry., Toronto, born at Stillwater, Minn., Nov. 24, 1880.

W. A. Fitch, Assistant Superintendent, District 3, Intercolonial Ry., Moncton, N.B., born at Kentville, N.S., Nov. 25, 1867.

P. J. Flynn, Superintendent, Districts 2 and 3, Central Division, Canadian Northern Ry., Winnipeg, born at Fishers, N.Y., Nov. 22, 1872.

J. E. Gibault, A.M.Can.Soc.C.E., Resi-

C.P.R., Montreal, born at Liverpool, Eng., Nov. 2, 1866.

A. B. McNaughton, General Yardmaster, Ottawa Terminals, G.T.R., Ottawa, Ont., born at Arnprior, Ont., Nov. 10, 1877.

A. S. Munro, Commercial Agent, G.T.R. London, Ont., born at Hamilton, Ont., Nov. 10, 1880.

C. Murphy, General Superintendent, Manitoba Division, C.P.R., Winnipeg, born at Prescott, Ont., Nov. 20, 1865.

G. H. Nowell, District Master Mechanic, District 3, British Columbia Division, C.P.R., Nelson, born at Montreal, Nov. 13, 1885.

A. C. O'Neil, Travelling Freight Agent, G.T.R., London, Ont., born at Point Edward, Ont., Nov. 30, 1866.

W. J. Quinlan, District Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, born at Montreal, Nov. 21, 1883.

G. H. Shaw, General Traffic Manager, Canadian Northern Ry., Toronto, born at Smiths Falls, Ont., Nov. 25, 1859.

J. G. Sutherland, Car Service Agent, Alberta Division, C.P.R., Calgary, born at Aulac, N.B., Nov. 24, 1882.

P. D. Sutherland, General Agent, Passenger Department, Canadian Pacific Ocean Services, Ltd., Hong Kong, China, born at Toronto, Nov. 2, 1879.

L. C. Thomson, General Storekeeper, Eastern Lines, Canadian Northern Ry., Toronto, born at Kingston, Ont., Nov. 25, 1882.

H. P. Timmerman, Industrial Commissioner, Eastern Lines, C.P.R., Montreal,

born at Odessa, Ont., Nov. 6, 1856.

H. E. Whittenberger, General Superintendent, Ontario Lines, G.T.R., Toronto, born at Peru, Ind., Nov. 9, 1869.

C. G. Washbon, Trainmaster, C.P.R., Brandon, Man., born at Morris, N.Y., Nov. 27, 1887.

W. A. Whyte, District Freight Agent, Canadian Northern Ry., Regina, Sask., born at Hornsey, England, Nov. 24, 1890.

Pacific Type Locomotives for Canadian Government Railways.

Ten heavy Pacific type 4-6-2 passenger locomotives are being built for Canadian Government Railways by Canadian Locomotive Co. They are of the railway standard type for this class, and only a few special features are embodied in the design. The boiler is of the extended wagon to ptype, and is 72 in. in diameter at the front end and 75 in. at the largest course. The barrel is fitted with 2 and 5 3/8 in. dia. tubes, 20 1/2 ft. over tube sheets, and has 28-unit Locomotive Superheater Co's header. The fire box is 109 x 75 in., power operating grate shaker, radial buffers between engine and tender, self-centering valve stem guides, and extended piston rods, flexible stay-

Coal capacity.....10 tons.
Style of truck.....4 wheel equalized type.
Diameter of wheel.....36 in.
Kind of wheel.....Steel tired.
Diameter and length of journal.....5 1/2 x 10 in.
Diameter and length of journal.....
.....5 1/2 x 10 in. M-C-B.
Brake beam.....Simplex high speed.

National Transcontinental Railway Elevator at Transcona.

The elevator plant which is to be built at Transcona, Man., a little southeast of the N.T.R. shops will consist of a working house, with track shed, a storage house, dryer house and boiler house. The elevator's principal business will be to receive from and load into railway cars. Facilities for cleaning, drying and storing grain will be included in the equipment. All material used in the construction of the buildings and equipment, excepting belts and ropes, will be non combustible. The foundations will consist of reinforced concrete slab on wood piles.

The working house will be 106 ft. 10 in., measured on the outside of first story columns. The first story and bins and cupola of the working house will be of reinforced concrete. The curtain walls of the first story and cupola will be of

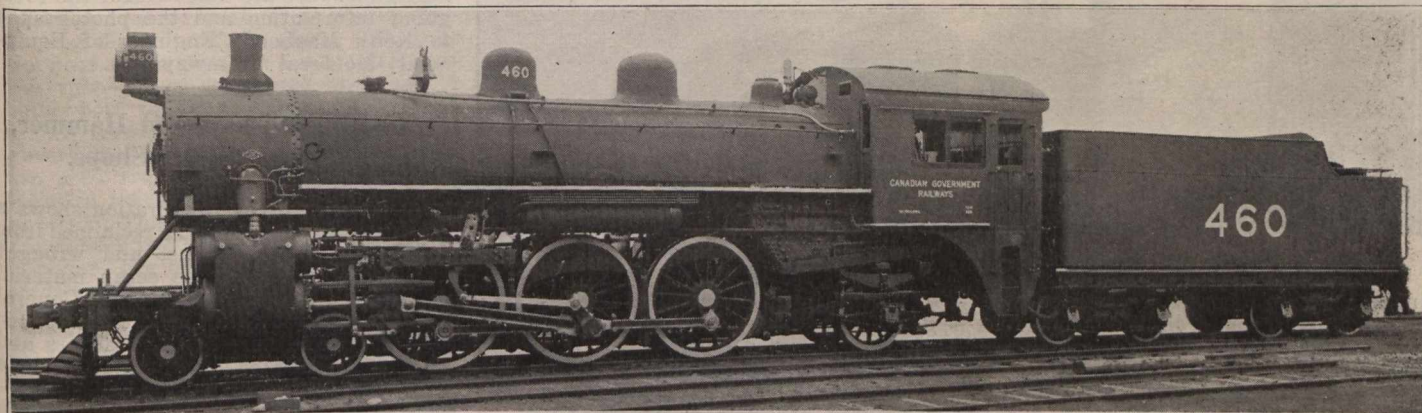
house. The tunnels for basement conveyors between the working house and storage house will be of reinforced concrete throughout.

The buildings will be erected under the direction of C. B. Brown, Chief Engineer, Canadian Government Railways, and have been designed by John S. Metcalf Co. Ltd., Montreal, who will supervise the erection.

We are officially advised that contracts have been awarded for building the substructure to the Thunder Bay Contracting Co., Ltd., Port Arthur, Ont., and for the superstructure to Figles-Bellows Engineering Co., Ltd., Fort William, Ont.

Handrails on Locomotives and Tenders.

The Board of Railway Commissioners passed General Order 172, dated Sept. 28, as follows: Re general order 171, dated Aug. 1, 1916, requiring railway companies, inter alia, to equip the tenders of all locomotives of 100,000 lb. or over with a railing on both sides, on the top of the coping. Upon the report and recommendation of the Chief Operating Officer it is ordered that the said order



Pacific Type Locomotive, Canadian Government Railways.

steel frames, metallic packing, cross-bolts in breaking zone of fire box, cast heads of the 2 bar alligator type, Walschaert valve gear, relief valves, hard grease driving box cellars, vestibule type of cab, trailing truck of radial bar type, with out side bearings, Detroit 5-feed lubricator, incandescent headlight with latest type of turbo-generator, cast steel cradle at rear end of frame, injector check on top of boiler, pedestal type of tender box, and outside equalizer type, 4-wheel tender truck for 5 1/2 x 10 in. M-C-B journal. The general dimensions, etc., are as follows:

Fuel used.....Bituminous coal.
Weight in working order, drivers.....150,000 lbs.
Weight in working order, total.....230,000 lbs.
Wheel base of engine, rigid.....13 ft.
Wheel base of engine, total.....36 ft. 6 in.
Wheel base of engine and tender.....65 ft. 1 in.
Diameter of driving wheels.....73 in.
Material of driving wheels, centres.....cast steel.
Diameter and length of driving journals.....
.....10 ft. x 13 in.
Diameter of cylinders.....23 1/2 in.
Stroke of cylinders.....28 in.
Type of boiler.....Radial stay.
Working pressure of boiler.....200 lbs.
Number of tubes.....205, 28.
Diameter of tubes.....2 in., 5 3/8 in.
Length of tubes.....20 1/2 ft.
Injectors.....Locomotive type.
Brakes.....Westinghouse American.
Superheater.....Schmidt type A.
Cab.....Vestibule type.

TENDER.

Weight, loaded.....150,000 lbs.
Capacity of tank in imp. gallons.....6,500
Style of tank.....Water bottom.

brick, 9 in. thick. The bin walls will be 65 ft. deep. Floors and roof will be of reinforced concrete and roof will be covered with tar, felt, and gravel.

A track shed, 104 1/2 ft. by 69 ft. 7 in., measured on centre line of columns and covering 4 railway tracks will extend along north side of the working house. It will be built of structural steel, outside wall and ends being covered with galvanized corrugated steel. Track openings will be closed by Kinnear doors. Roof and roof covering will be similar to those in the working house. Floors will be of concrete.

The storage house will be 135 ft. 7 in. x 90 ft. 7 in., measured on the outside of bin walls and will consist of 24 bins, having an inside diameter of 21 ft. 11 in. and 15 interspace bins. The walls of the storage bins will be 7 in. thick and 95 ft. high and will be built of reinforced concrete. Bin bottoms will be of concrete and so sloped and finished that they will be self emptying. The structure above the storage bins will be built of reinforced concrete, having floors, roof and roof covering similar to those in the working house. The tops of the bins will not be floored over.

The galleries connecting the working house and storage house will be of structural steel, covered with corrugated galvanized steel, with floors, roofs and roof coverings similar to those in the work-

be amended by striking out the word "such" in the first line of paragraph 2.

General order 171 was published in full in Canadian Railway and Marine World for October, paragraph 2 reading as follows: "That the tender of all such locomotives be equipped with a railing on both sides, on the top of the coping; such railing, if made of round bar iron or of iron pipe, to be not less than 1 in. in diameter, supported by three columns, one at each end and one in the centre, standing 8 in. from the top of the coping; the said rails to run the full length of the fuel storage well, or clear of the back coal wall on the tender; that on the space back of the coal wall, where the water man hole is located, the coping or railing project 8 in. above the top of the tank and run around both sides and back of the tank not less than 8 in. high, supported by columns to make it secure. That plans showing the proposed foot rests and the railing on tenders be filed for the Board's approval."

By order 172 the word "such," shown in the paragraph quoted above in bold face letters, is struck out and the provision of railings on all tenders is made obligatory.

The locomotives dealt with in paragraph 1 of the order and which were referred to in paragraph 1 as "such locomotives" are locomotives of 100,000 lbs. and over.

Railway Mechanical Methods and Devices.

Testing Air Valves in C.P.R. Passenger Car Shops.

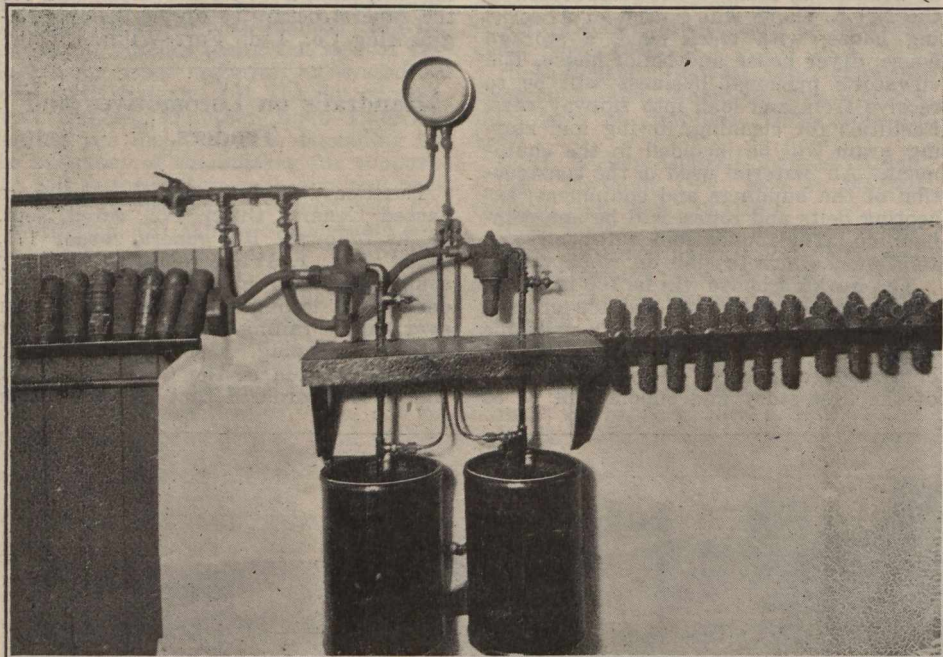
A device for testing air pressure governor valves and reducing valves in the C.P.R. passenger car shops, air brake department at Vancouver, is shown in the accompanying illustration. Prior to the

the car is applied and the reducing valve and air pressure governor on both are set to operate at a given pressure. This method eliminates a lot of adjusting in the passenger car yard and prevents a car leaving the yard with valves not properly adjusted. We are indebted to T. Spence, General Car Foreman, C.P.R., Vancouver, for the foregoing information

was designed to ensure strictly clean brass and copper scrap. It consists of half of an old G.E. 800 type motor case, fitted with a special shunt wound field coil, connected on 500 volt circuit with outside resistance.

The mixed clippings are shovelled into the upper hopper, which is made of wood with a slotted outlet about 1x4 in., situated directly above the centre of the magnet and about 2 in. out from the face so that clippings sifted through this opening fall directly past the magnet's field. The brass, not being attracted in falling, strikes a baffle, which throws it into the outer box. The steel and iron, being attracted by the magnet, are either drawn against its face or dropped through a 3 in. opening about 15 in. long into the rear box. The clippings which are held against the magnet face are dropped directly into the rear box when power is released from the magnet.

Mixed clippings are of little value and this device has paid for itself many times over owing to the high price obtained for clear brass and copper clippings. The cost of power to operate the magnet is negligible. We are indebted for the foregoing information and the photographs to Keith MacLeod, Engineer of Equipment, Montreal Tramways Co.



Device for Testing Air Pressure Governor and Reducing Valves.

installation of the device, valves were cleaned and ground in the shop, reassembled and put back into position in their respective places on the cars. As they have to be adjusted to a 15 and 60 lb. air pressure it was necessary to have the tank under air pressure to make the adjustment and this method very often caused delay.

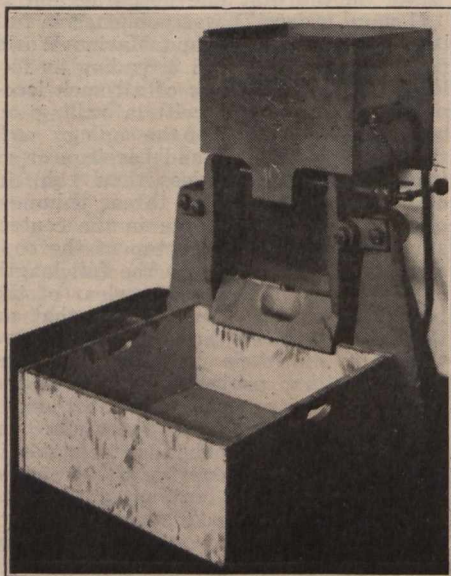
and photograph from which the illustration was made.

Magnetic Separator for Brass Turnings, Montreal Tramways Co.

The device illustrated herewith is used for separating steel and iron chips from

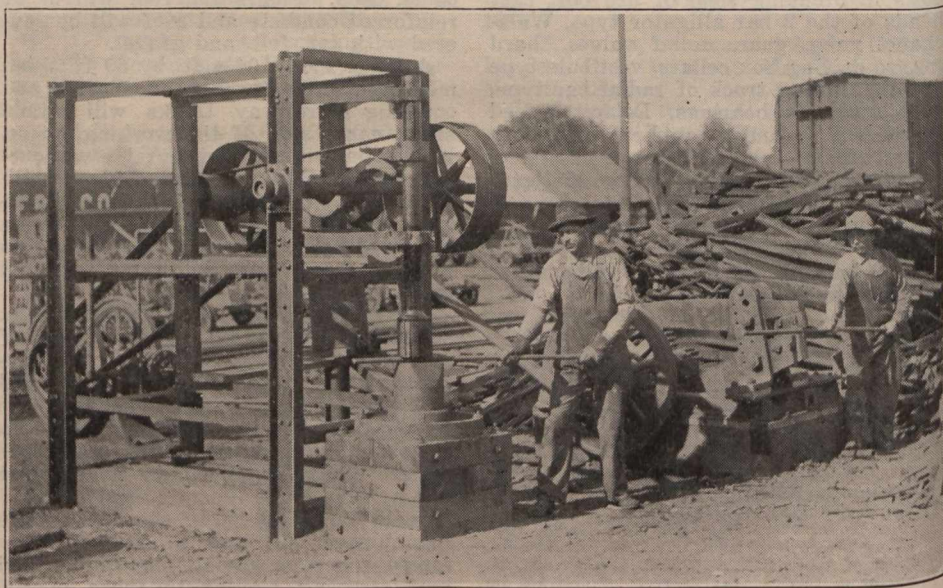
Salvaging Shears and Hammer, Michigan Central Shops.

The accompanying illustration shows a machine used in salvaging reclaimed iron, etc., and separating cast and wrought iron. It was built from scrap material under the direction of N. Marple, General Car Foreman, M.C.R. Shops, St. Thomas, Ont., and consists of cutting shears and striking hammer. The hammer is made from an old car axle and is held in position by steel wheel centre. The frame is made from old channel iron, the gasoline engine is the remains of a discarded cement mixer, the shears crank shaft is



Magnetic Separator for Brass Turnings.

The testing device is made up of two air chambers connected to air pressure through a 3-way valve with double hand gauge above, so that the same condition that occurs in the air brake system on



Salvaging Shears and Hammer.

brass and copper turnings. Although precautions are taken to keep turnings from each job separate, it is impossible to entirely prevent foreign chips from getting into the pans, and the separator

made from an old engine, the bed of the shears, from an old engine bed, the shear rims from two passenger truck equalizers, and the fly wheel and pulleys from scrap. The shears make 52 cuts a

minute and cut up to 1½ in. diameter. The hammer, which is used for straightening salvage iron, strikes 100 blows a minute and will straighten iron up to 1½ in. diameter. Since the photograph was taken the engine parts have been covered in and the rest of the machine covered over for protection from the weather, and safety devices have been applied to protect the men working. The machine has proved a valuable saver on scrap material. We are indebted for the foregoing information and for the photograph to John Jackson, Foreman, Repair Track, M.C.R., St. Thomas, Ont., who took the photograph from which the illustration was made.

Stationary Locomotive Stack Blower on the Grand Trunk Pacific Railway.

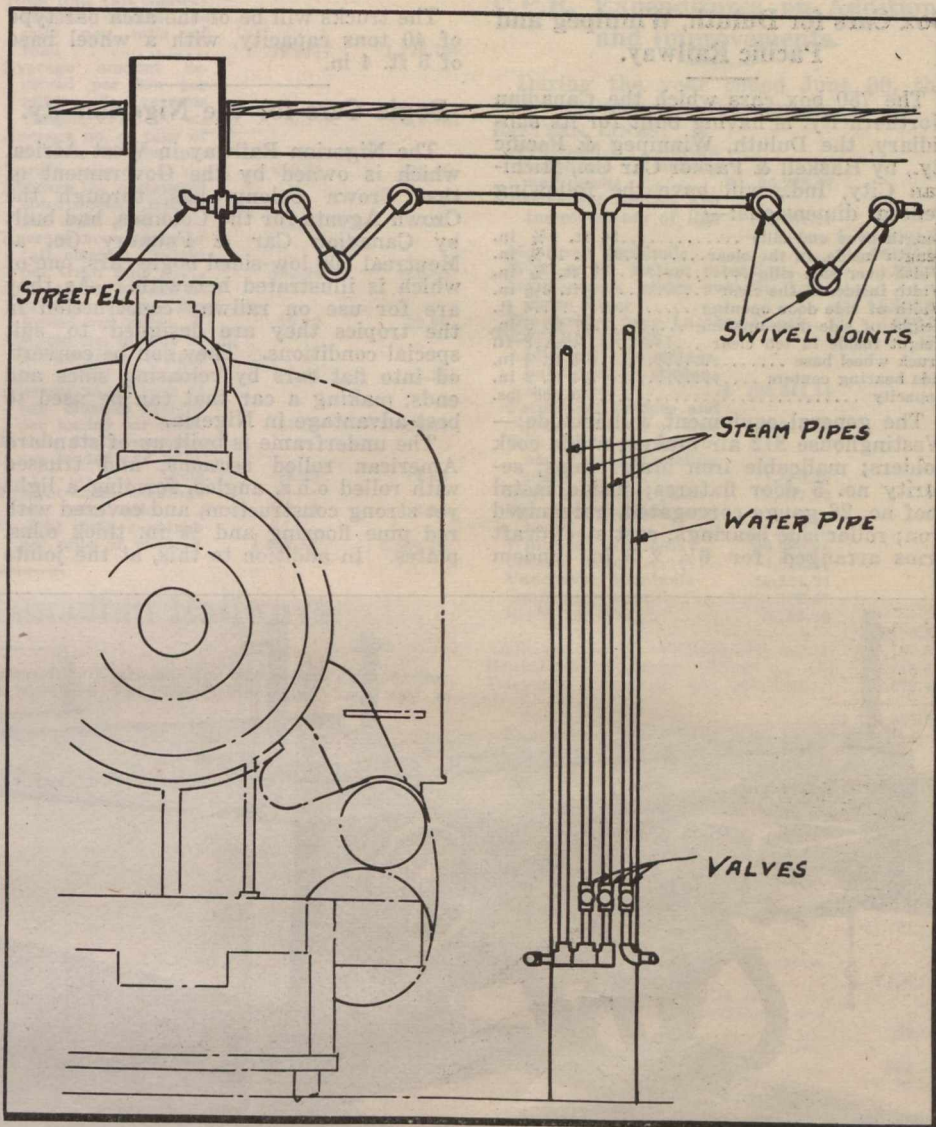
The accompanying sketch shows a method of arranging piping with attachment and connection for stationary locomotive stack blower, in use in the Grand Trunk Pacific locomotive house at Watrous, Sask. A line of 2 in. steam piping is run from the stationary boilers through the locomotive house and is placed high enough so that the locomotives pass under it. From this steam line at every second post is a 1½ in. pipe coming down to within about 4 ft. from the floor. This pipe has a valve and from the valve steam is carried back up the same post to each smoke jack. This makes three valves at the post, which govern the flow of steam. Flexible joints are used from the post to the smoke jacks so that the jack can be raised and lowered. This style of blower has been in use over two years and all the expense necessary has been to grind in the valves occasionally. It is always ready for service and the boilermakers, as well as the light-up man, make use of it. When used for lighting up they do not let any smoke outside the jack but will actually take the smoke out of the locomotive house if it should be close to the stack. We are indebted to Geo. Robinson, Locomotive Foreman, Watrous, Sask., for the foregoing information.

Rivetting Dolley in Grand Trunk Shops.

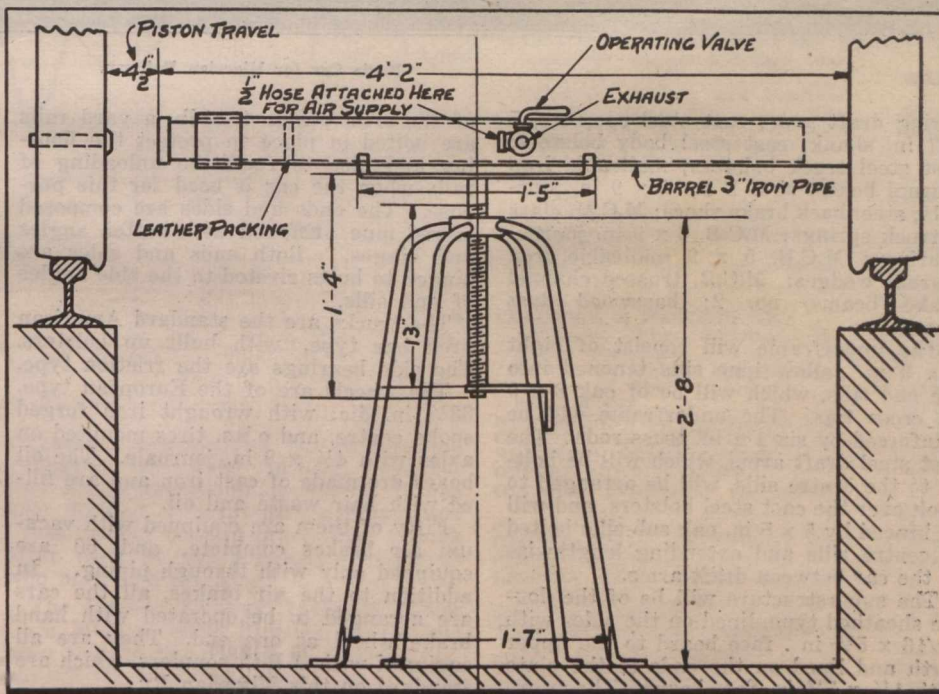
The accompanying plan shows a rivetting dolley used in the G.T.R. shops at Belleville, Ont., operating in a pit, for holding behind rivets in driving wheels, locomotive and tender truck wheels where the tires are rivetted on with an air hammer.

The measurements in the plan are for the wheel dolley, a similar one of the required size can be used to an advantage for holding against foundation ring rivets inside of fire box.

The frame is made from wrought iron scrap welded to a centre in which the raising or lowering screw operates. The barrel is made from three-inch wrought iron pipe with a plug welded solid in one end. The opposite end is fitted with a three-inch pipe coupling screwed up flush and the inside bored out to fit snug to the piston which has a packing ring attached on the inside surface. Air is fed through a half-inch hose and controlled by a three-way air cock tapped into the three-inch pipe about the centre. We are indebted to W. H. Towner, Locomotive Foreman, G.T.R., Belleville, for the foregoing information.



Stationary Locomotive Stack Blower on G.T.P.R.



Rivetting Dolley.

Queen's University, Kingston, Ont. The following appointments have been made: J. F. Wilson of Michigan University, Professor of Electrical Engineering;

L. S. Eaton of Cornell University, Professor of Mechanical Engineering; I. C. Demarest of Columbia University, Lecturer in Latin.

Box Cars for Duluth, Winnipeg and Pacific Railway.

The 750 box cars which the Canadian Northern Ry. is having built for its subsidiary, the Duluth, Winnipeg & Pacific Ry., by Haskell & Parker Car Co., Michigan City, Ind., will have the following general dimensions:—

Length over end sills	36 ft. 9 3/4 in.
Length inside, in the clear	35 ft. 10 3/4 in.
Width over side sills	9 ft. 3/4 in.
Width inside, in the clear	8 ft. 6 1/2 in.
Width of side door opening	6 ft.
Height of side door opening	7 ft. 6 in.
Height inside in teh clear	8 ft.
Truck wheel base	5 ft. 4 in.
Side bearing centers	4 ft. 2 in.
Capacity	80,000 lbs.

The general equipment will include:— Westinghouse 812 air brakes; angle cock holders; malleable iron brake steps; security no. 5 door fixtures; inside metal roof no. 26 gauge corrugated, galvanized iron; roller side bearings; cast steel draft arms arranged for 6 1/4 x 8 in. tandem

The trucks will be of the arch bar type of 40 tons capacity, with a wheel base of 5 ft. 4 in.

Bogie Cars for the Nigerian Ry.

The Nigerian Railway in West Africa, which is owned by the Government of that Crown Colony, has, through the Crown Agents for the Colonies, had built by Canadian Car & Foundry Co. at Montreal 100 low-sided bogie cars, one of which is illustrated herewith. As they are for use on railway construction in the tropics they are designed to suit special conditions. They can be converted into flat cars by releasing sides and ends, making a car that can be used to best advantage in Nigeria.

The underframe is built up of standard American rolled sections, and trussed with rolled o.h.s. angles, forming a light yet strong construction, and covered with red pine flooring and 1/8 in. thick o.h.s. plates. In addition to this, at the joints

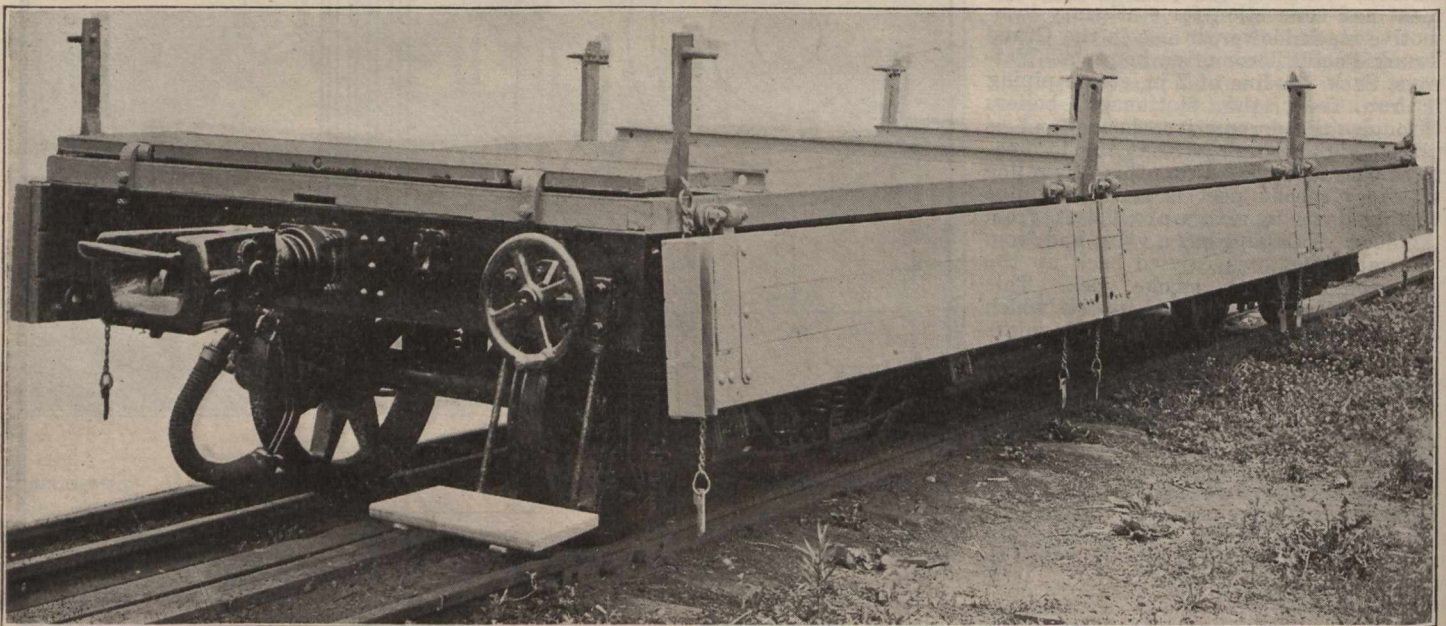
Canadian Pacific Railway Traffic Statistics.

The following figures are for the fiscal years ended June 30, 1915, and 1916, respectively:—

Freight forwarded.	1914-1915.	1915-1916.
Flour, barrels	8,538,600	10,499,260
Grain, bushels	126,909,828	276,788,209
Live stock, head	2,833,726	2,190,389
Lumber, feet	2,180,735,600	2,696,804,934
Firewood, cords	254,428	298,426
Manufactured articles, tons	6,024,590	7,960,723
All other articles, tons	7,423,163	8,228,156
Freight Traffic.	1914-1915.	1915-1916.
Number of tons carried	21,490,596	29,276,872
Number of tons carried one mile	7,940,151,342	14,057,685,773
Earnings per ton per mile	0.76 cts.	0.64 cts.
Passenger Traffic.	1914-1915.	1915-1916.
Passengers carried one mile	13,202,603	13,833,978
Passengers carried one mile	1,164,488,630	1,255,561,198
Earnings per passenger per mile	2.06 cts.	1.97 cts.

TRAIN TRAFFIC STATISTICS.

Earnings of lake and river steamships are not included below.



Bogie Car for Nigerian Railway.

spring draft gear; cast steel couplers, 5 x 7 in. shank; cast steel body bolsters; cast steel truck bolsters; malleable iron journal boxes, M C B for 5 x 9 in. journals; steel back brake shoes; M.C.M. class C truck springs; M.C.B. 5 x 9 in. journal bearings; M.C.B. 5 x 9 malleable iron journal wedges; M.C.B. trussed channel brake beams, no. 2; basswood dust guards.

The underframe will consist of eight 5 x 9 in. yellow ipne sills tenoned into the end sills, which will be of oak 8 x 9 in. cross ties. The underframe will be reinforced by six 1 1/4 in. truss rods. The cast steel draft arms, which will be bolted to the centre sills, will be arranged to hook over the cast steel bolsters, and will be braced by 5 x 5 in. oak sub-sills bolted to centre sills and extending lengthwise of the car between draft arms.

The superstructure will be of the double sheathed type, lined on the sides with 13/16 x 5 1/4 in. face board to the upper girth and lined on the ends to the plate with 1 1/2 x 5 1/4 in. face boards. The framing on the sides will be 2 1/2 in. thick, and the end framing 4 in. thick. Pocket castings will be used at the top and bottom of all side and end posts and braces.

The roof will be of the inside metal type, supported by yellow carlines.

of the steel plates 4 25-lb. a yard rails are bolted in place to protect the flooring and also to facilitate unloading of rails when the car is used for this purpose. The ends and sides are composed of red pine, stiffened with batten angles and hinges. Both ends and sides are hinged to butts riveted to the side angles of end sills.

The trucks are the standard American arch bar type, with built up bolsters. The side bearings are the friction type.

The wheels are of the European type, 33 1/2 in. dia. with wrought iron forged spoke centre, and o.h.s. tires mounted on axles with 4 1/4 x 8 in. journals. The oil boxes are made of cast iron and are filled with hair waste and oil.

Fifty of them are equipped with vacuum air brakes complete, and 50 are equipped only with through piping. In addition to the air brakes, all the cars are arranged to be operated with hand brake wheel at one end. They are all equipped with A.B.C. couplers, which are standard on this Nigerian Ry.

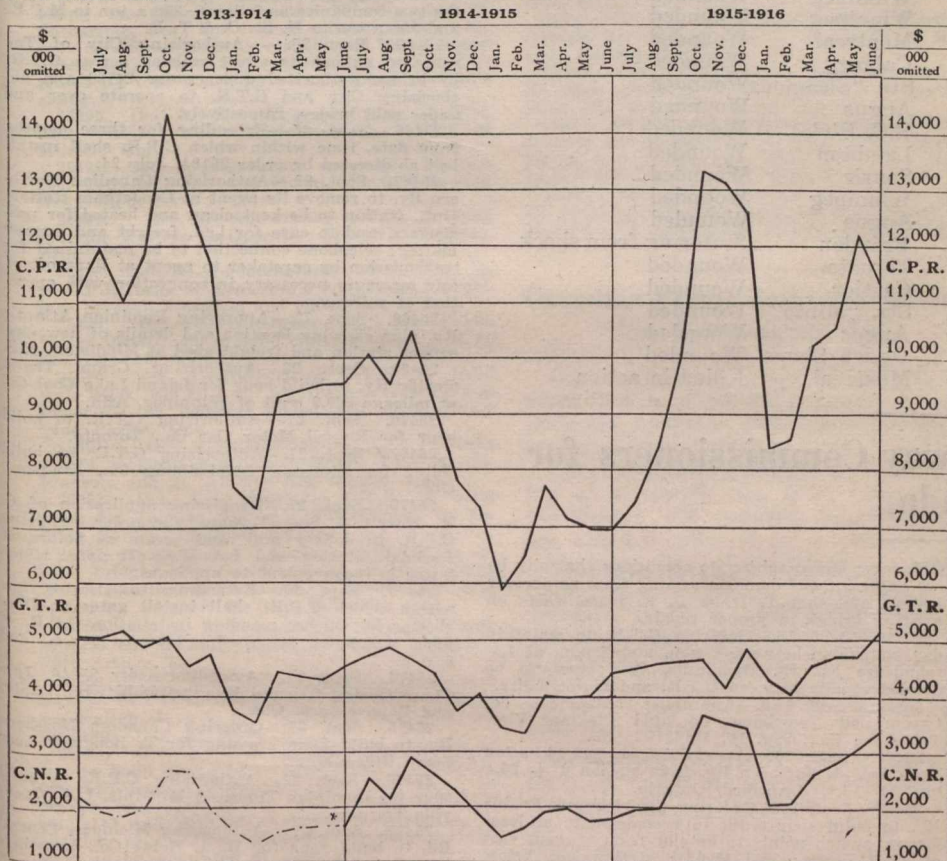
The Nigerian Railway has also had built by Canadian Car & Foundry Co. 100 ten-ton end tipping coal cars, which were described and illustrated in Canadian Railway and Marine World for April.

TRAIN MILEAGE.		
	1914-5.	1915-6.
Passenger trains	17,977,033	18,159,545
Freight trains	16,896,368	25,355,997
Mixed trains	1,939,478	2,098,825
Total trains	36,812,879	45,614,367
CAR MILEAGE.		
Passenger:		
Coaches and p.d. and s. cars	87,283,067	88,080,027
Combination cars	2,829,455	2,835,311
Baggage, mail and express cars	40,691,990	39,335,804
Total passenger cars	130,804,512	130,251,142
Freight:		
Loaded	404,249,594	603,705,406
Empty	144,408,527	280,241,711
Caboose	18,476,337	27,558,813
Total freight cars	567,134,458	911,506,930
Passenger cars per traffic train mile	6.57	6.43
Freight cars per traffic train mile	30.11	33.20
PASSENGER TRAFFIC.		
Passengers carried (earning revenue)	13,086,064	13,727,219
Passengers carried (earning revenue) one mile	1,155,371,348	1,247,118,119
Passengers carried (earnings revenue) one mile per mile of road	93,413	96,546
Average journey per passenger, miles	88.29	90.85
Average amount received per passenger	\$ 1.81	1.78

Average amount received per passenger mile, cts.	2.05	1.96	Total tons (all classes) freight carried one mile per mile of road	705,017	1,170,756
Average number of passengers per train mile	58.01	61.56	Average amount received per ton per mile of revenue freight cts.	0.773	0.641
Average number of passengers per car mile	12.82	13.72	Average no. of tons of revenue freight per train mile	410.62	503.46
Revenue from passengers per passenger car mile, cts.	26.32	26.84	Average no. of tons of non-revenue freight per train mile	52.32	47.37
Total passenger train earnings per train mile \$	1.53	1.55	Average no. of tons of (all classes) freight per train mile	462.94	550.83
Total passenger train earnings per mile of road \$	2,468.87	2,425.15	Average no. of tons of revenue freight per loaded car mile	19.13	22.90
FREIGHT TRAFFIC.			Average no. of tons of non-revenue freight per loaded car mile.	2.44	2.15
Tons of revenue freight carried one mile	7,734,433,065	13,822,500,920	Average no. of tons of (all classes) freight per loaded car mile.	21.57	25.05
Tons of non-revenue freight carried one mile	985,500,816	1,300,624,817	Freight train earnings per loaded car mile, cts.	14.79	14.68
Total tons (all classes) freight carried one mile	8,719,933,881	15,123,125,737	Freight train earnings per train mile \$	3.17	3.23
Tons of revenue freight carried one mile per mile of road	625,338	1,070,068	Freight train earnings per mile of road \$	4,832.53	6,860.21
Tons of non-revenue freight carried one mile of road	79,679	100,688			

Gross Earnings of Canadian Railways.

Up to June 30, 1914, the figures were for the Canadian Northern Ry. west from Port Arthur, Ont. The subsequent figures are for the Canadian Northern Ry. System, including lines east of Port Arthur also.



The Roadmasters and Maintenance of Way Association held its 34th annual convention at New York recently. The officers for the current year are: M. Burke, C.M. & S.P., Chicago, President; A. Grills, Superintendent of Track, G.T.R., St. Thomas, Ont., First Vice President; J. B. Oatman, Second Vice President; P. J. McAndrews, C.N. & W., Sterling, Ill., Secretary; W. H. Kosmehl, Elgin, Ill., Treasurer. The next convention will be held in Chicago, Ill.

The Grand Trunk Railway Patriotic Association held its second annual meeting at Toronto Sept. 30, when \$2,000 was voted for the British Red Cross Society, and about \$1,500 for the dispatch of

Christmas boxes to all G.T.R. terminal employes who have enlisted, whether they are in Canada or elsewhere. It was also decided to pay the Canadian Red Cross Society \$5 a week per man to look after each of the company's employes who may be a prisoner.

The Quebec Railway Light & Power Co.'s Montmorency Division, which has been sold to the Dominion Government, has not yet been transferred, but is being operated by the company on behalf of the government.

Canadian Railway Club. At the monthly meeting in Montreal, Oct. 10, W. S. Thompson, of the G.T.R. Press Bureau, read a paper on railway publicity.

C.P.R. Expenditures on Additions and Improvements.

During the year ended June 30, the following amounts were spent:

EASTERN LINES:	
Additional sidings, buildings, stations and yards \$	85,232.57
Permanent bridges and improvements of line	155,801.97
	\$ 241,034.54
Montreal Terminals	56,276.96
Windsor St. station extension	1,567.22
Double track bridge over St. Lawrence River	5,599.92
Drawbridge over Lachine Canal	4,172.00
WESTERN LINES:	
Additional sidings, buildings, stations and yards \$	103,544.44
Permanent bridges and improvements of line	130,717.80
Fort William terminals, including coaling plant	1,360.42
East Winnipeg yard	28,847.92
Winnipeg station and hotel	77,193.60
Winnipeg terminals	99,980.94
Calgary hotel	4,213.11
Vancouver terminals	45,331.24
Connaught tunnel	1,251,732.47
Right of way	5,188.90
	1,748,110.84
Additions to office buildings and hotels	686,102.89
Rented and temporary sidings	7,218.60
Telegraph extensions and additions	28,572.41
	\$2,778,655.38

Expenditure on Leased and Acquired Lines.

NEW BRUNSWICK RY.:	
Additional sidings, buildings, stations and yards \$	3,085.92
Permanent bridges and improvements of line	15,129.90
St. John terminals	21,693.03
ATLANTIC & NORTH WESTERN RY.:	
Additional sidings, buildings, stations and yards	20,952.60
Permanent bridges and improvements of line	21,631.68
MONTREAL & OTTAWA RY.:	
Permanent bridges and improvements of line	8,366.02
MONTREAL & WESTERN RY.:	
Additional sidings, stations and yards Cr.	259.62
Permanent bridges and improvements of line	500.09
Account purchase of road	15,231.58
ONTARIO & QUEBEC RY.:	
Additional sidings, buildings, stations and yards	17,213.56
Permanent bridges and improvements of line	42,158.85
Double tracking	2,226.41
Toronto terminals Cr.	36,612.57
MANITOBA & NORTH WESTERN RY.:	
Additional sidings, buildings, stations and yards	802.50
Permanent bridges and improvements of line Cr.	960.41
Right of way	705.86
MANITOBA SOUTH WESTERN COLONIZATION RY.:	
Additional sidings, buildings, stations and yards	2,998.17
CALGARY & EDMONTON RY.:	
Additional sidings, buildings, stations and yards	7,067.57
Permanent bridges and improvements of line	4,516.46
Right of way	266.53
COLUMBIA & WESTERN RY.:	
Additional sidings, buildings, stations and yards	3,422.45
Permanent bridges and improvements of line	30,573.04
Right of way	1,776.28
NEW BRUNSWICK SOUTHERN RY.	
	179.38
CAP DE LA MADELEINE RY.	
	32.51
NORTHERN COLONIZATION RY. Cr.	
	473.99
ORFORD MOUNTAIN RY.	
	14.85
OTTAWA, NORTHERN & WESTERN RY.	
	5,017.15
ST. MAURICE VALLEY RY.	
	311.61
GEORGIAN BAY & SEABOARD RY.	
	10,188.73
GUELPH & GODERICH RY.	
	1,798.62
LINDSAY, BOBCAYGEON & PONTYPOOL RY.	
	1,008.50
SOUTH ONTARIO PACIFIC RY.	
	21.81
TILLSONBURG, LAKE ERIE & PACIFIC RY.	
	739.02
WALKERTON & LUCKNOW RY.	
	2,828.14
ALBERTA CENTRAL RY. Cr.	
	1,626.06
COLUMBIA & KOOTENAY RY.	
	745.01
KASLO & SLOCAN RY.	
	837.12
KOOTENAY & ARROWHEAD RY. Cr.	
	110.00
NICOLA, KAMLOOPS & SMILKAMEN RY.	
	325.00
VANCOUVER & LULU ISLAND RY.	
	55.88
	\$204,329.18

The Canadian Pacific Railway's Roll of Honor.

List 13, Sept. 24.

Brown, James Ernest	Trainman	B. C. Div.	Wounded
Clark, Albert Edward	Call boy	Winnipeg	Wounded
Clarke, Andrew W.	Ashpitan	Lambton	Wounded and missing
Deacon, John Canton	Coach carpenter	Angus	Wounded
Donworth, William	Clerk	Montreal	Wounded
Edgar, John Hamilton	Loco. inspector	Montreal	Wounded
England, Stanley L.	Clerk	Montreal	Wounded
Flyn, Charles Angus	Ditch rider	Lethbridge	Died of wounds
Gilbertson, Magnus	Draftsman	Brooks	Killed in action
Haskell, Charles S.	Checker	Saskatoon	Wounded
Hicks, Stephen C.	Stationary fireman	Ignace	Wounded
Jaffray, Matthew	Trucker	Toronto	Wounded
Johnson, James Albert	Porter	Fort William	Wounded
Johnstone, Sidney G.	Brakeman	B. C. Div'n	Killed in action
McLean, James	Loco. engineer	Calgary	Wounded
McLeod, William	Station cleaner	Vancouver	Gassed
Malcolm, John E.	Instrumentman	Ducks	Wounded
Maughan, Herbert	Tapeman	Calgary	Wounded
Miller, Ralph	Fitter's helper	Glen Yard	Wounded
Miller, Thomas J.	Storeman	Winnipeg	Wounded
Moroney, William J.	Wiper	Wynyard	Wounded
Nebbs, Thomas A.	Clerk	Winnipeg	Wounded
Nelson, Arthur W.	Brakeman	B.C. Div'n	Wounded
Payne, Albert	Operator	Portage La Prairie	Wounded
Richards, Joseph V.	Operator	Calgary	Killed in action
Roberts, Wilfred	Clerk	Angus	Wounded
Robinson, John	Tender truck repairer	Ogden Shops	Wounded
Rogers, Ronald	Supply car man	Winnipeg	Wounded
Russell, Douglas	Clerk	Winnipeg	Wounded
Russell, Edward	Clerk	Montreal	Wounded
Scotland, Thomas H.	Clerk	Calgary	Wounded
Selwood, Albert P.	Freight clerk	Str. "Sicamous"	Wounded
Spence, Charles	Boilermaker	Angus	Wounded
Still, Geoffrey	Loco. fireman	B.C. Div'n.	Wounded
Stitt, Fred.	Laborer	Lambton	Wounded
Stubbins, Joseph W.	Loco. fireman	Souris	Wounded
Thomson, Gordon M.	Chief clerk	Winnipeg	Wounded
Tilt, Frederick G.	Clerk	Angus	Wounded
Tongs, Harry	Wiper	Brandon	Suffering from shock
Turner, John	Car repairer	Toronto	Wounded
Wedge, Percy H.	Trimmer	Cartier	Wounded
West, John William	Deckhand	Str. "Minto"	Wounded
Will, James	Boilermaker	Angus	Wounded
Williams, Ivor S.	Machinist's helper	Ogden Shops	Wounded
Wyatt, William G.	Waiter	Montreal	Killed in action

Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearings took place, and not those on which the orders were drawn.

General Order 172. Sept. 28.—Amending general order 171, Aug. 1, 1916, re raiiling on locomotive tenders.

25428. Sept. 15.—Authorizing Brantford & Hamilton Ry. to rebuild bridge over Toronto, Hamilton & Buffalo Ry. near Cainsville, Ont.

25429. Sept. 15.—Approving plan showing change in location of crossing of G.T.R. by Berlin & Northern Ry. on Wellington St., Kitchener, Ont., work be done at expense of B. & N. R.

25430. Sept. 19.—Authorizing British Columbia Public Works Department to build highway crossing at each end of Grand Trunk Pacific Ry. bridge across Fraser River at Prince George.

25431. Sept. 19.—Approving Dominion Public Works Department's plan of bridge to be built across St. Charles River at Quebec.

25432. Sept. 19.—Authorizing Saskatchewan Board of Highway Commissioners to build highway over right of way of C.P.R. Swift Current Northwesterly Branch in n.e. ¼ Sec. 3-23-28, w.3m.

25433. Sept. 19.—Authorizing Canadian Northern Ry. to open for traffic extension of its Winnipeg and Northern Branch, mileage 48.56 to 62.72.

25434. Sept. 19.—Extending for 60 days from date time within which C.P.R. shall install bell at second public highway south of Brampton, Ont.

25435. Sept. 19.—Extending for one year from date time for building new Toronto, Hamilton & Buffalo Ry. bridge carrying King St., Hamilton,

Ont., over track, subject to conditions that city be not liable for any damages arising from non-repair bridge, and that T. H. & B. R. place walks on existing bridge in proper repair.

25436. Sept. 15.—Ordering G.T.R. to maintain day watchman between 7 a.m. and 7 p.m. at Laframboise St., St. Hyacinthe, Que.; cost to be divided equally between G.T.R. and municipality.

25437. Sept. 20.—Approving agreement between Bell Telephone Co. and Pleasant View Telephone Co., Aug. 16, 1915.

25438. Sept. 20.—Approving revised location Lake Erie & Northern Ry. from station 0 + 26.1 to 3 + 13.8, Brantford, Ontario.

25439. Sept. 19.—Ordering Grand Trunk Pacific Ry. to build spur track to accommodate at least 3 cars, switch points to be placed on tangent east of mail crane; and shelter station not below Board's standard 1 "B," with 60 ft. platform and driveway to siding, at Skeena Crossing, B.C.

25440. Sept. 20.—Authorizing G.T.R. to build siding for Peterborough Metal Products Co., Peterborough, Ont.

25441. Sept. 20.—Authorizing Canadian Northern Ry. to build across highway between River Lot 101, St. Paul's Parish and s.w. ¼ Sec. 33-11-4, e.p.m., Man.

25442 to 25446. Sept. 20.—Authorizing Canadian Northern Ry. to build across highways, between river lots 64 and 63; and 95 and 94; across Panet Road in lot 101; river lot 101, on either side C.P.R., St. Paul's Parish, Man.; and across highway between s.w. ¼ Sec. 33 and n.w. ¼ Sec. 28-11-4, e.p.m., Man.

25447, 25448. Sept. 19.—Approving Bell Telephone Co. agreements with Zion Line Telephone Association, Ltd., Aug. 25, 1915, and the Omeme Telephone Co., Sept. 9, 1916.

25449. Sept. 20.—Authorizing G.T.R. to build sidings and spurs for James Playfair, Midland, Ont.

25450. Sept. 20.—Authorizing C.P.R. to build

its Irricana Subdivision at mileage 6.88 across diverted highway in n.e. ¼ Sec. 14-22-19, w.4 m., Alta.

25451. Sept. 21.—Authorizing C.P.R. to build second track across Level St., Churchbridge, Man.

25452. Sept. 20.—Authorizing G.T.R. to build siding for Forwarders Ltd., Kingston, Ont.

25453. Sept. 22.—Suspending, pending hearing to be fixed by Board, proposed cancellation of special commodity rates on iron and steel articles from stations in Canada to St. Lawrence River and Atlantic ports for export, as contained in schedules of G.T.R., C.P.R., T. H. & B. Ry., C.N.R., M.C.R., Wabash Ry. and P. M. R.

25454 to 25456. Sept. 22.—Authorizing C.P.R. to use bridges 94.26 over Columbia River at mileage 38.7, and over Bull River at mileage 9.2, Kootenay Central Ry., B.C.

25457. Sept. 22.—Approving Toronto, Hamilton & Buffalo Ry. Standard Mileage Freight Tariff, C.R.C. 1113, cancelling C.R.C. 1, applying between stations on its line issued Sept. 15.

25458. Sept. 23.—Authorizing C.P.R. to build two spurs for Curtis's & Harvey, Ltd., Rigaud Parish, Que.

25459. Sept. 20.—Authorizing G.T.R. to build siding for B. Blair Co., Woodstock, Ont.

25460. Sept. 22.—Ordering G.T.R. to build farm crossing for O. Murphy, Victoria Road, Ont.

25461, 25462. Sept. 22.—Authorizing C.P.R. to use bridges at mileage 59.8 over Findlay Creek, and at mileage 46.62 over Skookumchuck Creek, Kootenay Central Ry.

25463. Sept. 22.—Authorizing G.T.R. to use bridge 180, at milepost 122.90, District 3, Montreal Division, Que.

25464. Sept. 25.—Ordering that railway companies interested establish with as little delay as possible, a joint rate of 47c a ton to apply on coal in carloads from Niagara frontier to Thorold and St. Catharines for Niagara, St. Catharines and Toronto Ry. delivery, to be apportioned between the two companies as follows—27c a ton to M.C.R. and 20c a ton to N. St. C. & T. R.

25465. Sept. 25.—Authorizing City of Toronto to extend its street railway across G.T.R. by bridge authorized under order 24738 and authorizing City and G.T.R. to operate over and under said bridge, respectively.

25466. Sept. 25.—Extending for three months from date, time within which C.P.R. shall install bell as directed by order 25184, July 24.

25467. Sept. 22.—Authorizing Canadian Northern Ry. to remove its agent at Goderham station, Ont., station to be kept clean and heated for passengers; and to care for l.c.l. freight and express matter; telephone connection to be maintained for transmission by caretaker to agent at Bancroft of any messages necessary in connection with operation of railway.

25468. Sept. 23.—Approving Dominion Atlantic Ry. plan showing location and details of new passenger station and freight shed at Middleton, N.S.

25469. Sept. 23.—Authorizing Grand Trunk Pacific Ry. to build spur for Island Lake Coal Co. at mileage 839.9 west of Winnipeg, Alta.

25470. Sept. 27.—Authorizing C.P.R. to build spur for Russell Motor Car Co., Toronto.

25471. Sept. 27.—Authorizing G.T.R. to build siding for Kingston Shipbuilding Co., Kingston, Ont.

25472. Sept. 27.—Dismissing application of C. R. Harris & Son, Toronto, for order requiring C.P.R. to deliver milk and cream as before at Parkdale station and not West Toronto, which latter is inconvenient to applicant.

25473. Sept. 27.—Extending to Dec. 1 time within which C.P.R. shall install gates at Dorchester St. Quebec, pending installation C.P.R. to place watchman at crossing between 7 a.m. and 6 p.m.

25474. Sept. 27. Amending order 25246, July 27, re Quebec Oriental Ry. shelter between Caplin and Bonaventure, Que.

25475. Sept. 27.—Ordering Canadian Northern Ry. to build farm crossing for T. Boughen, near Swan River, Man.

25476. Sept. 27.—Authorizing C.P.R. to build spur for Dominion Timber & Minerals, Ltd., Greenville Tp., Que.

25477. Sept. 27.—Authorizing Michigan Central Rd. to build spur for H. J. Heinz Co., Leamington, Ont.

25478. Sept. 27.—Authorizing C.P.R. to build spur at Riverton, Man., for Sigurdson, Thorvaldson Co.

25479. Sept. 28.—Approving deviation of Toronto, Hamilton & Buffalo Ry., from Lot 19, Con. 1, from Grand River, Sherbrooke Tp., Ont., station 912-68 to 1008+18; and location from Lot 17 to east bank of Grand River, Port Maitland, station 1008+18 to 1013+37.

25480. Sept. 28.—Authorizing Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.), to open for traffic portion of its line from Kettle Valley Ry. to Canadian Northern Pacific Ry. at Hope, B.C., 900 ft.

25481. Sept. 27.—Authorizing City of Montreal to build foot subway under C.P.R., in line with Melrose Ave.

25482. Sept. 29.—Authorizing Canadian Northern Ry. to build spur to gravel pit in Secs. 10, 15, and 22-15-12, w.2 m., near Kendal, Sask. and to cross highway between Secs. 10 and 15.

25483. Sept. 29.—Approving Canadian Northern Ontario Ry. location in Port Arthur from mileage

1.57 to 1.88; and authorizing it to build two sidings for Saskatchewan Co-operative Elevator Co. and Grain Growers' Grain Co.

25484. Sept. 30.—Authorizing highway crossing over C.P.R. about 125 ft. west of First Ave., Oak Lake, Man.

25485. Sept. 30.—Ordering C.P.R. to build interchange track with Grand Trunk Pacific Ry. at Moose Jaw, Sask.; G.T.P.R. to contribute \$2,500 toward cost, reserving for further consideration cost of maintenance and rescinding orders 24797, March 16, and 25400, Sept. 11.

25486. Oct. 2.—Ordering C.P.R., within 60 days to install bell at Boulevard Gouin, Bordeaux, mileage 9.91, Ottawa Subdivision, Que., and maintain it at own expense; 20% cost installing to be paid out of Railway Grade Crossing Fund, remainder by company.

25487. Oct. 2.—Approving G.T.R. plan of proposed improvements to freight facilities at Windsor, Ont., to be completed by Dec. 31, 1916.

25488. Oct. 2.—Authorizing Northern Development Branch, Ontario Government, to construct trunk road across C.P.R. main line on boundary between Pedley and Springer Tps., mileage 21.28, Cartier Subdivision, and rescinding order 25219.

25489. Oct. 2.—Authorizing Canadian Northern Ry. to construct across highway between Secs. 7 and 8-18-7, e.p.m., Man.

25490. Oct. 3.—Ordering G.T.R. to erect station building at Eganville, Ont., by Dec. 1, 1916.

25491. Oct. 2.—Authorizing Town of Preston, Ont., to construct South St., across G.T.R., by a subway.

25492. Oct. 3.—Authorizing C.P.R. to replace 8-ft. through plate girder span over Muddy Creek, mileage 41.10 St. John Subdivision, with 8 x 8 ft. cement rail culvert.

25493. Oct. 3.—Approving location and detail plans of proposed remodelling G.T.R. passenger station at Dominion, Lachine, Que.

25494. Sept. 23.—Authorizing G.T.R. to build siding for Canadian Crocker Wheeler Co., St. Catharines, Ont., and change existing siding. Approving and authorizing vertical and lateral clearances, subject to G.T.R. undertaking to keep employes off tops and sides of cars when operating siding.

25495. Oct. 5.—Extending, until Dec. 1, 1916, time within which G.T.R. complete station at Mimico, Ont.

25496. Oct. 3.—Approving agreement between Bell Telephone Co. and Mount Horeb Telephone Association, Sept. 2, 1915.

25497. Oct. 5.—Authorizing C.P.R. to build spur for Western Co-Operative Grain Co., Calgary, Alta.

25498. Oct. 5.—Amending order 25466, Sept. 25, re C.P.R. bells at Crawford's and Pardy's Crossings between Westfield and Hillandale, N.B.

25499. Oct. 5.—Authorizing Alberta Public Works Department to build crossing over C.P.R. in Sec. 12-43-10, 4.

25500. Oct. 4.—Authorizing C.P.R. to build scale track, 950 ft. long, for Wayagamack Pulp & Paper Co. on Belleville Island, Cap de la Madeleine Parish, Que.

25501. Oct. 6.—Extending to Nov. 19, time within which C.P.R. shall install bells at St. Francois and St. Antoine Sts., Rigaud, Que.

25502. Oct. 5.—Authorizing G.T.R. to build spurs for Toronto Harbor Commissioners, in Toronto Harbor industrial district.

25503, 25504. Oct. 6.—Authorizing G.T.R. to rebuild bridges over Rawdon Creek, milepost 16.14 from Belleville; on lot 3, Con. 2, Rawdon Tp., and bridge 34, milepost 66 from Belleville, Ont.

25505. Oct. 5.—Authorizing Canadian Northern Ontario Ry. to build bridge over Current River, Port Arthur, Ont.

25506, 25507. Oct. 3, 6.—Approving agreements between Bell Telephone Co. and Jackson Telephone Association, June 9, and Clavering Telephone Association, July 20, 1915.

25508. Oct. 5.—Ordering Canadian Northern Ry. to build flat station and siding, with cattle pen and loading chute, at Twin Elm, Ont.; to provide passenger service; and to take up shipments of milk and cream and express matter, in addition to handling passenger traffic offering; work to be completed by Dec. 31.

25509. Oct. 10.—Authorizing Canadian Northern Ry. to alter bridge over South Magnetawan River, mileage 34.86 from Parry Sound, Ont.

25510. Oct. 7.—Authorizing Canadian Northern Quebec Ry. to build extension of Standard Lime Co.'s tracks in lot 426, Parish St. Paul de Joliette.

25511. Oct. 10.—Dismissing application of residents and ratepayers of Torrance, Ont., for order directing Canadian Northern Ry. to build road in lieu of road closed in lot 24, Con. 27, Wood Tp., Ont.

25512. Oct. 4.—Authorizing C.P.R. to remove station agent at Moyie, B.C.

25513. Oct. 10.—Authorizing C.P.R. to operate trains over crossing of its Lac du Bonnet Subdivision and Bergen Northeast cutoff at Murdock, Man., without first stopping trains.

25514. Oct. 10.—Amending order 25396, Sept. 8, re Saskatchewan Government crossing of Grand Trunk Pacific Branch Lines Co.'s right of way at Bechard Station.

25515. Oct. 11.—Relieving C.P.R. from providing further protection at crossing of side road 1¼ miles south of Berkeley, Ont.

25516. Oct. 10.—Authorizing C.P.R. to build spurs for Saskatchewan Co-operative Elevator Co., Port Arthur, Ont.

25517. Oct. 10.—Authorizing C.P.R. to build spur 890 ft. long for Canadian Tube & Iron Co., Montreal.

25518. Oct. 10.—Ordering G.T.R. to build farm crossing for A. Desilets, Breault Mill, Que.

25519. Oct. 10.—Authorizing Grand Trunk Pacific Ry. to build two highway crossings in lot 1169 and 6340, R. 5, Coast District, B.C.

25520. Oct. 11.—Authorizing Brantford & Hamilton Electric Ry. to establish its Brantford passenger station at Lake Erie & Northern Ry. station near Lorne Bridge, Brantford, and to extend its tracks from Market St. to L.E. & N.R. station.

25521. Oct. 12.—Authorizing Canadian Northern Ontario Ry. to build spur for J. C. Wilson & Co., Belleville, Ont.

25522. Oct. 10.—Approving Maine Central Rd. bylaw passed Sept. 13.

25523. Oct. 14.—Authorizing Central Vermont Ry. to build siding and passing track to Lime Stone Quarry, lot 230, R. 9, Stanbridge Tp., Que.

25524. Oct. 13.—Authorizing C.P.R. to build across highway on eastern boundary of n.w.¼ Sec. 32-35-11, w.3m., at Perdue, Sask., mileage 370 of its Pheasant Hills Branch.

25525. Oct. 13.—Authorizing C.P.R. to build diversion of road allowance on southern limit of s.w.¼ 30-13-6, w.2m., at Windthorst, Sask.; and to extend Van Horne St. across its tracks, Sec. 25-13-7.

25526. Oct. 13.—Ordering Canadian Northern Ry. to install agent at Sturgis, Sask., by Oct. 20.

25527. Oct. 13.—Disallowing proposed increase from \$3 to \$5 a car in charge for stopping cars containing part loads canned goods in transit for completion of loads.

25528. Oct. 12.—Relieving G.T.R. from providing further protection at highway west of Beamsville, Ont.

25529. Oct. 13.—Authorizing Canadian Northern Ontario Ry. to build spur for Houpt Paper Mills, Ltd., Camden Tp., Ont.

25530. Oct. 13.—Relieving Canadian Northern Ry. from providing further protection at Chatham Road, St. Jerusalem Parish, Que.

25531. Oct. 11.—Authorizing Canadian Northern Ontario Ry. to cross C.P.R. with double track in lot 13, Con. 2 from Bay, York Tp., Ont.; and to cross Park Drive, lot 13, Con. 2.

25532. Oct. 13.—Amending order 25451, Sept. 21, re C.P.R. crossing of Level St., Churchillville, Manitoba, by substituting Saskatchewan for Manitoba.

The Board of Railway Commissioners has authorized the company to use the following bridges erected on its Kootenay central subdivision recently, viz., over Columbia River, mileage 94.26; over Kootenay River, mileage 38.7; over Bull River, mileage 9.2; over Findlay Creek, mileage 59.8; over Skookumchuck Creek mileage 46.62.

In connection with the increasing of the company's dock accommodation at Vancouver, F. W. Peters, General Superintendent, is reported to have said, Oct. 7, that the extension of the present pier is merely the quickest means of providing additional facilities and does not in any way conflict with the original plans for the construction of Pier B, which is now projected. The extension of Pier A to the harbor line merely means that this work will be done first in order to provide additional berths and warehouses for trans-Pacific business.

The construction of Pier B as originally planned will not in any way be interfered with. The general plans provide for the building of piers lettered from A to G, and they will all be provided as business requires. It is also the company's intention to remove the old detention shed and make improvements at Pier A by building an extension on to the east end of no. 1 freight shed. Pier D is filled out to the harbor line and marked for quite a distance of the 400 ft. addition by dolphins. The lines of construction for the addition will be in conformity with the style of the present pier, which is of steel framework. The extended pier will provide accommodation for three or four of the company's ocean water vessels. (Oct., pg. 403.)

Steel Rails and the Customs Duty.

Canadian Railway and Marine World for October contained a press dispatch from Ottawa stating that it was understood that an arrangement had been made with regard to supplying rails required by Canadian railway companies which would satisfy temporarily the urgent requirements of the various railway systems. No definite announcement has been made as to the terms of the arrangement. We understand that some weeks ago the Canadian Northern Ry. represented to members of the Dominion Government that it was unable to procure rails from Canadian mills for prompt delivery for important work and made a request that the duty be suspended temporarily so as to enable it to bring in a moderate tonnage. It is said that the C.P.R. made similar representations.

Both the Algoma Steel Corporation and the Dominion Iron & Steel Co. are running practically all the time on steel bars for the Imperial Munitions Board, the Board having told them that it expects to get practically their entire outputs for the next six months to come.

It is said that the C.P.R. has not purchased any rails in the United States as yet, and may not do so, as it may be able to secure a small tonnage in Canada for early shipment. One reason for its not having placed an order in the U.S. probably is that it is impossible to obtain open hearth rails there for delivery earlier than Sept. or Oct. 1917, and the C.P.R. will not use any other grade. It is possible the Canadian Northern may bring in some Bessemer rails from the U.S., it being possible to secure them for fairly early delivery, provided the Canadian customs duty is temporarily suspended.

Canadian Pacific Railway Construction, Betterments, Etc.

Ontario District.—We are officially advised that it is not the intention to electrify the Kingston and Pembroke Ry. as reported in the daily papers.

Local press reports state that the building of a branch line from Linwood on the Guelph and Goderich Ry. to Wellesley, about 9 miles, is being considered.

Manitoba District.—The Winnipeg City Council has approved of the plans for umbrella roofs to be erected on the platforms over the Main Street subway stipulating that nothing be added in the shape of walls, etc. The umbrella roofs referred to will be a culmination of those over the station platforms.

Saskatchewan District.—The Board of Railway Commissioners has directed the C.P.R. to build an interchange track with the Grand Trunk Pacific Ry. at Moose Jew, Sask., this company to pay \$2,500 towards the cost. The cost of maintenance of the track is reserved for future consideration.

Alberta District.—The Sterling division has been extended from Foremost easterly to Pakowki, Alta., 22.2 miles, by the opening for traffic of that section of the line generally known as the Weyburn-Lethbridge line. The extension from Pakowki to the Alberta-Saskatchewan boundary, where track from the east at present terminates, is under construction. Tracklaying on this extension was reported to have been started Oct. 12.

British Columbia District.—It is reported that the Connaught Tunnel, on the main transcontinental line at Rogers Pass will be opened for traffic Dec. 1.

Canadian Pacific Railway Company's Annual Meeting.

At the annual meeting in Montreal, Oct. 4, the President and Chairman, Lord Shaughnessy, in moving the adoption of the report for the year ended June 30, which was published in Canadian Railway and Marine World of October, said:

"The information contained in the report with reference to the outcome of the company's operations during the year, and the condition of its affairs generally, must be as gratifying to the shareholders as it is to the directors. While the gross income from the business of your railway lines was below the maximum that had been reached, the net revenue was in excess of any previous year. The statements and statistics give evidence of improved operating effectiveness and of greater financial strength and stability.

"Although the amount of the taxes that the company may be called upon to pay in Great Britain and Canada in connection with special war assessments is not as yet definitely determined, it will, no doubt, be considerable, and prudence suggests preparation to meet it. Then, as you are aware, most of your ocean steamships have during the past two years been engaged in Admiralty service. Some of them were lost, although in this respect we have been singularly fortunate, some were taken over by the Admiralty, and the character of the service that the others have been performing will make extensive rebuilding necessary whenever the steamships are released. To make provision for these excess war profit taxes and other war assessments that the company may be required to pay, and for the rehabilitation of your ocean fleets at the prices now current and that are likely to prevail for some time to come, the directors decided to transfer to a fund for contingencies a very substantial sum that would in other circumstances have gone to special income. I am confident that this policy will meet with your hearty approval.

"It is very comforting to know that on June 30 last the cash in hand, including the temporary investment in war loans, readily convertible, was nearly \$47,000,000, or about \$30,000,000 more than at the end of the previous fiscal year, although in the meantime no capital securities of any description had been disposed of, but, of course, important works requiring large expenditure, that were not immediately necessary, were postponed until a more opportune time. In addition to the cash in the treasury you have available for sale upwards of \$40,000,000 of 4% consolidated debenture stock for additional railway mileage built with funds advanced by the shareholders.

"In the opinion of the directors the time has arrived when the company should arrange to carry its own fire and marine insurance, or the greater portion of it, instead of paying large annual premiums as at present. To that end, a transfer of \$331,000 was made to the fund last year, and further transfers will be made year by year until the fund is sufficient for the purpose in view.

"In Eastern Canada the outcome of farming operations this year was generally satisfactory, but the grain crops in portions of the western provinces were injuriously affected by unfavorable weather conditions during the late summer, and it is now thought that the total yield will be little more than half of last season's phenomenal crop. These conditions

will naturally be reflected in the company's revenue returns during the next year, but general business is showing decided improvement, and in any event there is every reason to expect that the company's net income for the year will be quite sufficient to meet the ordinary dividend distribution without encroaching on the surplus of previous years.

"The progress and prosperity of your company during the past few years tempted other railway companies to enter the field, and they received encouragement and support from the Dominion and provincial governments in the shape of cash bonuses and guaranteed securities, with the result that hundreds of millions of dollars were invested in railway lines throughout Canada, many of them in territory already served by your railway, years before they were required or could be made self sustaining. It has been necessary for the government on more than one occasion to come to the aid of these companies by advancing large amounts of money to prevent liquidation and collapse. As a consequence, a situation fraught with some anxiety and apprehension has developed. Within the last few months a board of inquiry, composed of expert and capable men has been selected by the Dominion Government to study every phase of the railway problem, and to make a report incorporating suggestions and advice that may serve to guide the Government in dealing with the subject hereafter. It is to be regretted that a board of this kind was not asked to give information and advice before these large expenditures and obligations were incurred, rather than afterwards, but there is little doubt that its report and recommendations will be very useful to Parliament and the Government.

"I cannot too highly commend the vice presidents and their assistants for the splendid organization, the intelligence and energy that were manifest in every branch of the company's service, and to which may be attributed the very gratifying outcome of the year's business.

"The vacancy in the board of directors caused by the death of Sir Sandford Fleming has not been filled. Your directors recommend that Sir Vincent Meredith, Bart., be elected a director to fill the vacancy, and his name will appear on the ballot paper to be submitted to you today."

Prior to the adoption of the resolution approving of the report, Huntly Drummond, a shareholder, stated that he desired on behalf of the shareholders to express their gratification at the satisfactory results of the year's operations, which could only be attributed to the wisdom and foresight exercised by the President and the remarkable esprit de corps which was known to exist throughout the company's service. He also referred to the enormous assistance the company's organization had been in matters connected with the prosecution of the war and to the generosity of the company and its employes in their contributions to the patriotic fund and for other war purposes. He concluded his remarks by referring to the anxiety that was felt amongst the shareholders at rumors which had been current for some little time past of the possibility of the retirement of Lord Shaughnessy from the presidency. He stated that in his opinion,

which he felt was generally shared, it was of vital importance that Lord Shaughnessy should continue to direct the company's affairs and suggested, if he was not on too delicate ground, that it would be very reassuring to the shareholders if Lord Shaughnessy would make some statement on the subject.

Lord Shaughnessy, after thanking Mr. Drummond for his expression of appreciation, stated that there were two factors to be considered in the selection of a president, namely, the board of directors and the person who might be named, but that if the directors at the meeting to be held after this meeting were to ask him to be President of the company he would be very pleased to accept, and that if a year from now they again proposed that he should be President, he would be very glad to serve. He did not think any man at his time of life should predict beyond two years. The President referred to his 34 years connection with the company, 17 of them as President, and the splendid organization which the company possessed and in which he personally took much pride. He mentioned that many of his assistants and advisers on the staff had been with him from the beginning. Indeed, some of those now holding positions of greatest responsibility he had known when they started as boys in the company's service. He assured Mr. Drummond and the shareholders that so long as he was mentally and physically capable his services would always be at their command.

His reply was received with loud cheers.

The following resolutions were unanimously adopted:

Toronto, Hamilton and Buffalo Ry.—Whereas an agreement has been entered into, dated Feb. 1, 1916, between the Toronto, Hamilton & Buffalo Ry. Co., the Michigan Central Rd. Co., the Canada Southern Ry. Co., the New York Central Rd. Co., and this company, providing for the interchange of traffic between the several companies parties to the agreement and for the issuance from time to time by the Toronto, Hamilton & Buffalo Ry. Co. (but only with the consent in writing of the Michigan Central, Canada Southern, New York Central and Canadian Pacific Companies) of bonds not exceeding in the aggregate \$10,000,000, bearing interest not exceeding 5% per annum, such bonds to be secured on the property and assets, present and future, of the T. H. & B. R. Co., subject however to the mortgage dated June 1, 1896, and to be unconditionally guaranteed by the Michigan Central, Canada Southern, New York Central and Canadian Pacific Companies, the said agreement providing that if the earnings of the T. H. & B. R. Co. are not sufficient to provide for the payment of any of the interest on the bonds, the deficit shall be borne by the other companies parties to the agreement in the proportions therein mentioned; now therefore be it resolved that the said Agreement be approved and the execution thereof by the President and Secretary of the company be ratified and confirmed.

Canadian Pacific Ocean Services, Ltd.—Whereas by resolution passed at the annual meeting of shareholders on Oct. 6, 1915, the sale of the shares of the Allan Line Steamship Co. held by this company and the transfer of the several

steamships named in the schedule attached to the resolution and other property therein mentioned to the Canadian Pacific Ocean Services, Limited, was ratified and confirmed to be effective from Nov. 1, 1915, or from such later date as the directors might determine; and whereas by agreement dated Dec. 7, 1915, approved by the directors on Dec. 13, 1915, the effective date of such sale and transfer was deferred to a date to be fixed by agreement between this company and the Canadian Pacific Ocean Services, Limited, and the last named company was appointed manager and agent to operate and manage the steamships of the Allan Line Steamship Co. and of this company; And whereas the conditions pertaining to ocean traffic may render it desirable in the company's interests that in giving effect to the proposals previously approved a somewhat different plan should be adopted, and it is desirable to authorize and empower the directors to take such action as may seem to them advisable in the premises; ;Therefore, be it resolved that the agreement dated Dec. 7, 1915, providing for the operation of the fleets of this company and of the Allan Line Steamship Co. by the Canadian Pacific Ocean Services, Limited, as manager and agent, be ratified and approved. And be it further resolved that the directors of the company be authorized to give effect to the resolution passed at the last annual meeting relating to the sale of the shares of the Allan Line Steamship Co. held by this company and the transfer of the several steamships and other property therein mentioned by completing the sale and transfer therein authorized either to the Canadian Pacific Ocean Services, Limited, or to some other company created for that purpose in which this company shall have full ownership and control, in such manner and at such times and upon such conditions as to them seem proper.

Bylaw 91, which names the officers of the company authorized to prepare and issue tariffs of the tolls to be charged for the carriage of freight amended by the substitution of the name of H. E. Macdonell for that of W. B. Bulling, as Assistant Freight Traffic Manager, Eastern lines.

The three retiring directors, G. Bury, W. D. Matthews, and A. M. Nanton were re-elected for 4 years and Sir Vincent Meredith, President Bank of Montreal, was elected a director for 4 years to succeed the late Sir Sandford Fleming.

At a meeting of directors held immediately after the shareholders' meeting, Lord Shaughnessy was elected President, George Bury, Vice President, and E. W. Beatty, K.C., Vice President and General Counsel, and the following were appointed the executive committee: R. B. Angus, E. W. Beatty, K.C., George Bury, Sir Herbert S. Holt, Sir Edmund B. Osler, M.P., Lord Shaughnessy.

Board of Railway Commissioners Incomes.—The Ottawa Court of Revision decided, Oct. 13, that the salaries of members of the Board of Railway Commissioners are exempt from income tax by the city. The decision was the result of an appeal made by D'Arcy Scott, Assistant Chief Commissioner, under the terms of the agreement between the City Council and the Government, by which the city agreed to make no claim for taxes on the income of officers and servants of the Government derived from the Govern-

Grand Trunk Preference Dividends.

At an interval of two years the G.T.R. has resumed payment of dividends on part of its preference capital. For 1913 the full dividends, interim and final, were paid on its first and second preference stocks, while 2½% was distributed on its third preference stock. For 1914 and 1915, nothing was paid on any of the company's preference issues, while for the former year only 3½% was paid on the 4% guaranteed stock.

Thanks to the considerable improvement in earnings this year, the directors, while paying the full interim dividend of 4% per annum on the guaranteed stock (as against only 3% per annum a year ago), are able to recommend an interim payment at the full rate of 5% per annum on the first preference stock.

The extra ½%, actual, on the guaranteed stock and the 2½% on the first preference stock call for £143,500. This additional disbursement was rendered practicable by an increase of £131,900 in the net receipts of the parent company in the first half of the year, and the fact that no deficiency had to be made good in respect of the working of the G.T. Western, which in the corresponding six months incurred a deficit of £122,200.

No doubt had they deemed it prudent to do so the directors could have distributed something on the second preference stock, the full interim dividend on which requires only £63,200, but they have adopted the wiser course of waiting until the results for the completed year are known before making any recommendation as regards the payment of dividends on the junior preference issues.

Since the end of June last the company has been making further satisfactory progress, though the gain in net profits

in July was small in proportion to the expansion in gross receipts. However, the net earnings of the main line for the entire year should show a considerable improvement, and as the parent company will not have to make good heavy deficits of its subsidiaries, as in 1915, there ought to be a considerable amount available for distribution on the company's preference issues after additional capital charges have been provided for.

Toronto Terminal Railway Co's Annual Meeting.

The adjourned annual meeting of the Terminals Ry. Co. was held at the G.T.R. general offices, Montreal, Oct. 10. H. G. Kelley, President, presiding. Good progress was reported on the construction of the new station building in Toronto, which will be owned and occupied jointly by the Canadian Pacific and Grand Trunk Railway Companies, each of which holds an equal interest in the property. The steel work on the new building was reported as practically all complete, and the stone is being delivered and cut preparatory to its erection, which it is expected will be commenced during November.

Directors were elected as follows: George Bury, I. G. Ogden, and E. W. Beatty, K.C., representing the C.P.R.; E. J. Chamberlin, H. G. Kelley, and J. E. Dalrymple, representing the G.T.R. The officers for the current year are: H. G. Kelley, President; G. Bury, Vice President; H. Phillips, Secretary; H. E. Suckling, Treasurer; W. H. Ardley, Auditor; J. W. Leonard, General Manager; W. C. Chisholm, K.C., General Solicitor; J. R. W. Ambrose, Chief Engineer; W. H. Biggar, K.C., E. W. Beatty, K.C., General Counsel; H. R. Safford and J. M. R. Fairbairn, Consulting Engineers.

Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending Oct. 13, 1916.	bushels.	bushels.	bushels.	bushels.	bushels.
	Wheat.	Oats.	Barley.	Flax.	Totals.
Fort William—					
C.P.R.	886,530	181,411	57,699	.....	1,125,640
Consolidated Elevator Co.	674,067	122,902	26,436	68,050	891,455
Empire Elevator Co.	533,082	140,259	21,218	85,653	779,212
Ogilvie Flour Mills Co.	891,885	87,319	38,890	.....	1,018,094
Western Terminal Elevator Co.	901,982	93,805	20,977	125,084	1,141,848
G. T. Pacific	755,611	371,828	32,204	70,653	1,230,316
Grain Growers' Grain Co.	801,531	325,954	69,518	.....	1,197,003
Fort William Elevator Co.	449,124	278,060	42,854	9,880	779,418
Eastern Terminal Elevator Co.	282,250	106,212	18,933	.....	407,395
Port Arthur—					
Port Arthur Elevator Co.	924,319	499,892	201,172	102,428	1,727,811
D. Horn & Co.	181,608	107,504	41,533	87,618	418,263
Dominion Government Elevator	636,301	105,881	40,998	91,003	874,183
Thunder Bay Elevator	505,731	173,479	54,456	43,846	777,512
Total terminal elevators	8,423,021	2,594,506	666,908	683,715	12,368,159
Calgary Dom. Govt. Elev.	67,574	4,706	2,989	55	75,324
Saskatoon Dom. Govt. Elev.	31,838	9,198	856	2,854	44,746
Moose Jaw Dom. Govt. Elev.	226,783	25,510	9,933	1,172	263,398
Total interior terminal elevators	326,195	39,414	13,778	4,081	383,468
Midland—					
Aberdeen Elevator Co.	171,475	210,190	.....	.....	381,665
Midland Elevator Co.	31,961	493,858	.....	.....	525,819
Tiffin, G.T.P.	879,455	313,419	.....	.....	1,192,874
Port McNicol	911,600	1,023,396	.....	29,467	1,961,493
Goderich Elevator and Transit Co.	441,908	488,821	.....	.....	930,749
Kingston—					
Commercial Elevator Co.	19,969	81,212	.....	.....	98,181
Port Colborne	617,898	947,647	.....	.....	1,565,545
Montreal—					
Harbor Commissioners no. 1	812,101	1,912,395	592,513	25,980	3,342,389
Harbor Commissioners no. 2	563,672	1,178,522	205,901	.....	1,948,095
Montreal Warehousing Co.	1,018,590	793,037	3,323	.....	1,814,950
Quebec Harbor Commissioners	26,205	149,471	14,695	*7,823	189,194
West St. John, N.B.	59,657	179,419	.....	.....	.....
Total public elevators	5,551,511	7,762,387	816,432	52,477	14,190,630
Total quantity in store	14,300,727	10,396,307	1,497,118	740,273	26,942,248
*Corn.					

Commission of Enquiry into Railways and Transportation.

The Chairman of the commission, A. H. Smith, President of the New York Central Lines, and Sir Henry Drayton arrived in Ottawa Oct. 8, on their return from an inspection trip over Canadian Northern, Grand Trunk Pacific and National Transcontinental lines as far as the Pacific Coast.

William Mitchell Acworth has been appointed a member of the Commission, in succession to Sir George Paish, who was compelled to relinquish the appointment on account of ill health. He was born near Bath, Somersetshire, Eng., Nov. 22, 1850. He is a barrister, M.A. (Oxon), and was a member of the London County Council from 1889 to 1892, and was a candidate for Parliament for the Keighley Division of Yorkshire in 1906, 1910 and 1911. Following are a list of committees connected with transportation of which he has been a member:—1895, Board of Trade Committee on Light Railways; 1899, Royal Commission on Accidents to Railway Servants; 1906, Vice Regal Commission on Irish Railways, and Committee on Railway Accounts and Statistics. He is a member of the council of the Royal Economic and Royal Statistical Societies, and of the executive committee of the Tariff Reform League, and Chairman of the London United Tramways Co. He is the author of several works on railways, including Railways of England, 1889; Railways of Scotland, 1890; Railways and the Trader, 1891, and Railway Economics, 1905. He was, from 1895 to 1904, lecturer on Railway Economics at the London School of Economics.

The Commission's Staff.

As stated in a previous issue, no information is obtainable from the commissioners as to the staff employed. As already announced, Prof. G. F. Swain and W. H. Chadburn have been brought in from the United States. Prof. Swain is apparently not spending much time in Canada, but is directing the work from Boston, Mass., W. H. Chadburn being his principal assistant at Ottawa, while A. Buchanan, formerly of the New York Central Lines, is looking into rolling stock questions. W. P. Kellett, who was Chief Engineer of the Lake Erie & Northern Ry. during most of its construction, and who is now President of the Dominion Steel Products Co. at Brantford, Ont., has been engaged in connection with the engineering work and is going to inspect the lines to the Pacific coast. A. H. N. Bruce, M. Can. Soc. C.E., formerly Chief Engineer, Quebec & Saguenay Ry., is said to have also been appointed on the engineering staff.

Geo. F. Swain's record is as follows:—Born, Mar. 2, 1857, in San Francisco, Cal. Graduated in 1877 from Massachusetts Institute of Technology, Department of Civil Engineering. Studied in Polytechnic School at Berlin, 1877, 1880. 1880-1884, hydraulic expert, 10th United States Census. 1887-1907, Professor of Civil Engineering, Massachusetts Institute of Technology, in charge of the department. 1909 to date, Gordon McKay Professor of Civil Engineering, Harvard University. 1887-1914, Consulting Engineer, Massachusetts Railroad Commission. 1894 to date, member Boston Transit Commission; since June, 1913, Chairman of the commission. 1904, member of commission to revise building laws of City of Boston. 1908, member, National Con-

servation Commission. 1911, member joint commission to consider and report on transportation improvements in Metropolitan District, including steam and electric railways, and port developments. 1910, expert employed by State Board to validate assets and liabilities of New York, New Haven & Hartford Rd. 1911, made valuation of New York Central Rd., 1912, expert on valuation of Chicago Elevated Railways; also made valuation of two small railways. During the last 20 years he has been consulting engineer for a large number of engineering projects, having designed and superintended construction of quite a number of bridges of various types. Has been expert in quite a number of cases involving bridges, railway matters, docks, and other engineering problems. Has also been a member of a large number of special commissions, including 15 or 20 commissions appointed to decide manner and apportion the cost of abolishing grade crossings of highways and railways, including a considerable number of large projects, such as those at Worcester, Waltham, Taunton, Newton, Somerville, and many other cities and towns in the United States. 1913-1914, Consulting Engineer for City Cincinnati on project for subways. Has also been employed by various States and municipalities on engineering projects of various kinds. 1916, member of board of arbitration on plan for reconstruction of Galveston causeway. 1913, President, American Society of Civil Engineers. Is a member of the American Society of Mechanical Engineers, American Institute of Consulting Engineers, Canadian Society of Civil Engineers, Institution of Civil Engineers of Great Britain, Society of Engineers and Architects, Hanover, Germany, Boston Society of Civil Engineers (Ex-President), American Railway Engineering Association, American Society for Testing Materials, and many other professional societies.

The following memorandum has been issued from the Prime Minister's Office in Ottawa:—"The government are in receipt of many communications which have reached them in consequence of a circular issued by the Canadian Society of Civil Engineers on Sept. 7, copy of which is hereto appended. [Editor's Note.—This circular was published in Canadian Railway and Marine World for October.]

"It is the policy of the government to employ Canadians for all public purposes; but having regard to the magnitude and seriousness of the questions which confront the government with regard to the railways, they have not been disposed to dictate to the commissioners in the selection of the best available assistance on this continent or elsewhere. Indeed the government could not expect the commissioners to undertake the very arduous and important task which has been set before them, unless they were given a free hand in such matters. The Prime Minister has called upon Sir Henry Drayton for a full report in respect of the matters set forth in the Canadian Society of Civil Engineers' circular, and that report has just been received. A copy is hereto appended."

Sir Henry L. Drayton's report.

The following letter from Sir Henry L. Drayton, K.C., Chief Railway Commissioner for Canada, and one of the Commissioners of inquiry into railway and transportation, was dated: "On Private

Car Acadia, Port Arthur, en route west, Sept. 19," and addressed to Sir Robert Borden.

"A copy of the circular of protest issued by the Canadian Society of Civil Engineers on the question of the appointment of Prof. Swain, of Harvard University, who is an American engineer, has been forwarded to me. In case you have not already got one, I enclose copy herewith. I understand, rightly or wrongly, that some 3,000 of these circulars have been issued; and, as the object of the circular is to have all those circularized write the members of parliament and to take up the question with those whom they believe to have influence in Ottawa, I have no doubt that the question is one which will be called to your attention with more or less regularity and insistence. I, therefore, think that while the appointment by the commission of investigation of their assistants is of necessity a matter for that commission, and that no apologies are required for the appointment of Prof. Swain, it is but fair that I should write you my position in the matter. The question was first brought to my attention by R. A. Ross, an electrical engineer of much eminence, with whom I have been personally associated in the past in connection with hydro electrical matters. At the outset, I desire to say that I have a very high opinion of Mr. Ross' engineering skill and knowledge and honesty of purpose. He writes:—

"As you are the only Canadian on that board and I am an engineer without knowledge of railway matters and therefore free to speak without my motives being misunderstood, I may say that it has been common practice in Canada whenever investigations were carried on which were really worth while taking up, to call in foreign engineers and that I sincerely hope that your board is not going to continue this practice which will result in a horde of probably several hundred American engineers being landed in this country to do work for which our Canadian engineers are better fitted both by training and actual experience. Canadian engineers can and do go to the States and obtain a preference there because they are Canadians and are well trained and reliable and there is abundant material still in this country to cover the present requirements. At the present there are many engineers out of work in Canada and who have had to go to the States for the same reason or who have enlisted, all of whom are our own citizens who will have to bear the burden not only of war costs but of the railways at present under consideration. Of course I realize that this dispatch may not be correct, but previous actions of the governmental bodies have indicated the possibility of its truth, hence this protest to the only Canadian member of the board. May I also add that from what I hear the personnel of the board itself appears to be thoroughly acceptable to every one and personally I wish you every success in this very important undertaking."

"I am entirely free to admit my personal preference in favor of the local men, many of whom I know and have come in contact with in business. It occurs to me, however, that in a position of the present magnitude, and, indeed, as a matter of common duty, the only proper thing to do is to ignore all personal predilections, acquaintances, and the like, and get the best men available, whoever they may be. The question is certainly large enough and the urgency sufficiently real. Every consideration was given Mr. Ross' letter before Prof. Swain's appointment was made. I note that the circular refers to his appointment as a particularly flagrant case. I, therefore, should say something about him. Strangely enough, he happens to be a member of the protesting society. He became a member in Jan., 1913, being himself at the time President of the American Society. I should also say that he is a member of many years' standing of the

British Institution of Civil Engineers.

"The circular states that competent constructing and operating engineers have been passed over in favor of alien engineers. Prof. Swain has not been appointed for any such work, or for advisory work as to the methods of construction or methods of operation. Rightly or wrongly, the commission thinks that, in order to report properly to parliament, some knowledge should be had as to what the actual investment in railways means, and what the physical value of the lines under consideration, to the extent possible in view of the limited time available, is. No general valuation has ever been made in Canada, although in a few instances I believe it to be a fact that railways, for their own purposes, have made partial valuations. The question is a particularly complicated one, the mere compilation of necessary data, scales, etc., entailing the expenditure of a large sum of money, the employment of a comparatively large staff, and some six months of time itself. Prof. Swain is thoroughly familiar with this work and had much data already in hand and available. Under the United States legislation of 1913, the duty was thrown on the Interstate Commerce Commission of making a physical examination of American lines, and the work, merely preliminary, in 1914 cost \$456,565. In 1915, the cost amounted to \$2,131,935. It has been stated that the actual work of valuation will take upwards of 10 years and will cost millions of money. No such work, of course, has ever been undertaken in Canada. In so far as the railways themselves are concerned, as the result of inquiry, the only valuation that I can find that was made in detail was one which was made in 1910-11 by the C.P.R. for a portion of its line. That company has always been looked upon as a characteristic Canadian company and is noted for its praiseworthy policy of employing Canadians wherever possible. The work, however, being entirely new in Canada, I find that in this instance, the Canadian Pacific itself went to the States for engineers who had the necessary experience to do the work. So far as Prof. Swain is concerned, he has been in touch with this work since its inception in the States, and, without going into details of his work, it is sufficient to state that in 1910-11 he was in charge of the valuation of the physical properties of the New York, New Haven & Hartford Rd., and in 1911-12 of the New York Central Lines.

"Over and above all this there is the obvious objection to the appointment of a Canadian engineer which the circular itself recognizes. It states:—

"It may be argued in support of the present alien appointment that Canadian engineers are not acceptable because many have been in the employ of the railway companies. To this we would reply that, as the commission itself is to advise the government, basing itself upon the engineering data given to it, any experienced engineers are competent to collect and submit the necessary information to the commission."

"In so far as the answer is concerned, if the information supplied to the commission by an engineer was formed from an improper basis, it certainly would be of no use unless acted upon by the commission, and if acted upon by the commission would be just as objectionable as if made by the engineer to the government itself. The circular might have gone further in its statements and frankly admitted that all Canadian railway engineers of standing have been some time or other, or are now, in the employment of railway companies. A glance at the members of the council issuing the circular will show how neces-

sary the admission that the society makes, was. There are on the council two Canadian Pacific engineers, two Grand Trunk engineers, two Canadian Northern engineers, as well as engineers on the Intercolonial or National Transcontinental systems. Taking any of the council's representatives in so far as the members interested in railway work are concerned, their connection in the past or present with the Canadian lines is beyond all doubt. Besides the matter of public interest in having an entirely unprejudiced report, the interests of the companies themselves must be considered. A valuation, for example, of Canadian Northern properties by a Canadian Pacific engineer, committed to Canadian Pacific standards and grades by his own work, and in full sympathy with Canadian Pacific policies, would be absolutely unfair. The same can be said of engineers of either of the other roads, all of whom have a natural bias in favor of their own work, and an honest conviction at that. Much depends upon the point of view. The valuation of a given property may show startlingly different results arrived at by engineers whose experience and work, and resultant convictions and prejudices—never mind how honest they may be—have differed one from the other.

"The circular is of course in error where it says that an American engineer is appointed as the commission's advisor. He is not. His work is simply to look after the matter of physical valuation as nearly as may be, and that in itself is an all sufficient task. I feel somewhat keenly the position—not in the slightest degree personally, but in the interest of the public service. To my mind, the present occasion is a pretty good illustration of what is very largely relied upon by those opposed to public control and service of utilities—that is, that it is impossible that they would be conducted on business lines and as a matter of business. Personally, I have not found it so in the past. No such difficulties were raised, for example, when I acted as a commissioner of the Hydro Electric in Toronto, where the conduct of the business was left entirely in the hands of those responsible for it.

"This circular, however, requests each member to write:—1. To his representative in the Dominion Parliament, whether government or opposition, setting forth the facts of the case in a strong way, and pointing out that this is merely an incident in a long course of similar procedures. 2. To write in a similar vein to those having influence with the government in his own community or elsewhere. 3. That wherever similar incidents are brought to his attention he voice a protest, giving the facts to his local branch of the Canadian Society of Civil Engineers, or to the Secretary at Montreal, in such a manner that the council may deal therewith. 4. That he do not delay acting in this matter as above outlined, but proceed today to do what he can to bring every pressure to bear in every direction for the good of the engineering community in Canada.

"I, of course, do not know whether the action of the society was instigated by a disappointed applicant, whether it was initiated by the railways for their own purposes, or whether it was launched in the very best of faith. Personally, I believe it to be launched in the best of faith, but without any consideration of the immediate issue and the necessity of the present emergency. It would be difficult to imagine a more complete initiation of

an attempt to achieve a result by political influence. I do not know why railway accountants or any body of men engaged in railway work could not, with equal propriety, circularize complaints and insist upon the employment of some of their members on an inquiry, which after all, is only necessary in view of a railway situation, the result at least in part of the work of those engaged in construction of railways in Canada. The work is, of course, merely temporary. Only Canadians should in my view be appointed to permanent government positions, which I believe to be the rule in the States; but, so far as temporary work and advisory work is concerned, if proper results are to be obtained, the best man ought to be got irrespective of his parish, province, or country; and a great hurt will be done to public ownership and administration in Canada if campaigns such as that now undertaken are to flourish in the future."

"No Canadian Need Apply."

Under the above heading, the Toronto Globe said recently:—"There are two dangerous conditions symptomatic of national weakness which Canada should endeavor to avoid. Canadians should resist on the one hand every tendency towards smug complacency and self exaltation, and on the other hand the no less pernicious practice of self depreciation. Judging by recent happenings, Canada seems to have passed the first stage, and is now in serious danger of stultifying herself in the eyes of her neighbors by underestimating the worth of her own citizens. Has this country gone so far down in the scale of values as to pass by Canadians in favor of outsiders in public appointments in which expert knowledge and honor are the chief requirements? In criticizing the action of the Government in passing over Canadian civil engineers in favor of Prof. Swain, of Harvard, when selecting the personnel of the commission investigating the Canadian railway situation, the Globe has no intention of criticizing Prof. Swain, who stands so high in his profession. What compels criticism in this case is a government memorandum which adds insult to injury, so far as civil engineers in Canada are concerned. There is nothing in either the magnitude or seriousness of the question under investigation that justifies this undeserved slur cast upon the professional reputation and honor of an intelligent body of Canadian citizens. There are in the Dominion civil engineers second to none on this continent in professional standing, outside those connected with the various railway interests. Is it contended, then, that in all Canada no civil engineer can be found who will give an impartial and reliable report on the railways, free from the taint of political or railway influence? Is there not one righteous civil engineer in all Canada to whose honor this task could safely be entrusted? The question has only to be asked to show the absurdity of the government attitude in refusing to appoint a Canadian engineer instead of an imported expert. Toronto's experience does not bear out the Government's fears. W. T. Jennings, a former C.P.R. engineer, combated railway aggression fearlessly when in the service of this city. Some more intelligible excuse will have to be found for this unjust slight upon the engineering profession of Canada."

The foregoing shows how impossible it is for the daily press to discuss any public matter without introducing politics. The Globe has fallen into two errors, first in saying that Prof. Swain

is a member of the commission appointed to enquire into railways and transportation, and second that he was appointed by the government. The commission, as frequently stated in these columns, is composed of A. H. Smith, President New York Central Rd., as Chairman, and Sir Henry Drayton, Chief Railway Commissioner. The third member appointed, Sir George Paish, of London, Eng., is not able to act, owing to ill health. Prof. Swain has not been appointed by the government, but by Messrs. Smith and Drayton. Their defence of the appointment is given in Sir Henry Drayton's letter to the Premier, reproduced above, and the government has taken the ground that it cannot interfere with the commission's appointments.

Comments by R. A. Ross, M.Can.Soc.C.E.

In a letter to a U.S. paper R. A. Ross, M.Can.Soc.C.E., Montreal, says in part:—

"As regards the case in point, it is one of a series of similar appointments made by the Dominion and Provincial Governments which have hitherto called forth merely desultory criticism by individual members of the Canadian Society of Civil Engineers. In this case (a particularly flagrant one in the opinion of all) it was decided that united action should be taken, not, be it noted, so much against American engineers as such, nor at all against Prof. Swain, but against the Government's total neglect of Canadian engineers. The action is intended as the opening gun of a campaign to force a recognition of the engineer on our lawyer politicians. In dealing with the matter we first met Prof. Swain at a small dinner in his honor at Montreal, and laid before him our intended programme, in which his case was a mere incident, pointing out that we had no criticisms to offer as to his attitude, as we would all be ready to act for the Government of the United States should that Government decide to call in Canadian engineers for advice—a thing, by the way, which has never happened and never can happen, owing to the legislation against such appointments.

"We entirely agree with the ethics of high thinking and plain living, and have held that position up till recently without complaint, although the plain living has become plainer, especially during the last three years; but at last we have awakened to the fact that the game is not played in that way, and that the admonition is not for practical use, but only for application to others—and we apparently are the others. The Canadian engineer is not surrounded by carefully constructed wire entanglements of defensive laws, and has had to fight in the open against all comers—and they have come in recent years in ever-increasing numbers. We are therefore in the position of a nation of avowed free traders who find that the other fellows are protectionists, and that in order to obtain, not the free trade which they desire and have always upheld, but merely a fair trade, they must take such action as will provide at least the less desirable alternative. How far we may ultimately find it advisable to go in the direction of much disliked protection we do not know, but the present situation is not as yet connected with a demand for legislation, being designed merely to discourage the calling in of outsiders where such necessity does not exist. As a matter of fact, the engineer in this as in other countries resents his position under the domination of the politician and proposes to make himself felt,

"The decision of the Society's council was unanimous, and as to the membership in general the only criticisms we have heard are from four U.S. members. This unanimous approval of Canadian members must indicate clearly that the matter is not a new question, but has been drilled in during past years by experience of governmental action, and indicates a well-grounded body of opinion endorsing the action of the council. The American engineer in question is a member of our society, and a valued one. A large number of Canadians are members of American societies and yet require a special act of Congress for each case to permit of their doing Government work. May it be pertinent to inquire what would be the attitude of the American societies toward any American Government which preferred Canadians, and passed over without consideration their own countrymen, or undertook to remove the legal restrictions imposed on alien engineers in the U.S.? The foregoing question does not appear pertinent to such confirmed free traders as ourselves, as should we later obtain such protection as exists for engineers in the U.S. we might be able to swap advantages and both return to that ethical plane which we may be forced reluctantly to abandon in the not distant future, as our campaign for the recognition of the engineer develops."

The Canadian Society of Civil Engineers' British Columbia Division, at a meeting held recently, decided to appoint a delegation to interview Sir George Foster, Minister of Trade and Commerce, and Hon. Martin Burrell, Minister of Agriculture, during their visit to that city and lodge a strong protest against "the policy of placing in the hands of aliens the engineering work of a commission appointed by the Canadian government to investigate Canadian railways." R. S. Hayward, President of the Vancouver branch, was in the chair, and a number of addresses were delivered strongly condemning the action of the government in awarding such an important post to one who was not a British subject when there were equally competent British engineers available to undertake the work. A strong case was outlined to be laid before the two ministers.

Freight and Passenger Traffic Notes.

The Grand Trunk Pacific Ry. has removed its divisional point from Wainwright to Edmonton, Alta.

The C.P.R., on Oct. 5, increased its first class saloon passenger rates from Vancouver to Hong Kong from \$225 to \$250.

C.P.R. lines centering on Lethbridge, Alta., are reported to have shipped this year 1,318,000 lbs. of wool, the produce of 84,000 sheep.

The C.P.R. put in operation an additional train on its Calgary-Edmonton line Oct. 29. It leaves Calgary at 13.20 o'clock, and the corresponding south-bound train leaves Edmonton at 17 o'clock.

The North Pacific Coast Passenger Agents' Association held its regular quarterly meeting at Victoria, B.C., Oct. 10. C. R. Jenney, General Agent, Passenger Department, G.T.P.Ry., Vancouver, being Chairman.

The C.P.R. has offered special rates on cattle returned from Winnipeg, Saskatoon, Moose Jaw, Calgary and Edmonton

to country points for feeding during the winter. The object is to enable farmers to utilize their surplus foodstuffs.

The Reid Newfoundland Co. is now operating its passenger steamship service between North Sydney, N.S., and Port Aux Basques, Nfld., in both directions, on Tuesdays, Thursdays and Saturdays, instead of daily as heretofore.

The Canadian Northern Ry., on Oct. 8, discontinued its train leaving Ottawa at 7.15 p.m. for Quebec. On the same day it put on a local train from Ottawa via Joliette and Montreal, leaving Ottawa at 8 a.m., and another train leaving Montreal at 3.45 p.m. daily except Sundays.

The Grand Trunk Pacific Ry. has extended its train service on the Moose Jaw Northwest Branch from Gilroy to Riverhurst, Sask. The service is a triweekly one, leaving Moose Jaw at 10.30 a.m., Mondays, Wednesdays and Fridays, and returning on Tuesdays, Thursdays and Saturdays.

The Grand Trunk Pacific Ry. announces that during December a through tourist car service will be operated between Moose Jaw, Sask., and Toronto. Through cars will leave Moose Jaw Mondays, Wednesdays and Saturdays, to connect with the "National" leaving Winnipeg Tuesdays, Thursdays and Saturdays at 5.15 p.m. The tourist car service on the Winnipeg-Edmonton section will be augmented for the December traffic.

The Grand Trunk Pacific Ry. put its winter time table in operation Oct. 15. The triweekly service each way between Edmonton and Prince Rupert has been discontinued, and a biweekly service substituted. Trains will leave Edmonton every Sunday and Tuesday at 10.35 p.m., arriving at Prince Rupert Tuesdays and Thursdays at 5.30, and leaving Prince Rupert Wednesdays and Saturdays at 11.30 a.m., arriving at Edmonton Fridays and Mondays at 8 a.m. In connection with this alteration the company will continue a weekly service by the s.s. Prince Rupert to Alaskan points until Dec. 21. The steamship will leave Vancouver on Thursdays at 10 p.m., and Prince Rupert on Saturdays at noon, arriving at Skagway on Mondays, and starting at noon on the same day on the return trip.

Grand Trunk Track Inspection.—The annual track inspection over the G.T.R. began on the Eastern Lines Oct. 9, the party consisting of the Chief Engineer, Engineer of Maintenance of Way, general superintendents, division engineers, superintendents of track, superintendents of bridges and buildings, division superintendents, assistant engineers, supervisors of track, supervisors of bridges and buildings and supervisors of signals. The same method of inspection was followed as during the previous two years by the officers of the Maintenance of Way Department, and by use of the inspection car equipped with an electric recording apparatus, which was fully described and illustrated in Canadian Railway and Marine World for April, 1915.

Brunner, Mond, Canada, Limited has been incorporated under the Dominion Companies Act, with authorized capital of \$3,000,000, office in Toronto, and power to manufacture nitrates and similar chemical products, and in connection therewith to carry on mining, to own steam and other vessels, to build railways and tramways, canals, docks and warehouses. It is reported that the company's works will be erected at Port Colborne or Welland, Ont.

Railway Development, Projected Lines, Surveys, Construction Betterments, Etc.

Dallve-Madden Mine.—M. Albert, of Prince Rupert, B.C., is reported to have arrived in Vancouver in October to engage men to build an 18-mile mining railway from the Dallve-Madden Mine to the coast.

Dominion Atlantic Ry.—The Board of Railway Commissioners has approved of plans of new station and freight sheds at Middleton, N.S., details of which have already been published. (Oct. pg. 400.)

Dominion Government Railway to Hudson Bay.—A press report states that track has been laid to Kettle Rapids on the Nelson River, mileage 552, from Pas, Man., making 90.76 miles of track laid this season.

J. D. McArthur, the general contractor, has returned from an inspection of the work and is reported to have said that satisfactory progress had been made during the season, notwithstanding the scarcity of labor. There is no reason, he said, why the line should not be completed for traffic by the end of 1917. Oct. ug. 400.)

Edmonton, Dunvegan and British Columbia Ry.—The station building at Peace River, Alta., has been completed. The general waiting room and ticket office is in the centre of the building, with the women's waiting room at one end, and a men's smoking room at the other.

Good progress is reported to have been made with grading on the 54-mile extension of the line from Spirit River to the B.C. Block. A Northwest Mounted Police officer is reported to have said in Vancouver, Oct. 10, that the grading gangs will reach the boundary line between Alberta and British Columbia by Dec. 31. (Oct. pg. 400.)

Grand Lake Ry. and Transportation Co.—Application is being made to the Quebec Legislature to incorporate a company with this title to build a tramway from Christopherson Lake on Bell River to Twenty-one Mile Bay on the Ottawa River, and from Lake Lamy to Rabbit Lake on the Ottawa River; to own and operate steam and other vessels in connection with these lines; to build telegraph and telephone lines, and to carry on a general lumbering, mining and trading business. The application is being made by G. Bryson, Jas. Bryson, Fort Coulonge, Que.; J. B. Fraser, W. H. A. Fraser, Ottawa; Geo. Gordon, North Bay, Ont.; A. B. Gordon, Toronto.

Grand Trunk Pacific Ry.—The extension of the Regina-Moose Jaw branch from Gilroy, Sask., mileage 108, to Riverhurst, about 1½ miles west of the Saskatchewan River, has been completed, and is reported to be opened for regular traffic. Grain traffic has been moved from Riverhurst since Sept. 1. (Oct. pg. 400.)

Grand Trunk Ry.—The Board of Railway Commissioners has authorized the company to use bridge 180 at mileage 122.90, district 3, Montreal subdivision, and has approved plans for a new station at Port Colborne, Ont. (Oct. pg. 400.)

Great Northern Ry. Lines in Canada.—The Vancouver, Victoria and Eastern Ry and Navigation Co. has been authorized by the Board of Railway Commissioners to open for traffic the section of its line from a connection with the Kettle Valley line at Hope, B.C., to a connection with the Canadian Northern Pacific Ry.,

900 ft. The V. V. & E. R. runs over the K.V.R.'s Coquihalla Valley section to Hope, and then over the C.N.P.R. to a connection with another Great Northern Ry. line near the Fraser River bridge, opposite New Westminster. The opening of this piece of line gives the company a through route from Republic, Wash., to Vancouver.

The work being done in the vicinity of Coquitlam, B.C., to cut out an objectionable bend on the line into Vancouver is reported to be progressing favorably. In connection with this work the Board of Railway Commissioners has ordered the company to build a steel bridge on concrete abutments, capable of carrying a double-track line for the B. C. Electric Ry., across the line at the North Road, through which the new track is cut. The gravel and other material obtained in this area is being used for filling at False Creek. (Oct. pg. 400.)

Greater Winnipeg Water District Ry.—Tenders are under consideration for building of a locomotive shed at Waugh, Man., the Indian Bay terminal of the railway. The commissioners have under consideration a comprehensive plan for the promotion of colonization along the line. (Jan. pg. 10.)

Intercolonial Ry.—A new ballast pit has been opened at Milford, on the Halifax-Truro section to provide ballast for the line to the new ocean terminals at Halifax, etc.

Tenders will be received to Nov. 15 for building the superstructure of the new grain elevator at St. John, N.B. The foundation work is reported to be in progress. (Oct. pg. 400.)

Niagara and Eastern Rd.—The New York Public Service Commission, on Oct. 14, refused the application of the N. & E. Rd. for permission to connect the Buffalo, Lockport and Rochester Rd. with the Niagara frontier, where it is proposed to build another international bridge across the gorge at the Devil's Hole. The commission considered the possibility of building the bridge to be too remote to deal with the application at present. According to an Albany, N.Y., dispatch, the connecting line on the Canadian side would be a line to be built by the Canadian Northern Ry. A C.N.R. official has denied this, saying that that company was not interested in the application at Albany at all and that its repeal would make no difference to the C.N.R. plans for reaching the Niagara frontier.

Pacific Great Eastern Ry.—A press report states that plans have been prepared for the erection of a machine shop, storehouse and weigh scales at Squamish, and for the erection of a locomotive house, machine and repair shop at Lillooet, B.C., on which it is proposed to make an immediate expenditure of \$150,000. The work it is said will be started at once, and it is expected to have the several buildings completed by next spring.

Owing to the shortage of labor it is reported that but little progress is being made with grading and tracklaying between Clinton and Prince George. (Oct. pg. 400.)

Quebec Bridge.—It is reported that rush orders have been placed in the U.S. for the necessary steel to complete a new suspension span to replace the one which fell into the river on Sept. 11 while it was being hoisted into position. It is

stated that the new span will be ready for placing during 1917. (Sept. pg. 364.)

Quebec, Montreal and Southern Ry.—A press report states that it is intended to replace immediately the locomotive house on Chambly Road, Longueuil, Que., destroyed by fire recently. (Jan., pg. 10.)

Quebec & Saguenay Ry.—Tenders were received by O'Brien & Doheny, contractors, to Oct. 6, for 30,000 railway ties for immediate delivery at Cap Tourmente, Que. In connection with this we are officially advised that M. J. O'Brien of Renfrew, Ont., and Hugh Doheny of Montreal, working as O'Brien & Doheny, have entered into a contract with the Q. & S. R. for the repair and completion of the line, which contract will be taken over by the Dominion Government when the Q. & S. R. is transferred to it to be operated as part of the Canadian Government Railways. (Aug., pg. 316.)

St. John and Quebec Ry.—There has been deposited with the Minister of Public Works at Ottawa plans and description of the site of the proposed bridge across Jones' Creek, Greenwich, N.B., mileage 87, on the extension from Georgetown. (Sept. pg. 365.)

Seymour Narrows, B.C., Bridge.—The Dominion Royal Commission, which is travelling through Canada, was urged by a deputation at its sittings in Victoria, B.C., recently, to press upon the Dominion Government the importance from the standpoint of Imperial defence of building a bridge across Seymour Narrows to connect Vancouver Island with the mainland.

Southern New England Ry.—Some matters connected with this company's projects have been before the Massachusetts Public Service Commission recently. The company is reported to have put in a statement showing that as of June 30, it had \$3,452,000 of advances from the Central Vermont Ry., an increase of \$505,000 during the preceding year, and that \$4,141,000 has thus far been spent on the new road. It is the Massachusetts section of the projected line to Providence, which, of course, still lies quite uncompleted. The S.N.E.Ry. is a subsidiary of the C.V.Ry., which is controlled by the G.T.R.

Pere Marquette Rd. Officials have completed their annual inspection of the entire system in the U. S. and Canada, upon which the award of prizes is made. The prizes consist of \$100 to the roadmaster of the division receiving the highest marks; \$25 to the foreman of the best section on each roadmaster's division; \$50 to the signal supervisor receiving the highest grade; \$100 to the master mechanic having the most efficient shops; \$25 to the agent on each division receiving the highest grade for care of buildings.

Changes in C.P.R. Signalling.—On the section of about 5 miles of double track between Place Viger and Mile End stations, Montreal, automatic signals, using direct current for track circuit, were installed about 4 years ago. This year, the track circuits have been changed from direct to alternating current, the signals and switch indicators operating by direct current as formerly. The change in the track circuit current has been made to avoid the chance of interference from stray foreign current.

Mainly About Railway People Throughout Canada.

Lord Shaughnessy sailed from New York, Oct. 25, for England.

S. J. McLean, one of the members of the Board of Railway Commissioners, has been called to the Ontario bar and sworn in as a solicitor.

Jno. McIntyre, K.C., of Kingston, Ont., who died Oct. 4, aged 73, was a brother of D. M. McIntyre, K.C., Chairman, Ontario Railway and Municipal Board, Toronto.

W. H. Grant, General Tie & Timber Agent, and acting General Store Keeper Eastern Lines, Canadian Northern Ry., has been elected President of the Toronto Curling Club.

J. T. Arundel, General Superintendent, Ontario District, C.P.R., who has been suffering from rheumatism, has been taking treatment at Mount Clemens, Michigan.

H. E. Beasley, General Superintendent, Esquimaux & Nanaimo Ry., Victoria, B.C., and Mrs. Beasley, spent a few weeks in Toronto and vicinity recently, visiting relatives.

Lt. Col. Blair Ripley, Commanding Officer, No. 1 Construction Battalion, and formerly Engineer of Grade Separation, C.P.R., North Toronto, has arrived in England with his battalion.

Hon. F. Cochrane, Minister of Railways and Canals, was presented with an oil portrait of himself, by a number of friends in Cobalt, Haileybury and Liskeard, Ont., at Haileybury, Oct. 5.

S. Parker Tuck, who died at Nelson, B.C., recently, was associated with the building of a section of the C.P.R. from Yale westward, and was in charge of the work from Lytton to Spence's Bridge.

A. S. Dawson, M.Can.Soc.C.E., Chief Engineer, and R. S. Stockton, Superintendent of Irrigation, Natural Resources Department, C.P.R., Calgary, Alta., were at the irrigation convention at El Paso, Texas, in October.

D. McNicoll, formerly Vice President, and a director, C.P.R., who, owing to illness, spent the summer at his son's ranch Penticton, B.C., has returned to Montreal where, it is said, he is to undergo special medical treatment.

A. J. Stevens, M.Can.Soc.C.E., who was in charge of the Dominion Public Works, Manitoba District, has been transferred to Windsor, Ont., to relieve H. J. Lamb, M.Can.Soc.C.E., who is in the Canadian Expeditionary Force.

Hon. John Costigan, who died at Quebec, Que., Sept. 29, aged 82, was at one time associated with the promotion of the Quebec and New Brunswick Ry. Co., which, however, carried out no railway construction, and was, for some years, until 1897, Minister of Marine.

The Ross Memorial addition to the Royal Victoria Hospital, Montreal, was officially opened by the Duke of Connaught, Oct. 11. The building has been erected and equipped by J. K. L. Ross, director, C.P.R., in memory of his father, the late James Ross, and of his mother.

A. E. Killam, formerly Inspector of Bridges and Buildings, Intercolonial Ry., Moncton, N.B., attended the annual convention of the American Railway Bridge and Building Association, of which he was Vice President, 1911-12, and President, 1912-13, at New Orleans, La., Oct. 17 to 19.

H. E. Stevens, M.Am.Soc.C.E., Bridge Engineer, Northern Pacific Ry., has been promoted to be Chief Engineer, succeeding W. E. Darling, resigned. Mr. Darling has opened an office in St. Paul, Minn., as consulting engineer, specializing in railway engineering and construction.

Sir Thomas Tait, President, Fredericton & Grand Lake Coal & Ry. Co., who resigned his position as Director of National Service recently, stayed with his mother-in-law, Mrs. G. R. R. Cockburn, in Toronto, during part of October, being accompanied by Lady and Miss Tait.

D. R. Campbell, Assistant General Manager, Pacific Division, Canadian Northern Ry., was reported to be convalescent, about the middle of October, after a sudden illness which necessitated several weeks stay in the hospital at Kamloops, B.C. He is now at his home in Vancouver.

Lt. Col. John Stewart, of Halifax, N.S., of the Canadian Army Medical Corps, who was offered the position of head of the Duchess of Connaught's Canadian hospital at Cliveden, Eng., recently, is a brother of A. F. Stewart, M.Can.Soc.C.E., Chief Engineer, Eastern Lines, Canadian Northern Ry.

Col. H. C. Mitchell, B.A.Sc., C.E., M.Can.Soc.C.E., one of the Corps of Guides, who has been at the front almost since the commencement of war, and who was previously in engineering practice in Toronto, has been transferred from the Canadian staff to the Second British Army's General Staff and has been appointed General Staff Officer. He was awarded the D.S.O. some time since.

Denis Murphy, President, Ottawa Transportation Co., and one of the Timiskiming & Northern Ontario Ry. Commissioners, who is 77 years of age, has been seriously ill at his house in Ottawa for several weeks. His son, Lt. Col. G. P. Murphy, who has been in England a good deal since war broke out, and who was appointed Quarter Master General at London recently, has returned to Canada to be with him.

Sir William Mackenzie, President, and D. B. Hanna, Third Vice President, Canadian Northern Ry., who left Toronto in August for England with several members of their families, returned to Toronto Oct. 7, having come over on the s.s. Olympic, which made a record trip to Halifax in 4 days, 15 hours. Mr. Hanna, in company with Sir Clifford Sifton, spent some days visiting the front in Belgium and France.

Neil Mooney, whose appointment as Assistant General Passenger Agent, New York Central Rd., New York, was announced in our last issue, was entertained to luncheon at Montreal, Oct. 12, by a number of transportation men in the city, and presented with a silver tea service. Prior to his present appointment, he had been General Agent, Passenger Department, N.Y.C.R. at Montreal, since Jan. 1910.

W. J. Cunningham, who has been appointed to the James J. Hill Professorship of Transportation of Harvard University, was born at St. John, N.B., April 29, 1875, and began railway work with the C.P.R. as stenographer and ticket clerk at St. John and Boston. In 1896 he entered Boston and Albany Rd. service, and has since been in the service of the New York, New Haven and Hartford,

and Delaware, Lackawanna and Western, in various capacities, and latterly was President's Assistant, Boston and Maine Rd.

A. K. Galloway, who was appointed General Master Mechanic, Northwest District, Baltimore and Ohio Rd., and Cincinnati, Hamilton and Dayton Rd., recently was born at St. Thomas, Ont., Oct. 1, 1885, and entered Michigan Central Rd. service there as an apprentice in 1902, and on completion of his apprenticeship remained there until Nov. 1, 1914, at which time he was roundhouse foreman, and was later appointed General Foreman. He subsequently transferred to Baltimore and Ohio Rd. service as Master Mechanic at Baltimore, and remained as such until his present appointment.

Royden Findlay McNaughton, whose appointment as City Ticket Agent, Canadian Northern Ry., Regina, Sask., was announced in our last issue, was born at Petrolea, Ont., June 23, 1889, and entered railway service in April 1908, since when he has been, to Oct. 1910, relieving agent, Middle Division, G.T.R., Toronto; Oct. 1910 to Nov. 1912, rate clerk, Passenger Department, Canadian Northern Ry., Winnipeg; Nov. 1912 to April 1913, chief clerk to District Passenger Agent, C.N.R., Saskatoon, Sask.; April 1913 to May 1914, Travelling Passenger Agent, C.N.R., Saskatoon, Sask.; May 1914 to Sept. 1916, Travelling Passenger Agent, C.N.R., Edmonton, Alta.

V. G. Bogue, who died suddenly, Oct. 14, on board ship when returning to New York from Mexico, had been concerned with the construction of many railways on this continent. At one time he made a report for the C.P.R. on the economics of its line between Calgary, Alta., and Vancouver, B.C., as compared with a proposed revised line, and other routes. Amongst other work carried out in Canada, he examined the report and plans for the improvement of the harbor, waterfront and railway terminals at Prince Rupert, B.C. He was a member of the American Society of Civil Engineers, and of the American Railway Engineering Association.

James Balkwill, whose appointment as Division Superintendent, Michigan Central Rd., St. Thomas, Ont., was announced in our last issue, was born in Southwold Tp., Ont., Mar. 8, 1870, and entered M.C.R. service in Mar. 1888, since when he has been to June 1889, telegrapher at various places; June 1889 to Aug. 1890, relieving agent, various places; Aug. 1890 to Dec. 1903, agent, Dutton, Ont.; Dec. 1903 to Mar. 1904, extra dispatcher, St. Thomas, Ont.; Mar. 1904 to June 1913, chief clerk to Superintendent, St. Thomas, Ont.; June 1913 to Nov. 1914, Assistant Trainmaster, St. Thomas, Ont.; Nov. 1914 to Sept. 1916, Trainmaster, St. Thomas, Ont.

J. A. Everell, whose appointment as District Passenger Agent, Canadian Government Railways, Montreal, in addition to his position as Superintendent, Montmorency Division, Quebec Ry. Light and Power Co., Quebec, Que., was announced in our last issue, was born at Cap Rouge in 1863. He commenced his transportation service as a clerk and telegraph operator with the Cap Rouge Pier and Wharf Co., and in 1889 joined the Quebec and Lake St. John Ry. staff, and was station master at Riviere a Piere and

later at Chambord, Que. In Aug. 1889, he entered Quebec, Montmorency and Charlevoix Ry. service as dispatcher, and remained when that line became the Montmorency Division of the Quebec Ry. Light and Power Co., eventually becoming Superintendent of that division.

Alfred Erwin McMaster, who has been appointed Division Freight Agent, Grand Trunk Pacific Ry., Edmonton, Alta., was born at Perth, Ont., Oct. 22, 1885, and entered railway service in 1902, since when he has been, to May 1903, in Freight Department, C.P.R., Keewatin, Ont.; May 1903 to Aug. 1907, in various positions up to assistant agent, C.P.R., Port Arthur, Ont.; Aug. 1907 to Aug. 1908, agent, and chief clerk to Superintendent, Grand Trunk Pacific Ry., Fort William, Ont.; Aug. 1908 to July 15, 1913, agent, and General Agent, G.T.P.R., G.T.R. System, and Grand Trunk Pacific Coast Steamship Co., Prince Rupert, B.C. July 15, 1913 to Sept. 30, 1916, Commercial Agent, G.T.P.R., Regina, Sask. Prior to leaving Regina, he was entertained to dinner at the Canada Club, and presented with a case of pipes.

W. H. Sample, who has been appointed Master Mechanic, Eastern Lines, G.T.R., Montreal, was born at Altona, N.Y., Aug. 20, 1864, and entered railway service, July 20, 1882, since when he has been, to April 1886, fireman, Central Vermont Ry.; April 1886 to July 1887, locomotive man, C.V.R.; July 1887 to Aug. 1889, locomotive man, Atchison, Topeka and Santa Fe Ry.; Aug. 1889 to Feb. 1901, locomotive man, Central Vermont Ry.; Feb. 1901 to July 1906, Road Foreman of Locomotives, C.V.R.; July 1906 to Mar. 15, 1911, Superintendent of Motive Power and Car Department, Northern Ry. of Costa Rica; March 15, 1911 to Oct. 1914, Master Mechanic, Ottawa Division, Eastern Lines, G.T.R., Ottawa, Ont.; Oct. 1914 to Oct. 1916, Master Mechanic, Western Lines, G.T.R., Battle Creek, Mich.

M. G. Murphy, whose appointment as General Agent, Passenger Department, C.P.R., Detroit, Mich., was announced in our last issue, was born at Halifax, N.S., Feb. 26, 1878, and entered C.P.R. service, Mar. 31, 1899, since when he has been, to Jan. 1901, agent and operator, Atlantic Division; Jan. 1901 to 1903, chief clerk to Freight Agent, C.P.R., and agent, Dominion Express Co., Halifax, N.S.; 1903 to 1905, Travelling Passenger Agent, Atlantic Division; 1905 to June 1907, Assistant to District Passenger Agent, St. John, N.B.; June 1907 to Nov. 1, 1910, General Travelling Passenger Agent, All Lines, Montreal; Oct. 1, 1911 to Jan. 31, 1916, District Passenger Agent, Toronto covering rail and lake lines as well as ocean services; Jan. 31 to Sept. 1916, District Passenger Agent, C.P.R., and Canadian Pacific Ocean Services Ltd., St. John, N.B.

Herbert Gates Reid, who has been appointed Assistant Superintendent of Rolling Stock, Canadian Government Railways, Transcona, Man., was born at Pembroke, Ont., Oct. 27, 1863, and entered railway service in Mar., 1884, since when he has been, to Nov. 1884, wiper, C.P.R., North Bay, Ont.; Nov. 1884 to Nov. 1887, fireman, C.P.R., North Bay, Ont.; Nov. 1887 to Dec. 1905, locomotive man, C.P.R., North Bay, Ont.; Dec. 1905 to June 1906, relieving Road Foreman of Locomotives, C.P.R., North Bay, Ont.; June 1906 to Feb. 1907, locomotive man, C.P.R., North Bay, Ont.; Feb. to April 1907, Locomotive Foreman, C.P.R., Chapeau, Ont.; Sept. 1907 to Oct. 1908, District Master Mechanic, District 1, Lake Superior Divi-

sion, C.P.R., North Bay, Ont.; Oct. 1908 to April 1915, Master Mechanic, Lake Superior Division, C.P.R., North Bay, Ont.; April 1915 to May 1916, Master Mechanic, Saskatchewan Division, C.P.R., Moose Jaw; May to Sept. 30, 1916, Master Mechanic, District 3, National Transcontinental Ry., Transcona, Man.

N. S. Dunlop, Insurance and Tax Commissioner, C.P.R., Montreal, has, on medical advice, resigned in order to take a prolonged rest. He was born near Almonte, Ont., Jan. 17, 1861. For seven years he was a public school teacher, and in 1886 entered a law office in Toronto, and was, subsequently, Secretary and then President of the Canadian Shorthand Society. In 1888 he entered the C.P.R. solicitors' office at Toronto, and in 1890 was placed in charge of the company's assessments and taxation in Ontario, and also had charge of garnishee matters, inquests, investigations, etc., and did the court shorthand work for the company. He was appointed Insurance and Tax Commissioner in 1892, and in 1904 was also appointed Claims Adjuster, Atlantic, Eastern and Lake Superior Divisions, which joint positions he held until 1914, when, owing to the growth of the C.P.R., his duties were confined to those of Insurance and Tax Commissioner. He was the creator of the company's floral department, which is responsible for the floral decoration of the company's stations throughout the Dominion.

Normand R. DesBrisay, whose appointment as District Passenger Agent, C.P.R. St. John, N.B., was announced in our last issue, was born at Minneapolis, Minn., May 18, 1888, and entered C.P.R. service, June 14, 1904, since when he has been, to May 31, 1905, clerk in District Passenger Agent's office, St. John, N.B.; June 1, 1905 to June 7, 1907, ticket clerk, City Ticket Office, St. John, N.B.; June 14, 1907 to Dec. 5, 1908, ticket clerk, s.s. Empress of Ireland; Dec. 5, 1908 to May 24, 1909, exchange ticket clerk, Halifax, N.S.; May 27 to Nov. 19, 1909, exchange ticket clerk, Quebec; Nov. 19, 1909, to May 4, 1910, exchange ticket clerk, Halifax, N.S.; May 5 to July 15, 1910, exchange agent, Quebec; July 15, 1910 to Nov. 1912, Travelling Passenger Agent, St. John, N.B.; he resigned that position to enter private business for a short time, and resumed his duties in the early part of 1913, and continued as Travelling Passenger Agent, St. John, N.B., until July 1914; July 1914 to Sept. 1916, General Travelling Passenger Agent, Montreal; and latterly, Chief Clerk, Passenger Department, New York.

William John Pickrell, whose appointment as Assistant Superintendent, District 1, Eastern Division, C.P.R., Farnham, Que., was announced in our last issue, was born at London, Ont., Sept. 15, 1880, and entered C.P.R. service, Jan. 3, 1900, since when he has been, to July 31, 1901, wiper and fitter's helper, Toronto; July 31, 1901 to Nov. 1, 1904, Locomotive Foreman, Toronto; Nov. 1, 1904 to Aug. 4, 1906, travelling fireman, Ontario Division; Aug. 4 to Oct. 1, 1906, locomotive man, Toronto; Oct. 1, 1906 to Aug. 1, 1907, travelling fireman, Ontario Division; Aug. 1, 1907 to April 15, 1908, Assistant Road Foreman of Locomotives, Ontario Division; April 15, 1908 to May 10, 1910, locomotive man, Toronto; May 10 to July 1, 1910, rule examiner, Ontario Division; July 1 to Oct. 15, 1910, locomotive man, Toronto; Oct. 15 to Dec. 10, 1910, rule examiner, Ontario Division; Dec. 10, 1910 to April 9, 1912, locomotive

man, Toronto; April 9 to Nov. 1, 1912 Assistant District Master Mechanic, District 1, Ontario Division, Toronto; Nov. 1, 1912, to July 29, 1913, District Master Mechanic, District 3, Ontario Division; July 29 to Oct. 18, 1913, Assistant Superintendent, District 3, Ontario Division; Oct. 18, 1913, to April 24, 1915, Assistant Superintendent, District 2, Atlantic Division, Aroostook Jct., N.B.; April 24, 1915, to Sept. 1, 1916, Master Mechanic, Ontario Division, Toronto.

George R. Martin, who has been appointed Vice President, Great Northern Ry., St. Paul, Minn., was born at Evans Mills, N.Y., July 3, 1864, and entered railway service in 1885, since when he has been, consecutively, to Jan. 1, 1887, telegraph operator and agent, Chicago and North Western Ry.; Jan. 1, 1887 to July 1890, station agent, dispatcher and chief clerk to Superintendent, Minneapolis, St. Paul and Sault Ste. Marie Ry.; July 1, 1890 to Aug. 1, 1894, in accounting department, Great Northern Ry., and from Aug. 1, 1894 to Jan. 1, 1897, Assistant Auditor of Disbursements, same road; Jan. 1 to Mar. 1, 1897, Special Superintendent, same road; Mar. 1, 1897 to Mar. 1, 1898, General Superintendent, Montana Central Ry.; Mar. 1, 1898 to Mar. 1, 1899, General Superintendent, Central District, Great Northern Ry.; Mar. 1, 1899 to Nov. 1, 1902, Auditor of Disbursements, same road; Nov. 1, 1902 to Jan. 1, 1905, General Auditor, same road; Jan. 1 to May 15, 1905, on special duty in President's office, same road; May 15, 1905 to Jan. 1, 1906, Assistant to Comptroller, same road; Jan. 1, 1906 to June 1, 1911, Assistant to Comptroller, same road; Jan. 1, 1906 to June 1, 1911, Assistant Comptroller; June 1, 1911 to Sept. 1, 1916, Comptroller. He is also Vice President, Great Northern Steamship Co., Northern Steamship Co., Chairman of Pension Board, G.N.R., Vice Chairman G.N.R. Employees Investment Co., Comptroller, Great Northern Express Co., and of all the minor railway and other subsidiary companies of the G.N.R.

Grain Inspection at Western Points.

The following figures compiled by the Department of Trade and Commerce, show the number of cars of grain inspected on railways at Winnipeg and other points on the Western Division for September, and for 12 months ended Sept. 30, with a comparison of the number of cars inspected for 12 months ended Sept. 30, 1915.

	Sept.	12 months to Sept. 30, 1916	12 months to Sept. 30, 1915
C.P.R. Calgary.	269	7,505	6,899
C.N.R.	5,838	114,700	48,761
G.N.R. Duluth	219	15,451	1,866
G.T.P.R.	1,007	41,602	16,560
Totals	16,532	380,571	150,590

W. A. Griffiths, formerly Secretary to Manager, Department of Natural Resources, C.P.R., Calgary, Alta., and now Traffic Assistant, Gold Coast Government Railways, Secondee, West Africa, writes: "Permit me to say how much I appreciate reading Canadian Railway and Marine World month by month. Its pages are perused by other Government officers

G.T.R. Importing Machinists.—Stratford, Ont., press dispatch, Oct. 14. Scarcity of machinists at the G.T.R. shops, owing to enlistments, etc., has necessitated the importing of 25 from the United States. Woman labor is assisting, but is not by any means solving the labor problem in the shops.

Traffic Orders by the Board of Railway Commissioners.

Interchange at Moose Jaw, Sask.

25400. Sept. 11. Re the application of City of Moose Jaw for an order directing interchange facilities between the C.P.R. and Grand Trunk Pacific Ry. at Moose Jaw. Upon the consent of the Board of Grain Commissioners, the Grand Trunk Pacific and Canadian Pacific Railway Companies, and the report and recommendation of the Chief Engineer of the Board, it is ordered that the plan filed by the C.P.R., dated Moose Jaw, Aug. 12, 1916, as revised Aug. 21, 1916, showing in red the transfer tracks at the government elevator, Moose Jaw, providing for the interchange of traffic between the C.P.R. and the G.T.P.R. be approved.

25485. Sept. 30. Re application of the City of Moose Jaw, Sask., for an order requiring interchange facilities between Canadian Pacific and Grand Trunk Pacific Railways in Moose Jaw, and orders 24797, Mar. 16, 1916, and 25400, Sept. 11, 1916, made herein. Upon the consent of the Board of Grain Commissioners, the Grand Trunk Pacific and Canadian Pacific Railway Companies, and the City of Moose Jaw, and upon the report and recommendation of the Chief Engineer of the Board, it is ordered that the C.P.R. be required to construct an interchange track between its railway and the G.T.P. Ry. at Moose Jaw, and be authorized to construct, maintain and operate the said interchange track across the road allowance between Secs. 25 and 26, Tp. 16, R. 27, W. 2nd M., as shown on the plans dated Aug. 12, 1916, revised to Aug. 30, 1916, and dated Moose Jaw, Sept. 1, 1916, that the G.T.P.R. contribute \$2,500 toward the cost of constructing the interchange track, the remainder to be paid by the C.P.R.; and that the cost of maintenance be reserved for further consideration. That orders 24797 and 25400 be rescinded.

Transfer Track at Yorkton.

25424. Sept. 16. Re application of the Board of Trade of Yorkton for a transfer accommodation at Yorkton, between the Canadian Northern Ry. and the Grand Trunk Pacific Branch Lines Company. It is ordered that the Canadian Northern Ry. be directed to construct a transfer track at Yorkton between its railway and the Grand Trunk Pacific Branch Lines Co.'s railway, as shown on the plan dated Winnipeg, Aug. 29, 1916, and filed with the board. That the Canadian Northern pay four-fifths and the Grand Trunk Pacific Branch Lines Co. one-fifth of the cost of construction of the transfer track, the said companies to furnish without charge the necessary land on their respective rights of way for the transfer track. That the cost and maintenance of the transfer track be borne equally by the said railway companies. That the construction of the transfer track be completed.

Toronto, Hamilton & Buffalo Ry. Tariff.

25457. Sept. 22. Re application of Toronto, Hamilton & Buffalo Ry., under sec. 327 of the Railway Act, for the approval of its Standard Mileage Freight Tariff, C.R.C. no. 1113, cancelling C.R.C. no. 1, it is ordered that the said tariff be approved.

Coal Rates from Niagara Frontier to St. Catharines and Thorold.

25464. Sept. 25.—Re complaint of City of St. Catharines, Town of Thorold, McKinnon-Dash Co., Devaney & Son, D.

Dittrick, and W. H. McCormick, of St. Catharines; H. N. Boyle, of Merriton; Welland Vale Manufacturing Co., St. Catharines; Canadian Retail Coal Association of Brantford, and McMahon Bros. of Thorold, complaining against increase in rates on coal in carloads from Niagara Frontier to Thorold and St. Catharines for Niagara, St. Catharines & Toronto Ry. delivery. It is ordered that the railway companies interested establish with as little delay as possible, a joint rate of 47c a ton to apply on coal in carloads from the Niagara Frontier to Thorold and St. Catharines for Niagara, St. Catharines & Toronto Ry. delivery, to be apportioned between the two companies as follows—27c a ton to Michigan Central Rd. and 20c a ton to Niagara, St. Catharines & Toronto Ry.

The Assistant Chief Commissioner, D'Arcy Scott, gave the following judgment:—The Michigan Central Rd. and the Niagara, St. Catharines & Toronto Ry. have for many years had a joint rate in effect on coal from the Niagara Frontier to St. Catharines and other Niagara, St. Catharines and Toronto points of 40c a ton. Of this the Michigan Central received two-thirds and the Niagara, St. Catharines & Toronto one-third. This rate was cancelled on May 5 last, because the companies were unable to agree on the proportion each company should receive of the revenue. The Niagara, St. Catharines & Toronto contended that the extension of its line to Welland, which made Welland the interchange point, instead of Niagara Falls as formerly, materially reduced the Michigan Central's haul; and that therefore an equal division of the rate giving each company 20c should be made. The Niagara, St. Catharines & Toronto also contended that the payment of car rental for foreign cars on a per diem charge, instead of on a mileage basis, which was the method in use at the time the joint rate was established, necessitated its securing an increased revenue or the traffic would be handled at a loss. This means that instead of paying 20c a car for mileage the car rental now amounts to \$2.70 a car; i.e., the per diem allowance of 45c for 6 days. This time is made up by counting 1 day in, 1 day passing customs, 3 days unloading allowed by the Car Service Rules, and 1 day out. The Michigan Central submitted that it was satisfied with the 40c rate so long as its proportion was two-thirds.

At the time the Niagara Central (now the Niagara, St. Catharines & Toronto) was built it received substantial financial aid from St. Catharines, and the company agreed that the rate on coal should not exceed 40c from the boundary for 20 years. The agreement was lived up to by the company, but the time limit expired some years ago. Coal merchants at St. Catharines and Thorold have spent money in the erection of coal sheds on the line of the Niagara, St. Catharines & Toronto with the expectation that the joint rate would be continued. The Grand Trunk had a 40c rate to these points, which was unchanged; but, if these coal merchants desired to get their coal shipped in on the Grand Trunk they either had to pay cartage or interswitching to get it to their sheds.

After the cancellation of the 40c joint rate the Michigan Central put in a rate of 40c to Welland, and the Niagara, St. Catharines & Toronto put in a rate of 20c

from Welland to St. Catharines and Thorold, making the sum of the locals 60c in place of the 40c joint rate which had been cancelled.

Since the establishment of the 40c one line haul rate from the frontier to St. Catharines put in by the Grand Trunk, the Board in its judgment in the Eastern Rates Case has allowed a 10% increase. This rate is, therefore, now increased to 44c a ton.

A joint rate on coal from the frontier to St. Catharines and adjacent points over the Michigan Central and Niagara, St. Catharines & Toronto should be established; but it is not reasonable to expect that it should be as low as a one line rate. I think the Niagara, St. Catharines & Toronto has made out a good case for an increase. The Michigan Central said it was satisfied with its two-thirds of 40c which was (26.66c) 27c, and the Niagara, St. Catharines & Toronto stated it wanted 20c. Adding these together it would make a joint rate of 47c, which would be only 3c over the one line rate and would, I think, be reasonable.

An order should go for the establishment, as soon as possible, of a joint rate of 47c with the proportions to each company as stated. As far as this Board is concerned we will accept the new tariff effective on short notice, but the Interstate Commerce Commission requires 30 days notice of the new tariff to be given that commission and the public. Perhaps this time would be shortened if the Michigan Central applied for it.

Delivery of Milk and Cream at Parkdale.

25472. Sept. 27. Re application of G. R. Harris & Son, of Toronto, for an order requiring the C.P.R. to deliver shipments of milk and cream as before at Parkdale station and not West Toronto, which latter station is inconvenient to the applicant. Upon hearing the application at Toronto, July 10, in the presence of counsel for the applicants and the railway company, one of the applicants appearing in person, and upon the report of the Chief Operating Officer of the Board, it is ordered that the application be dismissed.

Omission of Symbols From Class Freight Rate Tariffs.

25555. Oct. 24.—Re tariffs of class freight rates authorized by general order 167, July 3, 1916, in what is known as the Eastern Rates Case, and the application of the C.P.R. for relief from the provisions of order no. 16900, June 27, prescribing certain symbols to denote rate changes. Upon its appearing that, owing to necessary changes in the groupings of the stations, it will be impracticable to carry out intelligibly the provisions of order 16900 with respect to the class freight tariffs from points west of Montreal to points east thereof, it is ordered that the said relief be granted, provided that a notice be printed at the beginning of the said tariff, or tariffs, reading as follows:—“This tariff contains the changes in rates authorized by the general order of the Board of Railway Commissioners for Canada, no. 167, dated July 3, 1916, which order has necessitated a rearrangement of the station groupings which makes it impracticable to indicate the individual changes by symbols as prescribed by the order 16900, dated June 27, 1912, the omission of the said symbols in this tariff having been authorized by order 25555, dated Oct. 24, 1915.”

Joint Rates, From Minnesota Transfer to Saskatoon.

Commissioner McLean gave the following judgment Sept. 28:—Various shipments were made at various dates in 1912 and 1913 from points east and south of Minnesota Transfer to Saskatoon, Sask. A claim for refund on account of alleged overcharges was made against the Canadian Northern Ry. by the Security Traffic Bureau of Minneapolis, acting for McKenzie & Thayer, of Saskatoon. Considerable correspondence has taken place between the applicant and the railway company. The matter has been submitted to the board for its opinion. From the points of origin in the U. S. there were no specific through rates to Saskatoon. The applicants built up a combination rate of 11c to Minnesota Transfer, plus 12c from Minnesota Transfer to International Boundary, plus 14c from International Boundary beyond, a total of 37 as against the rate of 38 charged. The rate of 14c from the International Boundary beyond is carried in C.N.R. Tariff C.R.C. 526, which, however, bears a notation "Rates shown herein may be used only when no other rates apply. They may not be used either by themselves or in combination in preference to any specific tariff rate."

The applicants contend that this clause does not apply in the present instance, as there are no specific through tariff rates from points or origin to destination, and that there is no other rate applying from the International Boundary to Saskatoon than that applying in the tariff above quoted, viz., 14c. The Canadian Northern in its correspondence points out that the rate of 27c charged from the Minnesota Transfer is a specific through rate. Minnesota Transfer is a recognized junction point, and it is also a basing point for rate making. A through rate was in fact in existence therefrom.

The Interstate Commerce Commission has ruled that where a through rate is constructed on a combination, each factor must be published and filed with the commission—Aubrey & Semple, v. G. H. & S. A. Ry. Co., 17 I. C. C., 271.

Under sec. 336 of the Railway Act, where traffic is carried from any point in a foreign country into Canada . . . by any continuous route, owned or operated by any two or more companies whether Canadian or foreign, a joint tariff for such continuous route shall be duly filed with the board. There is no plea that the route was discontinuous or that there was in fact a series of purely local movements. A joint tariff must, therefore, be filed and the filing covering the movement from Minnesota Transfer is a compliance with the Railway Act.

No information is submitted to show how the 27c rate is divided between the railway south of the International Boundary and the Canadian Northern. The jurisdiction of the board is in respect of the movement in Canada; there is no application to hold the 27c rate unreasonable because in excess of the locals and for corresponding reduction of the rate for the future. Without passing on the question of the jurisdiction of the board to regulate a through rate from Minnesota Transfer, a point in the U. S., to a point in Canada, it may be said that in general where a through rate is attacked as being unreasonable because in excess of the sum of the locals, the board's jurisdiction goes only as far as directing a reduction for the future. The board possesses no power to direct a refund. It

cannot, therefore, direct a refund of the difference, if any, between the division received by the Canadian Northern out of the 27c rate and the 14c local. The applicants' papers may be returned.

Railway Rolling Stock Notes.

The C.P.R. received 200 freight refrigerator cars from its Angus shops, Montreal, recently.

The Greater Winnipeg Water District which was in the market recently for a mogul locomotive, has purchased one from the City of Winnipeg.

The Eastern Car Co. expected to make the first shipment of 350 of the 2,000 box cars which it is building for the Paris & Orleans Ry., France, by the end of October.

The Timiskaming & Northern Ontario Ry. has received 2 Mikado locomotives, being part of an order for six, from the Canadian Locomotive Co. Details of these locomotives were given in a previous issue.

The C.P.R. has ordered 7 steel baggage cars, 70 ft. long; 74 steel underframe box cars, 40 tons capacity, and 22 steel underframe freight refrigerator cars, 41 ft. long, 30 tons capacity, from its Angus shops, Montreal.

Canadian Government Railways, between Sept. 18 and Oct. 18, received the following additions to rolling stock,—2 sleeping cars from National Steel Car Co., and 3 Pacific type locomotives from Montreal Locomotive Works.

The chief details of the 200 wooden box cars, 30 tons capacity, with steel draft arms, which are being built for Canadian Government Railways by Canadian Car and Foundry Co., as mentioned in our last issue, are as follows:

- Width over side sills 9 ft. 0 5/8 ins.
- Height sills to plate 7 ft. 10 1/4 ins.
- Length inside 36 ft.
- Width inside 8 ft. 6 ins.
- Height inside, floor to carline 8 ft.
- Centre to centre of tie timbers 7 ft. 8 ins.
- Height, rail to centre of coupler 2 ft. 10 1/2 ins.
- Door opening 6 ft.
- Centre to centre of bolsters 26 ft. 9 5/8 ins.
- Draft gear M.C.B. class G springs
- Couplers Simplex, 5 x 5 shank, 8 1/2 in. butt
- Body bolsters Simplex
- Brakes Westinghouse K.C. 812 with brake cylinder expander rings
- Trucks C.G.R. standard 30 ton, Diamond arch bar
- Truck springs M.C.B. class B
- Wheels M.C.B. standard 33 ins.
- Brake shoes Dominion Brake Shoe Co.'s steel back
- Journal boxes M.C.B. cast iron with mall. lids
- Journal bearings 4 1/4 by 8 ins.
- Dust guards M.C.B. standard

Following are chief details of 100 refrigerator cars, 40 tons capacity, with steel draft arms, which Canadian Car and Foundry Co. is building for Canadian Government Railways, as mentioned in our last issue:

- Length over end sills 36 ft.
- Width over side sills 8 ft. 11 ins.
- Height top of sill to under side of plate 7 ft. 8 ins.
- Length inside between ice boxes 28 ft. 9 1/4 ins.
- Width inside 8 ft. 2 1/4 ins.
- Height top of floor to underside of ceiling 7 ft. 6 3/8 ins.
- Outside of end sill to centre of body bolster 5 ft.
- Side door opening 5 ft.
- Height, top of rail to centre of coupler 2 ft. 10 1/2 ins.
- Wheel base of truck 5 ft. 2 ins.
- Centre to centre of trucks 26 ft.
- Draft gear Tandem spring type
- Couplers—Improved M.C.B. automatic vertical plane type
- Body bolsters Simplex
- Side bearings Susemihl
- Brakes Westinghouse K.C. 1012
- Trucks 40 ton standard, diamond arch bar
- Truck springs M.C.B. class C
- Wheels M.C.B. standard 33 ins.
- Brake shoes Dominion Brake Shoe Co.'s steel back
- Journal boxes McCord, M.C.B. 4 1/4 by 8 ins.
- Journal bearings 5 by 9 ins.
- Ice tanks Two per car

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	\$3,884,200	\$2,636,800	\$1,197,400	\$ 711,000
Aug.	3,684,900	2,612,900	1,072,000	614,300
	\$7,519,100	\$5,249,700	\$2,269,400	\$1,325,300
Incr	\$3,573,800	\$2,248,500	\$1,325,300	.....

Approximate earnings for Sept., \$3,187,900, and for three weeks ended Oct. 21, \$2,544,800, against \$2,757,000 for Sept., and \$2,407,100 for three weeks ended Oct. 21, 1915.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1915-16, from July 1, 1916:

	Gross Earnings	Expenses	Net Earnings	Increase
July	\$12,247,440.39	\$8,230,348.66	\$4,017,091.73	\$1,216,688.61
Aug.	13,570,467.31	7,802,680.46	5,467,786.85	2,025,472.13

\$25,517,907.70 \$16,033,029.12 \$9,484,878.58 \$3,242,160.74
Inc. \$ 8,821,080.71 \$5,578,919.97 \$3,242,160.74

Approximate earnings for Sept., \$11,846,000, and for three weeks ended Oct. 21, \$8,962,000, against \$9,995,000 for Sept., and \$8,971,000 for three weeks ended Oct. 21, 1915.

Grand Trunk Railway Earnings.

Following are the earnings and expenses for the G.T.R., including the Canada Atlantic Ry., the G.T.W.R. and D.G.H. & M.R., for August, compared with those for August, 1915:—

Grand Trunk Railway.			
	1916.	1915.	
Earnings	\$4,621,000	\$3,612,000	
Expenses	3,133,500	2,507,500	
Net earnings	\$1,487,500	\$1,105,400	
Grand Trunk Western Railway.			
	1916.	1915.	
Earnings	\$ 839,200	\$ 635,950	
Expenses	621,400	512,500	
Net earnings	\$ 217,800	\$ 123,450	
Detroit, Grand Haven and Milwaukee Ry.			
	1916.	1915.	
Earnings	\$ 290,000	\$ 249,100	
Expenses	254,000	188,400	
Net earnings	\$ 36,000	\$ 60,700	

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from Jan. 1 to Sept. 30:—			
	1916.	1915	Increase.
G.T.R.	\$23,506,112	\$29,451,739	\$5,054,373
G.T.W.R.	7,013,803	5,458,739	1,555,064
D.G.H. & M.R.	2,486,612	1,978,179	508,433
	\$44,066,527	\$36,888,657	\$7,117,870

Approximate earnings for Sept., \$5,636,826, and for three weeks ended Oct. 21, \$3,810,229, against \$4,605,041 for Sept., and \$3,130,733 for three weeks ended Oct. 21, 1915.

Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section, 916 miles, for Sept., were \$383,749, against \$403,888 for Sept., 1915, and from July 1 to Sept. 30, \$1,076,505, against \$884,976 for same period 1915.

Railway Lands Patented.—During September letters patent were issued in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary & Edmonton Ry.	2,514.00
Canadian Northern Ry.	338.36
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.	2,555.00
Total	5,407.36

Queen's University, Kingston, Ont. The following appointments have been made: J. F. Wilson of Michigan University, Professor of Electrical Engineering; L. S. Eaton of Cornell University, Professor of Mechanical Engineering; I. C. Demarest of Columbia University, Lecturer in Latin.

Canadian Northern Railway Construction, Betterments, Etc.

Montreal Tunnel and Terminal Co.—It is reported that tenders will be called for some time in November for the building of the station at Lagacherie St., Montreal, as the first instalment of the Montreal terminal undertaking.

The Canadian Northern Ontario Ry. consists of a line from Montreal via Hawkesbury, where the C. N. Quebec Ry. connects with the old Great Northern Ry. route, to Ottawa and on via North Bay to Port Arthur, the Ottawa-Toronto line and the Sudbury line. At present the two latter lines run into the union station, Toronto, by an arrangement with the G.T.R. In order to obtain an entrance into the North Toronto station, for which an arrangement has been made with the C.P.R., a connection between these two lines and the tracks on which the C.N.R. has equal rights with the C.P.R., is about to be built.

The connecting link between the C.N.R. Toronto-Sudbury line and the Leaside-North Toronto will leave the Duncan station yard and run eastward to a connection with the C.P.R. near the east end of the West Don bridge. A spur of high land dividing the west and main branches of the Don (which is also crossed by the C.P.R. at Donlands station) necessitates a surmount in the grades, which will be 40 ft. per mile in each direction, and a somewhat heavy cutting, but these grades will be short and will be reduced by train filling when the traffic warrants the expense. The total length of the link will be 2.2 miles. Outside of the curves forming the junctions with existing lines at either end, there will be only one curve of three degrees, and with the exception of the cutting mentioned, which is the counterpart of that on the C.P.R., the work will be light. The C.P.R. double-track viaduct over the West Don will be used jointly by both roads, as also a joint double-track to North Toronto station. This double-track is completed to Leaside Jct. and the balance is under construction. The work on this 2.2 mile link is now in progress, Angus Sinclair being the contractor, and it is expected to be completed this season.

From the same point of junction on the C.P.R. a line has been located to a point on the company's Ottawa-Toronto line near Scarboro Village and has been approved by the Board of Railway Commissioners. This has a length of 4 miles; the grade standard will conform to that of the balance of the Ottawa-Toronto line—26 ft. to the mile, as also the curvature, which will have a maximum of four degrees. The work will be of ordinary character, with the exception of a viaduct over the Don River, which will be built at mileage 4.8 from Yonge St. It will be 650 ft. long, with a maximum height of 114 ft. The substructure will consist of 20 concrete pedestal piers and 2 abutments, in all approximately 950 cu. yds. The superstructure will consist of one 100-ft., five 70-ft. and five 40-ft. deck plate girder spans and five 40-ft. towers. It will be designed for class heavy loading, Dominion Government specification 1916, and the estimated weight will be about 620 tons.

The contract for this line and the substructure of the viaduct over the Don has also been let to Angus Sinclair, and is also expected to be completed this year. The location of both lines was made by H. K. Wicksteed, Chief Engineer of Surveys, Mackenzie, Mann & Co. Karl Hoff-

man is resident engineer for the C.N.R. on both pieces of line.

The object in view in the construction of both these lines is obvious. The C.N.R. has heretofore run all its trains into the union station, and except for the local freight yard in Cherry St. and the Rosedale station in the Don valley, has no terminal of its own in the lower part of the city. The Rosedale yard has now become quite inadequate to handle the growing business, and arrangements were made some years ago for a jointly-occupied station with the C.P.R. in North Toronto, and for extensive yards and shops at Leaside. It has now become essential that these be developed and used. Incidentally the long descent of 160 ft. to the lake level will be saved for the passenger traffic and the distance to all points north shortened five miles and to eastern points three miles. On account of the low speed permissible along the lake front the gain in time by the new route will average nearly half an hour. The distance from the union station to Rosedale is 3.8 miles and to Duncan is 11.1 miles. Todmorden, where the two lines separate, the one to Parry Sound and the other to Ottawa being at mileage 5.06.

The Board of Railway Commissioners has authorized the altering of a bridge over the South Magnetawan River, mileage 34.85 from Parry Sound, Ont., also the building of a bridge across Current River, mileage 145.8 west from Jellicoe, and 2 miles east of Port Arthur, Ont.

Canadian Northern Ry.—The Board of Railway Commissioners has authorized the opening for traffic of the extension of the Winnipeg and Northern Ry. branch, mileage 48.56 to 62.78.

The Minister of Public Works for Manitoba informed a deputation from the Fort Alexander district recently that the Government will give every consideration to its request that the Province guarantee bonds of the C.N.R. for building an 18-mile line from Balsam Bay to Fort Alexander. Balsam Bay is 57 miles from Winnipeg, and is 4 miles on the Winnipeg side of the line now terminating at Grand Marais.

We are officially advised that the company expects to buy 35 miles of track west of Eston, Sask., this year.

We are officially advised that W. J. Cowan, Winnipeg, has been given a contract for grading on the Larch Lake branch, extending from Dumblane, Sask., for 35 miles in a southwesterly direction. Work on this line was started in August and is being pushed forward as fast as labor and other conditions permit.

Among the other works reported to have been completed during the year is the building of new stations on the Goose Lake line, the putting in of several new sidings, the erection of a three-stall locomotive house, with coal filling plant, a water tank, and the erection of a yardmaster's office at Drumheller, Alta. Drumheller is the junction of the line from Saskatoon with the Vegreville-Calgary line. Three steam shovels have been at work during the summer on bridge filling work west of Humboldt, and two on the Goose Lake line, taking out ballast for the line.

In connection with the building of the line from Hanna, mileage 263, on the Saskatoon-Calgary line, southeasterly to Medicine Hat, we are officially advised that construction was started in August

and that it is the intention to have the line completed this year. The Cowan Construction Co., Winnipeg, have the contract for 60 miles. A late press report states that about 23 miles have already been graded.

The Moose Jaw, Sask., City Council discussed, on Oct. 3, a plan for giving the C.N.R. connection with the civic spur line, and thus enabling it to transfer traffic with the C.P.R. A provisional agreement was reached, and the city also arranged to ask the Saskatchewan Government to give a provisional guarantee of bonds for an independent C.N.R. terminal in the city in lieu of the present guarantee for a joint terminal with the Grand Trunk Pacific.

A press report from Edmonton states that the Alberta Government has been advised that 100 miles have been graded on the Oliver-St. Paul de Metis line, the grade now reaching to within 25 miles of St. Paul, the objective point, and that it is expected to lay track on the 100 miles this year.

Plans have been deposited with the Public Works Department, Ottawa, showing location, etc., of a bridge across the Sturgeon River on lot 23, tp. 56, range 23, west of 4th meridian.

The spur track from Brule, mileage 23.45, on the transcontinental line to the Brule Lake coal field was reported to be practically completed Oct. 11. The collieries being opened are controlled by a company in which F. H. Phippen, General Counsel for the C.N.R., and Joseph Errington, of the company's resources department, are interested, and of which P. C. Andrews is General Manager.

Canadian Northern Pacific Ry.—We are officially advised recently that no contract had been let for the construction of the Kamloops-Okanagan branch.

While M. H. MacLeod, General Manager and Chief Engineer, was at the Pacific Coast recently, he inspected the practically completed car shops, the new car ferry dock and other terminal facilities at Port Mann, and discussed matters connected with the work in progress at the False Creek terminals, Vancouver, with the city council. He is reported to have said that a considerable amount of additional work would be started forthwith. One of these works is the building of the freight sheds, for the erection of which a contract is reported to have been let to Macdonald, Nettleton & Bruce, Vancouver, at an estimated cost of \$125,000.

The new freight offices and shed at Vancouver will be erected at False Creek to the south of and in close proximity to the company's new passenger station. The freight offices will occupy a 2 story block, having a frontage of 100 ft., and a depth of about 55 ft., giving ample accommodation for the various departments. The building is designed along simple, but attractive, lines, and will have its exterior walls constructed generally with brick with stone dressings and features. The floors, except basement, will be constructed of timber finished with maple. The basement floor will be cement finished on concrete slab. Lavatory accommodation will be provided for both men and women on each floor, and ample light and ventilation will be available in all parts of the building. The roof will be of flat type. The building will be supported by pile foundation.

Filing of Freight Tariffs on Less than Statutory Notice.

Commissioner McLean, of the Board of Railway Commissioners, gave the following judgment recently:—

"Under date of May 26, 1916, complaint was received from T. M. Stevens & Co., Vancouver, B.C., stating that they had been advised by one of the railway companies that an advance was to be made in the rates on sago and tapioca from 80c to 90c per 100 lb., and on spices from 80c to \$1 per 100 lb. It was stated that prior to the beginning of the war there had been a through rate of \$1.30 per 100 lb. on these commodities, and it was stated that the division of this rate to the railways would not exceed 70 to 75c per 100 lb. It was stated, further, that after trans-Pacific freights advanced, the railway companies put in a rate of 80c, which was quite satisfactory to the applicants, and that the applicants had developed a considerable business on these rates. It was urged by the applicants that the railway companies be enjoined from making an advance pending a general hearing and justification of the rates in question.

"As will be noted, the rates in question are import rates from Vancouver to points in Eastern Canada.

"In answer to the complaint as launched the Great Northern Ry. replied as follows: 'The rates as specifically named in complainants' letter on sago and tapioca from 80c to 90c carloads is correct. Proposed advances as stated are to become effective Aug. 1. These rates are proportional rates applying on traffic which originates in the Orient. The conditions under which the present rates were established do not exist today. At the time rates were originally established a great deal of the Oriental tonnage moved into Atlantic ports via direct steamship lines and the present rates from Vancouver and Puget Sound ports were established in order to enable the rail carriers from such ports to obtain a share of this Oriental traffic, in connection with the steamship lines, operating from the Orient to Vancouver and Puget Sound ports. The company considers the proposed advances to be fair and consistent, since the former conditions do not now exist, as to the direct movement of Oriental traffic to United States and Eastern Canadian ports as today. There is a scarcity of bottoms that in the past have been handling Oriental traffic direct to Atlantic ports and the company thinks, therefore, that carriers are warranted in making the slight advances that they have. The company also says that there has been a general advance made covering all commodities, and in a great number of cases the shippers as well as consignees were interviewed as to the possibility of permitting the carriers to make these advances. The condensed result has been that the shippers as a whole saw no objections to these slight advances; for instance, the carriers advanced the import rate on tea, carloads, from \$1 to \$1.10. Before this advance was concurred in by interested lines, the tea trade was canvassed, with results that most of the shippers and consignees of tea informed the carriers that rate points could be advanced from 10 to 25%. In view of these statements from the tea shippers as well as similar statements from other shippers on other commodities, the company considers the advances

made on sago, tapioca, and spices to be entirely proper and in keeping with the manner in which the present rates were established.

"The company respectfully submits that the advanced rates ought to be maintained.'

"Subsequently a tariff showing the increased rates complained of was filed. Other increases are also set out in this tariff. The matter of justifiability of the rate increase or increases is not gone into here, as the immediate question involved is entirely one of the legality of the filing. The tariff in question is East-bound Import Tariff 26-D cancelling a similarly described tariff 26-C. This tariff quotes import class rates and commodity rates from specified points on the Pacific Coast of the United States and from Prince Rupert, Vancouver and Victoria, B.C., to points in United States and Canada as set out in the tariff. While the tariff is issued by R. H. Countiss, agent for the railways, and deals with the rates both on United States and Canadian movements, what is especially concerned here is the question of the requirements of the Railway Act in regard to filing.

"The tariff which is numbered C.R.C. No. 364 has also an I.C.C. No. 1026. On the face of the tariff is the notation that it is issued under the authority of Rule 71, Interstate Commerce Commission Circular 18-A. Under this ruling, which is concerned with export and import tariffs, it is set out that, 'in consideration of unusual and special circumstances surrounding the movement of traffic exported to or imported from foreign countries not adjacent to the United States and which moves through ports of the United States or Canada on the Pacific Ocean as to said traffic and confined to tariffs which contain only rates applicable thereto, the commission, by its order of Oct. 24, 1908, authorizes carriers to make changes in said rates upon notice to the commission and to the public in manner prescribed by law of three days as to changes which affect reductions in rates or charges, and like notice of 10 days as to changes which affect increases in rates or charges.'

"The tariff as filed bears on its face the statement that it is issued July 7, 1916, effective Aug. 1, 1916. As a matter of fact, the filing date with the Board was later, it not being until July 13 that the tariff in question was received. Under sec. 328 of the Railway Act, as amended by 1 & 2 Geo. V, chap. 22, sec. 11, it is provided that when a special freight tariff advances any toll previously authorized to be charged under the Railway Act, the company is to file and publish such tariff 30 days previous to the date the tariff is intended to take effect. In view of the fact that the tariff was issued as of July 7, 1916, effective Aug. 1, 1916, and the further fact that it was not filed with the board until July 13, the non-compliance with the provisions of the Railway Act was taken up with the railway companies. The answer of the Great Northern is submitted by its Solicitor, Mr. Haydon, said answer being sent out in the letter of the General Solicitor of the Company. It states, inter alia, that the Interstate Commerce Commission usually allows rates on import traffic to be put into effect on short no-

The freight shed, which will be built immediately east of the freight office block, will be 40 x 800 ft., supported on pile foundations. The roof will be supported on steel columns and will be constructed of steel trusses carrying wood purlins and covered with 2 in. plank, finished with tar and gravel roofing. The floors will be of heavy timber construction, finished with 2 in. rough and 7/8 in. finished flooring. The walls to level of door heads will be constructed of studing with 7/8 in. sheeting outside and inside. The outside surface will be finished with galvanized corrugated iron. Along the entire length of the building above door heads will be a continuous glazed transom light. On the track side of shed doors will be continuous, and on teaming side doors will occur only in alternate 16 ft. bays. The shed will be divided into four compartments by the introduction of three 13 in. fireproof walls at equal intervals along the length of shed; provision will also be made at extreme east end of shed for cold storage, and at the west end (that is the end nearest the freight office block) rooms will be provided for the shed foreman, porters and for staff lavatory. About midway up the shed will be located the customs office. Electric light will be used in both freight offices and shed.

Along the track side of shed will be run three lines of tracks and beyond the farthest out of these will be a distributing platform 13 ft. wide, which will be continued along the entire length of the shed.

The buildings have been designed by the company's architects, Pratt & Ross, of Winnipeg and Vancouver, and the cost, exclusive of tracks and teamways, will probably run to about \$150,000.

Railway Finance, Meetings, Etc.

Boston & Maine Rd.—A U. S. Court at Boston, Mass., Oct. 16, authorized certain minority shareholders to intervene in the receivership proceedings now pending, and fixed Oct. 30, as the date of hearing arguments.

A United States court in New York, on Oct. 20, extended to Jan. 1, 1918, the date fixed for the sale of the New York, New Haven & Hartford Rd.'s holdings in the B. & M. Rd.

The Canadian Northern Ry. has given notice that the net earnings for the half year ended June 30 were insufficient to enable the interest to be paid on the 5% income charge convertible debenture stock on Nov. 2.

Ottawa Terminals Ry.—The board of directors elected at the recent annual meeting, for the current year, is:—E. J. Chamberlin, President; H. G. Kelley, Vice President; Frank Scott, Secretary and Treasurer; J. E. Dalrymple, R. S. Logan, H. R. Safford and W. H. Biggar, K.C.

Toronto, Hamilton & Buffalo Ry.—A recent press report stated that the company was issuing \$10,000,000 4½% consolidated bonds due in 1966 to retire a maturity bond issue and to provide some \$5,000,000 for betterments. We are officially advised that the report is incorrect. Under the Dominion Parliament's authority, a mortgage has been made to secure an issue of \$10,000,000 of consolidated mortgage, bonds and \$2,000,000 par value of them have been sold to the Canadian Pacific, the Canada Southern, New York Central and Michigan Central Companies.

Canadian Railway AND Marine World

ESTABLISHED 1898

Devoted to Steam and Electric Railway,
Marine, Express, Telegraph, and Railway and Canal
Contractors' Interests.

Official Organ of various Canadian Transportation
Associations.

Published on the first of each month.

ACTON BURROWS, LIMITED - Proprietors,
70 Bond Street, Toronto, Canada.

ACTON BURROWS, A. Can. Soc. C.E.
Managing Director and Editor-in-Chief.

AUBREY ACTON BURROWS - Secretary and
Business Manager.

Associate Editors
JOHN KEIR AND DONALD F. KEIR

Canadian Business Representative,
W. H. HEWITT, 70 Bond Street, Toronto

United States Business Representative,
A. FENTON WALKER, 143 Liberty St., New York

European Business Representative,
J. MEREDITH MCKIM, 16 Regent St., London, Eng.

Authorized by the Postmaster General for Canada,
for transmission as second class matter.

Entered as second class matter, July 25, 1913, at the
Postoffice at Buffalo, N.Y., under the Act of Congress
of March 3, 1879.

SUBSCRIPTION PRICE, including postage any-
where, \$2 a year.

SINGLE COPIES, 20 cents each, including postage.

The best and safest way to remit is by express money
order. Where one cannot be obtained, a post office
money order, or bank draft, payable at par in Toronto,
may be sent. Cheques or drafts not payable at par in
Toronto cannot be accepted. Remittances should be
made payable to Canadian Railway and Marine World.

NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application.
ADVERTISING COPY must reach the publishers by
the 10th of the month preceding the date of publication.

TORONTO, CANADA, NOVEMBER, 1916.

PRINCIPAL CONTENTS.

Appointments, Transportation	455
Birthdays of Transportation Men	434
Board of Railway Commissioners,—	
Orders by, Summaries of	440
Traffic Orders	450
Canadian Government Railways, Pacific Type	
Locomotives	435
Canadian Northern Ry. Construction, Etc. . .	452
Canadian Pacific Ry., Annual Meeting.	442
Construction, Etc.	441
Divisions Changed	454
Expenditures on Additions, Etc.	439
Traffic Statistics	438
Duluth, Winnipeg & Pacific Ry. Box Cars. .	438
Electric Railway Department	457 to 463
Electric Railway Topics	459
Finance, Meetings, Etc.	462
Lake Erie & Northern Ry. Electrification	457
London & Port Stanley Ry. Operating,	
Equipment, Etc.	463
Notes	463
Projects, Construction, Etc.	460
Sandwich, Windsor & Amherstburg Ry.	
Wage Arbitration	461
Sherbrooke Ry. & Power Co.'s Report.	458
Three Rivers Traction Co., Equipment, Etc.	462
Toronto & York Radial Ry. Deviation	461
Toronto Suburban Ry. Extensions	463
Express Companies, Among the	463
Filing of Freight Tariffs	453
Freight and Passenger Traffic Notes	446
Grain in Store at Terminal Elevators	443
Hand Rails on Locomotives and Tenders ..	435
Mainly About Railway People	448
Marine Department	464 to 472
Imperial Oil Co.'s Tank Steamships.	466
Montreal Transportation Co.'s New Steam- ship	464
Personal	471
Sault Ste. Marie Canals Traffic	469
Steamships Thorjerd and Blaamyr	467
Toronto, Hamilton & Buffalo Navigation Co.	472
National Transcontinental Ry. Elevator at Transcona	435
Nigerian Railway Bogie Cars	438
Pacific Great Eastern Ry. Annual Meeting. .	456
Railway Commission of Enquiry	444
Railway Development	447
Railway Earnings	451
Railway Finance, Meetings, Etc.	453
Railway Location and Construction Through Muskeg Swamps	433
Railway Mechanical Methods and Devices .	437
Railway Rolling Stock Notes	451
Telegraph, Telephone and Cable Matters. .	456

tice; that under the circumstances the Canadian Commission should do likewise.

"The board is advised by the C.P.R. as follows:—

"In this matter, through an oversight, R. H. Countiss, who issued Transcontinental Tariff D-26, neglected to file it with the board the full 30 days in advance of its effective date as required by sec. 328 of the Railway Act. Accordingly, I have to request that the board consent to alter the effective date of the tariff to Aug. 8, and arrangements will be made to refund, on application, the excess charges on any shipments which moved between Aug. 1 and Aug. 8, when it should properly have been effective."

As to the position taken by the General Solicitor of the Great Northern that the board should grant short notice on import traffic, that is manifestly a question of what power is given under the Railway Act. The board is bound by the ex-

PLICIT provisions of the Railway Act. As to the suggestion contained in the latter paragraph of the letter of the Canadian Pacific as above quoted, the initial filing not having been in compliance with the provisions of the Railway Act, there is no power in the board to alter the effective date of the tariff to Aug. 8. The full 30 days notice is required in connection with filing with the Board. At best, however, there was only a period from July 13 to Aug. 1 covered by notice, and this does not establish a credit of so many days in connection with a later and amended notice of filing. The tariff as filed has not met the requirements of the Railway Act, and the railway companies cannot legally collect rates thereunder in respect of movements within the scope of the Railway Act. If the railway companies desire to put the tariff in question into force, immediate steps should be taken to file in accordance with the terms of the Railway Act.

Changes in Names of C.P.R. Divisions, Districts and Subdivisions.

Commencing with the going into effect of the autumn time tables the 8 grand divisions on the C.P.R. have been changed to districts, their names being also changed in certain cases, and the districts have been changed to divisions, the territorial limit of each remaining as heretofore. The alterations in names are as follows:

Atlantic Division changed to New Brunswick District; District 1 changed to Brownville Division; District 2 changed to Woodstock Division.

Eastern Division changed to Quebec District; District 1 changed to Farnham Division; District 2 changed to Montreal Terminal Division; District 3 changed to Laurentian Division; District 4 changed to Ottawa Division; District 5 changed to Smiths Falls Division.

Ontario Division changed to Ontario District; District 1 changed to Trenton Division; District 2 changed to London Division; District 3 changed to Bruce Division; District 4 changed to Toronto Terminal Division.

Lake Superior Division changed to Algoma District; District 1 changed to Sudbury Division; District 2 changed to Chapleau Division; District 3 changed to Schreiber Division.

Manitoba Division changed to Manitoba District. Fort William Terminals changed to Fort William Terminal Division. District 1 changed to Kenora Division; Winnipeg Terminals changed to Winnipeg Terminals Division; District 2 changed to Portage Division; District 3 changed to Brandon Division; District 4 changed to Souris Division.

Saskatchewan Division changed to Saskatchewan District; District 1 changed to Regina Division; District 2 changed to Moose Jaw Division; District 3 changed to Saskatoon Division.

Alberta Division changed to Alberta District; District 1 changed to Medicine Hat Division; District 2 changed to Lethbridge Division; District 3 changed to Calgary Division; District 4 changed to Edmonton Division.

British Columbia Division changed to British Columbia District; District 1 changed to Revelstoke Division; District 2 changed to Vancouver Division; District 3 changed to Nelson Division; District 4 changed to Cranbrook Division.

In order to avoid any subdivision bearing in some cases the same name as a division, the following changes in names of subdivisions have been made:

New Brunswick District—Brownville Subdivision changed to Mattawamkeag Subdivision; Woodstock Subdivision changed to Shogomoc Subdivision.

Quebec District—Farnham Subdivision changed to Adirondack Subdivision; Quebec Subdivision changed to Trois Rivières Subdivision; Ottawa Subdivision changed to Lachute Subdivision; Smiths Falls Subdivision changed to Winchester Subdivision; Laurentian Subdivision changed to St. Agathe Subdivision.

Ontario District—Toronto Subdivision changed to Oshawa Subdivision; London Subdivision changed to Galt Subdivision; Trenton Subdivision changed to Belleville Subdivision.

Algoma District—Sudbury Subdivision changed to Parry Sound Subdivision; Chapleau Subdivision changed to Nemeegos Subdivision; Schreiber Subdivision changed to Heron Bay Subdivision; Algoma Subdivision changed to Thessalon Subdivision.

Manitoba District—Fort William Subdivision changed to Kaministikwia Subdivision; Kenora Subdivision changed to Keewatin Subdivision; Souris Subdivision changed to Glenboro Subdivision; Brandon Subdivision changed to Carberry Subdivision.

Saskatchewan District—Regina Subdivision changed to Kiseby Subdivision; Moose Jaw Subdivision changed to Indian Head Subdivision; Saskatoon Subdivision changed to Sutherland Subdivision.

Alberta District—Medicine Hat Subdivision changed to Maple Creek Subdivision; Calgary Subdivision changed to Brooks Subdivision; Lethbridge Subdivision changed to Taber Subdivision; Edmonton Subdivision changed to Leduc Subdivision.

British Columbia District—Cranbrook Subdivision changed to Fernie Subdivision.

The American Association of Traveling Passenger Agents held its 44th annual convention at Philadelphia, Pa., Oct. 2 and 3, when there was an attendance of over 400 delegates.

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely 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.—F. W. ROBERTSON, District Passenger Agent, Halifax, N.S., has also been appointed acting Superintendent, Sleeping and Dining Car Service, vice L. B. Archibald, who has been granted temporary leave of absence owing to ill health.

W. A. DUFF, Engineer of Bridges, has been appointed Assistant Chief Engineer. He continues to perform the duties of Engineer of Bridges, and has charge of the Halifax Ocean Terminals, and will perform such other work as may be assigned to him by the Chief Engineer. Office, Moncton, N.B.

A. C. BARKER has been appointed acting Superintendent of Telegraph and Time Service, Intercolonial Division. Office, Moncton, N.B.

S. ALLANACH, heretofore Roadmaster, Fredericton Subdivision, Intercolonial Division, Fredericton, N.B., has been appointed Roadmaster, Campbellton Subdivision, Intercolonial Division, vice A. B. Gorham, transferred. Office, Campbellton, N.B.

A. B. GORHAM, heretofore Roadmaster, Campbellton Subdivision, Intercolonial Division, Campbellton, N.B., has been appointed Roadmaster, Leonard Subdivision, Intercolonial Division, vice J. Bury, transferred to Transcontinental Division. Office, Campbellton, N.B.

J. BURY, heretofore Roadmaster, Leonard Subdivision, Intercolonial Division, Campbellton, N.B., has been appointed Roadmaster between Napadogan and Edmundston, Transcontinental Division. Office, Edmundston, N.B.

H. A. IRVING, heretofore chief clerk to Superintendent, Fort William, Ont., has been appointed acting Trainmaster, District 3, Transcontinental Division, Graham, Ont.

J. W. CAMPBELL, heretofore section foreman, Sunstrum, Ont., has been appointed acting Roadmaster, Graham, Ont., vice P. B. Barnard, resigned.

H. G. REID, heretofore Master Mechanic, District 3, Transcontinental Division, Transcona, Man., has been appointed Assistant Superintendent of Rolling Stock, reporting to Superintendent of Rolling Stock, Moncton, N.B., and has direct charge of the Transcona shops and will perform such other duties as may be assigned to him. Office, Transcona, Man.

JOHN BIRSE, heretofore Road Foreman of Locomotives, Graham, Ont., has been appointed District Master Mechanic, District 3, Transcontinental Division, and his former position has been abolished. Office, Transcona, Man. The position of Master Mechanic, District 3, heretofore held by H. G. Reid, who has been appointed Assistant Superintendent of Rolling Stock, has been abolished.

Canadian Northern Ry.—H. J. LECCLAIRE, heretofore Soliciting Passenger Agent, Toronto, has been appointed Travelling Passenger Agent, Montreal, vice C. A. Langevin.

F. C. TURNER has been appointed Travelling Passenger Agent, Montreal.

J. B. SMITH has been appointed Rule Instructor, Lines East of Port Arthur. Headquarters, Toronto.

J. E. BERRY, heretofore Yardmaster, Regina, Sask., has been appointed Gen-

eral Yardmaster, Saskatoon, Sask.

J. L. LOUNSBERRY has been appointed Travelling Agent. Headquarters, 510 Woolworth Bldg., New York, N.Y.

H. S. HEAD has been appointed Travelling Agent. Headquarters, 510 Woolworth Bldg., New York, N.Y.

A. DEWITT FOSTER has been appointed Travelling Immigration Agent. Headquarters, 64 West Adams St., Chicago, Ill.

Canadian Pacific Ry.—E. W. BEATTY, K.C., Vice President and General Counsel, has been added to the Executive Committee, the number of directors on which has been increased from 5 to 6.

DR. H. A. BEATTY, heretofore Chief Surgeon and Medical Officer, Eastern Lines, has been appointed Chief Surgeon and Medical Officer for the system. Office, Toronto.

N. S. DUNLOP, Insurance and Tax Commissioner, having resigned on account of ill health, the position has been abolished. All matters pertaining to assessments, taxes, local improvements, etc., affecting the company's property on Eastern Lines, will be handled by FRANK TAYLOR, Right of Way and Tax Agent, Montreal. As the company is setting up its own insurance fund, all insurance matters will be handled by E. MOORE, of the Financial and Accounting Vice President's Office, Montreal.

P. MCPHERSON, heretofore Right of Way and Lease Agent, Western Lines, has been appointed Right of Way and Tax Agent, Western Lines. All assessment notices, tax bills, notices regarding drains, local improvements, etc., in connection with the company's property, west of Fort William, used in connection with the operation of the railway, are dealt with by him.

ALLAN PURVIS, General Superintendent, Quebec District, Montreal, has been appointed General Superintendent, Ontario District, Toronto, while J. T. Arundel is absent from duty on account of illness.

J. H. BOYLE, Superintendent, Farnham Division, Quebec District, Farnham, will act as General Superintendent, Quebec District, Montreal, during Mr. Purvis' absence in Toronto.

W. J. UREN, Superintendent, Trenton Division, Ontario District, who has been acting as General Superintendent, Ontario District, since Mr. Arundel became ill, has returned to his former position.

L. G. ROGERS, Assistant Superintendent, Trenton Division, Ontario District, Trenton, who has been acting as Superintendent of that district while W. J. Uren has been acting as General Superintendent, Ontario District, has returned to his former district.

H. H. TRIPP, heretofore Resident Engineer, Winnipeg, has been appointed Resident Engineer, Kenora, vice H. J. Black, transferred.

C. L. GALLOWAY, heretofore Chief Dispatcher, Souris, Man., has been appointed Chief Dispatcher, Winnipeg, vice W. E. Cline, promoted.

H. J. BLACK, heretofore Resident Engineer, Kenora, Ont., has been appointed Roadmaster, Portage la Prairie, Man.

E. H. GODWIN has been appointed acting Manager, Hotel Palliser, Calgary, Alta., vice E. Cotty, who was Manager of Banff Springs Hotel during the summer, but who has now resigned from the service.

W. E. CLINE, heretofore Chief Dispatcher, Winnipeg, has been appointed Trainmaster, Macleod, Alta., vice W. M. Ansley, whose appointment as Trainmaster, Assiniboia, Sask., was announced in our last issue.

M. G. MURPHY, heretofore District Passenger Agent, St. John, N.B., has been appointed General Agent, Passenger Department, C.P.R. and Canadian Pacific Ocean Services, Ltd., Detroit, Mich., and not merely for the C.P.R., as mentioned in our last issue.

G. G. MCKAY, heretofore City Passenger Agent, Detroit, Mich., has been appointed Travelling Passenger Agent for the lower peninsula of Michigan, vice E. C. Oviatt, transferred to other duties in Michigan. Office, Detroit.

A. E. EDMONDS, heretofore General Agent, Passenger Department, Detroit, Mich., has been appointed City Passenger Agent there, vice G. G. McKay, transferred. He deals with all requests for sleeping car reservations.

W. C. ELMER has been appointed City Ticket Agent, Detroit, Mich.

Canadian Pacific Ocean Services, Ltd.—A. RUTLEDGE, heretofore General Superintendent, Sleeping, Dining and Parlor Cars and News Service, Eastern Lines, C.P.R., Montreal, has been appointed Purchasing Agent, Canadian Pacific Ocean Services, Ltd., Vancouver, B.C.

T. J. BURNS, heretofore Passenger Agent, Hong Kong, China, has been appointed Passenger Agent, Manila, vice J. R. Shaw, whose appointment as General Agent, Passenger Department, Shanghai, China, was announced in a recent issue.

Chicago, St. Paul, Minneapolis & Omaha Ry.—A. R. WITHERSPOON, heretofore Travelling Freight Agent, Grand Forks, N.D., has been appointed General Agent, Winnipeg, Man., vice W. S. R. Cameron, resigned. Office, 333 Main St.

E. R. CUNNINGHAM, heretofore City Ticket Agent, Canadian Northern Ry., Winnipeg, Man., has been appointed Travelling Agent, C. St. P. M. & O. R. there, and assigned to the solicitation of passenger business, reporting to the General Agent.

Grand Trunk Ry.—W. H. SAMPLE, heretofore Master Mechanic, Western Lines, Battle Creek, Mich., has been appointed Master Mechanic, Eastern Lines. Office, Montreal.

J. B. DORAN, heretofore ticket clerk, Lindsay station, Ont., has been appointed City Passenger and Ticket Agent, Peterborough, Ont., vice B. A. Rose, resigned.

B. A. ROSE, heretofore City Passenger and Ticket Agent, Peterborough, Ont., has been appointed City Passenger Agent, Windsor, Ont., vice A. M. Stewart, retired.

B. J. FARR, heretofore Locomotive Foreman, Battle Creek, Mich., has been appointed Master Mechanic, Western Lines, vice W. H. Sample, transferred. Office, Battle Creek, Mich.

The following station agents have been appointed:—Niagara Falls, Ont., W. Kew; Goldstone, Ont., C. S. Groh; Belgrave, Ont., R. Yule.

Grand Trunk Pacific Ry.—W. A. B. RUSSELL has been appointed Commercial Agent, Regina, Sask., vice A. E. McMaster, promoted.

A. E. McMASTER, heretofore Commercial Agent, Regina, Sask., has been ap-

pointed Division Freight Agent, Edmonton, Alta., vice W. J. P. McGregor, granted leave of absence.

W. E. SIMMONS, heretofore Chief Dispatcher, Tofield, Alta., has been appointed Chief Dispatcher, Biggar, Sask., and the dispatching office at Tofield has been closed in a readjustment of territory.

JAMES PORTEOUS, heretofore Car Inspector, Smithers, B.C., has been appointed Car Foreman there, vice F. E. Dymond, transferred.

F. E. DYMOND, heretofore Car Foreman, Smithers, B.C., has been appointed Car Foreman, Prince Rupert, B.C., vice C. A. McNiece, resigned.

The following station agents have been appointed:—Spy Hill, Sask., E. P. Guay; Waldron, Sask., J. M. Carson; Unity, Sask., M. L. Myers; Lebret, Sask., H. L. Cole; Griffin, Sask., F. C. Schepple; Northgate, Sask., J. R. Wilson; Lawson, Sask., D. L. Cozeart; Riverhurst, Sask., B. Clew; Ryley, Alta., A. E. Bodieu; Swallow, Alta., J. E. Rivard.

Intercolonial Ry.—See Government Railways.

Michigan Central Rd.—J. R. CAMPBELL, heretofore Assistant Yardmaster, Montrose, Ont., has been appointed General Yardmaster, Windsor, Ont., vice F. McElroy, whose appointment as Trainmaster, St. Thomas, Ont., was announced in our last issue.

National Transcontinental Ry.—See Canadian Government Railways.

New York Central Rd.—A. T. HARDIN, Vice President in charge of operation, has been appointed Assistant to the President, regardless of department, and in connection with lines not directly operated. He continues as Vice President, N.Y.C.R., and has also been appointed Vice President, Ottawa & New York Ry., Michigan Central Rd., and Cleveland, Cincinnati, Chicago and St. Louis Rd. Office, New York.

P. E. CROWLEY, heretofore Assistant Vice President, Operating Department, has been appointed Vice President, Operating Department, N.Y.C.R. and Ottawa & New York Ry., vice A. T. Hardin, promoted. Office, New York.

Ottawa & New York Ry.—See New York Central Rd.

Pere Marquette Rd.—JOHN HANDFORD, heretofore valve setter, has been appointed General Foreman, St. Thomas, Ont., vice G. W. Cook, resigned.

St. John Ambulance Brigade.—The annual inspection of the three nursing divisions of the St. John Ambulance Brigade—C.P.R., Fort Garry and Fort Rouge—took place at Winnipeg, Oct. 11. The C.P.R. division is composed of wives and daughters of C.P.R. men, and is actively engaged in sending supplies to the Red Cross Society, in addition to doing first aid and other work locally.

Quebec Railway, Light & Power Co.'s Traffic. During the year ended June 30, 1916, the total number of passengers carried on the City Division, including transfers, was 15,227,583. On the Montmorency Division the total number of passengers carried was 1,890,207, and 9,253 car loads of freight were hauled. fiscal year.

The C.P.R. Opened, on Oct. 12, in the Shaughnessy Building, Montreal, an exhibition of toys and novelties made in New England States by fishermen and others during the winter nights. The C.P.R. has made this collection with a view of demonstrating the possibilities of a Canadian toy industry.

Pacific Great Eastern Railway's Annual Meeting.

At the annual meeting in Victoria, B.C., recently, the following report was presented for the year ended June 30, over the signature of J. W. Stewart, President:—

In many respects, considering only the progress of construction, the year in review has been an unfavorable one to the company's objects. Under the pall of the greatest war in the history of man, it has been impossible, during this time, to accomplish more than a small percentage of the work remaining to be done at the close of the last fiscal year. Early in the spring of 1912, the company entered into an agreement with the British Columbia Government, calling for the completion of the line from Vancouver to Fort George (now Prince George) by July 1, 1915. This agreement was, of course, made in good faith between the company and the government, the company confident of its ability to do its part and the government expecting nothing less. From causes with which you are familiar the requisite progress was not made and it was seen that more time would be required to complete the undertaking, and, being apprised of the facts, the government, in the spring of 1914, increased the amount of its assistance to the enterprise.

It might be well here briefly to recapitulate the financial assistance rendered by the government. In 1912, the government guaranteed securities of the company to the extent of \$35,000 a mile for 450 miles of line; in 1914, this guarantee was extended over the entire mileage of 480 miles, and additional securities to the extent of \$7,000 a mile were guaranteed, making a total of \$42,000 a mile for 480 miles, amounting to \$20,160,000. Of these securities, \$14,234,805 were sold and the balance \$5,925,195 pledged to secure a loan of \$4,800,000, prior to the date of our last annual meeting.

During the spring of this year your directors unreservedly presented the status of the undertaking to the government, which brought down before the Legislative Assembly an important measure of relief which was enacted into law, authorizing the Provincial Minister of Finance to advance by way of loan to the company \$6,000,000 at the actual cost to the government of obtaining same, and repayable at or before the expiration of 10 years. The funds thus provided will, in the opinion of your Chief Engineer, enable the completion of that portion of the line between Squamish, at the head of navigation, Howe Sound, and Prince George, where connection will be made with the Grand Trunk Pacific transcontinental line.

The summons of patriotism to service overseas has been so faithfully obeyed by the youth and the eligible older men of this province that it is now impossible adequately to man the work, and the difficulty experienced in obtaining track and bridge material, occasioned by the unprecedented demands of the war and industry upon the metal markets, is another militating factor in determining the time required to complete your line of railway. Secure in the knowledge that the results so far attained are in the highest degree satisfactory, and confident that the best efforts possible were made to carry on the work as originally contemplated, you may rest assured that no effort will be spared in the future that will

promote the cause of the undertaking. As, upon the close of the year gone by, in the fortunes of our beloved Canada and the Motherland and our gallant allies an era of higher hopes has dawned and notable success already attained, earnest of greater achievement, so we may hope in the ensuing months for the dawning of brighter days upon our own undertaking. The settler is beseeching us to hasten the completion of the railway to enable him to get in to the land; the forests and mines are crying out to us to move their abundant products to market; and the teeming plains of the northland are groaning for deliverance. Abundant traffic is in prospect waiting upon the completion of the line whose need becomes daily more urgent. It therefore behooves us to continue our earnest efforts to that end.

The directors for the current year are: J. W. Stewart, President; D'Arcy Tate, K.C., Vice President and General Counsel; T. Foley, Vice President; F. Wilson, Land Commissioner, and E. F. White. The other officers are: R. D. Thomas, Secretary-Treasurer; Jno. Callaghan, Chief Engineer; A. H. Sperry, Land Commissioner.

Telegraph, Telephone and Cable Matters.

A. Malcolm has been appointed chief operator, C.P.R. Telegraphs, Montreal, vice J. G. Davies, who resigned recently to enter Great North Western Telegraph Co.'s service at Winnipeg, as announced in our last issue.

G. H. Walters is acting as a special representative of the Great North Western Telegraph Co.'s traffic department at Winnipeg, pending the appointment of a chief operator in the place of B. S. Round who has resigned.

M. S. J. Baker was acting Superintendent of Telegraphs, Saskatchewan Division, C.P.R., and H. B. McIntyre was acting in a similar capacity, British Columbia Division, C.P.R., during the absence of D. Coons and R. N. Young, respectively, on vacation.

J. G. Davies, heretofore chief operator and circuit manager, C.P.R. Telegraphs, Montreal, has been appointed Superintendent, District 4, and Manager Winnipeg office, Great North Western Telegraph Co., J. Paddington, Superintendent, and S. Goldstein, Local Manager, having resigned. Biographical details were given in our last issue.

At the Great North Western Telegraph Co.'s annual meeting at Toronto, Oct. 2, the following board was elected for the current year:—Z. A. Lash, K.C., President; Adam Brown, Vice President; G. D. Perry, General Manager; Jas. Hedley, —Hon. J. K. Kerr, K.C., Aemilius Jarvis, F. B. Hayes, D. B. Hanna and R. P. Ormsby. A. C. McConnell is Secretary and Auditor, and D. E. Henry is Treasurer.

Government Railways Rules.—An order-in-Council has been passed rescinding portions of the general train an interlocking rules for use on the Canadian Government Railways approved Jan. 22, 1914, and substituting new sections therefor. The amended sections cover definitions and indications under the headings "Automatic block signals," and "Interlocking signals."

The Acadia Coal Co. has received 150 all steel mining cars from Canadian Car and Foundry Co.

Electric Railway Department

Electrification of Lake Erie and Northern Railway.

The L.E. and N.R., which is a C.P.R. subsidiary, is a single track, standard gauge line, with Galt, Ont., as its northern terminus, and Port Dover, Ont., as its southern terminus. It runs through the towns of Paris, Brantford, Waterford, and Simcoe, to Port Dover, on Lake Erie. It is expected that a coal ferry service will be put in operation from Port Dover

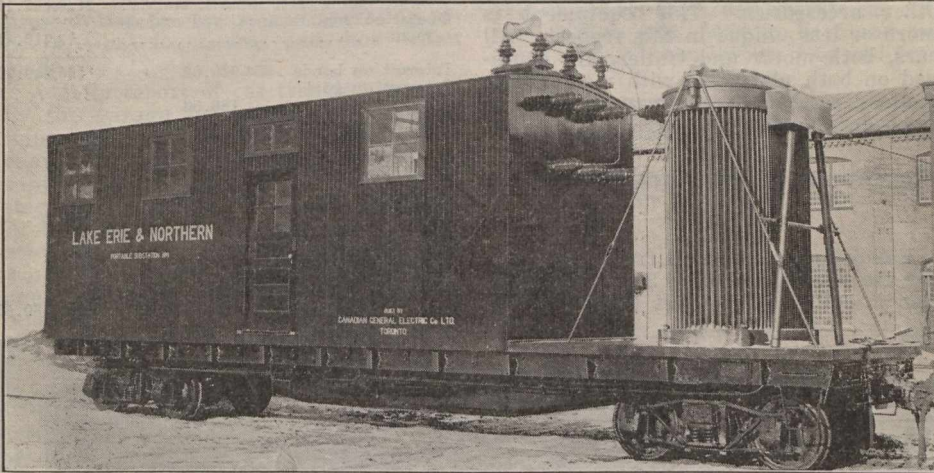
stations and an extra portable station for use where necessary. This portable substation was fully described in our June issue. Had 600 volts been decided upon, 6 substations would have been required, together with a large amount of overhead feeder, etc.

The traffic conditions require, for conductivity, the equipment of two 0000 B. &

which is 75,000 c.m., corresponding in conductivity to two 0000 copper wires. The sag of this messenger in the standard 150 ft. span is 2 ft. at 60° Fahrenheit. At intervals of a mile the messenger and the trolley wires are anchored in both directions, galvanized iron clamps and guy cables being utilized for this purpose.

The use of aluminum cable steel reinforced avoids the necessity of having additional feeder cables with the accompanying insulators. The contact wire is 0000 B. & S. standard grooved, and is of double galvanized steel. It is supported by means of stamped steel hangers, having a stem designed in the form of a loop and is of stamped sheet steel galvanized. The loop fits over a stamped sheet steel clamp, so arranged that by tightening up the bolts it clamps the messenger cable. The arrangement affords a flexible suspension for the trolley wire at all points, and at the same time prevents any wear of the aluminum cable by reason of the constant sliding up and down of the flexible hanger. Electrical connections are provided for between the messenger cable and contact wire by means of a parallel groove clamp and 00 stranded, copper jumpers attached to feeder ears on the steel trolley.

The line is 51 miles long, with various sidings and passing tracks, 40 miles being tangent track. The grades are comparatively light, and the main line ones are all easy with the exception of a few short lengths near yards, which are 7° to 9°. Power for operation is obtained

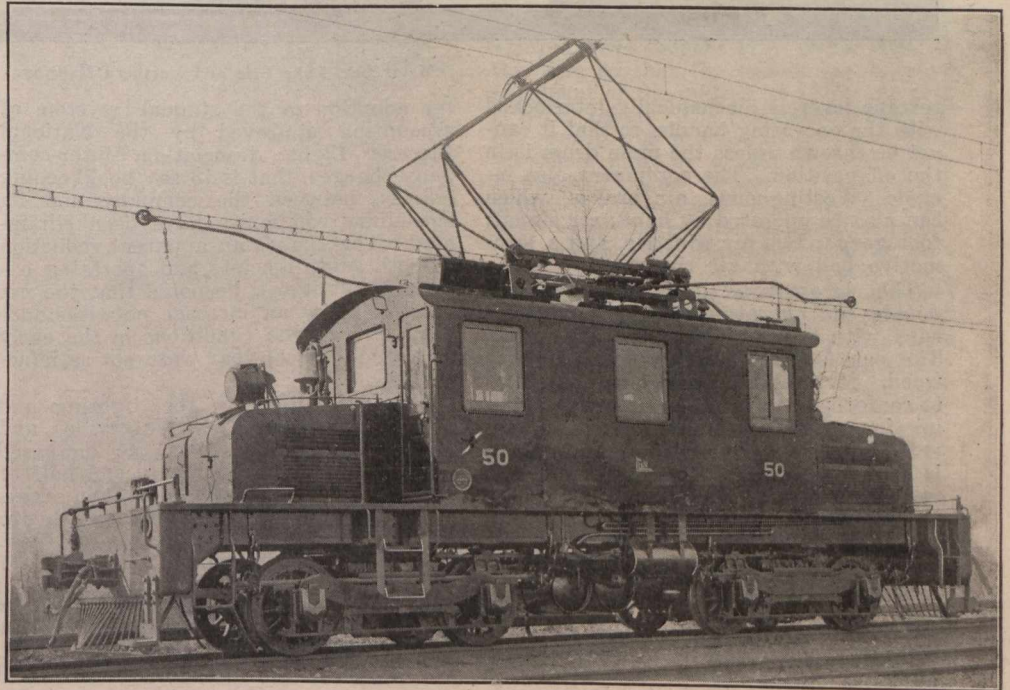


Portable Substation, Lake Erie and Northern Railway.

in the near future, and that a heavy coal traffic will result. The line was completed from Galt to Brantford and put in operation on Feb. 7 of this year, to Simcoe on June 2, and to Port Dover on July 22. Connection is made at Galt with the Galt, Preston and Hespeler Ry., another C.P.R. subsidiary, which has been in operation for some years. This connecting road is operated at 600 volts and runs from Galt to Kitchener, Ont., with a branch line from Preston to Hespeler, 20 miles in all. The L.E. & N.R. was built to steam road standards, 85 lb. T. rails were used, and bonded with 0000 copper, electrically welded bonds.

In approaching the problem of electrification many very important considerations had to be kept in mind, in order to construct the line for electrical operation and to take advantage of the very latest practice in the type of system and overhead construction, bearing in mind minimum first cost, combined with durability, simplicity, and efficiency of operation. After a careful investigation of the various types of construction and kinds of material available, it was decided to operate the line at 1,500 volts. One of the reasons for adopting this voltage was the fact that the Galt, Preston and Hespeler Ry., with which the line connects, is operated on 600 volts, and there is a possibility that it will be changed over to 1,500 volts. At present, therefore, it is possible to run the L.E. & N.R. cars over the G., P. & H. Ry. at half speed, without changing the equipment. Later, when the connecting road is changed over to 1,500 volts, it will be possible to operate cars from Kitchener to Port Dover on one voltage. Another reason for the adoption of 1,500 volts as an operating voltage was the fact that substations with such a voltage could be arranged at long distances and would be few in number. The system now operates two permanent sub-

S. gauge copper wires throughout the length of the line, and in order to obtain the simplest possible construction, avoiding the necessity of additional feeder cables, insulators, etc., it was decided to use a messenger cable having the com-



Electric Locomotive, Lake Erie and Northern Railway.

combined qualities of maximum strength with the necessary conductivity for this purpose. Aluminum cable steel reinforced was therefore decided upon as a messenger cable. This cable consists of an extra high strength, double galvanized, steel core, around which are stranded 54 pure aluminum wires, the cross section of

from the Hydro Electric Power Commission at Galt, Brantford, and Simcoe. The power is received at the substations at 26,000 volts, 3-phase, 25-cycles, and is stepped down through transformers and changed by means of rotary converters, to 1500 volts direct current. The substations at Brantford and Simcoe are now in

operation, and it is planned to use temporarily a portable substation at Galt, until such time as the connecting road is changed to 1,500 volt operation, when a permanent station will be erected at Preston.

Two 60-ton, Baldwin-Westinghouse electric locomotives, of the double truck type, mounted on 36 in. cast steel, steel tired wheels, are used for heavy traffic. The motors are of the Westinghouse 750 volt railway type, wound for and operated two in series permanently on 1,500 volts, and have a capacity of 94 kw, or 125 h.p. They are arranged for forced ventilation and are of the field control type. While air for cooling the motors is normally provided by a motor driven blower, each motor has a fan at one end of the armature which will furnish sufficient ventilation to operate the locomotive at three quarter capacity in case of accident to the blower. The control equipments used on the locomotives are of the electro pneumatic type. The various main circuit connections are made by individual or unit switches arranged compactly in a group and operated by compressed air. Master controllers are located at both ends of the locomotive cab. Each controller has two levers, one for notching up and one for reversing. The

should there be other equipments in operation at the time.

For passenger service 8 standard 60 ft., interurban cars are used; they consist of 6 motor cars and 2 trailers. Two of the motor cars are of the passenger and express type and are equipped with Westinghouse motors. The arrangement of equipment is such that 2 motors are permanently in series and the 2 pairs then operate in parallel, giving the cars a speed of 45 miles an hour. The control equipment is of the Westinghouse A.B. electro pneumatic type. The compressor and lighting systems are both operated direct from the 1,500 volt line, thus making the car a straight 1,500 volt one without any complications of dynamotor or other accessories. This equipment is more or less unique in this respect. All cars, both motor and trailer, are equipped on both platforms with master controllers, so that a train may be operated from any platform.

Sherbrooke Railway and Power Co's Report.

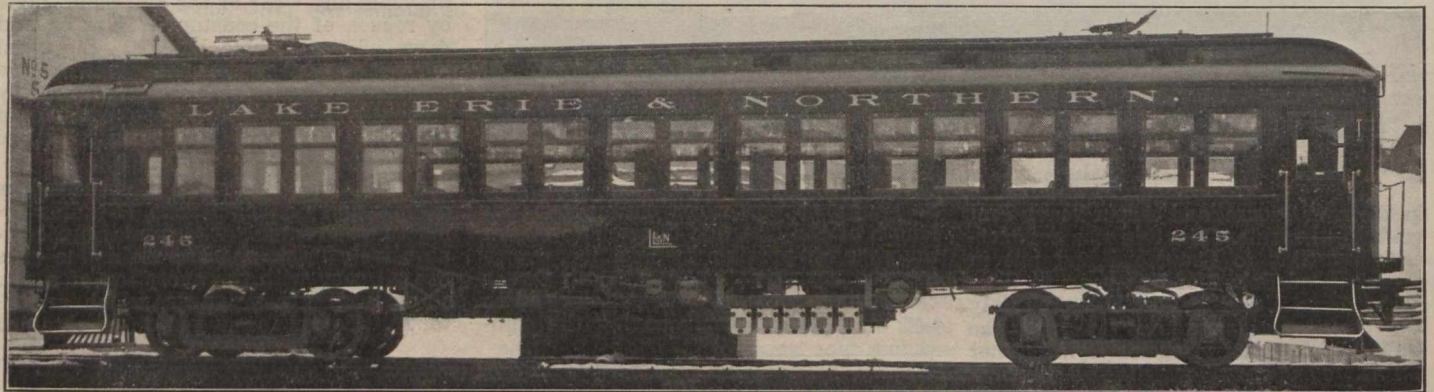
Following are extracts from the report for the year ended June 30:—The attention is called to the fact that owing to

Your directors regret to report the death of the late General Manager, N. C. Pilcher, who was killed while bravely fighting with his regiment in France. He was highly commended for his work by his commanding officer.

This summer, J. H. Trimmingham, the Superintendent, left for overseas service with the motor boat patrol, and Capt. Thos. Irving, the Assistant Accountant, with the 117th Eastern Townships Battalion. During Mr. Trimmingham's absence, Chas. Johnstone, a very efficient officer of the company, has been appointed acting Manager.

Profit and Loss Account for Year Ending June 30th, 1916.

Gross revenue from railway, power, light, real estate, rentals, etc.	\$140,069.11	
Operation, maintenance, and management	73,719.41	
Interest on bonds . \$54,525.00		\$66,349.70
Interest on gold notes 186.53		
Interest on current liabilities 3,712.02		
		\$58,423.55
Head office and legal expenses \$1,426.92		
Bad debts written off 246.42		
Expenses and discount on note issue written off 2,533.76		
		4,207.10
		62,630.65



Motor Car, Lake Erie and Northern Railway.

reverse lever is mechanically interlocked with the operating handle, so that it cannot be thrown unless the main drum is in the off position. The equipment also includes Westinghouse air brakes, which can also be operated by hand; air signal; foot gongs; two air whistles, and a locomotive bell with air ringer.

The locomotives are arranged for double end operation and have central cabs with sloping hoods at either end. The cab is of steel and is lined with wood. Steps and handholds are arranged to conform to the Board of Railway Commissioners' requirements. The two locomotives are very similar. One, however, is arranged for a speed of from 20 to 25 miles an hour, and the other for from 30 to 35 miles an hour, with normal load, on a straight, level track. The high speed locomotive, which is intended for passenger, excursion traffic, is equipped with regenerative braking, controlled by the same master controller that operates the unit switch control outfits. When used for regenerative braking the motor fields are separately excited by a motor generator set, which also drives the blower for ventilation. This system is so arranged by means of relays that as soon as the voltage of the motor is equivalent to the voltage on the line the switch group automatically comes in on the line and throws the motors directly on the line, generating back to the power system, or utilizes the power on the line

the adoption of the standard system of accounting approved by the National Electric Light Association, inter-company charges, that is to say bookkeeping entries, between the company and its subsidiary companies have been eliminated. This makes an apparent reduction in both gross receipts and operating expenses, but it will be noted that the net receipts show an increase notwithstanding the fact that conditions in the early part of the fiscal year were not satisfactory.

The acquisition of the lighting and power businesses of Waterville and Compton, combined with the increased demand for power in the second half of the year, have created a market in excess of the capacity of the company's hydro electric development on the Magog River. To provide for this increased demand for power and the probable requirements in the immediate future, your directors deemed it advisable to make a contract through the Southern Canada Co., Ltd., for the purchase of sufficient power to cover same and this should be available in October. A considerable quantity of this power has already been contracted for. An extension of the power house and some of the transmission and distributing systems has been rendered necessary to handle this additional power and this work is now nearing completion and should materially increase the earning power of the company for the current

At credit of profit and loss, June 30, 1915	\$3,719.05
1915	1,181.32
Balance carried forward to credit of profit and loss	\$4,900.37

The gross earnings for the year ending June 30, 1915, were \$55,920.74.

Saskatoon Municipal Ry. Earnings.

Following are the earnings, etc., for August:—

Total revenue	\$15,526.13
Operating expenses	9,719.12
Net revenue	5,807.01
Capital charges	4,504.22
Net profit	1,302.79
Total mileage	64,386
Passengers carried	299,348
Receipts per car mile	23.569c
Operating expenses, per car mile	15.072
Capital charges per car mile	6.985c
Total k.w.h.	136,700
Passengers per car mile	4,642

We are officially advised in connection with recent press reports that the Winnipeg Electric Ry. was about to take action against the City of Winnipeg for permitting the operation of jitneys in the city to the damage of the company's interest, that while the matter had been under discussion no definite action has been decided upon. The company claims that the franchise granted it by the city is an exclusive one, and that the licensing of jitneys is a direct breach.

Answers to Questions on Electric Railway Topics.

Following are answers to some questions sent to the American Electric Railway Association's question box, contributed by W. G. Murrin, General Superintendent, British Columbia Electric Ry., Vancouver:—

Automobiles for Official Use.—Will member companies which operate a large number of automobiles for the use of their general officers, roadmasters, linemen and other employes, let us know what cost and performance records they keep; form of daily report, form of monthly report, form of summary for presentation to general and operating officers, what is shown, and how often made?

A daily report of car troubles is made by the garage foreman to the General Superintendent. The foreman retains one copy, and in addition to forwarding a copy to the General Superintendent, a third copy is sent to the Master Mechanic. A daily report of cars requiring special attention, such as general overhauling, worn parts, etc., is also made by the garage foreman to the General Superintendent. Weekly odometer readings and tire changes are reported, and this information is transferred to a ledger, which furnishes at a glance the mileage and tire history of a car. A tire and casing record, showing the date installed, the car number, where carried, date changed, reason for changing, reading and the number of miles, is used in conjunction with the ledger. A card record is kept of individual car maintenance costs, the information being furnished by the accountant. Monthly statements are made to the General Superintendent and the Accounting Department, showing,—mileage of all cars, distribution of power charges for batteries of electric vehicles, distribution of power charges for lighting and starting batteries on all vehicles.

Street Sprinkler Cars.—Have any member companies constructed in their own shops, or had constructed in outside shops under their own specifications, street sprinkler cars, if so, please describe in a general way, this equipment and its practicability?

In 1905 we constructed in our shops a 3,000 gal. capacity single truck sprinkler, consisting of an old 6x16 ft. return tube boiler with the tubes removed, mounted on a timber platform 26 ft. over bumpers by 7 ft. wide. Canopy hoods on pipe standards were built at each end. The trucks were built with each side frame made of two 1x3 in. bars forged around and over the journal boxes, and two over-truss rods of 1/2x3 in. iron, the space-blocks having bearings for six coil springs, on each side frame, which carried the car. The wheel base is 7 1/2 ft. with standard 3 3/4x7 in. freight car journal boxes. The car is mounted on 33 in. rolled steel interurban wheels, with 5 in. axles carrying two G.E. 57 motors and is equipped with straight air brakes, 8x10 in. cylinder. Water is pumped from the tank to sprinkler heads at either end by a 4 in. centrifugal pump, belted to a 10 h.p. motor, and 250 ft. roadway can be easily sprinkled in one trip. The cost of this car is about \$2,800 complete.

Inspection of Hand Brake Equipment.—What methods of inspection have member companies adopted to keep in good order hand brake equipment on cars upon which air brakes are ordinarily used? Is the hand brake equipment overhauled at

regular intervals or is this left to the judgment of the car house foreman?

When air brakes are used it is a particularly difficult matter to enforce the use of hand brakes frequently enough to keep them from becoming stiff or clogged up, especially so at the floor bearings on the platform. We inspect hand brakes on city equipment at every periodical inspection or after every 90 car hours, and on interurban equipments after every 1,000 car miles. Transportation rules require on city lines that hand brakes must be tried out before car is taken out of the barn, and at least one stop with hand brakes made during each shift, at some suitable place on the route. Interurban crews must test hand brakes on taking over car at the barn, and operate car with hand brakes only, between barn and terminal station when taking it to and from service.

Regina Municipal Railway Earnings

Following are earnings, expenses, etc., for August, and for eight months ended Aug. 31:—

	August	Jan. 1 to Aug. 31
Gross earnings	\$14,679.13	\$137,327.56
Expenses	13,600.87	127,836.61
Net earnings	1,078.26	9,490.95
Capital charges	8,022.96	64,183.69
Deficit	6,944.70	54,692.74
Expenses per car mile		
without power	12.76c	16.09c
with power	17.02c	21.45c
Power per k.w.h.	1.41	1.83
Power per k.w.h. per car mile	4.25	5.16
Platform wages per car hour	70.41	72.46
Passengers carried	323,225	3,040,080
Expenses percentage, without capital charges		92.65%
Expenses percentage, with capital charges		147.31%

Quebec Railway, Light and Power Co's Accident Talks, Etc.

The Quebec Ry. Light and Power Co. has, since the end of 1914, been issuing "Accident Talks" for the benefit of its employes and the general public. The first of these was issued Nov. 1914, the first series consisting of five talks. The 1st asks the public to help the company to avoid accidents, and shows how they may do so; the 2nd shows how they may help the company and the travelling public when an accident happens; the 3rd contains suggestions to drivers of automobiles and other vehicles; the 4th relates to suits for damages, urging the public to come direct to the company with claims for compensation; and the 5th invites cooperation in the teaching of children in accident prevention. The second series of accident talks—10 in number—were issued bi-monthly between Nov. 1915, and Mar. 1916. The 1st is addressed to motormen; the 2nd refers to those who witness accidents, asking them to give the company all the facts; the 3rd points out that 90 per cent. of all accidents are brought about by carelessness, and urges carefulness and caution; the 4th calls attention to danger signals and their use; the 5th enforces the lesson "Wait till the car stops"; the 6th shows some of the ways in which accidents occur; the 7th is a talk on safety; the 8th "Dont's" to be observed by parents and taught to their children; the 9th is addressed to drivers of autos and to parents, and the 10th is an appeal for cooperation.

In June and July of this year two leaflets, addressed to the company's employes were issued—the 1st dealing with

service and the 2nd with courtesy. They are all clear and concise, and full of fact and suggestion, and are printed in both English and French.

Brandon Municipal Railway Operating Results.

Following is a comparative statement for the year ended June 30, 1916 and 1915:—

Passenger earnings	\$28,590.05	\$35,321.64
Miscellaneous earnings	668.63	647.41
Gross earnings from operation	29,258.68	35,969.05
Total operating expenses	28,660.23	28,394.87
Net income	\$598.45	\$7,574.18
Interest on funded debt	20,100.00	19,200.00
Interest on floating debt . . . . .	.25	267.34
Sinking fund	5,968.08	5,968.08
Depreciation	6,484.41	6,477.51
Less net income	32,552.74	31,912.93
Net loss	\$598.45	\$7,574.18
	\$31,954.29	\$24,339.75
Fare passengers carried	627,739	782,011
Average fare revenue passengers, in cents	4.52	4.52
Gross earnings per car mile	12.43	13.33
Operating expenses per car mile	12.18	10.53

The increased net loss of 1916 over that of 1915 is due to the closing of the railway system for 10 weeks, during the excessively heavy snowfall last winter. Not only was the revenue nil during that period, but the city council decided that the motormen, conductors and car barn employes should be given employment for the whole of the time the system was closed.

Ontario Hydro Electric Railways.

Twenty-five Ontario municipalities will on New Year's Day vote on bylaws for a hydro radial electric railway to run between Port Credit, St. Catharines and Bridgeburg. Under an act of last session, it is necessary for the sanction of the Lieutenant-Governor in Council to be secured three months prior to the date of the vote so that the people can become cognizant of the matter on which the poll is being taken. The estimated length of the road is 100 miles, and its cost about \$40,000 a mile, or a total cost of about \$4,000,000. The order in council was passed at the request of the Hydro Electric Power Commission, following the recent meeting in Hamilton, where the delegates made a strong demand that preliminary work on the line be started. The route is through a rich section of agricultural country, and the line will touch the following places:—Townships: Toronto, Trafalgar, Nelson, East and West Flamborough, Barton, Saltfleet, North Grimsby, Clinton, Louth, Grantham, Crowland, Humberstone and Bertie. Villages: Grimsby, Beamsville, Port Colborne, Humberstone, Fort Erie. Towns: Oakville, Burlington, Welland and Bridgeburg. Cities: St. Catharines and Hamilton. The radial from Toronto would connect with the line at Port Credit.

Edmonton Municipal Railway Deficit.

For the first 7 months of 1916 the deficit on operation, including depreciation and capital charges, was \$63,010.78, against \$75,136.90 for the first 7 months of 1915, a betterment in results of \$12,126.12, which A. G. Harrison, City Commissioner, points out was in spite of the fact that the city decreased in population and that five battalions of her soldiers were in camp at Calgary and elsewhere during the summer.

Electric Railway Projects, Construction, Betterments, Etc.

Berlin & Northern Ry.—The Board of Railway Commissioners has approved of plans showing a change in the location of the company's crossing on Wellington St., to the south side of Louisa St., Kitchener, Ont., the work to be done at the company's expense. (Dec., 1913, pg. 592.)

Brantford & Hamilton Ry.—The Board of Railway Commissioners has authorized the company to rebuild its bridge across the Toronto, Hamilton & Buffalo Ry. at Cainsville, Ont. (May, 1915, pg. 190.)

The Board of Railway Commissioners has authorized the company to establish its Brantford passenger station in the Lake Erie and Northern Ry. station at Lorne Bridge, Brantford, Ont., subject to agreement with, and the consent of, the city to the building of an extension of its tracks from Market St. to the station.

British Columbia Electric Ry.—The Vancouver City Council decided Oct. 6 to ask the company to continue the double track line on Hastings St., to Boundary Ave.

A settlement was effected Oct. 5, between the company and the Silver Spring Brewery, Victoria, of the matters about which they have had a difference, and which reached the law courts. The company sought to secure payment for power supplied to the brewery, and the brewery set up in defence a 20 year old understanding that it was to receive power free, in consideration of the company having built part of its line on brewery property. The brewery company is to pay a sum for power, and the railway company is to give a strip of land 31 ft. wide for the operation of a double track street railway, and it will have the absolute right to operate trams upon this at all time. The settlement gives the brewery company, by moving its tracks out from their present position close to the wall of the building, a means of access and sufficient clearance to the shipping doors, with an easement across the tracks to this roadway and another clearance from the brewery to the office. (Oct., pg. 425.)

Edmonton Radial Ry.—A press report states that the Edmonton, Alta., City Council is preparing a bylaw to provide for raising of \$75,000 for street railway purposes. (Sept., pg. 378.)

Fort William Electric Ry.—The Fort William, Ont., City Council has under consideration a proposal to build subways at the west end of the city, in order to carry highways along which the street railway runs across 14 sets of tracks belonging to the C.P.R., the Canadian Northern Ry. and the Canadian Government Railways (Lake Superior Branch). The council favors the building of one subway on Yonge St., as a start, at an estimated cost of \$250,000. Plans for this are being prepared by the City Engineer.

Lake Erie & Northern Ry.—The Board of Railway Commissioners is being asked to approve of an agreement between the Brantford City Council and the company for the sale by the city to the company of a portion of the Grand Valley Ry., and the board has approved of the revised location of the company's line in Brantford from station 0-26.1 to 3.13.8.

The Mayor of Brantford has written M. N. Todd, General Manager, L.E. & N.R., asking the company to provide protection for the public at Holmedale crossing. (Oct., pg. 425.)

London & Port Stanley Ry.—The London City Council has agreed to provide a further sum of \$117,000 to make certain improvements on the line, including the building of about 12 miles of second track and providing a grain elevator at Port Stanley. (Oct., pg. 425.)

The London St. Ry., we are officially advised, is just completing the building of a second track on a 2,000 ft. section of Dundas St., west of the fair grounds, at London, Ont. It is expected at an early date to extend the Hamilton Road line from the present terminus at Egerton St. for 2,200 ft. to West St. (Sept., pg. 378.)

Montreal & Southern Counties Ry.—We are officially advised that the contract for the erection of a car barn at Granby, Que., which was let to the Nicholson Constructions, Limited, is expected to be completed early in November. (Aug., pg. 378.)

Montreal Tramways Co.—The Board of Control is spending considerable time discussing the terms of a new franchise to be offered the company. At the rate the discussion is going on at present it will be some time before the terms are settled. The question of the employment of expert help in settling the terms is the subject of considerable discussion. The Board of Trade has appointed a committee to discuss the matter so as to be in a position to approach the City Council when the draft franchise comes before it. (Oct., pg. 422.)

Morrisburg & Ottawa Ry.—The following advertisement was published in Ottawa papers recently: "The Secretary-Treasurer of the above company will be at his office, 210-211 Union Bank Building, Ottawa, from 10 a.m. until 4 p.m. every day until Oct. 4, 1916, to receive payments or to make settlements with shareholders in arrears, and that (excepting such shareholders as against whom this company has judgment, or suits pending, or who have given promissory notes, or who have voluntarily made other satisfactory settlement) all shares other than as specified above upon which any call or part of call or other amount remains unpaid, on our books as of date Oct. 14, 1916, may be forfeited to the company, that such forfeited shares will be disposed of by the directors in such manner and at such times as may be deemed advisable and in accordance with the Statute of Ontario governing such sale of forfeited shares; and further take notice—That the Secretary-Treasurer of this company is the only authorized person to give receipts for money paid to the credit of this company and shareholders and others will govern themselves accordingly."

This company failed in securing from the Ontario Legislature last session an extension of time for construction. The company did some grading, but could not get further funds. In May, 1915, it began to take proceedings against its shareholders to recover unpaid instalments of calls and secured judgment against a considerable number of them. (June 1915, pg. 227.)

The Porcupine Rand Belt Electric Ry. Co. was incorporated by the Ontario Legislature in 1912 to build certain lines to be operated by electricity, and to connect with the Timiskaming and Northern Ontario Ry. at Dane, Ont. The company's organization was reported completed in Nov. 1912, and surveys were said to have

been completed by C. R. Fullerton, Liskeard, for some of the lines. Nothing further was heard of the project until Oct. 1913, when an unsuccessful application was made to the Ontario Government for a subsidy for building an electric railway from Haileybury to Lake Abitibi. A special general meeting of shareholders was called to be held in Toronto Oct. 16, to elect directors, to terminate a contract with the Porcupine Construction Co., to build two branch lines from Boston Creek to Swastika, and from the T. & N. O. R. via Larder Lake; and for other purposes. The secretary-treasurer of the company is W. J. James, Allandale, Ont., and the other officers and directors include several Toronto City Hall officials. (Nov. 1913, pg. 544.)

Quebec Ry., Light & Power Co.—The portions of this company's lines which are to be taken over by the Dominion Government, under the provisions of an act passed last session, have not yet, we are officially advised, been transferred, but are still being operated by the company, but on behalf of the Government.

We are further advised that the company has now under construction about 1.50 miles of new track in St. Malo and Linoilon wards, Quebec, and that it proposes to lay about 4 miles of city and suburban lines during 1917.

The company is adding a 2,000 h.p. motor generator to its equipment, from Canadian Westinghouse Co.

The St. John, N.B., Ry. is building a brick and concrete pumping station and doing some dredging in connection therewith at St. John, N.B. H. M. Hopper is General Manager, and G. G. Murdoch, Engineer.

Toronto Civic Ry.—We are officially advised that the 9-car addition to the St. Clair Ave. car barn is under construction and is expected to be completed at an early date. (Oct., pg. 425.)

Toronto Ry.—The gap between the Toronto Ry.'s northern terminus on Yonge St., just south of the new subway under the C.P.R., and the Toronto & York Radial Ry. Metropolitan Division's southern terminus on Yonge St., between Farnham and Woodlawn Avenues, the greater portion of which was caused by the city tearing up the T. & Y. R. Ry. track south of that point, on the expiration of its franchise some two years ago, has been closed up by the extension of the Toronto Ry. north to the point mentioned. Following the British Privy Council's judgment in favor of the company, the city did the paving and the company laid the ties and rails and did the overhead work. Through service was started Oct. 4, but after a few days was superseded for 3 days by a stub service north of the subway, pending some alterations in the overhead work in the subway. The Toronto Ry. cars run into a Y at Woodlawn Ave. and then back up Yonge St. to the T. & Y. R. Ry. terminus. (Oct. pg. 425.)

The North Toronto Ratepayers' Association, on Oct. 21, passed a resolution calling for the expropriation of the Toronto & York Radial Ry., Metropolitan Division. The question of the future of this division is at present a matter of negotiation between the company and the Hydro Electric Power Commission of Ontario, at the request of the City of Toronto, the city council desiring to purchase it.

The Toronto and York Radial Railway's Deviation to its North Toronto Station.

The judicial committee of the Imperial Privy Council has allowed the Toronto & York Radial Ry. Co.'s appeal from the decision of the Ontario Appellate Court, relating to the proposed deviation of the company's tracks from Yonge St. to its proposed new station off Yonge St., between Farnham and Woodlawn Aves. This matter has been bandied about for several years, in fact, ever since the question of the separation of steam railway grades at North Toronto was mooted, and which latter is now an accomplished fact.

On June 17, 1912, the Ontario Railway and Municipal Board authorized the Metropolitan Ry. (owned by the T. & Y.R.R.) to deviate its line from Yonge St. to a private right of way from Farnham Ave. to a proposed new terminal 800 ft. west and north of the C.P.R. This location showed the crossing of several streets on the level, and the speed of cars crossing them was limited to six miles an hour. The board held that it was not reasonable to compel the company with its earnings to spend \$500,000 on grade separation, more especially as the municipalities refused to contribute anything. The City of Toronto appealed against the order in Feb., 1913, and the Ontario Court of Appeal decided in favor of the city. The company then appealed to the Privy Council, and its appeal was dismissed in Nov., 1913. The company then applied to the Ontario Railway and Municipal Board for authority to deviate from Yonge St. to a proposed new terminal at Farnham Ave., and this authority was granted. The city appealed against the board's order, and the Ontario Court of Appeal decided in favor of the city. The company immediately gave notice of appeal to the Privy Council, and this has resulted in the present decision in favor of the company.

A cable dispatch from London, summarizing the judgment, states:—

"The appellants for the purpose of operating the railway have the franchise which they claim in respect of the street and adjoining the lands proposed to be used, and the committee of the Privy Council determines in their favor the question on which Judge Garrow preferred not to give a final opinion.

"On the second point, concerning the obtaining of the consent of the city council before the Ontario Railway and Municipal Board could approve the plans, the judgment says it is clear that before construction is commenced the plans setting forth the proposed location of the tracks must be approved by the committee appointed by the city council, and the location cannot subsequently be altered without the consent of the committee. There is further protection that the line shall not be put in operation upon any section until the City Engineer has certified such section has been constructed in compliance with the terms of the agreement. It must be assumed that all these conditions were fulfilled before the line was put in operation.

"In the present case the board before approving the plans of the appellants took care to ascertain whether they were satisfactory on engineering grounds to the city. They considered the objection of the city on engineering grounds, procured a report thereon of their own engineer,

and before approval amended the appellants' plans to conform with the objections made on behalf of the city. In effect, there was no difference on engineering grounds between the city and the appellants when the board finally approved the plans for carrying the spur line on the level across the sideway on the west side of Yonge St. In the event of any difference arising between the city and the appellants as to any matter to be done under the terms of the agreement, the agreement contains an ample arbitration section. Their Lordships are of the opinion appellants succeed, with costs here and in the court below."

Sandwich, Windsor and Amherstburg Ry. Employes Wages.

S.W. & A.R. conductors and motormen, who have been agitating for an increase of wages, applied recently for a board of investigation and conciliation under the Industrial Disputes Act. They named Magnus Sinclair, of Toronto, as their arbitrator. The company named E. G. Henderson, of the Windsor Salt Co., as its arbitrator, and the Minister of Labor appointed the County Judge of Essex County as the third arbitrator and Chairman. The present wages per hour are, 1st six months, 25c; 2nd six months, 26c; 2nd year, 27c; after 2nd year, 28c. The men asked increases as follows: 1st six months, 27½c; next six months, 32½c; thereafter, 35c.

The men's demands were made in the form of a draft agreement submitted to the company, which is summarized as follows: The agreement to be between the Sandwich, Windsor & Amherstburg Ry. and the Windsor & Tecumseh Ry. Companies and the Amalgamated Association of Street & Electric Railway Employes of America, Division 616. All business arising between the companies and the association to be transacted directly between the companies' officers and the association's officers and committee. All the companies' employes to become members of the association within 30 days from the signing of the agreement and all employes entering the companies' service to become members within 30 days from date of entering the service. The day's work for all motormen and conductors to be from 9 to 10 hours, to be completed within 12 consecutive hours. The runs to be divided as nearly equal as possible between two crews, to be known as early and late runs. Wages of motormen and conductors per hour to be as follows: 1st 6 months service, 27½c; next 12 months, 32½c; thereafter, 35c. Where an employe is suspended or discharged, and after an investigation it is proved that there was not sufficient cause for suspension or discharge, he shall be reinstated in his former position and paid for all time lost at same rate as if he had been working on the car. If any difference arises between the companies and the association that cannot be amicably adjusted between them, it shall be submitted to three arbitrators, one selected by the companies, one by the association and the third by the first two named, the finding by a majority of the arbitrators to be final and binding upon both parties. All cars to be cleaned, oiled and put in good condition by barn men, relieving conductors and motormen from such duty. All cars to be equipped with good power brakes, automatic fenders and modern improved sanders. All conductors and motormen to be supplied by companies with one sum-

mer uniform yearly, consisting of hat, coat, waistcoat and trousers, and winter uniform of cap, overcoat and trousers. Extra conductors and motormen to be guaranteed 5 hours each day, whether they work or not, provided they are ready for duty and report at the companies' offices each day for work. The agreement to be in force for one year from signing.

The board commenced its sittings Oct. 21, but no decision had been reached at the time of writing, Oct. 25.

Shareholders Suit Against Dominion Power and Transmission Co.

The action of C. W. Moodie, Hamilton, Ont., against W. C. Hawkins, Vice President and Managing Director, and other directors of the Dominion Power & Transmission Co., asking for the appointment of a receiver and an adjustment of the company's affairs, came before Mr. Justice Middleton at a special sitting of the Supreme Court of Ontario at Hamilton, Oct. 3. After the case had been before the court for three days a settlement was arrived at, the terms of which were not made public, but it is said they include the taking over by the President of the D. P. & T. Co. of all C. W. Moodie's interests in the company, for which the Hamilton Spectator says he is to receive \$185,770.

The statement of claim set out that C. W. Moodie held 1,290 shares of preferred stock and 2,211 shares of limited preferred stock in the D. P. & T. Co. The plaintiff alleged that since the incorporation of the company, its official representatives have secured large financial interests in auxiliary companies through the fraudulent use of money belonging to the shareholders of the D. P. & T. Co., and that because of the securing of these side interests at an excessive cost, the directors of the company have suffered great loss. The plaintiff asked for the appointment of a receiver and the adjustment of his financial interests in the company.

An action similar in many respects to this was taken against the D. P. & T. Co. some months ago by John Moodie, of Hamilton, who claimed that the company owed him about \$7,000 on back dividends. After a lengthy trial the action was dismissed.

Municipal Electric Railways Operations in Western Canada.

The Saskatoon, Sask. Phoenix says:—"The Brandon Municipal St. Ry. has proved an expensive luxury, and, it is estimated by the civic authorities, has cost the city approximately \$50,000 this year, an average monthly loss of about \$4,000. The street railway of Regina municipality has cost that city \$40,000 to operate so far this year. The Lethbridge Municipal Ry. has cost approximately \$8,000. In practically every city in Western Canada the municipal street railways are proving themselves to be merely sink holes for public funds.

"The street railway system in Saskatoon, which at one time was regarded as a losing proposition, has so far this year shown a profit of \$7,000. Part of the profit is undoubtedly due to the profitable operation of the exhibition route during part of last winter when the military were stationed at the grounds, but apart from that, the local street railway is a paying concern. Editorials appear in

the daily papers of some of the western cities that are paying through the nose for their street car service, and one of them, at least, has a very hopeless tone. It speaks as though it were impossible to make that particular street car system pay. Saskatoon went through a similar process of reasoning, but the council became determined that the street car system must be made to pay and instructed the street railway superintendent to that effect. The kicks of particular sections of the city that wanted a street car service entirely out of proportion to the amount of traffic carried were disregarded to a great extent and the system was run on business-like lines. It has been a success ever since. The use of the expensive, power-hungry double truck cars was discontinued in a great measure, and the routes were somewhat reorganized by competent people. The result has been that the present car service here is on time, efficient and paying."

Mainly About Electric Railway People.

W. E. Skead has been appointed City Purchasing Agent, Brandon, Man., and will make purchases for the Brandon Municipal Ry.

Redmond Quain, Director, Ottawa Traction Co., Ottawa Electric Ry. Co., and Ottawa Car Manufacturing Co., died at Ottawa, Oct. 5, aged 56.

C. F. Waugh, has been appointed Agent, Chatham, Wallaceburg and Lake Erie Ry., Chatham, Ont., vice R. M. Dunlop, resigned to enter G.T.R. service.

W. C. Hawkins, Vice President and Managing Director, Dominion Power & Transmission Co., Hamilton, Ont., has been elected a Director of the Southern Canada Power Co.

The Public Utilities Commission of Port Arthur, Ont., which operates the Port Arthur Civic Ry., has advanced the salary of the Manager, **M. M. Inglis**, from \$150 to \$175 a month.

W. T. Woodroffe, formerly Superintendent, Edmonton Municipal Ry., who went overseas some time ago in the Canadian Expeditionary Force, is reported to have been killed in action.

Geo. Kidd, General Manager, British Columbia Electric Ry., returned to Vancouver recently after a three months official trip to England, and was given a general welcome by the staff at a reception.

B. Greenway, General Foreman, Regina Municipal Railway, is now looking after both track and overhead work. **T. McGuinness**, Overhead Foreman, having enlisted, that position has been abolished.

C. H. Ritchie, K.C., who died at Toronto Oct. 3, aged 65, was one of the arbitrators engaged in the settlement of the dispute between the City of Toronto and the street railway company, regarding the amount to be paid by the city in taking over the system, prior to the formation of the present Toronto Ry. Co.

E. L. Cousins, A. M. Can. Soc. C. E., General Manager, Toronto Harbor Commission, has declined to act for the Montreal City Council in reference to the street railway problem there on account of the extra demands on his time caused by the large number of the commission's staff who have gone into the Canadian Expeditionary Forces.

Thomas Penney, a former President, and for a number of years General Counsel, International Ry., Buffalo, N.Y., which company operates the Niagara Falls Park & River Ry. in Canada, has been appointed a Vice President, in addition to the present Vice President, E. J. Dickson. He resigned as President in Jan., 1913, but continued as a director. He was born in London, Eng., and went to the United States as a boy.

Three Rivers Traction Co's Lines and Equipment.

The Three Rivers Traction Co.'s Cap de la Madeleine extension which will serve the populous district across the St. Maurice River from the City of Three Rivers, Que., is expected to be in operation in November if sufficient men can be obtained to complete the ballasting. The terminus will be near the Union Bay Co.'s large new paper and pulp plant and the



C. L. Wilson
Assistant Manager, Toronto & York Radial Ry., and Vice President, Canadian Electric Railway Association.

Cap de la Madeleine Parish Church's pilgrimage grounds.

With the opening of the new branch the company's total track mileage, including the Wayagamack Branch, will be 42 miles—comprising 7,500 ft. of 60 lb. rail track, and 14,750 ft. of 75 lb. rail track. All special work is of flange bearing manganese construction. The overhead construction is the usual cross span, direct suspension system with 000 trolley and aluminum feeders. 4/0 gas-weld bonds are used throughout.

The car storage shed has been increased by 4,500 sq. ft. to accommodate new equipment and additional stores facilities required.

The new equipment ordered for the extension service comprises two of the company's standard prepayment rear-side, radiax truck cars operated entirely by one man. A third standard car has been purchased, differing only in that a duplicate control equipment has been placed in the rear end to facilitate reverse direction running in shuttle service. These

three cars are equipped with K control for two Westinghouse 101-B2 motors, together with s.m.e. air brake.

A snow plough with steel nose operated pneumatically and with a large wing for street cleaning has been ordered to handle the usual drifts on the new branch. In other service this car may be used for package freight or switching. It will be equipped with four Westinghouse 101-B motors and h.m.m. brake equipment.

At two steam railway crossings derail protection, with signal light has been provided.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry., and allied companies:—

	July 1 to	July 1 to		
	Aug.'16	Aug.'15	Aug.31,'16	Aug.31,'15
Gross . . .	\$550,293	\$507,126	\$1,088,586	\$1,017,849
Expenses . .	476,159	487,392	951,252	971,273
Net	\$ 74,134	\$ 19,734	\$ 137,334	\$ 46,576

Cape Breton Electric Co.—

		12 months	12 months	
	Aug. 1916.	ended	ended	
	Aug. 1915.	Aug.31,'16.	Aug.31,'15	
Gross	\$35,264.46	\$33,225.71	\$385,278.88	\$338,506.24
Exp.	19,184.77	18,159.39	225,931.96	206,902.58
Net	16,079.69	15,066.32	159,346.92	131,603.66

Dominion Power and Transmission Co.—The gross earnings of this company, which controls all the electric railways operating in and radiating from Hamilton, Ont, for the months ended Aug. 31, were \$1,768,625; expenses \$951,508; net earnings \$817,117; reserves \$109,888; bond interest \$289,447; other interest \$25,677; balance \$443,458.

Levis County Ry.—The annual meeting was held at Levis, Que., Oct. 19, when the report for the past financial year was adopted. The board for the current year is,—S. H. Ewing, President; Hon. Richard Turner, Vice President; E. A. MacNutt, Secretary; A. Kingman, John Forman, J. C. Blouin and G. E. Allen-Jones.

Montreal and Southern Counties Ry.—The following board was re-elected for the current year at the annual meeting recently,—E. J. Chamberlin, President; Frank Scott, Vice President and Treasurer; J. A. Yates, Secretary; W. H. Ardley, Comptroller; and W. H. Biggar, K.C. W. B. Powell is General Manager.

Sherbrooke Railway and Power Co.—

	July, 1916.	July, 1915
Gross earnings	\$14,110.79	\$12,559.07
Expenses	6,310.48	5,682.76
Net earnings	7,800.31	6,876.31

Toronto Railway—

	1916	City	1915	City
		percentage		percentage
Jan.	\$473,784	\$68,847	\$471,226	\$70,486
Feb.	470,764	70,614	440,313	66,047
Mar.	518,555	97,237	488,468	93,141
Apr.	496,172	99,234	467,701	93,540
May	500,314	100,063	468,953	93,790
June	467,086	93,417	450,582	90,116
July	469,845	93,969	449,108	89,821
August	474,814	94,964	447,968	89,593
Sept.	506,621	40,530	489,574	39,166
	\$4,377,966	\$758,875	\$4,173,893	\$725,700

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

	Jan. 1 to	Jan. 1 to		
	Aug.'16	Aug.'15	Aug.31,'16	Aug.31,'15
Gross . . .	\$889,241	\$762,627	\$7,092,229	\$6,345,703
Expenses . .	462,179	365,093	3,634,674	3,280,047
Net	427,062	397,534	3,457,555	3,065,656

Winnipeg Electric Ry.—

	Jan. 1 to	Jan. 1 to		
	Aug.'16	Aug.'15	Aug.31,'16	Aug.31,'15
Gross . . .	\$249,795	\$251,189	\$2,193,957	\$2,251,467
Expenses . .	163,860	182,512	1,402,927	1,481,593
Net	\$ 85,935	\$ 68,677	\$ 791,030	\$ 769,874

The commission in charge of the building of the Toronto-Hamilton highway is said to be considering the operation of a motor bus traffic on the road.

London and Port Stanley Railway Operations, Equipment, Etc.

Sir Adam Beck, Chairman, Hydro Electric Power Commission of Ontario, and London Railway Commission, attended a meeting of the London, Ont., City Council, Oct 16, and is reported to have said that the city's auditor had been at work for some time on the L. & P. S. R. accounts. He was in a position to read a statement of the finances of the road which the auditor will no doubt verify. It shows that operating expenses for the first year were \$100,197.48. Taxes, interest, sinking fund and rental to the city reduced this by \$76,542.72, leaving a net income from operation of \$23,672.76. A donation of \$1,300 was made to the British Red Cross, and sinking fund that accrued on debentures during the six months construction period before a wheel was turned or a dollar earned amounted to \$5,439.58. The actual net surplus in the hands of the commissioners at the termination of their first year was, accordingly, \$18,233.18. The commissioners now have on hand over \$50,000, about \$32,000 representing the surplus earnings over operation since July. This will enable the commissioners to meet the expenditure on the bathhouse at Port Stanley and other improvements, and will reduce the amount for which it is proposed to issue debentures.

The London City Council had before it recently bylaws to provide for the expenditure of \$75,000 for building two steel motor and three trailer cars for the line, and of \$42,000 for second track work, a bathing house at Port Stanley found necessary to provide further office accommodation and the latter bylaw was amended by the addition of \$8,000 to the amount authorized to be expended upon improvements, making a total of \$125,000. The original bylaw was to authorize the council to raise this amount by the issue of debentures, but after Sir Adam Beck's statement above referred to, the bylaw was amended to authorize the council to issue debentures for such an amount of the whole expenditure of \$125,000 as the commissioners may not be in a position to meet out of surplus earnings.

The London City Council on Oct. 2, on the Board of Control's recommendation, and at the request of the London Railway Commission, authorized application to the Ontario Railway and Municipal Board for permission to issue debentures for \$75,000 for the purpose of purchasing two steel motor and three trailer cars.

On behalf of the London Railway Commission, the Hydro Electric Power Commission of Ontario has prepared plans and specifications for 3 additional all steel motor cars for the L. & P. S. R., and is receiving tenders for them, to Nov. 2. It is intended to have the cars delivered in April, 1917. The cars will, in the main, be similar to those already in operation on the line, and which were illustrated and described in Canadian Railway and Marine World for Jan. 1915. They will, however, be 10 ft. 7 ins. longer, and will have a number of improvements, all making for the increased comfort of the passengers. Among the improvements will be larger and more convenient lavatories, large water cooler with sanitary drinking cups, rubber tiling for flooring of lavatories, rubber matting over trapdoors, heavier fittings generally throughout the car, sliding doors leading from platform to main car body,

spring buffers at each end of car, steps at both ends of car, larger doors of the sliding type over steps leading into the baggage compartment, two collapsible seats in the baggage compartment for additional seating capacity for passengers not carrying baggage, and a trainman's locker in the baggage compartment opposite the switchboard cabinet. There are also a few changes in the design, tending toward simplification of construction, lowering maintenance cost, and general efficiency. The cars will be divided into three compartments, main, smoking and baggage. Following are the chief dimensions:—

Length overall	71 ft. 7 ins.
Width over sheathing	9 ft. 6 ins.
Height from rail to top of roof	13 ft. 6¼ ins.
Total seating capacity	68
Total weight, including all equipment.	104,720 lbs.

Toronto Suburban Railway.

Some little work is being done on the extension of the line from Lambton to Guelph, but it is being done slowly and with a small staff. It is unlikely that the line will be opened for traffic this year, but if it were opened, the cars on the extension would only run from Lambton, as it is not probable that the change in gauge in the line from Keele St., Toronto, to Lambton, will be made during the winter. There is a general impression that a change of ownership is pending, and that possibly the line will be taken over by the Hydro Electric Power Commission of Ontario, on behalf of the municipalities interested.

The Ontario Railway and Municipal Board on Oct. 12 considered the company's plans for an extension of its line from its present easterly terminus at or near Bathurst St., easterly along Davenport Road. It had already been agreed by the parties that the route plan and profile easterly to the north limit of Bridgeman Ave. were unobjectionable, and the Board had decided to issue an order in respect thereof, but the plans in respect of the proposed track easterly from the north limit of Bridgeman Ave. had been by agreement left for further consideration. The plan of cross section filed is objected to on several grounds by the city, chiefly on account of the proposed method of construction. The company's plans showed the tracks laid in broken stone ballast throughout the entire length, and the type of rail used, as 60 lb. T rail. The city contended that the tracks throughout the entire length must be laid on a concrete base 15 ins. thick, and with 90 lb. girder rail. The Board's engineer was instructed to report on the proposed work, and advised that regarding the work along the portion of Davenport Road which is macadam, that is from Bathurst St. to Kendal Ave., and from the east side of Huron St., to the north side of Bridgeman Ave. the track be laid in stone ballast on a well rolled subgrade, the ballast to be 6 in. thick under the ties and thoroughly tamped; the rails to be of the ordinary T section, 70 lbs. a yard, ties to have at least 6 ins. of bearing surface and spaced 2 ft. centres; space between rails and for 18 ins. outside each outer rail to be filled with macadam. In the event of any portion of this section being paved in the future it would be advisable to take this ballasted track up and replace it with deep rails and concrete base. For that portion of Davenport Road between Kendal Ave. and the west side of Huron St., which is now paved with asphalt block, standard concrete base 15 ins. thick, and

there is no reason why the deep 7 in. T rail, 90 lbs. a yard, should not be used, as it would conform to the ordinary T rail construction on either side, but objection may be raised to the rail.

It was urged by the city that in anticipation of the part of Davenport Road now laid in macadam being paved at a future time, the standard of track construction recommended by the engineer, for the paved portion, be adopted for the macadamized portion as well. In view of the interpretation of the city's agreement with the company, the Board could not concede this contention, but orders that if a new plan of cross section conforming to the terms of the engineer's report is filed with the Board, it, with the location and profile now on file, will be approved. (Oct., pg. 425.)

Electric Railway Notes.

The Levis County Ry. is reported to be building 2 single truck cars, 32 ft. long, in its own shops at Levis, Que.

The Toronto City Board of Control has recommended that the minimum wages of conductors and motormen on the Toronto Civic Ry. be increased from 27 7/9c to 30c an hour.

The Women's Forum, of Vancouver, B.C., decided Oct. 14, to join with the Social Service Council in bringing before the city council certain information which had been gleaned with regard to the jitney traffic in relation to morals.

Winnipeg City Council cancelled about 50 jitney permits recently on account of complaints made by the morality department. The jitney men are making a test case to determine the city's right to cancel the licenses.

The British Columbia Electric Ry.'s technical school was resumed for the winter session, Oct. 4. The company bears the cost of the school and grants certificates to those who pass the examinations. Prizes are provided by G. Porter, Chief Electrical Engineer.

Among the Express Companies.

K. Copeman has been appointed route agent, Dominion Ex. Co., Winnipeg.

F. R. Lount has been appointed agent, Canadian Ex. Co., St. Thomas, Ont., vice V. J. Smith.

J. Bayley has been appointed route agent, Dominion Ex. Co., London, Ont., vice O. A. Sharp, transferred.

O. A. Sharp, heretofore route agent, Dominion Ex. Co., London, Ont., has been appointed acting agent there.

The Canadian Ex. Co. has extended its service over the Grand Trunk Pacific Ry., Biggar-Battleford, and Battleford-Cut Knife branches, and has opened offices at Battleford, Lawson and Riverhurst, Sask.

The Canadian Northern Ex. Co. has opened offices at East Selkirk and Oakland, Man.; Browning, Carmel, Chandler, Drapmore, Fairmount, Forgan, Hardy, Margo, Merritt, Ridpath and Sturgis, Sask., and Cardiff Jct., Alta., and has closed its offices at Bates, Que., and Chaffey's Locks, Ont.

The Great North Western Telegraph Co. has opened offices at St. Ulric, Riviere Blanche, Que.; Drapmore, Oakland, Man.; Carmel, Dorgan, Hardy, Willowbrook, Sask.; and Cardiff, Alta., and has closed its offices at Pointe au Pic, Que.; Kingsville, Royal Muskoka Hotel, Ont.; and Sangudo, Alta.

Marine Department

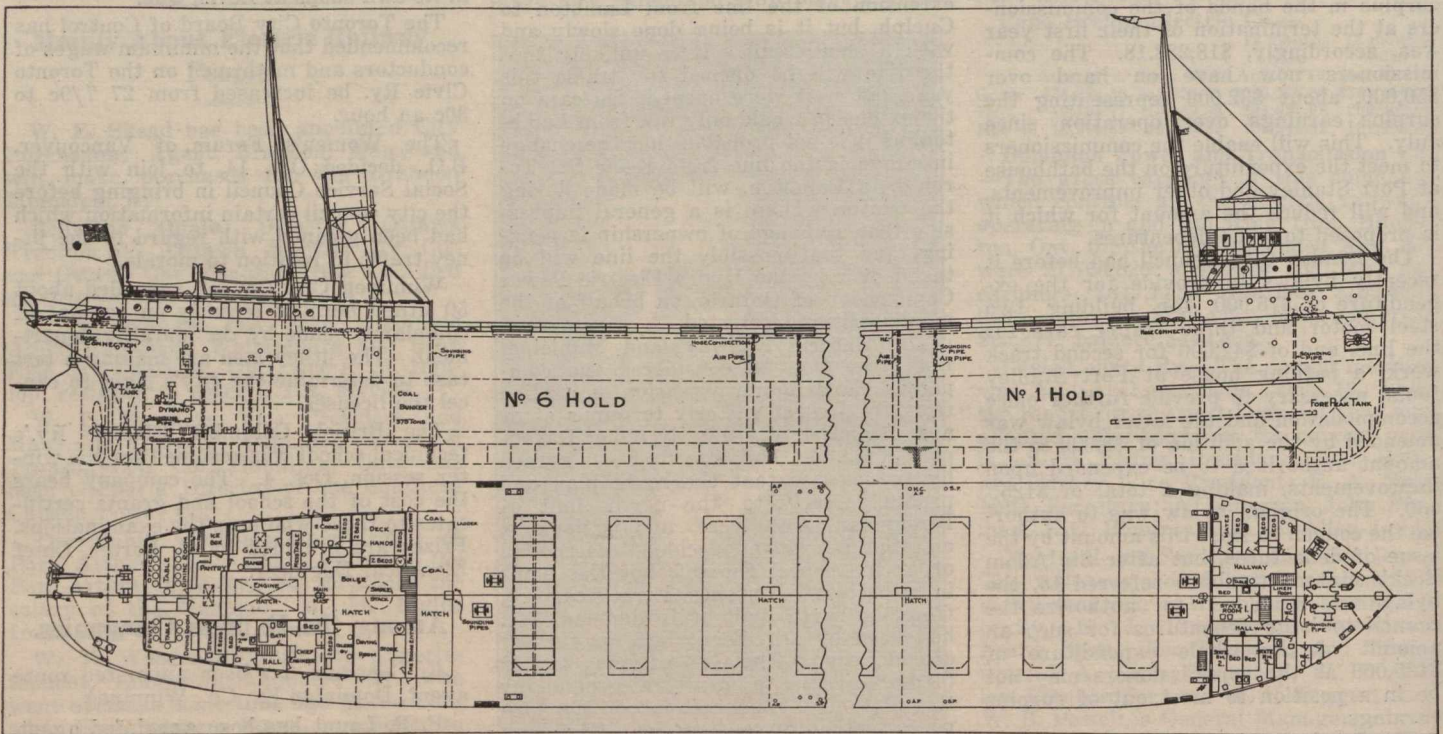
New Steamship for Montreal Transportation Company.

The steamship which is under construction at Collingwood, Ont., for the Montreal Transportation Co. is of the single deck type, which has been evolved to meet the requirements of the Great Lakes in regard to the transportation of coal, ore and grain. The leading dimensions are:—Length over all 550 ft. 8 in.; length between perpendiculars 537 ft.; breadth moulded 58 ft.; depth moulded 31 ft.; deadweight capacity, on 19½ ft. draught, 11,000 tons.

The vessel is of steel throughout, to the highest class for the Great Lakes Register, the weights of materials being, in many cases, in excess of the registration requirements. In common with other

suits for mechanical unloading operations. The tank top plating, which carries the weight of the cargo, is supported by a centre girder and 4 longitudinal girders on each side of the centre line. Intercostal deep floor plates are fitted in the transverse direction on every second frame, that is, 6 ft. apart, there being a deep floor plate at each girder, and one between. There are two complete collision bulkheads forward, the space between these forming a deep tank. The cargo hold is divided by screen bulkheads into 6 compartments, and the double bottom by 4 watertight divisions into 5 compartments for water ballast. The remaining bulkheads are, a cross bunker

weight. The anchors are stowed in pockets so that they may not foul lock gates or other possible obstacles in navigating narrow waters. The main and emergency steering engines are situated right aft on the main deck. Both gears have 9x9 engines, and actuate the rudder directly through a toothed quadrant directly connected to the rudder. Both gears are controlled by a wire transmission led from the bridge, and a clutch arrangement is provided so that either gear can be put in and out of operation on short notice. Four winches are fitted for breasting the vessel, and one heavy winch is fitted aft to handle stern lines and a kedge anchor as necessary.



Plan and Profile of Montreal Transportation Co.'s New Vessel.

vessels of her class, she embodies many features to facilitate rapid loading and unloading, the short season on the lakes making quick dispatch in port a matter of the utmost importance. No loading or discharging appliances are provided on board, these operations being accomplished by appliances on shore. There are 16 cargo hatches, each 38 ft., by 9 ft. 4 in., spaced 24 ft. centre to centre. Between the hatchways strong arch girders extend right across the vessel, the adoption of which dispenses with the use of stanchions, and the holds are left unobstructed, a necessary feature where coal and ore cargoes are unloaded by clam shell buckets. The ordinary bottom and side transverse frames are of channel section spaced 3 ft. apart. The double bottom, 5 ft. deep, extends the full length of the vessel between the peak bulkheads. The side tanks are of the same width and extend on each side up to the level of the main deck stringer, thus forming a double skin well above the deep load line. The well tanks provide a large additional capacity for water ballast, while the centre plating transforms the hold into a compartment of hopper form, eminently

screen bulkhead, a screen bulkhead between the engines and boilers, and watertight afterpeak bulkhead.

A short forecastle is fitted above the upper deck, right forward, in the port side of which are arranged cabins for the first and second officers, the quartermasters and watchmen. In a corresponding position on the starboard side are the owners' staterooms. On the forecastle deck above is situated a large steel deckhouse containing an observation room and the captain's quarters. The top of this house forms the navigating bridge, upon which stands the wheel house. The accommodation provided at the after end of the vessel is arranged in a large steel house surrounding the engine and boiler casing, and includes engineers' quarters, galley, dining rooms for owners, officers and crew respectively, and berths for the crew. The firemen's accommodation is on the main deck just abaft the engine room casing.

A powerful steam windlass of the quick warping, direct grip type is located on the upper deck under the forecastle. The cables are 2¼ in. diam., each being attached to a stockless anchor of 8,000 lbs.

The hatch covers are of 4 in. spruce. On previous vessels of this class steel telescopic hatch covers were used for quick handling, but after the loss of so many vessels on the Great Lakes in Nov., 1913, during the storm when the s.s. James Carruthers was among the number, a great many owners have preferred to go back to the heavy and more unwieldy wooden covers. Heavy steel strong backs are fitted athwartships to lend additional support to the covers. Another feature in this vessel is that the engine and other skylights have been made entirely of steel instead of wood, and 16 in. circular deadlights have been fitted in the deckhouses in lieu of the square windows formerly adopted in this type of vessel. The deckhouses have been specially stiffened to stand excessive abuse.

The boat outfit includes two 22 ft. metallic life boats, and one 18 ft. gasoline launch for use in harbor. All boats are placed aft on a level with the deckhouse, attached to sliding davits, and fitted with patent releasing blocks. The vessel has two steel pole masts, one forward and one aft, for signalling purposes and to carry the running lights. Awnings are

fitted over the forecastle deck and pilot houses. Draught gauges are placed at each end of the vessel, so that the draught forward and aft may be read at the same time. The vessel is lighted throughout by electricity, the total number of lights being about 200. For providing the necessary current, two electric generators, each with a capacity of 10 kilowatts, are fitted at the after end of the main engine room.

The propelling machinery, located at the after end of the vessel, consists of a single set of triple expansion reciprocating engines, with cylinders 24, 40 and 66 in. diam., by 42 in. stroke, capable of de-

veloping 2,400 i.h.p., and of driving the vessel 13 miles an hour when loaded. Steam is generated by three single ended boilers of the Scotch marine type, each 13 ft. diam., by 11 ft. long, designed for a working pressure of 185 lb., on the forced draught system. The machinery includes 1 centrifugal and 2 duplex ballast pumps, 1 sanitary pump, 1 duplex main feed pump, and 1 duplex feed and fire pump. The air circulating and bilge pumps are directly driven from the main engines and in addition to these, a hand bilge and fire pump are also provided.

The vessel is being built by the Collingwood Shipbuilding Co., Ltd.

The Hochelaga-Etoile Collision.

An investigation into the causes of the collision between the s.s. Hochelaga, owned by Furness Withy and Co., and chartered to the Dominion Coal Co., and the paddle wheel steamship Etoile, near the Platon buoy in the St. Lawrence River, July 19, was held at Montreal recently, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. C. Lapierre and J. O. Grey as nautical assessors. The evidence showed that the Hochelaga, which was fully equipped, was bound from Montreal to Sydney light, and was in charge of a pilot. When steering for Portneuf light, a vessel's lights, white and red, were observed on the starboard bow, about 1½ miles off. After reaching the Portneuf light a change of course was necessary, which brought the lights of the other vessel, which was the Etoile, on the port bow, the vessels being about 600 or 700 ft. apart, when all at once the green light was perceived. The Etoile then blowing 2 or 3 blasts was answered by 1 blast from the Hochelaga. A one blast signal and full speed astern orders were given on the latter vessel, but the Etoile came on for the port bow and the impact followed. The master stated that he chose to risk grounding his vessel, which he did, rather than risk a collision, but the collision happened. The Etoile carried a first officer and a pilot who steered as well. He was always on duty and on this occasion had come from Montreal and after landing passengers at Platon, had waited for tide to make other places. The speed of the vessel was about 9 miles an hour. The master stated that he guided himself entirely by the lights. He had a compass but it was not used. When told by the pilot that he saw a vessel coming, he saw a green light on his starboard side, and after seeing that, he saw three lights for one or two minutes, then the red, but when he saw the three lights he sounded two blasts signifying that he wanted to keep to the left of the channel, but never altered the helm. Then he received one blast and replied with two, rang "ease away," then "stop," then "reverse," and the collision occurred.

The pilot stated that he held a master's certificate since 1889, and was engaged on the Etoile as pilot and wheelsman, and that he dealt entirely with the navigation of the vessel, but the master saw to the bells when making a landing. When the Hochelaga's red light was seen the master gave the order to starboard and kept the wheel hard to starboard until the collision occurred. He stated that there were three signals given with the whistle, they answering with two blasts, twice the signal of one blast of the Hochelaga. When the master gave him the order to starboard, he immedi-

ately relinquished all responsibility. Had he been left to his own devices, he stated that he did not know what line of conduct he would have followed. It was a matter of seconds between the order "full astern" and the collision, and at the moment of collision the wheel escaped from him and struck him on the arm, disabling him for 10 days.

In dealing with the Hochelaga, the court found that the actions of the vessel up to the hearing of the first two blast signal from the Etoile bore all the earmarks of proper navigation and seamanship, but instead of replying by one blast the proper action would have been to sound three blasts and put the engines full speed astern, in conjunction with a hard to port helm. These actions would have caused her to swing more rapidly to starboard, and the probabilities are that if there had been an impact, it would have been trifling, and the Hochelaga, had she grounded, would only have received minor damage, if any, and this would have met the requirements of article 23. The fact of not sounding three blasts when the full astern order was given did not contribute to the collision, as at that time it was inevitable. The collision was imminent at the first two blasts from the Etoile. The court commended the action of running the risk of grounding the vessel rather than colliding. The court therefore criticized and censured the master, Capt. W. G. Tudor, and the pilot, S. Perron, of the Hochelaga, for the error of judgment mentioned.

Regarding the Etoile, the court pointed out that the man at the wheel was engaged as a pilot, though he did not hold a license as such, and although he held a master's certificate, it was issued many years ago. The pilot's evidence convinced the court that the master chose to order the Hochelaga to starboard his helm and pass green to green to him, while he was showing his red light to the Hochelaga. To make such a request under the conditions existing, so near a buoy and shoal water, was nothing short of criminal, and had it been performed by one versed in navigation methods and thoroughly conversant with the rules of the road, it would apply in a forcible manner, but the evidence shows that the master and the pilot of the Etoile showed great ignorance in these matters. The court therefore attributed the signal of two blasts as an absolute proof of ignorance of the rules of the road. Again, when the Hochelaga gave one blast in return, it was the imperative duty of the master of the Etoile to put his vessel full speed astern immediately, which he failed to do. The pilot, M. Chabot, who held a master's certificate for minor inland

waters, granted some 30 years ago, was still unable to tell the port or starboard sides of the vessel properly, and admitted that he only read the rules of the road after the collision. Such an admission from a master is, to say the least of it, astounding. His engagement was verbal, but was to the effect that he was to pilot and navigate, yet at the crucial moment, when danger was impending, he ceased to act, or advise, and attempted to free himself of the onus of the disaster by stating that the master took command. The court remarked on the method of keeping the lookout and disapproved of the lookout man being in the wheelhouse, and the practice of the lookout man helping with the wheel is to be condemned owing to the lengthy hours the man would be called upon to give to these duties. The letter and spirit of the rules of the road, which orders that a good lookout be kept, were not met in this case.

The right to navigate the St. Lawrence or any other waterway is not given to large vessels, or counsel for the Etoile rightly remarked, when he claimed privileges for local traffic, and the court replied that since that privilege is given it must be with the understanding that those engaged in such traffic must possess the requisite knowledge to command and operate the vessels plying in these waters, similarly, but proportionately, to those commanding large and foreign going vessels. That there was no loss of life was providential, and not due to any knowledge of navigation or rules of the road on the part of the master, Capt. J. D. Boisvert, and the court found that the master, and the pilot, M. Chabot, invited the collision by deliberately violating articles 19, 21, 23, 25 and 29 of the Rules of the Road, and it decided that it must see that a repetition will be impossible and it will allow Capt. J. D. Boisvert's presence on his vessel as owner, but not as master, and therefore cancels his certificate, 1407. Regarding the pilot the court is of opinion that he holds a master's certificate unworthily. It is true he was engaged verbally as a pilot, and as there was no agreement or articles signed by any of the crew, the court assumed that his duties were equivalent to a sailing master, and having that in view, cancelled his master's certificate. While the court censured the master and pilot of the Hochelaga, it sympathized with them for the distressing and nerve racking moments they were subjected to when meeting a situation forced upon them by the ignorance of some local navigators, and fortunately such utter disregard of the rules is rarely met. The court also expressed the opinion that it is established not only to find fault and penalize but also to make recommendations with a view to bettering the situation as it is found, and thus counsels that a positive assurance of the knowledge and ability of an applicant be obtained by strict methods before a certificate is given to him to permit of his mingling with others of the profession. Sec. 152, part III, cap. 113, R.S.C. 1906 obliges masters of all vessels above 80 tons to have the crew sign an agreement. The Etoile, which is of much greater tonnage, violated this section, as none of them signed an agreement in accordance with the act, therefore a prosecution against the owner or owners is obvious.

The International Mercantile Co.'s Receiver, was discharged at Trenton, N.J., Oct. 3, after it was shown that all claims against the organization had been withdrawn or paid.

Five New Tank Steamships for Imperial Oil Co.

The Imperial Oil Co. is adding to its fleet five steel oil tank steamships for service on the Great Lakes during the summer and on the ocean during the winter when lake navigation is closed. The following are the dimensions of the first three, viz., s.s. Royalite, s.s. Iocolite and s.s. Sarnolite: Length overall 258 ft.; length b.p., 250 ft.; breadth, moulded, 43 ft.; depth, moulded to main deck, 18 ft.; gross tonnage, 2051.83; net register tonnage 1542.44; deadweight loaded, 2700 long tons; total capacity of oil cargo tanks, 124,500 cu. ft. The expansion trunk is 7½ ft. high and extends the full length of the oil tanks. Each vessel is divided into 10 main oil tanks, 4 lubricating oil tanks and a cross bunker for oil fuel. Side bunkers are fitted for carrying coal, the vessels being designed to work on either coal or oil fuel. The pump room, which is forward of the foremost tank, is equipped with two 18 x 14 x 24 in. duplex oil pumps for handling

stalled, including independent main feed large size general service and fire pump, sanitary and fresh water pumps, surface feed water heater, evaporator and distiller.

The steam steering gear is on the main deck aft and connected directly to a fixed quadrant. The steam windlass is of the patent direct grip type with warping ends. Each vessel has two pole masts with one derrick on each for handling suction hose pipes. Three 6 x 8 single drum winches are carried for mooring purposes and to operate the derricks, 2 on the main deck forward, 1 port, and 1 starboard, and 1 on the poop deck.

Quarters for the captain, the Marconi wireless operator and the wireless instruments, are provided in a house on top of expansion tank. The engineers are housed in the poop, and accommodation for the 1st and 2nd mates, petty officers and seamen is provided in the forecabin. A very complete system of

ing 250 ft. long, 43 ft. 9 in. breadth, moulded, and 25 ft. depth moulded to main deck.

Regulations Respecting Collisions with Navy Vessels.

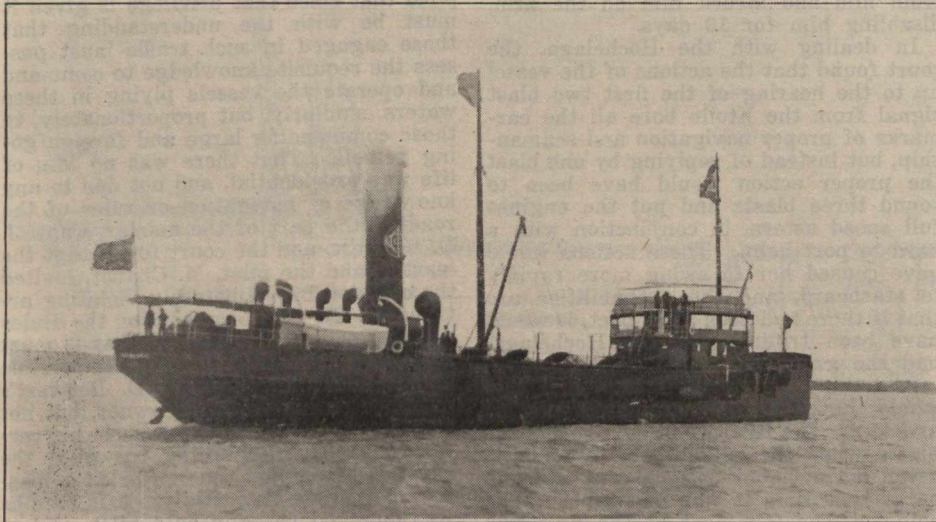
An order in council has been passed providing that if any vessel causes any injury by collision or otherwise to any ship belonging to or engaged in the service of His Majesty, or to any person on board such ship, or is so navigated or managed as to cause danger of collision, the master or person in charge of the vessel shall be guilty of an offence unless it is shown that such injury or danger of collision was not caused or contributed to by any failure on his part to keep or cause to be kept a proper lookout, or to observe any of the regulations for preventing collisions at sea, or any regulations relating to the navigating or mooring of ships in a harbor or the approaches thereto, or to take any precaution required by ordinary practice of seamen, or by the special circumstances of the case.

Also that if a seaman lawfully engaged in accordance with the Merchants Shipping Act, or the Canada Shipping Act, to serve on board any British ship belonging to or chartered or requisitioned by the Admiralty, neglects or refuses without reasonable cause to join his ship or to proceed to sea in his ship, or deserts or is absent without leave from his ship or from his duty at any time, or joins his ship in a state of drunkenness, so that the performance of his duties or the navigation of his ship is thereby impeded, he shall be guilty of an offence. The master, mate or owner of the ship, or his agent, or any naval or militia officer, or any superintendent, as defined by the Merchants Shipping Act or the Canada Shipping Act, may with or without the assistance of a police constable, convey on board his ship any seaman whom he has reason to believe to be guilty of an offence under this paragraph. Police constables and other peace officers shall render such assistance as may be required of them in arresting seamen and conveying them on board under the provisions of these regulations.

Any person violating any of the provisions of these regulations shall be liable upon summary conviction before two or more justices of the peace, to a fine not exceeding \$5,000, or to imprisonment for not exceeding five years, or to both fine and imprisonment.

The Borghild-Oriole Collision.

Judgment in the matter of the collision between the Norwegian s.s. Borghild and the U.S. fishing schooner Oriole, near the entrance to the Bay of Fundy, Aug. 12, when the schooner was sunk and four lives lost, was delivered at Halifax, N.S., recently, by Capt. L. A. Demers, Dominion Wreck Commissioner, with Commander Wyatt, R.N.R., and Capt. A. Cuthbert, nautical assessors, concurring. The court found the master and mate of the s.s. Borghild in default for violating article 16 of the Rules of the Road, and also found the master of the schooner Oriole equally at fault for carrying a press of canvas, violating the first paragraph of article 16 and therefore inviting a collision. As both vessels are of foreign register, the court had no jurisdiction over the officers' certificates.



Imperial Oil Co.'s s.s. Sarnolite.

the cargo quickly and so arranged that either pump can pump out any tank, whether on the port or starboard side; the control valves being operated from the top of the expansion trunk. A steam driven fan is also located in the pump room for the purpose of drawing the foul gases from the various cargo tanks and pump room, or blowing fresh air in as desired. Nos. 1 and 2 tanks have been arranged for carrying gasolene, and a cofferdam has been fitted aft of these so as to separate them from the other oil tanks. Another cofferdam is fitted between the oil fuel bunker and the oil tanks. A small cargo hold is fitted between the fore peak bulkhead and the pump room and will be used occasionally for carrying case oil. The main oil suction are 8 in. diameter with 6 in. branches and are arranged so that the pumps can draw from any tank and discharge into any other. Provision has been made for the carriage of water ballast in the forward and after peaks and in the double bottom under engines and boilers.

The propelling machinery consists of a set of surface condensing engines 16, 26 and 44 x 36 in. stroke, with direct connected air pump and 2 bilge pumps. Steam is supplied by one Scotch boiler 15 ft. diam. x 11 ft. long, working at 180 lbs. pressure under natural draught. A complete set of auxiliaries has been in-

electric lighting has been installed.

Generally speaking, the vessels are of the most up to date character for carrying oil in bulk and everything has been done to ensure that the equipment and workmanship is of the best character.

The Royalite's trials were run on a measured mile course outside of Collingwood harbor on June 14. The principal results are shown below, the designed speed of 9 knots on 14 ft. draught being exceeded.

Boiler pressure	180 lbs.	175 lbs.
Revolutions per minute	78.8	87
Total i.h.p.	678	937
Speed	9.183 knots	9.863 knots
Draught forward and aft	14 ft.	14 ft.
Admiralty	$D^2/a+S^3$	
Coefficient	255	228
	I.H.P.	

The Iocolite ran trials on Sept. 15, with equally satisfactory results. The Sarnolite was launched on Sept. 27, and is expected to leave the lakes for the ocean late in November. The vessels have been built by the Collingwood Shipbuilding Co. under the supervision of Capt. R. W. Henderson, Commander, U.S. Navy, and now Marine Superintendent, Imperial Oil Co.

In addition to the above, work is about to be commenced at Collingwood on two more steamships for the Imperial Oil Co., viz., s.s. Torontolite and s.s. Tararalite. They will be somewhat larger than the first three described above, be-

The New Steamships Thorjerd and Blaamyra.

Two sister steel freight vessels are being built at Port Arthur, Ont., for unnamed owners. Their dimensions are: Length over all, 261 ft.; length between perpendiculars 251 ft.; breadth moulded 43 ft.; depth moulded 28 ft. 2 in.; carrying capacity about 3,000 gross tons.

They will be of the single deck type, with poop, bridge and forecastle, steel deckhouse on bridge deck and chart room on top of deckhouse, with navigating bridge. They are being built on the transverse system of construction. There will be two cargo holds with two hatches in each hold. No. 1 hold will extend from collision bulkhead to boiler room bulkhead and no. 2 hold from engine room bulkhead to after peak bulkhead. The propelling machinery will be located amidships. The double bottom will be 3 ft. deep and will extend from collision bulkhead to after peak bulkhead, divided by transverse water or oil tight floors into a number of compartments. Part of the double bottom will be utilized to carry fuel oil, the remainder of the fuel to be carried in wing tanks, which can also be used for coal. The officers and crew will be berthed amidships on bridge deck, where also will be the mess rooms, galley, pantry, lavatories, etc. The firemen and sailors will have their quarters aft on main deck.

The two main boilers will be of the Scotch marine type, single ended, and arranged abreast. They will be 14 ft. 8 in. diam. by 11 ft. long and will have a combined grate area of 126 sq. ft. Each boiler will have three corrugated furnaces, of the suspension type, 42 in. inside diam. They will be fitted for natural draft.

The propelling machinery will consist of triple expansion engine with surface condensers, built-in type, 3 cylinders each, working each on a separate crank placed at an angle of 120 degrees. The slide motion will be of the Stephenson link type. Cylinders 20, 33 and 54 in., with a stroke of 40 in. The average working horse power will be 1,200, maximum 1,300. The high pressure cylinder will have piston valve, the low and intermediate will have double ported slide valves with relief frames, and the low pressure one will have a Lovekin assistant cylinder. The high pressure cylinder will be supplied with a loose bushing of hard cast iron. All cylinders will have relief valves, top and bottom, discharging into the atmosphere. The turning gear will consist of a single cylinder engine, driving through worm gearing, a shaft mounted on sliding cast steel worm. The propeller will be of cast iron, solid section, with four blades. The air pump will be bolted to the back column of the engine.

The steam steering gear will be placed on the main deck in the engine room. There will also be a hand steering gear aft. There will be a 8 x 6 in. steam windlass fitted with hand attachment and friction brakes. All anchors will be of the stockless type, of size in accordance with Lloyd's requirements. To facilitate the handling of the cargo there will be six 7 x 12 in. reversible steam winches, and 6 derrick booms to lift 4 tons each.

The vessels will be fitted throughout with electric light. One 7½ k.w. generator will be fitted in engine room. All wires, with the exception of those in cabins, will be enclosed in conduit, with outlets terminating in watertight fix-

tures. In the cabins the wire will be run in wood mouldings.

The vessels are being built by the Western Dry Dock & Ship Building Co., Ltd., to take the highest class in Lloyd's Registry and under their special survey. The Thorjerd was launched Sept. 27, and the Blaamyra during October.

Stranding of the s.s. Matatua.

An investigation into the cause of the stranding of the Shaw, Savill and Albion Co.'s s.s. Matatua in St. Mary's Bay, Nfld., July 22, was held at Halifax, N.S., recently, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Commander E. Wyatt, R.N.R., and Lieutenant R. H. Wright, R.N.V.R., as nautical assessors. The evidence brought out that the master, Capt. Jas. MacFie, upon reaching St. John, N.B., to take command of the Matatua, after the death of her former master, was stricken with paralysis on the left side of his face, and acknowledged that he was not in a fit state to take command, but seeing he was on the spot, he did not want to give it up; a fire partially destroyed the vessel, a series of explosions occurred on board which had the effect of tearing her decks, bending frames and causing other injuries, and she sank, resting on the bottom of the dock in St. John with the falling and rising tides, her compasses, standard and steering were also injured. Upon leaving St. John an adjuster was called to adjust the compasses, but it is evident that none of the officers watched the operation. The vessel proceeded to Halifax, where she underwent some temporary repairs, new plates being put in and patches made here and there, all of which tended to disturb the induced and permanent magnetism of the vessel. Then the master discovered that the magnet for correcting the heeling error had not been placed, therefore the adjustment for that particular correction had not been installed, and consequently the compass was not adjusted. During her course from Fame Point, which was traced with the intention of passing between Cape North and St. Paul's Island, the master found after experiencing some hazy weather, that he passed to the north side of St. Paul's Island, which meant that the vessel had outrun her distance; then a course was traced for Sydney, N.S., which apparently was made good. He left Sydney, July 21, and when passing Flint Island a departure was made by a cross and four point bearing and the log was set. The vessel was kept on her course, and full speed was maintained during fog, until just before she grounded the next morning. The master was supplied with a new set of charts as well as sailing directions by his London office, but he never consulted them. He had sailed in these waters before but not on this particular route.

The court could not understand why a man of the ability of the master omitted to take elementary precautions in navigating his vessel. In view of the uncertainty which should have existed in his mind, the court thought it apparent that navigating his vessel through the Gulf of St. Lawrence until he reached the ocean demanded unusual caution on his part. Had he read his sailing directions he would have found that at a certain period of the year, in the Cabot Strait, the current has a trend northward, which is amply proved in the present case, and he would surely not have kept his vessel at full speed in a thick

fog, and without casting a lead. It is not permissible for a master to navigate his vessel in a fog for a number of hours without diminishing his speed if necessary to take soundings, and frequent soundings, to check his courses. He stated that he did not think it was necessary as he considered himself at sea and that the soundings were not reliable. The court contradicted this statement, as it was aware that vessels carrying passengers and coming to Canada, after making Cape Race, or entering Cabot Strait, are led entirely by the lead. Soundings, although irregular, if a chain of them be taken, will show without doubt the position of a vessel, and the existence of whatever elements there may be to influence the vessel outside the course presumed. It could not find any excuse for the master failing to take soundings, even though he was short of tubes for his sounding apparatus, because he had a deep sea lead, and could use it as was done before sounding machines were invented. So far as the evidence went the court was of opinion that the necessary means were adopted to free the vessel after she grounded. The condemnation by the court is based purely on the action of the master in not acting in a prudent and careful manner. In fact, without hesitation, the court stated that the vessel was carelessly navigated in view of the possible conditions existing, and it was of the opinion that from the outset, the master was not in a fit condition to assume the grave responsibility which devolved upon him. The duty of the court would not be complete and its existence would not be justified if it did not condemn the master for faulty navigation, and therefore, though it had a great deal of sympathy with him in his affliction, as he accepted the responsibility, the court suspended his certificate for three months from Sept. 15 to Dec. 15.

Discontinuance of Lights and Fog Alarms for the Winter.

All Canadian light and fog alarms on the St. Lawrence River above Montreal, Lakes Ontario, Erie, St. Clair, Huron, Georgian Bay, Lake Superior and connecting waters, will be maintained in operation until the morning of Dec. 25, excepting the southeast shoal lightship, Lake Erie, which may be forced to abandon her station by ice conditions before the general close of navigation, and also at Lonely Island, Georgian Bay, from which the keeper may be removed before the close of navigation, also certain stations on Lake Superior, viz., Slate Islands, Battle Island, Lamb Island, Shaganash, Point Porphyry, Thunder Cape, Welcome Islands, Pie Island and Victoria Island, which will close after the last sailings to or from Port Arthur and Fort William. All gas buoys and other floating aids to navigation will be maintained in position as long as ice conditions will permit, and in cases where it is necessary to remove gas buoys before the close of navigation the more important ones will be replaced by spars. Light keepers are cautioned to maintain their stations in operation until the time mentioned above, viz., the morning of Dec. 25.

Norman A. Rule, Treasurer, Standard Shipping Co. Ltd., Winnipeg, writes: "I feel that the regular receipt of the Canadian Railway and Marine World is instructive to all of us."

Atlantic and Pacific Ocean Marine.

What is said to have been the most valuable cargo of raw silk ever landed on this continent was discharged at Vancouver recently from the C.P.R.'s s.s. Empress of Russia. It was valued at about \$3,500,000.

The Matsuo Co., of Seattle, Wash., and Kobe, Japan, is reported to have placed an order for the building of four steel steamships of 8,800 tons each, costing approximately \$1,000,000, with the Wallace Shipyards, Ltd., Vancouver.

The Belgian Government is financing a new steamship service to be operated between Havre, France and U.S. ports. The company will have a nominal capital of 100,000,000 francs, which will be guaranteed as to principal and interest by the Belgian Government.

The s.s. Arabien, owned by the Danish East Asiatic Co., Copenhagen, and under charter to Canadian Pacific Ocean Services, Ltd., for operation between Vancouver and Vladivostok, was docked at Esquimalt during October for overhaul and repairs.

The Cunard Line announces that two of its steamships, the Feltria and Folia, formerly owned by Canadian Northern Steamships, Ltd., will call at Halifax, N.S., during the winter, both eastbound and westbound, on the regular route between Bristol and U.S. ports.

The Ulster Steamship Co., operating the Head Line between Great Britain and Canada, is claiming \$25,000 in the Montreal Admiralty Court, for services rendered in salving the s.s. Fremona, which grounded on Anticosti Island, Aug. 1.

Canadian Robert Dollar Ltd., has been incorporated under the British Columbia Companies Act, with \$40,000 capital and office at Vancouver, with power among other things, to own and operate steam and other vessels for the transportation of mails, merchandise and passengers.

Manchester Liners, Ltd., has added three vessels to its fleet, one for each of the services to Canada, Philadelphia and Baltimore. The company now owns 17 vessels, aggregating 125,316 tons dead-weight capacity, operating directly to and from Manchester, Eng., via the Manchester Ship Canal.

The repairs on the Japanese s.s. Kenkon Maru 3, which stranded on the Belle Chain reef on Jan. 12, have been completed at Portland, Ore., and she resumed her service in October. The cost of the

repairs was \$175,000, and the work took 42 days. The vessel is about 20 years old and was formerly the British s.s. Ailsa Craig.

The Japanese s.s. Shintsu Maru, which ran ashore about four miles south of the Sandheads buoy at the mouth of the Fraser River, Sept. 22, was released Sept. 29, after practically all of her cargo had been lightered. She was docked at Vancouver, and it was stated that neither the vessel nor her cargo had been injured and that there was no damage to be repaired.

The Hudson's Bay Co. is reported to have purchased the s.s. Sacramento from the Northern and Southern Steamship Co., of San Francisco, Cal. The Sacramento was formerly the s.s. Alexandria, and was owned by the Kosmos Line. It is stated that the vessel has been detained at Valparaiso since the commencement of the war. The price paid is given as \$800,000.

P. A. Franklin, Vice President, International Mercantile Marine Co., is reported to have stated recently that the war has developed the necessity for a line of fast steamships in the trans-Atlantic service, and that the company is ready to build four 25 knot quadruple turbine steamships of from 32,000 to 35,000 tons each. Two of these, it is said, will be ordered in the U.S., and two in Belfast, Ireland.

The Cunard Line s.s. Alaunia, which was sunk by a floating mine in the English Channel, Oct. 19, was built at Greenock, Scotland, in 1913, for the Canadian service, and was launched June 7, 1913, her sister vessel, the Andania, having been launched in Mar., 1913. She was 540 ft. long, 64 ft. broad and 46 ft. deep, and equipped with two sets of quadruple expansion engines and complete up to date equipment for the accommodation of 2,140 passengers, two classes only. It is reported that two of her crew lost their lives.

The C.P.R. is reported to have purchased the s.s. Hackness from Pyman Bros., Ltd., of Wales. The s.s. Hackness was built in 1914, and is of the shelter deck type, 4,928 tons gross, 2,954 tons register. She was formerly owned by the London & Northern Steamship Co., owning 16 vessels with a combined carrying capacity of 92,000 tons, all of which have been acquired recently by Pyman, Watson & Co., Ltd., South Wales, for about £2,000,000. The s.s. Hackness has been under charter to the C.P.R. for several months for its Atlantic service.

The Anchor Line, in which the Cunard

Co. has practically a controlling interest, has absorbed the Donaldson Line, and the two companies will be operated under one management as the Anchor-Donaldson Line, with Sir Alfred Booth, Chairman, Cunard Co., as Chairman. The Donaldson Line has been operating between Glasgow and Canada for several years, and uses the steamships Athenia, Cassandra, Letitia and Saturnia on that service. In addition to this a regular service is run to the River Plate. The Anchor Line operates in the passenger trade between Glasgow and New York.

It is announced in Montreal that the Marine Navigation Co., a French company, has arranged for regular sailings from Canadian ports, Montreal in summer and Halifax in winter, to St. Nazaire, France. It is stated that the first vessel to sail early in November will be the Nigaristan, and that she will be followed about two weeks later by the North Cambria. These two vessels will make regular monthly trips, and will be supplemented by others if the necessity arises. The company is reported to have purchased a number of sailing ships from Aberdeen, Scotland, recently, for the Canadian lumber and coasting trade.

During the visit of the Minister of Customs to Vancouver recently he was again urged to consider the appointment of a Canadian customs officer at New York to facilitate the handling of freight in bond originating in Eastern Canada and destined for British Columbia ports, via the Panama Canal. It was suggested that a solution of this difficulty might be made with the inauguration of a new steamship line from Montreal in the summer and Halifax or St. John in the winter, or by an extension of the present line now running to and from New York. An Ottawa press dispatch of Oct 14 stated that for the present at least the Minister has refused the request.

The C.P.R. is going to overhaul its trans-Pacific steamships at the beginning of the New Year. They will be laid up at Hong Kong for renovation and repair. The s.s. Empress of Asia will be taken in hand first, on her arrival there about Jan. 17, and she will be out of service for about a month. She will be followed in turn by the steamships Empress of Russia and Empress of Japan, the first being out of service for a month and the latter for 26 days. The Empress of Asia and Empress of Russia have not been completely overhauled since they were released from Admiralty service about a year ago. The s.s. Monteagle was overhauled at Hong Kong recently.

List of Steam Vessels Registered in Canada During September, 1916.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner
134469	Clincher	Halifax, N.S.	Camden, N.J. 1892	132 6	25 4	16 0	368	66	81 sc.	Canadian Salvage Association Ltd., Montreal
134605	Fort McMurray	Winnipeg	McMurray, Alta. 1915	151 0	28 3	4 5	661	397	9 sc.	Hudsons Bay Co., London, Eng.
134470	M. Moran	Halifax, N.S.	Camden, N.J. 1912	109 0	25 7	14 5	315	111	54 sc.	Canadian Salvage Association Ltd., Montreal
134468	Petrel		Port Richmond, N.Y. 1915	123 7	26 3	15 3	540	367	65 sc.	
134270	Schoolcraft	Midland, Ont.	Trenton, Mich. 1884	185 0	34 0	14 2	972	690	80 sc.	Manley Chew, Midland, Ont.

List of Sailing Vessels and Barges Registered in Canada During September, 1916.

No	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner
133895	Ada Tower	Parrsboro, N.S.	Schr.	Port Greenville, N.S. 1916	175 5	36 4	12 9	528	G. M. Cochrane, M.O., Fox River, N.S.
138229	Agnes Wilson	Montreal	Barge	Charlamange, Que. 1916	126 0	27 3	7 8	225	St. Maurice Paper Co., Montreal
138191	James Slater	Liverpool, N.S.	Schr.	Port Jefferson, N.Y. 1874	114 9	28 9	9 9	282	Publicover Shipping Co., Dublin Shore, N.S.
138255	Marian J. Smith	Lunenburg, N.S.		Liverpool, N.S. 1916	128 2	33 8	11 4	332	W. C. Smith, M.O., Lunenburg, N.S.

Maritime Provinces and Newfoundland.

The hull of the s.s. Senlac, which was damaged by fire at Sydney, N.S., recently, is reported to have been sold to C. Brister and Son.

The Imperial Oil Co. has deposited with the Public Works Department at Ottawa, plans and description of site for a wharf to be built at Halifax, in the harbor in front of lands adjoining Fort Clarence southward of the eastern side of the harbor.

The French Cable Co.'s cable repair steamship Contre-Amiral Caubert was purchased recently by W. N. McDonald, Sydney, N.S., the stated price being \$102,000, and after being renamed Vigo, was sold to New York parties. She was built at Havre, France, in 1875, and is 2,078 tons gross, 1,137 register.

It is reported that the steam tug Amelia, which plies between Pictou, N.S., and Prince Edward Island, has received \$100,000 as salvage for towing the Belgian s.s. Indutiomare, which had been abandoned as a total loss near Magdalen Islands, into Halifax. The value of the cargo is given as \$200,000.

With reference to the report mentioned in our last issue, that the Dominion Government had purchased the Central Vermont Transportation Co.'s steamships Manhattan and Narragansett, for \$1,000,000, we have been officially advised that it is incorrect, and that there have been no negotiations regarding such purchase. In commenting on the report, we stated that it should not be taken seriously.

The St. Lawrence Timber, Pulp and Steamship Co., Ltd., has been registered in London, Eng., recently with £103,000 capital, to acquire and develop timber estates in Newfoundland, and to carry on the businesses of shipowners and builders, shipwrights, ship and insurance brokers, managers of shipping property, etc. An agreement is in contemplation to purchase from M. Deacon certain rights at Bonne Island, Nfld.

The Eastern Steamship Co.'s s.s. Calvin Austin, which has been on the St. John, N.B., and Boston route for some time has been transferred to the Boston-Portland route, and her place has been taken by the s.s. North Star, formerly on the Portland-New York route. During the winter the North Star will be the only vessel of the company on the St. John and Boston route, the s.s. Governor Cobb being transferred to the winter service between Key West and Havana.

The St. Mary's Bay Steamship Co.'s s.s. Mikado struck a ledge on the eastern side of Petite Passage, near Digby, N.S., at the end of September and subsequently became a total loss. The cargo of mixed freight for Weymouth and St. Mary's Bay ports, was salvaged. She was built at Shelburne, N.S., in 1896, and was screw driven by engine of 16 n.h.p. Her dimensions were: Length 82 ft., breadth 18 ft., depth 7.7 ft., tonnage 80 gross, 49 register. She was formerly known as Westport.

The St. Peter Canal, on the south coast of Cape Breton Island, N.S., is partially closed to navigation, and vessels drawing more than 16 ft. cannot pass through. At present vessels drawing not more than 16 ft. can pass between half tide flood and half tide ebb, and it is expected that in a short time they will be able to pass through the canal at any stage of the tide.

The certificate of registration of the

Oruro Steamship Co., Ltd, has been revoked by the Nova Scotia Registrar of Joint Stock Companies, owing to non-payment of annual registration fees.

The St. John, N.B. Board of Trade passed a resolution, Oct. 13, and sent a copy to the Dominion Government, urging the use of Canadian ports as a solution of the difficulties arising from the recent submarine raid on vessels off the U.S. coast. It was pointed out that trade with Canadian ports is protected by the British Navy, and that any submarine menace that might arise could be dealt with more effectually and without international complication. It was requested that all goods intended for Great Britain be routed through Canadian ports.

The ferry service between New Brunswick and Prince Edward Island is being performed by the s.s. Northumberland and the car ferry steamship Prince Edward Island. The Northumberland is operated by Canadian Government Railways between Point du Chene, N.B., and Summerside, P.E.I., making one round trip daily except Sunday; and the car ferry steamship Prince Edward Island runs between Pictou, N.S., and Charlottetown, P.E.I., making one round trip daily except Sunday. No decision has been arrived at the time of writing as to the winter service, as it was an open question whether the approaches at Cape Tormentine and Cape Traverse will be ready for a winter car ferry service.

Province of Quebec Marine.

It is reported that orders have been placed with Canadian Vickers, Ltd., Montreal, for the construction of two steamships, each of 7,000 tons capacity.

The Public Works Department has completed dredging in front of Les Eboulements wharf at Cap Joseph, to a depth of 15 ft. below low water level. The area dredged is from 183 ft. eastward of the southwest corner of the wharf to 247 ft. westward of same.

The icebreaking steamship J. D. Hazen, which was recently built by Canadian Vickers, Ltd., at Montreal, for ice service in the St. Lawrence River, and which was sold to the Russian Government imme-

diately after being completed, has been somewhat overhauled to meet the wishes of her new owners, and has been renamed Mikula Selianovitch. She underwent a series of trials at Murray Bay, Oct. 23, and will probably sail for Europe at any time.

The Davie Shipbuilding and Repairing Co., Levis, has been awarded the contract for the overhauling of the nine steamships which the French Government purchased recently from the Great Lakes and St. Lawrence Transportation Co., after which, they will proceed to Europe. An injunction was obtained recently in Chicago, restraining the sale, but as the vessels were then in Montreal, and the sale apparently made, nothing could be done in the way of holding them.

During the convention of the American Association of Port Authorities at Montreal recently, the delegates paid a visit to Quebec, where they were entertained to luncheon by the Harbor Commission, being welcomed by D. O. L'Esperance, Chairman, the Mayor and J. G. Scott, President of the Board of Trade. They were taken over the various harbor works in progress, and had an opportunity of seeing the full advantages offered at the port, including the unloading and loading of lake steamships and ocean steamships, both freight and passenger. One of the ocean steamships to load at the elevator was the Arachne, which had just come out of the local dock after having been repaired and overhauled subsequent to being wrecked on Anticosti Island.

Ontario and the Great Lakes.

The Dominion Government hydrographic steamship La Canadienne, which ran ashore at Dorion, Lake Superior, Sept. 17, was released about a week later and taken to Port Arthur for examination and repair.

The Canada Atlantic Transit Co. held its annual meeting at Ottawa, Sept. 26, when the following board of directors was elected for the current year.—E. J. Chamberlin, President; H. G. Kelley, Vice President; Frank Scott, Secretary and Treasurer; J. E. Dalrymple and H. R. Safford.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during September, 1916.

ARTICLES	CANADIAN CANAL	U. S. CANAL	TOTAL
Copper..... Eastbound	946	18,014	18,960
Grain.....	5,423,807	3,802,109	9,225,916
Building stone..... .....	.....	.....	.....
Flour.....	475,791	1,200,530	1,676,321
Iron ore.....	1,765,936	7,765,779	9,531,715
Pig iron..... .....	.....	10,277	10,277
Lumber.....	2,980	53,054	56,034
Wheat.....	7,951,637	7,279,026	15,230,663
General merchandise.....	4,040	53,348	57,388
Passengers.....	2,321	1,003	3,324
Coal, hard..... Westbound	12,800	291,087	303,887
Coal, soft.....	143,865	1,728,213	1,872,078
Flour..... .....	.....	45	45
Grain..... .....	.....	950	950
Manufactured iron.....	5,255	14,533	19,788
Iron ore..... .....	.....	.....	.....
Salt.....	3,500	103,534	107,034
General merchandise.....	47,996	122,801	170,797
Passengers.....	2,089	833	2,922
SUMMARY			
Vessel passages.....	918	2,521	3,439
Registered tonnage.....	1,801,952	7,993,765	9,795,717
Freight—Eastbound.....	2,165,783	8,358,140	10,523,923
—Westbound.....	210,416	2,172,185	2,382,601
Total freight.....	2,376,199	10,530,325	12,906,524

The Great Lakes Transportation Co.'s s.s. Howard M. Hanna, Jr., when down-bound from Duluth, Minn., with ore, Oct. 13, got out of her course after passing through the canal at Sault Ste. Marie, and ran on the rocks just east of the lighthouse above the entrance to the new cut in the St. Mary's River. Part of her cargo was lightered and she was refloated with comparatively little damage Oct. 15.

The s.s. Roberval, owned by Hall and Eligh, Ltd., Ottawa, Ont., foundered in Lake Ontario, about nine miles from Oswego, N.Y., Sept. 26. Some of the crew were only rescued after having been adrift in an open boat without food for 20 hours. The Roberval was built at Toronto in 1907, her dimensions being, length 128 ft., breadth 24 ft., depth, 9 ft.; tonnage, 344 gross, 157 register. She was equipped with an engine of 27 n.h.p. driving a screw.

The steamships Rideau King and Rideau Queen, formerly owned by the Rideau Lakes Navigation Co., Kingston, but which have not been operated for over a year, were taken to Belleville recently for sale. The Rideau Queen is reported to have been sold to the Trent Navigation Co., for \$5,800. She was built at Kingston in 1900, and is screw driven by engine of 25 n.h.p., and her dimensions are, length 108 ft., breadth 27.3 ft., depth 6.9 ft.; tonnage, 251 gross, 196 register.

The Public Works Department has dredged the northerly 450 ft. of the dredged channel in Thunder Bay leading to the Mission Channel, to a depth of 25 ft. below zero of the harbor gauge, which is 601.86 ft. above mean tide level at New York. An additional width of 100 ft., with a least depth of 21 ft., is available bordering the deep channel on its south side or between it and the Mission Channel revetment wall. Adjacent to the wall the water varies from 15 to 25 ft.

The Montreal Transportation Co.'s s.s. Simla, while en route from Erie, Pa., to Montreal, with coal, struck a reef at Coronation Island, near Brockville, Oct. 3, during a fog, and foundered. She was built at Garden Island, Ont., in 1903, and was of oak, and of the following dimensions,—length 225½ ft., breadth 34 ft. 8 in., depth 15 ft.; tonnage, 1,196 gross, 730 register. She was equipped with triple expansion engines with cylinders 17, 28 and 46 in. diam., and supplied with steam by 2 Scotch boilers 11 by 11¼ ft., at 176 lbs.

The Imperial Oil Co.'s s.s. Sarnolite was launched at Collingwood, Sept. 27, thus completing the three vessels ordered to be built there, as mentioned in previous issues. The three are named Royalite, Iocolite and Sarnolite. They are built of steel for service on the Great Lakes and the ocean. They are of the following dimensions,—length over all, 258 ft.; length between perpendiculars, 250 ft.; breadth moulded, 43 ft.; depth moulded to main deck, 18 ft.; tonnage, 2,052 gross, 1,543 register; deadweight loaded, 2,700 tons (long); total capacity of oil cargo tanks, 124,500 cu. ft. The vessels are designed for a speed of 9 knots an hour on 14 ft. draught.

The name of the s.s. St. Joseph, which has been purchased in the U.S., by The Cleveland-Sarnia Saw Mills Co., Ltd., Sarnia, Ont., has had her name changed to Frank B. Stevens. She is of oak, and was built at Buffalo, N.Y., in 1867, and rebuilt in 1887. Her dimensions are, length 146 ft., breadth 29 ft., depth 11 ft.; tonnage, 304 gross, 171 register. She is equipped with compound engine with cyl-

inders 18 and 33 in. diam. by 28 in. stroke, supplied with steam by a Scotch boiler 9 ft. 10 in. by 11 ft. 4 in. The American Transit Co. has been incorporated to operate the vessel between Canadian and U.S. ports. The company was incorporated under the Dominion Companies Act with \$50,000 capital, and office at Sarnia. The officers are: E. C. Barre, Sarnia, President; A. I. McKinley, Sarnia, Vice President, and F. H. Rose, Cleveland, Secretary-Treasurer.

The s.s. Merida, owned by the Valley Camp Coal Co., Midland, Ont., with which Jas. Playfair, President and Managing Director, Great Lakes Transportation Co., is intimately associated, was lost with all hands, on Lake Erie, about Oct. 20, during a severe storm. She was built at West Bay City, Mich., in 1892, and was of steel with double bottom for watertight ballast, with 5 watertight bulkheads, steel boiler house, steam pump wells, etc. She was practically rebuilt in 1904, and was formerly owned by D. Sullivan & Co., Chicago, Ill. She was equipped with triple expansion engines with cylinders 23, 37 and 60 in. diam. by 44 in. stroke, 1,700 i.h.p., and 78 r.p.m., and supplied with steam by 3 Scotch boilers, 12½ by 12 ft., at 168 lbs. Her dimensions were, length 360 ft., breadth 45 ft., depth 26 ft.; tonnage, 3,329 gross, 2,389 register. She was purchased about a year ago by Jas. Playfair on behalf of the Valley Camp Coal Co., and has since been operated regularly on the Upper Lakes. She is valued at about \$200,000.

British Columbia and Pacific Coast.

The Melmore Steamship Co., Ltd., Vancouver, is being voluntarily wound up, with Buttar & Chiene as liquidators.

The Dominion Government lighthouse and buoy tender Quadra, which was sunk at the entrance to Nanaimo harbor, Feb. 26, after a collision with the s.s. Charmer, and was afterwards sold to the Vancouver Dredging and Salvage Co., and raised, is reported sold to eastern U.S. interests, for transfer to the Atlantic coast at an early date.

The second of the two car floats which the Canadian Northern Ry. is having built at Port Mann for conveying freight cars across Patricia Bay, was launched early in October. It is anticipated that the service will be in operation early in November. The floats will be towed across the bay by tugs which have been acquired and which are named Chilliwack and Sumas.

The Pacific Coast Steamship Co., and the Pacific Alaska Navigation Co., Seattle, Wash., have amalgamated, under the name of the Pacific Steamship Co. The first named company owns 13 passenger and freight vessels, and the latter 9 vessels. The value placed on them is about \$12,000,000. The amalgamation agreement takes effect Nov. 1. The principal officers are, H. F. Alexander, President; E. C. Ward, Vice President; W. Jones, Treasurer; E. B. Rogers, Secretary; and A. F. Haines, Manager.

M. P. Cotton, of Vancouver, who is head of the company which has been negotiating with the Grand Trunk Pacific Ry. for the lease of its drydock at Prince Rupert, returned to Vancouver recently after a series of interviews with E. J. Chamberlin, President, G.T.P.R., and members of the Dominion Government on the matter. Mr. Chamberlin had stated that he would not lease the dock without the Govern-

ment's consent, and the Premier had written him to the effect that "pending the investigations of the railway commission, it would be unwise to lease this plant at the present time." This he considered final, and all negotiations would be discontinued.

The Turbinia-Primrose Collision.

The Dominion Wreck Commissioner, Capt. L. A. Demers, delivered judgment, Oct. 20, re the collision between Canada Steamship Lines' s.s. Turbinia and the Toronto Ferry Co.'s s.s. Primrose, in Toronto Bay, Aug. 13. The enquiry was held at Toronto, Sept. 6, and the judgment was concurred in by Capt. J. B. Foote and Jas. McMaugh, who acted as nautical assessors. Following is a summary. The court is of opinion that the master of the Turbinia, in skirting the wharves to reach his coal pier, was aware that the vessel he saw was an Island ferry carrying an undetermined number of passengers. After sounding his danger signal and one blast and receiving no reply, he should have stopped his vessel, but chose to proceed on his way. By so doing, when at a couple of ship's lengths from the ferry and noticing no alteration in her course, he acted contrary to article 22, Lake Rules. He knew where the ferry was bound to, but apparently because he had, according to the rules, a right of way, he chose to proceed regardless of probable consequences, evidently forgetting to take into consideration the last paragraph of article 30, as well as article 22. The court cannot imagine how a master in a position of such responsibility as caretaker of property of such value as a ship represents, and having under his care the lives of men composing his crew, on a bright clear night, should attempt to cross the bow of a vessel which he knew to be carrying passengers, and within 30 or 40 ft. of her landing place, in order to save a few minutes of time. Fortunately there was no loss of life, as had there been, the court would have been justified in calling upon other courts to deal with the matter.

It finds the master of the Turbinia, Capt. B. W. Bongard, in default, first, when his one blast whistle was unanswered, it was his duty to stop the ship and await developments; second, there was no lookout ordered, though this was not conducive to the collision. The master has already been the subject of an investigation in a similar case, and his certificate was suspended for a certain period. The court realizes that there have been too many of these foolhardy methods adopted in the past, and that precautionary measures must be adopted before any calamity such as loss of life occurs, and as a deterrent to anyone who would feel inclined to run such risks. Though no lives were lost, it was certainly not through any proper seamanship exercised by the master. The court therefore would not be fulfilling its duty if it did not suspend his certificate 6047, for one year from date, and recommends that a mate's certificate for a passenger steamship be granted in the interim.

The master of the ferry steamboat Primrose, Capt. Alex. Brown, has also been the subject of investigation on two occasions, on one of which his certificate was suspended. His entire thought was centred on making the dock and maintaining his schedule. There was no lookout, and to a certain extent this contributed to the collision. In the absence of

local rules, the Rule of the Road prevails, and the master showed a lack of interest when he stated that he was unaware of any changes being made in the rules last February. The court maintains that it is every master's and officer's duty to be conversant with any alterations in laws governing shipping, and especially with rules of the road. Therefore the master failed, and wilfully, in observing the elementary rules which tend to safety, by maintaining his course, violating article 30, and keeping the same speed until the collision occurred. Articles 35, 37, and 38 were also flagrantly violated. For the reasons above given, it is abundantly proved that Capt. Alex. Brown lacks the judgment which is expected from the master of a vessel, and by his actions he has proved himself incompetent as a master, therefore the court cancels his master's certificate, No. 1940, but recommends that a certificate as mate of a freight steamship be granted to him.

The court calls the attention of the Marine Department to the evidence of the mate of the s.s. Primrose, who instead of keeping a lookout, was engaging in conversation with passengers somewhere away from the bow, and who stated that he held a permit to navigate for this year, given him by a member of Parliament in the form of a letter, and that years ago he held a tug master's certificate, but lost it and never applied for a renewal. It also pointed out that there appears to have been a flagrant violation of sec. 97 of the Canada Shipping Act, on the part of the Toronto Ferry Co., in the s.s. Primrose not having a properly certificated mate, as she is licensed to carry 900 passengers.

Mainly About Marine People.

J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd., left Montreal, Oct. 21, for England, expecting to return towards the end of December.

Robert Fraser, Marine Superintendent, Montreal Transportation Co., Kingston, Ont., is reported to have resigned his position and to have gone to California, where he will reside in future.

J. W. Greiner, whose appointment as Mechanical Superintendent, Canada Steamship Lines, Ltd., was announced in our last issue, was formerly Fleet Engineer, Canada Atlantic Transit Co.

A. Rutledge, heretofore General Superintendent, Dining and Parlor Cars and News Service, Eastern Lines, C.P.R., Montreal, has been appointed Purchasing Agent, Canadian Pacific Ocean Services, Ltd., Vancouver, B.C.

Major W. G. Hagarty, B. Battery, Royal Canadian Horse Artillery, C.E.F., son of J. H. G. Hagarty, of the St. Lawrence and Chicago Steam Navigation Co., has been awarded the D.S.O. for conspicuous bravery at the front.

H. A. Sanderson, heretofore President, and **P. A. S. Franklin**, heretofore Vice President, International Mercantile Marine Co., have been elected Chairman of the Board, and President, respectively, for the current year.

Sir William B. Bowring, head of the firm of Ct. T. Bowring & Co., London, Liverpool and New York, died at Liverpool, Eng., Oct. 22. He was born at St. John's, Nfld., in 1837, and was a director of Bowring Bros., Ltd., shipowners and importers, St. John's.

Capt. James Ewart, who died at Toronto, Oct. 5, aged 68, was associated with the lakes marine since boyhood, and for some years was senior captain of the St. Lawrence & Chicago Steam Navigation Co., but retired from active service about seven years ago. His last command was the s.s. E. B. Osler, previous to which he was master of the s.s. W. D. Matthews.

Capt. William English, who died at Victoria, B.C., recently, following an operation, was a native of North Sydney, N.S., and had been connected with seafaring from an early age. He went to the Pacific Coast in 1888, in a sealing schooner, by way of Cape Horn, and engaged in sealing there for a number of years. He subsequently served the Dominion Government on the fishery cruiser Galiano, the dredge tender Princess, the lighthouse tender Quadra, and was from 1910 to 1912 in Grand Trunk Pacific Coast Steamship Co.'s service on the s.s. Prince Rupert, and the tug Escort No. 2. On the outbreak of war, he returned to Government service and was second officer on the s.s. Galiano.

Norman A. Rule, whose appointment as Treasurer, Standard Shipping Co., Winnipeg, was announced in our last issue, was born at Collingwood, Ont., Apr. 3, 1877, and entered transportation service Mar. 1, 1892, since when he has been, to Apr., 1896, office boy, Great Northern Transit Co., Collingwood, Ont.; May, 1896, to May, 1904, purser Northern Navigation Co.; May, 1904, to May, 1912, Chief Accountant, same company, Collingwood; May, 1912, to May, 1914, Superintendent, Georgian Bay Division, same company; May, 1914, to Apr., 1915, Travelling Freight Auditor, Canada Steamship Lines, Ltd., Montreal; Apr., 1915, to Sept., 1916, Assistant to Operating Manager, same company, Toronto.

Rumored Increases of Shipbuilding Plants for Canada.—A press dispatch dated London, Eng., Sept. 29, stated that Vickers, Ltd., contemplated considerable expansion in Canada, and there was linked with the name of that firm, that of Yarrows, Ltd., of Glasgow, which already has a plant at Esquimalt, B.C. The dispatch also named Sir W. G. Armstrong, Whitworth and Co., Cammel, Laird and Co., and John Brown and Co., as being on the point of laying plans for shipbuilding in Canada. Several years ago, when the question was under discussion as to whether the Dominion Government should or should not start the building of naval vessels in Canada, the firms named above, in addition to at least one other firm, considered the question of opening plants in the Dominion, but when it was decided that the Government would not build the vessels, nothing more was heard of the other proposals until the establishment of a Vickers plant at Montreal, by Canadian Vickers, Ltd. Since then, these rumors have arisen at stated periods, the same names being mentioned and in the same terms, so that one might almost think that the item was kept on hand in various newspaper offices for use when required. N. Yarrow, Manager, Yarrows, Ltd., Esquimalt, stated recently that he knew nothing of such reports, and so far as he knew any development contemplated by Yarrows, Ltd., would be independent of other concerns, and in his opinion it was highly improbable that any great expansion of the nature indicated would be inaugurated during the course of the war.

Canada Steamship Lines Notes.

The company is preparing a roll of honor containing the names of employes who have enlisted for active military service.

It is stated that the earnings of the s.s. J. H. G. Hagarty, for this season, will more than equal her construction cost. Up to the commencement of October she had carried down 14 cargoes of grain, and had also carried 12 cargoes of coal between Lake Erie ports and Fort William.

A statement issued from the company's office in London, England, announced toward the end of September, that for the first time since the outbreak of war, passenger traffic had become normal, and that business in the passenger department, for the period to the end of August, showed a net increase of \$175,000 over the corresponding period of 1915, and that there was a great increased demand for freight.

The s.s. W. C. Moreland, which has been rebuilt at Superior, Wis., was renamed Sir Trevor Dawson, Oct. 18, by Mrs. J. W. Norcross, wife of the company's Vice President and Managing Director. The Sir Trevor Dawson is now one of the largest vessels on the Great Lakes. Her dimensions are, length 598½ ft., breadth 58 ft., depth 32 ft.; tonnage 7,215 gross, 5,505 register.

A claim against the company under the Ontario Workmen's Compensation Act, by the parents of a seaman who was washed overboard from the s.s. C. A. Jaques, when on a voyage from Sydney, N.S., to Manchester, Eng., has failed. On behalf of the claimants, it was urged that there was an absence of lifebuoys and life lines on deck, but it was held that there was no evidence that had there been lifebuoys on deck anyone could or would have thrown one or more overboard, or if it had been done, that it would have been any kind of help, also that it was hardly possible that there was not plenty of rope on board, and if there were not life lines, it was the fault of the master and crew and not of the company.

The company's operations on the Atlantic Ocean for the past year form interesting reading. Twenty-two of its vessels were engaged in trading to and from different points on the ocean, and of that number, five have been lost, three of them being directly due to enemy's attacks, and the other two losses being presumed as perils of the sea. These were the Don-nacona, Dunelm, Empress of Fort William, Empress of Midland, and Midland Queen. The s.s. Wahcondah, after completing her charter trip to Great Britain, was, after running a special trip on the company's account, sold to British parties. Several of the vessels will be engaged with the Quebec Steamship Co., one of the company's subsidiaries, during the winter, on the West Indies route.

Manchester Liners, Ltd., reports a profit of £181,389 for the year ended June 30, after providing for debenture interest, preference share dividend, directors' fees, depreciation, reserve for excess profits duty and income tax. From this amount £100,000 has been placed to reserve, bringing that account up to £170,000, and a dividend of 10%, together with a bonus of 15%, has been paid on the ordinary shares. Of the balance, £5,565 has been transferred to first debenture reserve fund, and £20,176 carried forward to the current year's accounts.

Toronto Hamilton and Buffalo Navigation Company.

A car ferry service was inaugurated, Oct. 20, across Lake Erie, between Ash-tabula Harbor, Ohio, and Port Maitland, Ont., by the car ferry Maitland no. 1, in charge of Capt. R. T. Haagenson, to handle freight between the New York Central main line, Erie, Pa., and west, to and including Elyria, South Lorain and Toledo, Ohio, and the Oil City and Youngstown Branches, and from Pittsburg & Lake Erie Rd. stations, destined to C.P.R. territory in Canada now reached by the Buffalo gateway; to Michigan Central Rd. stations in Canada east of St. Thomas and London, Ont., inclusive; and to stations on the Toronto, Hamilton and Buffalo Ry., and the Niagara, St. Catharines and Toronto Ry. Class and commodity tariffs naming through joint rates via the Niagara frontier between points mentioned have been supplemented adding the Toronto, Hamilton and Buffalo Navigation Co. as a participating carrier, which makes the through rate applicable via the car ferry route. In addition to this, tariffs have been published to and from Port Maitland on such commodities as are now handled on the combination of local rates via Black Rock. The car ferry route will handle carload traffic and cars with less than carload shipments with a minimum of 10,000 lbs. The route affords a direct cross-lake service between Canadian and U.S. points in territories outlined above.

Following are the company's officials:—J. N. Beckley, President, Rochester, N.Y.; F. F. Backus, Vice President, Hamilton, Ont.; G. C. Martin, General Traffic Manager, Hamilton, Ont.; A. E. Lock, Superintendent Car Service, Hamilton, Ont.; G. W. Holmes, Purchasing Agent, Hamilton, Ont.; F. O. Waldo, Auditor, Detroit, Mich.; H. J. VanVleck, Assistant Auditor, Detroit, Mich.; W. R. Beckley, Secretary, Rochester, N.Y.; W. E. Hackett, Treasurer, Detroit, Mich.; R. R. Richards, Auditor of Disbursements, Detroit, Mich.; A. S. Dutton, Auditor of Freight Accounts, Detroit, Mich.; J. M. Eedson, Freight Claim Agent, Hamilton, Ont.

Load Lines and Bulkheads.—The general question of load lines and bulkheads has been coming up each year for some time past, and a definite action has now been taken by a special conference of about 40 representative shipbuilders, owners, naval architects and marine engineers, at the office of the Secretary of Commerce, in Washington, D.C. A preliminary committee has been appointed, consisting of the President of the American Society of Naval Architects and Marine Engineers, the President of the New York and Cuba Mail Steamship Co., who is also Chairman of the American Committee of Lloyd's Register of Shipping, and the President of the Newport News Shipbuilding and Drydock Co. This committee will designate a larger committee of seven to formulate general policies on load lines and bulkheads, and report to the Secretary of Commerce and the Shipping Board, when that body is appointed under the new Government Shipping Act, whence it will pass on to Congress for legislation. The Dominion Marine Association has been consulted and will keep in touch with the Canadian view, reasonable legislation with due regard to all requirements being considered desirable.

Livingstone Channel Navigation Regulations.

Amendments to the rules and regulations governing the navigation of the lower Detroit River, have been approved by the Governor in council, as follows:—

No vessel of 100 gross tons or over shall navigate the Livingstone Channel at a rate of speed greater than 12 statute miles an hour between its junction with the Amherstburg Channel at Ballard's reef and the Bar Point light vessel;

No vessel shall pass another vessel bound in the same direction in that portion of Livingstone Channel between its junction with the Amherstburg Channel at Ballard's Reef and Bar Point light vessel, nor at any other portion of either channel where the width of the channel is restricted by improvements in progress. Between any two down bound vessels entering or navigating that portion of the Livingstone Channel between its junction with the Amherstburg Channel at Ballard's Reef and the Bar Point light vessel, there shall be an interval of not less than 5 minutes.

Quebec Bridge Centre Span.—The Marine Department has issued the following notice to mariners,—“On Sept. 11 the centre span of the Quebec Bridge built to span the space between the cantilever arms collapsed while being hoisted into position and sank in the river. The channel in the vicinity has been swept to a depth of 50 ft. at low tide and found to be clear of obstruction to this depth.”

Military Recruiting Among Merchant Seamen.—For the third time this year a notice has been issued from the headquarters of the 4th Military District at Montreal to the different units recruiting in that area to the effect that recruiting among merchant seamen must cease. It is pointed out that the seamen in port are signed on ships' articles, and in order to enlist, they must desert, and lay themselves open to serious punishment.

Stranding of the Shintsu Maru.—An enquiry was opened at Victoria, B.C., Oct. 13, into the cause of the stranding of the Japanese s.s. Shintsu Maru at Roberts' Point, Gulf of Georgia, Sept. 22, by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by Capt. Bucknam and Clarke as nautical assessors. Owing to the refusal of the pilot, H. R. Jones, to give evidence, on the ground that he had already been punished for the mishap, by having his license suspended for three months by the Vancouver Pilotage Authority, the enquiry was adjourned, and the matter referred to the Minister of Marine for further instructions.

Norwegian Shipbuilding in Canada.—It is reported that Otto Dahl, representing a Norwegian syndicate, is visiting Canada and the United States, in order to see what space is available for building steel steamships, and to place contracts for a number, possibly 30. He is reported to have said that, prior to the war, most of the Norwegian vessels were built in England, but the shipbuilding plants there are not at present available for outside work. An order for the construction of six steamships of 8,800 tons register is said to have been placed with Wallace Shipyards, Ltd., Vancouver, and negotiations are proceeding for the placing of an order for another two similar vessels at a plant proposed to be established at False Creek, Vancouver.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Chicago Car Heating Co.—Jos. E. Buker, General Sales Manager, has been elected Vice President.

Taylor & Arnold, Limited, railway material and supplies, 404 St. James St., Montreal, have appointed N. G. Shenton as Sales Engineer.

Drew Electric & Manufacturing Co., manufacturers of electric railway, light, power and gas materials, Indianapolis, Ind., have appointed the C. E. A. Carr Co., Toronto, agents for Canada.

Roberts & Schaefer Co., engineers and contractors, Chicago, report the following orders. From Union Ry. for automatic electric, reinforced concrete, standard counter-balanced bucket, locomotive coaling plant and sand handling facilities at Sergeant Yard, Memphis, Tenn. From St. Louis, Iron Mountain & Southern Ry. for a 250-ton capacity automatic electric reinforced coaling plant at Dupo Yard, St. Louis, Mo. The Nevada Northern Ry. will build a Roberts & Schaefer automatic electric, reinforced concrete, coaling plant at East Ely, Nevada, using the new duplex shallow pit loader.

Locomotive Superheater Co., 30 Church St., New York, has issued bulletin 1, “Marine Superheaters,” containing 12 pages of illustrated matter describing installations of fire tube marine superheaters on various vessels and giving results obtained. The bulletin is enclosed in a durable loose leaf cover, so that additional bulletins which will be issued from time to time, dealing with features of interest in connection with the use of superheated steam in marine power plants, may all be bound together and make a permanent ready reference book of marine superheater information.

The Decimal System for Japanese Tariffs.—The Japanese Government has authorized the Toyo Kisen Kaisha to amend its freight and passenger rates between Japan and the North American continent and South America, by the adoption of the decimal system. Its tariffs are to be issued with rates shown in dollars and cents, instead of sterling, as heretofore.

Grain Handling in Canada.—The Board of Grain Commissioners which was appointed recently as a special commission to enquire into the whole matter of handling and marketing grain in Canada, and in particular the grading and weighing, the shipping from country elevators, grain exchanges, financing, handling at terminal points and charges for same, shipment to Atlantic ports, and lake shipments, is continuing its enquiries, and gathering information on the various heads mentioned. Meetings of the Dominion Marine Association's grain section have been held to give special consideration to the shipment of Canadian grain to the seaboard, and with reference to the causes for the passage of damaged grain through U.S. ports. A report on these subjects has been drawn up and sent to the commission for consideration and report.