

# Canadian Railway and Marine World

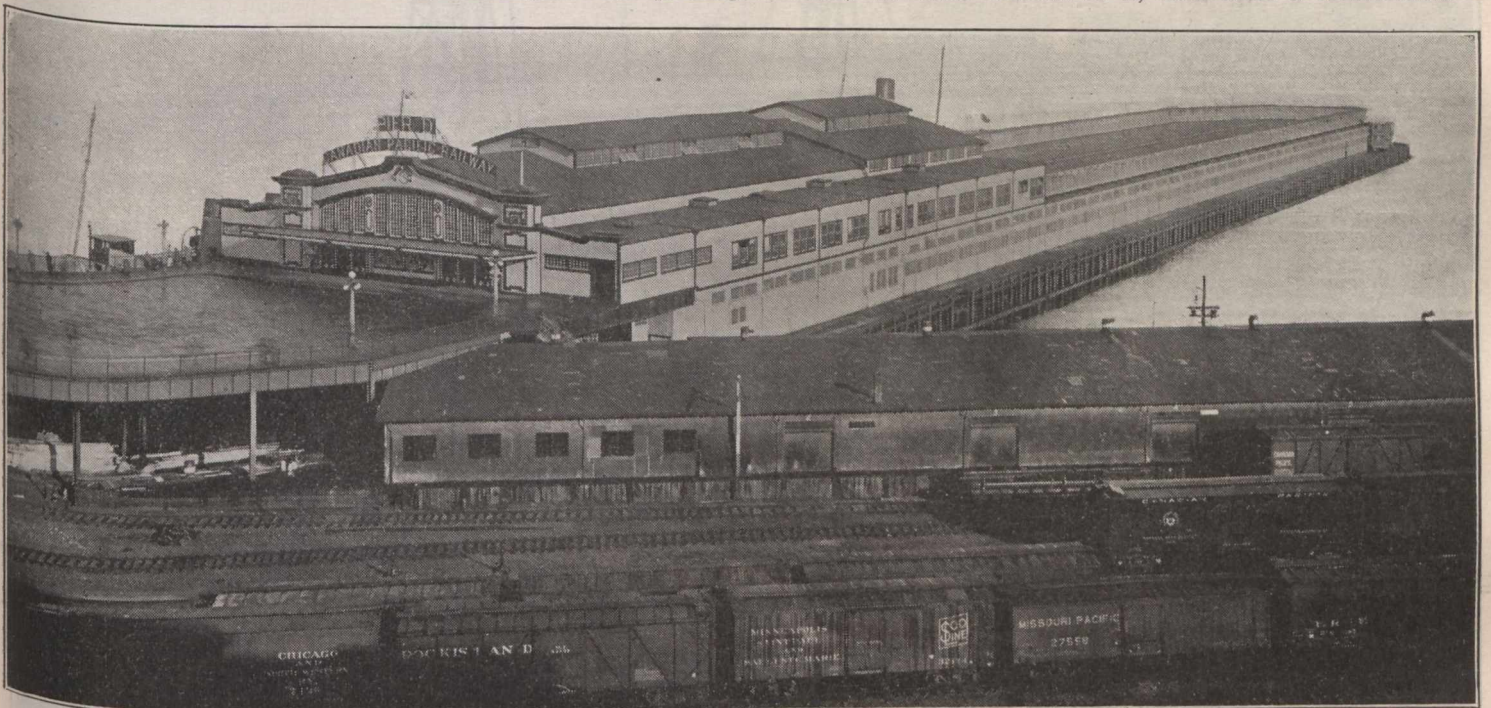
March, 1918.

## The Extension of the Canadian Pacific Railway's Pier D at Vancouver.

The C.P.R. has had completed recently an extension to one of its piers at Vancouver, which makes the new pier one of the largest structures of the kind on the Pacific Coast. The extension was made necessary by the steady growth of coastwise and trans-Pacific traffic. The pier, which is known as Pier D, is located on Burrard Inlet at the foot of Granville St. It is a creosoted pile structure, and on account of the depths of water and mud encountered is of considerable interest from an engineering standpoint. The older portion of the pier was built in 1913 and measured approximately 376

feet long. The new extension, which is 537 feet long, is also installed, together with a standard gauge railway track which runs the entire length of the east side, and makes it possible to deliver open car freight directly under the ship's slings. The east and west sides of the pier are divided by a depressed standard gauge track, running down the centre of the pier and serving both sides. A one story shed, of heavy mill type construction, is built over the new pier, on top of which is a promenade, connected with the lower deck by stairways on the west and north sides. This promenade is designed for passenger traffic, but also

point of equilibrium was reached and no further settlement of the fill would occur. If at that time, an amount was dredged off the fill, roughly approximating the weight of the structure later to be placed upon it the ability of the underlying material to stand the load could be reasonably relied upon. Careful weekly soundings were kept over the entire area covered by the fill, as also along lines parallel to and outside of it. These soundings showed a slow, but fairly continuous, settlement on the part of the fill, and a slow corresponding rise at the bottom outside of it, until after a considerable



Canadian Pacific Railway Pier D, Vancouver, as completed.

ft. on the centre line by 150 ft. It carried a two story structure, the lower deck being devoted to freight, and the upper deck to passenger traffic and various offices for operating, customs and immigration officials. The primary use of the old pier was for coastwise traffic.

The extension measures approximately 537 x 150 ft. and runs to the harbor line. As the pier has two distinct uses, viz., for coastwise and trans-Pacific traffic, it is so designed, the west and north sides being primarily intended for the coast boats and the east side for trans-Pacific and miscellaneous freight traffic. The west and north sides have complete arrangements for berthing four coast steamships at one time. These arrangements comprise in general, separate freight elevators of the Barlow type for each boat and separate passenger ramps or stairways, each taking the passengers direct from the boat to the upper floor level, without interference with the freight traffic. The east side is designed with continuous sliding doors, giving openings as desired at any point along practically the entire length of the pier. Two heavy adjustable

frames for sight seeing purposes, as it affords a good view of Vancouver harbor.

The old pier was a creosoted pile structure, and a study established the desirability of making the new structure of the same general type. Test holes in or near the area of the extension showed depths of water from 40 to 70 ft. at mean low tide. The tide range is approximately 16 ft. The harbor bottom itself was a mixture of mud, silt, sand and shell, ranging from 10 to 30 ft. in depth, and below this strata of clay and gravel. Hardpan lay variously at from 70 to 140 ft. below low tide. It was apparent that a fill would have to be made, and the material for it was readily obtained from a dredging contractor who was making channel improvements at the First Narrows, about two miles from the pier site. About 250,000 cu. yds. of material were used. The fill had a dual purpose: first, to displace the soft harbor bottom, and second, to provide end and lateral support to the piles to be driven into it. The theory was that the fill would gradually both displace and compress the lighter and softer material beneath, until a

period no further settlement could be observed. As was expected, the part of the fill next to the old pier came to rest first, and permitted pile driving to be begun at a time when the outer portion of the fill was still in movement.

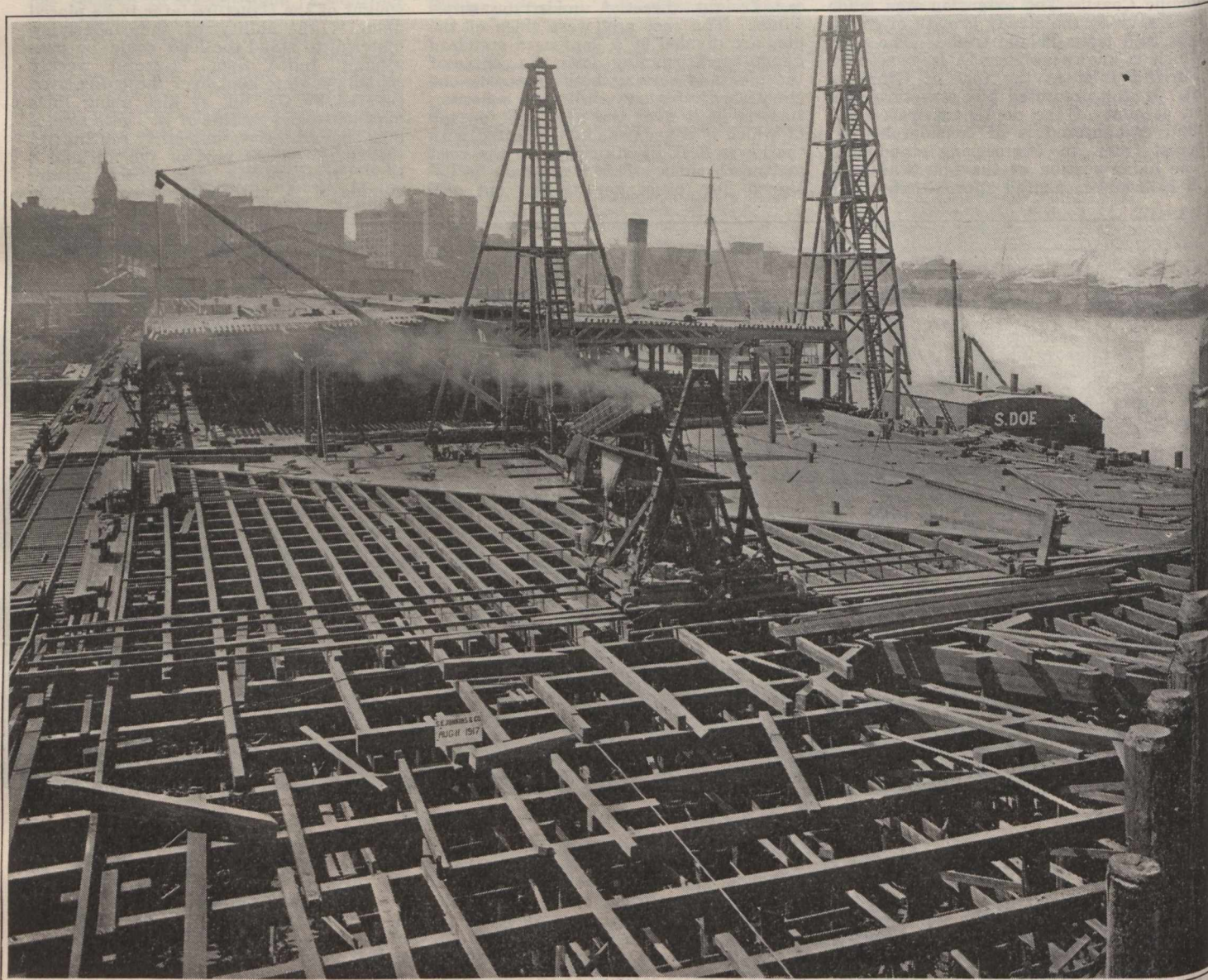
The type of substructure for the pier was fully considered and it was evident that creosoted wooden piling would be the cheap and logical solution of the problem. It was desired, so far as possible, to have the piling penetrate the fill, and rest on the harbor bottom beneath, thereby increasing the area of surface contact, as well as assuring full bearing power, and therefore safety, in case of any future movement on the part of the fill itself. To do this, piling lengths considerably over any known lengths for concrete piles were required. As the teredo is active in these waters a treated pile was necessary. Creosoted Douglas fir piles, with full 15 lb. treatment under boiling process, were therefore determined upon. All other established methods for pile preservation were, however, considered before final decision was made. The contract called for approximately 2,550 piles

from 85 to 125 ft. long. It was also decided that all deck timber, which was either in contact with the water or near enough to it to be continually damp should be treated. Bracing, caps, stringers and laminated deck timber were therefore specified for 12 lb. treatment under the boiling process. All timber was to be of Douglas fir and of standard specifications. The pile driving work was given to S. Doe, of Victoria. As there was no rig available for handling piles of the weight and lengths of those to be used, Mr. Doe built a special scow driver, with leads measuring 130 ft. in height.

travelling derrick, running on a track laid across the pier, and so arranged that it could be jacked up on rollers and moved forward under its own power. This moving operation took about two hours. About 40 lin. ft. of pier could be handled from each position of the track. The derrick was used for handling all creosoted timber, which was delivered on scows alongside as required, picking up, moving across the dock and depositing in place. The average time for handling the 7 in. x 12 in. x 40 ft. stringers, from the scow to the far side of the dock, and back again for another load was approxi-

and moored alongside of or near the dock, while field office, storehouse and compressor house were located at the extreme end of the old pier outside of the shed, where they would not interfere with the operation of the pier and yet be easily accessible.

While piles were being treated, inspectors were kept at each plant, and the quantity and quality of creosote used, temperatures, pressures and time of treatment were carefully watched and recorded. Each pile was numbered and stamped after being passed and full data on its treatment recorded. When driv-



Canadian Pacific Railway Pier D, Vancouver. Looking north during construction, Aug., 1917.

So far as is known, this is one of the largest, if not the largest, scow driver ever built.

As there was a large amount of boring and drift bolting to be done, a motor driven air compressor was installed, pipe lines extended from it and connections tapped in at intervals, with hose to the various air tools. These comprised air riveters, with special sets for drift bolt driving, and boring machines of various sizes. The borers were especially useful in laying the 2 x 4 in. Australian hardwood which served as flooring, and which had to be bored for nailing. This boring alone required approximately 70,000 holes.

Another useful machine was a small

mately two minutes.

A skid driver was used to drive the track extension along the old pier, and a few column piles under the old deck which had been omitted in building the original pier. When its pile driving work was finished, it was turned into a skid derrick, with an 80 ft. boom, and used to erect the roof trusses, which were framed and assembled on the deck and lifted complete on to the columns in one operation. This derrick was used to raise the 2 x 6 in. laminated roofing, a team load at a time. It also performed a variety of miscellaneous work, as its long boom and skids made it a very handy rig.

A fully equipped blacksmith shop was built on a small scow, to avoid fire risk,

ing, a report was also made by an inspector on each driver, as to the pile number, location, penetration and length of cutoff. It was thus possible to readily trace the history of any pile from its time of treatment until driven. All piles were spotted by transit and stayed soon after driving.

The driving at all times was extremely hard. Piles were driven on 6 ft. 8 in. x 8 ft. centres. Piles were capped by 10 x 16 in. and 12 x 14 in. creosoted timbers, drift bolted into place. Capping was kept several bents behind the pile driving, so that the jar from the driving would not change the elevation of the piles after cutoff. Creosoted stringers were laid across the caps and drift bolted

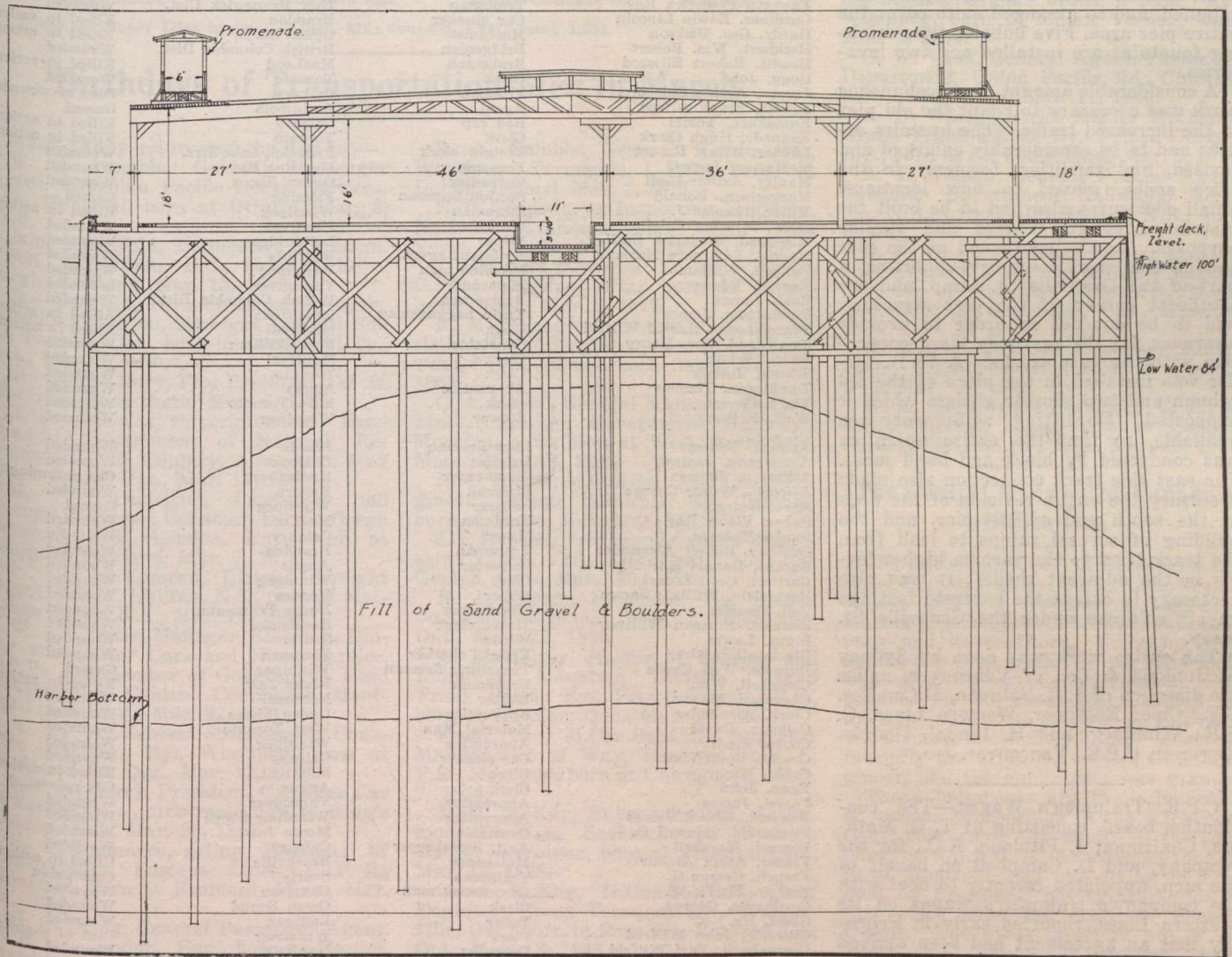
to them. A laminated creosoted 2 x 4 in. decking was laid diagonally on the stringers, the idea being to give additional rigidity by tying several parallel pile bents together in this way. Piles were also braced diagonally, and additional longitudinal bracing was run down each side of the depressed track. The outside railway track had its own special bracing. Waling was also installed at periods of maximum low water. On the laminated deck, there was laid a flooring of 2 x 4 in. Australian hardwood, running parallel to the pile bents. This flooring was air bored and spiked with great care to get a tight joint.

The shed area was divided down the middle by a depressed standard gauge track, which brought the car doors at

outside bays. The roof itself was made up of 2 x 6 x 30 ft. lamination, covered by a 3-ply asbestos roofing mopped on. A low monitor, ventilated by fixed louvres was run down the centre of the roof and also extended over the old portion of the shed. Running around the outer edge of the roof is a covered promenade 6 ft. wide. Two stairways lead from it to the lower outside deck. On the east side the promenade railing is in removable sections, as it is planned to land trans-Pacific passenger traffic to this promenade and so avoid passenger movement on the lower freight level. A heavy removable passenger gangway runs on the east side railway track and is provided with adjustable landing gangways on each side between itself the ship and the promenade.

few sliding doors and solid wall. The wall is made up of shiplap covered with corrugated iron. The north wall is provided with two doors.

Three freight elevators of the Barlow type were installed, one being a new machine and the other two being transferred from former locations on or near Pier D. Two adjustable freight slips were also installed. As the east side track crosses these slips, a device was worked out so that this section of track operates with a turntable. When the slip is up, the track is locked in place, and supported rigidly on the pile bents. When the slip is down, the track is given a quarter turn, so that the rails lie parallel to the slip axis and can be readily trucked over. Each slip is operated by two worms and



Canadian Pacific Railway Pier D, Vancouver. Transverse section, through one story shed, looking north.

the deck level. The area on each side of the track was divided into bays 36 and 46 ft. wide respectively, with outside bays of 27 ft. each, with roof columns 20 ft. centre longitudinally. These columns were posts, carried on special piles, independent of the rest of the substructure. The roof was required to bear, not only its own weight plus snow and wind load, but also a promenade with a possible live load of 100 lb. per sq. foot, the total load being about 150 lb. per square foot. It was also desired to have the roof line match that of the old pier, and at the same time keep a minimum clearance of 16 ft. under the trusses in the shed. The wooden trusses over the centre bays were 82 ft. long, and designed with separate members of 14 x 28 x 28 ft. over the

The passenger bridge was originally on the east side of the pier and was moved to the west side. The space formerly occupied by it was closed up and turned into offices.

The entire east side of the pier is made up of continuous sliding doors. There are 95 of these running on two parallel tracks and overlapping. They are hung on adjustable rollers, which will take up settlement. The bottom track is made up of T and angle irons, left open through the deck, so that nothing can collect to interfere with the working of the doors. The doors are glazed in the upper half and screened, with a 3 ft. section of window above them, to provide additional light. The west side walls are made up of short sections of continuous doors, a

gears, on a common shaft, with endless hand chain attachments. The slips are supported by steel hooks, which drop back when the slip is to be lowered, by means of a lever pulled from the deck level. The centre depressed track is fitted with an electrically driven car-haul, with a capacity of 10 loaded cars. Its use will avoid the presence of any steam locomotives inside the pier, with their attendant fire risk and smoke.

Motors, with a total capacity of about 200 h.p., are installed on the pier. The current is brought to a concrete transformer station at the south end of the pier and distributed in ducts. No transformers are allowed on the pier, on account of fire hazard. Lighting current is also transformed off the pier and distri-

buted by conduit, the circuits being arranged so that practically any combination of lights can be obtained. Lighting plugs are installed along the side of the depressed track, to provide for portable lights for loading and unloading freight cars. Screened bracket lights are placed at 40 ft. intervals around the outside of the shed, and red and green beacon lights at the outer end. An electric fog bell is also installed.

Fuel oil lines are carried down each side of the pier, with valves at the various boat landings. A covered water line is laid along the bottom of the roof trusses, and branch lines are taken off at intervals, for supplying the boats and for fire protection. Hose valves and lines of hose, laid on tilting hose racks, are also supplied, and so arranged as to cover the entire pier area. Five bubbler type drinking fountains are installed and two lavatories.

A considerable amount of miscellaneous work was necessary to adapt the old pier to the increased traffic. The upstairs offices had to be considerably enlarged and revised, and facilities, formerly in the office space, moved to new locations. Small enclosures also had to be built for customs, baggage, express and similar purposes. At the south end of the pier one of the steel columns supporting a part of the Granville St. ramp, and the southeast corner of the pier structure, had to be cut out in order to provide clearance for the east side track connection with the yard tracks. A 75 ft. girder was installed in the place of the old column and two shorter girders which it supported. No lifting equipment was available, so that the entire operation was conducted by block and hand jacks. The east side track connection also made necessary the entire revision of the deck at the south end of the pier, and the building of several ramps to lead from the track level to the various higher levels in the adjacent sheds. It was also necessary to extend the concrete footings on six columns under the Granville St. ramp.

The entire work was done by Sydney E. Junkins & Co., of Vancouver, under the direction of J. G. Sullivan, M. Can. Soc. C.E., Chief Engineer, Western Lines, C. P.R., Winnipeg, and H. Rindal, District Engineer, C.P.R., Vancouver.

**C.P.R. Trainmen's Wages.**—The conciliation board, consisting of T. G. Mathers, Chairman; I. Pitblado, K.C., for the company, and D. Campbell on behalf of the men, appointed recently to deal with the company's trainmen's wages on its Western Lines, reported early in February that an agreement had been arrived at on all matters in question. The rates under the new schedule, except those for the New Westminster Subdivision, which are fixed for the life of the schedule, are the existing rates, but when new rates are arranged in the U. S., following the movement now proceeding there, the new rates adopted for the U.S. will replace the existing ones.

**First Aid Work on G.T.R.**—The final tests in the first aid competition among the various shop teams on the G.T.R. system, for the Chamberlin silver shield, took place at Montreal, Feb. 22, the winning team being from the Stratford, Ont., shops, and the second and third being from the Point St. Charles, Montreal, shops. Each member of the winning team received an annual pass over the system, and each member of the other two teams received a pass over the lines in the division in which he is employed.

## Canadian Pacific Railway's Honor Rolls 30 and 31.

Abbey, Edwin Eustin	Transitman	Toronto	Killed in action
Allan, John Martin	Townsite salesman	Calgary	Killed in action
Anderson, Renwick M.	Clerk	St. John, N.B.	Gassed
Ashton, George Elliott	Conductor	Revelstoke	Killed in action
Bass, George Harold	Clerk	Winnipeg	Gassed
Baxter, Cyril James	Steward	British Col. Coast Strs.	Wounded
Bickerdike, Herbert	Stenographer	Winnipeg	Killed in action
Blachford, Alfred	Constable	Ontario District	Killed in action
Broom, Roy	Assistant agent	Kisbey	Killed in action
Brown, Richard Edison	Brakeman	Regina	Wounded
Burton, Frank	Loco. fireman	Minnedosa	Wounded
Bush, William	Checker	Toronto	Wounded
Celle, Joseph	Yardman	Vancouver	Wounded
Cowell, Wm. Redhead	Specialist	Angus	Killed in action
Darby, Wm. Henry	Constable	Fort William	Killed in action
Dominy, Chas. Grant	Clerk	Edmonton	Wounded
Drake, Leslie Alex.	Clerk	Montreal	Gassed
Drummond, Wm. Henry	Yardman	Chapleau	Died of Wounds
Duncan, William	Car checker	Ignace	Wounded
Edwards, Edward Ernest	Assistant agent	Crossfield	Killed in action
Fawcett, Frederick Roy	Trainman	New Brunswick Dist.	Wounded
Gardiner, Edwin Lincoln	Car checker	Brandon	Killed in action
Hardy, Geo. Dickson	Machinist	Ogden Shops	Killed in action
Heckbert, Wm. Robert	Bridgeman	British Columbia Dist.	Wounded
Hewitt, Robert Ellwood	Brakeman	MacLeod	Killed in action
Hogg, John	Clerk	Toronto	Wounded
Jacobs, Archie Chisholm	Fireman	Calgary	Died of wounds
Jowett, Frank Alfred	Agent	Assiniboia	Gassed
Kamakura, Yoichi	Red cap	Calgary	Killed in action
Kennedy, Hugh Clark	Clerk	Toronto	Killed in action
Lawlor, Albert Robert	Freight clerk	Brit. Col. Lake Strs.	Wounded
McMaster, James	Foreman	Medicine Hat	Wounded
Manley, Arthur Cecil	Carpenter	Ogden Shops	Wounded
Margerison, Ronald	Section foreman	Fleming	Gassed
Miller, Thomas J.	Storeman	Winnipeg	Killed in action
Miles, Norman Calvin	Clerk	Montreal	Wounded
Milestead, Frederick Basil	Wiper	Lethbridge	Wounded
Morrill, Lawrence Norman	Assistant agent	Redcliffe	Wounded
Purnell, William	Machine man	Winnipeg	Wounded
Rayner, Edgar	Messenger	Vancouver	Wounded
Reid, James	Bridgeman	British Columbia Dist.	Wounded
Rowbottom, James	Train baggageman	Revelstoke	Killed in action
Shaughnessy, Harold Wilfrid	Clerk	Montreal	Killed in action
Smallwood, Wm. Henry	Constable	Fort William	Wounded
Smith, Frank	Clerk	Montreal	Wounded
Spence, Joseph	Clerk	Toronto	Wounded
Tomkinson, Thomas	Apprentice	Angus	Wounded
Veale, George	Clerk	West Toronto	Wounded
Watt, Robert	Stower	Winnipeg	Wounded
Angood, Ernest	Loco fireman	Souris	Wounded
Armstrong, James	Laborer	Outlook	Wounded
Atkinson, James	Storekeeper	Bredenbury	Gas poisoning
Awock, Arthur George	Fireman	Kenora	Wounded
Ayre, George	Laborer	Winnipeg	Gassed
Baker, Victor Ray	Yardman	MacLeod	Wounded
Banks, Thomas	Miner	Calgary	Wounded
Barbour, Robert Alexander	Trainman	Brandon	Wounded
Barkas, Donald Harbutt	Inspector	Angus	Wounded
Bartlett, Cecil Stuart	Clerk	Winnipeg	Wounded
Baxendale, William James	Wiper	Kenora	Wounded
Bell, Douglas	Storekeeper	North Transcona	Wounded
Bennett, Norman Whitney	Ticket clerk	Revelstoke	Wounded
Biggs, Lewis	Wiper	Souris	Wounded
Blackwell, Arthur	Freight checker	Weyburn	Wounded
Burgess, Wm. Cowie	Travelling fireman	Winnipeg	Gassed
Campbell, Wm.	Brakeman	Moose Jaw	Killed in action
Chapman, Sidney	Waiter	Montreal	Wounded
Clark, Alexander	Apprentice	Ogden Shops	Wounded
Colhoun, David	Material Man	West Toronto	Wounded
Cooke, Fred.	Apprentice	Winnipeg	Wounded
Crooks, Rollo Wm.	Car cleaner	Calgary	Wounded
Craig, Wm.	Clerk	Montreal	Killed in action
Egan, John	Clerk	Angus	Gas poisoning
Farrel, James	Apprentice	Vancouver	Wounded
Fawcett, Ernest James	Apprentice	Winnipeg Shops	Wounded
Fitzgerald, Edward O.	Constable	Moose Jaw	Wounded
Forrest, Marshall	Asst. Storekeeper	Calgary	Wounded
Fraser, Allan Arthur	Messenger	Brockville	Killed in action
French, George G.	Trainman	Souris	Concussion
Futhey, Fred'k W.	Locomotive man	Chapleau	Wounded
Gardhouse, George	Clerk	Owen Sound	Wounded
Gibbs, Hy.	Tuber	Lanigan	Wounded
Gillespie, John Wilfred	Clerk	Winnipeg	Died of wounds
Grenzebach, Earl Wilfrid	Operator	Hardisty	Wounded
Grimes, Alfred	Shed porter	West Toronto	Wounded
Haines, Wm.	Wiper	Fort William	Wounded
Hall, John Albert	Station master	Fort William	Died of wounds
Hambleton, James Thomas	Conductor	Moose Jaw	Wounded
Hanna, George Edward	Trainman	British Columbia Dist	Wounded
Hawley, John Alfred	Trimmer's helper	London	Gas poisoning
Henderson, Samuel	Truck repairer	Ogden Shops	Wounded
Hodgben, Owen Percival	Clerk	Winnipeg	Wounded
Horn, William Archie	Porter	Pembroke	Wounded
Hoyt, Cyril M. C.	Inspector	Angus Shops	Wounded
Inglee, John	Loco. fireman	Moose Jaw	Wounded
Jackson, Harry	Car cleaner	Toronto	Wounded
Jones, Urban Arthur	Elevator operator	Toronto	Killed in action
Jones, James	Assistant agent	Killam	Wounded
Keevil, Walter John	Wiper	Fort William	Wounded
Kennedy, Keith	Loco. fireman	Fort William	Died of wounds
Kilfoyle, Albert Mansel	Clerk	Paddington	Wounded
Koplick, Chas.	Freight carpenter	Ogden Shops	Wounded
Lamburd, Walter Owen	Checker	Calgary	Wounded
Laskey, Francis William	Fireman	Edmonton	Killed in action
Laxton, Reginald John	Section man	Mission	Wounded
Lester, Joshua	Tuber	Wynyard	Wounded
Logan, James L.	Yardman	Winnipeg	Gassed
Long, Leonard	Blacksmith's appr.	Vancouver	Killed in action
Love, Hugh Thos. Mercer	Rate clerk	Vancouver	Wounded
Luxton, Victor	Car cleaner	Winnipeg	Killed in action
MacCallum, Frank Charles	Loco. fireman	British Columbia Dist	Wounded
Marple, Sidney	Constable	Schreiber	Died of wounds
Masterson, James	Trainman	Fort William	Died of wounds

Merrifield, John Arthur	Clerk	Toronto	Wounded
Morris, Thomas	Trainman	Winnipeg	Wounded
Muir, James	Boilermaker's helper	Angus	Wounded
Palmer, Richard	Machinist	Angus	Gassed
Robertson, Patrick	Wiper	MacLeod	Wounded
Robinson, Alfred Ernest	Conductor	Chapleau	Wounded
Sauvey, Chas. Geo.	Porter	Calgary	Wounded
Sayer, Ernest Albert	Chargeman	Bobcaygeon	Concussion
Shaw, George	Fireman	Winnipeg	Wounded
Shepherd, Alex.	Machinist	Angus	Contusion
Simpson, William	Trainman	Minnedosa	Wounded
Smith, Cecil	Store foreman	Moose Jaw	Wounded
Stump, Leonard Edward	Clerk	Calgary	Killed in action
Sweeney, Carson	Trainman	Winnipeg	Died of wounds
Swinton, Douglas	Clerk	Brandon	Gassed
Tait, Mortimer	Clerk	Victoria	Killed in action
Thomas, John Robert	Car inspector	Jack Fish	Gas poisoning
Thomas, William	Sectionman	British Columbia Dist	Gassed
Thompson, Frederick	Storeman	Ogden	Gas poisoning
Wigginton, Reginald	Clerk	Winnipeg	Killed in action
Wilson, Samuel Elliot	Motor driver	Calgary	Gassed
Wood, Sidney	Trainman	Kenora	Wounded
Wylie, Robert Hood	Wiper	Brandon	Wounded
Wright, David	Fireman	Kenora	Wounded
Wools, Walter Aubrey	Locomotive man	British Columbia Dist	Wounded

Shown on Honor Lists to date:—Killed, 576; wounded, 1,257; total, 1,833.

## Birthdays of Transportation Men in March.

Many happy returns of the day to:—  
 W. G. Annable, General Passenger Agent, Canadian Pacific Ocean Services, Ltd., Montreal, born at Ottawa, Mar. 3, 1875.  
 John Archibald, Locomotive Foreman, C.P.R., Coquitlam, B.C., born at Edinburgh, Scotland, Mar. 13, 1872.  
 Jas. Balkwill, Division Superintendent, Canadian Division, Michigan Central Rd., St. Thomas, Ont., born in Southwold Tp., Ont., Mar. 8, 1870.  
 Sir George Bury, Vice President, C.P.R. Montreal, born there, Mar. 6, 1866.  
 Allan Cameron, Superintendent, Land Branch, Department of Natural Resources, C.P.R., Calgary, Alta., born near Owen Sound, Ont., Mar. 14, 1864.  
 H. S. Carmichael, Passenger and Freight Manager, Canadian Pacific Ocean Services, Ltd., London, Eng., born at Glasgow, Scotland, Mar. 7, 1874.  
 F. G. J. Comeau, District Freight Agent, C.P.R., Halifax, N.S., born at Meteghan River, N.S., Mar. 10, 1859.  
 W. A. Cooper, Manager, Sleeping, Dining and Parlor Cars and News Service, C.P.R., and member of Government Food Consumption Control Committee, Montreal, born there, Mar. 22, 1871.  
 A. E. Cox, General Storekeeper, Canadian Northern Ry., Winnipeg, born at Huddersfield, Eng., Mar. 12, 1863.  
 Hon. N. Curry, President, Canadian Car & Foundry Co., Montreal, born in King's County, N.S., Mar. 26, 1851.  
 C. T. Delamere, acting Engineer of Construction, Eastern Lines, C. P. R., Montreal, born at Brainerd, Minn., Mar. 18, 1881.  
 H. G. Dring, General Passenger Agent, C. P. R., London, Eng., born at Easton, Northamptonshire, Eng., Mar. 8, 1881.  
 Patrick Dubee, Secretary-Treasurer, Montreal Tramways Co., Montreal, born there, Mar. 4, 1876.  
 Frederick Elliott, President Victoria Navigation Co., Ltd., Thurso, Que., born at Montreal, Mar. 8, 1858.  
 M. P. Fennell, Jr., Secretary-Treasurer and Comptroller, Montreal Harbor Commissioners, Montreal, born there, Mar. 13, 1885.  
 W. R. Fitzmaurice, Superintendent, District 2, Intercolonial Division, Canadian Government Railways, Campbellton, N.B., born at Bedford, N.S., Mar. 19, 1870.  
 C. Forrester, Superintendent, London Division, Ontario Lines, G.T.R., London, born at Wanstead, Ont., Mar. 5, 1876.  
 Jas. D. Fraser, Director and Secretary-Treasurer, Ottawa Electric Ry., Ottawa, Ont., born at St. Andrews, Que., Mar. 26, 1851.

R. A. Gamble, General Yardmaster, Winnipeg Terminals, C.P.R., born at Dublin, Ireland, Mar. 1, 1876.  
 E. P. Goodwin, ex-Inspecting Engineer, National Transcontinental Ry., Baie Verte, N.B., born there, Mar. 17, 1865.  
 J. Halstead, Division Freight Agent, C.P.R., Calgary, Alta., born at Bracebridge, Ont., Mar. 2, 1877.  
 R. M. Hannaford, M.Can.Soc.C.E., Assistant Chief Engineer, Montreal Tramways Co., Montreal, born there, Mar. 22, 1865.  
 C. A. Hayes, General Manager, Eastern Lines, Canadian Government Railways, Moncton, N.B., born at West Springfield, Mass., Mar. 10, 1865.  
 H. T. Hazen, M.Can.Soc.C.E., Chief Engineer, Toronto Suburban Ry., Toronto, born at Truro, N.S., Mar. 14, 1870.  
 J. I. Hobson, Treasurer, Canada Steamship Lines Ltd., Montreal, born at Guelph, Ont., Mar. 30, 1872.  
 N. J. Holden, President, The Holden Co., Ltd., Montreal, born at Nobleton, Ont., Mar. 22, 1866.  
 A. R. Holtby, Master of Bridges and Buildings, Mountain Division, Grand Trunk Pacific Ry., Prince Rupert, B.C., born at Rawdon, Que., Mar. 23, 1859.  
 Frank Lee, M.Can.Soc.C.E., Engineer Maintenance of Way, Eastern Lines, C. P.R., Montreal, born at Chicago, Ill., Mar. 7, 1873.  
 J. M. McKay, Superintendent, Saskatoon Division, Saskatchewan District, C.P.R., Saskatoon, born at Tiverton, Ont., Mar. 13, 1868.  
 Owen McKay, M.Can.Soc.C.E., Chief Engineer, Essex Terminal Ry., Walkerville, Ont., born in Ross Tp., Renfrew Co., Ont., Mar. 13, 1848.  
 Brigadier-General H. H. McLean, K.C., M.P., ex-President, St. John Ry., St. John, N.B., born at Fredericton, N.B., Mar. 22, 1855.  
 M. Magiff, Superintendent of Car Service and Telegraphs, Central Vermont Ry., St. Albans, Vt., born at Planks Point, N.Y., Mar. 24, 1852.  
 Sir Donald D. Mann, Vice President, Mackenzie, Mann & Co., Ltd., and Vice President, Canadian Northern Ry., Toronto, born at Acton, Ont., Mar. 23, 1853.  
 H. H. Melanson, Passenger Traffic Manager, Canadian Government Railways, Moncton, N.B., born at Scadouc, N.B., Mar. 9, 1872.  
 J. V. Murphy, General Agent, C.P.R., Portland, Ore., born at Bowmanville, Ont., Mar. 5, 1885.  
 Peter Paton, Purchasing Agent, Canada Steamship Lines, Ltd., Montreal, born at New Lovell, Ont., Mar. 13, 1869.

F. W. Peters, General Superintendent, British Columbia District, C.P.R., Vancouver, born at St. John, N.B., Mar. 25, 1860.  
 J. W. Pugsley, Secretary, Department of Railways and Canals, Ottawa, Ont., born at Amherst, N.S., Mar. 12, 1861.  
 C. J. Smith, Manager and Secretary, Montreal Warehousing Co., Montreal, born at Hamilton, Ont., Mar. 10, 1862.  
 W. Y. Soper, Vice President, Ottawa Electric Ry. Co., Ottawa, Ont., born at Oldtown, Me., Mar. 9, 1854.  
 E. F. L. Sturdee, General Agent, Passenger Department, C.P.R., Boston, Mass., born at St. John, N.B., Mar. 29, 1876.  
 A. A. Tisdale, Assistant to Vice President and General Manager and Purchasing Agent, Grand Trunk Pacific Ry., Winnipeg, born at Mount Vernon, Ont., Mar. 8, 1874.  
 G. W. Vaux, General Agent, Passenger Department, Union Pacific Rd., Chicago, born at Montreal, Mar. 21, 1866.  
 A. D. Watt, District Master Mechanic, Grand Trunk Pacific Ry., Prince George, B.C., born at St. Louis, Que., Mar. 5, 1874.  
 A. T. Weldon, General Freight Agent, Canadian Government Railways, Moncton, N.B., born at Dorchester, N.B., Mar. 6, 1876.  
 D. O. Wood, Assistant Export and Import Agent, C.P.R., and acting Assistant Director of Overseas Transport, Montreal, born at Kleinburg, Ont., Mar. 16, 1864.  
 R. Wright, Division Agent, Ontario Lines, G.T.R., Toronto, born at London, Ont., Mar. 15, 1885.  
 H. K. York, Car Foreman, C. P. R., Swift Current, Sask., born at Victoria Corner, Carleton Co., N.B., Mar. 20, 1881.

## The Central Railway of Canada's Difficulties.

The Exchequer Court of Canada has refused the Central Ry. Co. of Canada's directors' petition for confirmation of a scheme of arrangement between that company and its creditors. Following this, application was made by the City Safe Deposit & Agency Co. of London, Eng., trustees for the bondholders, asking for the appointment as receiver of F. Stuart Williamson, M.Can.Soc.C.E., of Montreal, formerly the C. R. Co. of C.'s Chief Engineer, and the application was granted.  
 These judgments are the culmination of various proceedings in the Exchequer Court concerning the affairs of the company, of which C. N. Armstrong, formerly of Montreal, and now living in England, is President, having succeeded to that office upon the death of Senator Owens. The other directors are W. D. Hogg, K.C., E. A. D. Morgan, J. T. Bethune, J. O. Dupuis, and J. D. Wells, the latter having also acted as Secretary. The Central Ry. was projected to run from Montreal to Midland, Ont., with several branches, but only some 20 miles have been partially constructed. Bonds for £427,000 were sold, principally in England and France.

**Coal Production in Alberta.**—The total output of coal in Alberta for 1917, according to a report issued by the Alberta Public Works Mines Branch, Edmonton, was 2,637,829 tons of lignite; 2,206,868 tons of bituminous coal; 118,717 tons of anthracite; and 93,818 tons of briquettes. Of this 1,558,121 tons was shipped by rail to points outside the province, Saskatchewan being the largest consumer. There were 93,081 tons shipped to the U. S. from the Southern Alberta coal fields during 1917.

## Grand Trunk Railway Car Shops at Port Huron.

Canadian Railway and Marine World for January contained a description and ground plan of the new car shops built by the G.T.R. at Port Huron, Mich. The accompanying illustration gives a general view of the plant. Following is a list of the machinery installed in the different buildings:—

**Machine Shops:**—1 arc portable electric welding machine; 4 arc portable electric welding machines; tool room lathe, 16 in. x 10 ft.; engine lathe, 24 in. x 22 ft.; engine lathe, 30 in. x 10 ft.; 42 in. passenger car wheel lathe; vertical boring and turning mill; hydraulic car wheel press; 36 in. x 36 in. x 8 ft. heavy planer; triple geared shaper; milling machine; bolt pointing machine; vertical drilling machine; sliding head drill press; wheel and lever feed drill press; power hack saw; motor head stock floor grinding machines; punching

pression riveter; 2 oil storage tanks; 3 forging furnaces; furnace for no. 9 bulldozer; 2 vertical drilling machines; 2 cutters.

**Upholstering Shop:**—Hair picker; 3 sewing machines; overseaming machine.

**Paint Mill:**—Paint mill; 2 paint mixing machines.

**Pipe Fitters Shop:**—Pipe machine; pipe bending machine.

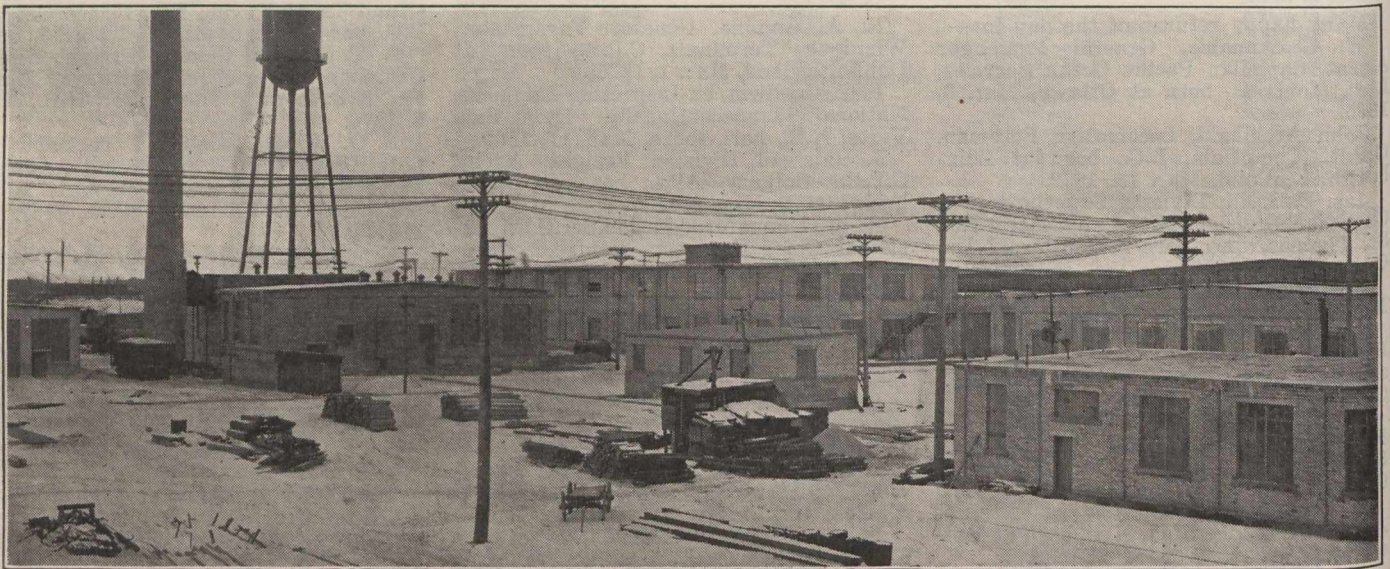
**Electrician's Shop and Battery House:** Drill press.

### Terminal Facilities at Quebec for National Transcontinental Railway Urged.

The question of providing adequate terminal facilities at Quebec for the Nation-

al Transcontinental Ry. has been attracting considerable attention there recently, and has formed the subject of correspondence between the Quebec Board of Trade, the Minister of Railways and the Montreal Board of Trade. The first communication was addressed to the Minister of Railways, on Oct. 5, by J. G. Scott, President of the Quebec Board of Trade, and formerly General Manager Great Northern Ry. of Canada and Quebec and Lake St. John Ry. This letter was in reply to one received from the Minister relative to the opening of the Quebec Bridge for traffic. Mr. Scott said, "The National Transcontinental Ry. was projected with the distinct promise in Parliament that it would materially cheapen transportation for farmers of the northwest; that it would give all its ocean traffic to Canadian seaports, and that steamship tonnage would always be available at Canadian seaports to handle all its tonnage." Mr. Scott pointed out that the N.T.R. reduces the distance from the northwest by 314 miles and is so well built that experience has shown that grain can be profitably carried to tide-water at 3c a bushel cheaper than it can be delivered by lake and rail route to Montreal and New York. But owing to the fact that the railway, which has already cost Canada \$150,000,000 has not terminal facilities of its own, it therefore cannot handle the traffic. Until these

facilities are provided grain dealers will not change their present arrangements in order to take advantage of the cheaper route. During the year ended Sept. 1, 1916, there were shipped from Port Arthur and Fort William to United States ports 193,000,000 bush. of grain, while 138,000,000 bush. were shipped from the same ports through Canada, a considerable portion of which was ultimately sent overseas via Boston and Portland. None of the purposes for which the N.T.R. was built have therefore been accomplished. The only way the railway can be made to pay its expenses, or become a profitable undertaking, is to provide the facilities necessary for the proper handling of the traffic which it has proved itself capable of handling. The Quebec Board of Trade has repeatedly during the past two years or more urged upon the Dominion Gov-



Grand Trunk Railway Car Shops, Port Huron, Mich. General View.

and shearing machine; cutter reamer and drill grinder; double car axle turn lathe; union planer chuck; 4 in. under gear comb chuck; triple valve test rack.

**Cabinet Shop:**—36 in. band saw; three drum sander; light ball bearing tenoner; 8 in. outside moulding; double spindle shaper; emery wheel stand; single surface planer; saw bench (iron frame); improved saw guard; wood turning lathe; grindstone frame and stone; scroll saw; vertical mortiser; universal saw bench; 16 in. jointer; single spindle boring machine; dowel and rod machine; complete veneer press; steam glue boiler; 4 factory trucks; vertical spindle and disk sander.

**Wood Mill:**—Plain rip saw bench; open side moulder; band re-saw and scroll; self feed rip saw; variety saw bench; automatic railway cut off saw; swing saw; timber planer and sizer; universal horizontal car tenoner; vertical hollow chisel car mortiser; horizontal hollow closed car mortiser; auto car gainer; spindle horizontal car borer; vertical and radial car borer; heavy 16 in. variety wood worker; automatic knife grinder high speed matcher; knife balance machine.

**Blacksmith and Forge Shop:**—Bolt heading, upsetting and forging machine; forging machine; bulldozer; punch and shear, 25 in. throat; punch and shear, 30 in. throat; single punch and shear, 9 in. throat; bolt threader; grindstone frame; radial drill press; steam hammer; com-

ment the importance of providing these terminals. The suggestion that the proposition recommended is too ambitious to warrant consideration during the period of the war, is not considered by Mr. Scott a sound one. He contends that the government's policy is permitting Canadian trade to drift away to the United States, from which country it will be very difficult to recover it after a few years. The city and province of Quebec are vitally interested in this matter because they have expended large sums to encourage the building of railways to the city. The proposition to build the necessary terminals is not too ambitious to warrant consideration even during the continuance of the war, but on the contrary, is most urgent, especially as terminals for the south shore lines coming into Quebec over the bridge will have to be arranged for immediately.

The Montreal Board of Trade's Secretary in writing to the Quebec Board of Trade on Nov. 8, said, "While in entire accord with your board as to the desirability of such terminal facilities for the N. T. R. being provided at the ports it reaches as are likely to be required, the council of this board is of the opinion that before any action is taken by the government in this connection, it should consider whether such terminal facilities shall, as in the case of Montreal, be provided by the port authorities and paid for

out of the port revenues, or whether the government shall provide them as a charge upon the public funds; and further that if the latter course be decided upon, the government would need to give very careful consideration as to the probable extent of the terminal requirements at the several ports before it enters upon any extension scheme for their provision, the fact that these ports have connection with the N. T. R. not necessarily involving a natural supply of ocean tonnage thereat.

To this letter Mr. Scott replied on Nov. 15, discussing the points raised, restating the arguments used in his letter to the Minister of Railways, and enforcing

them by references to trade returns and other facts. While he agrees that much may have to be sacrificed to the war, yet he claims that the country would be justified in undertaking this expenditure upon terminal facilities for the N.T.R. in order to prevent Canada's trade slipping away from it.

The Montreal Board of Trade replied on Nov. 30, that it saw no reason to change its former opinion; that if the war is prolonged it will be increasingly impossible to do anything in the matter; and that the government is in possession of all information necessary to enable it to provide the terminal facilities whenever it is able and willing to do so.

of using this fuel, which are practically legitimate in time of peace, will be found susceptible of changes which involve very slight sacrifices of material interests but afford opportunities for considerable saving of fuel.

We have in the past been an extravagant people in the use of fuel, and as the war continues it will be necessary to get down to bed rock in the matter of fuel economy.

Manufacturers of non-essentials should during these war times voluntarily forego the manufacturing of such articles, before being compelled to do so by government direction.

Wherever possible water power should be utilized.

In wooded districts, of which there are several in Canada, wood should be utilized wherever possible. One cord of hard wood is equal to one ton of coal, and one ton of coal is released for use in war work for every cord of wood substituted. It will be found that there is a vast quantity of dead wood in many sections of the country. It will also be found that the supply of wood in many communities is sufficient for domestic purposes in these parts. This wood in many instances is destroyed as waste, and its conservation will not only serve the patriotic purpose of conserving coal needed to win the war, but will also prove a measure of economy to the user.

In certain districts prison labor might be used as a means of cutting and collecting wood, where, of course, the labor of the prisoners could be utilized without interference with free labor.

As a matter of fact the one practical and needful thing today is to save coal, in order that our transportation lines and munition plants may have sufficient to carry on. It may be patriotic, and a certain amount of pleasure may be derived from singing "Keep the home fires burning," but the saving of one ton of coal is of more practical benefit towards assisting the boys in the trenches than the singing of one hundred songs.

The foregoing paper was read before the Canadian Railway Club in Montreal recently.

### Industrial Census of Canada.

The Governor-General in council has approved of schedules, under the provisions of the Act respecting the Census and Statistics Revised Statutes of Canada, Chap. 68, for taking of a census of certain industries. There are three sets of schedules, first those for lumber and sawmill products; second, general schedules for miscellaneous manufactures, and, third, supplemental schedules for specific industries. Among the latter are schedules for electric apparatus, foundry and machine shop products, locomotives and railway cars and repairs, shipbuilding and repairs, electric light and power plants.

The supplemental schedule for locomotives and railway cars and repairs, calls for information as to the quantity of material which, with details of the product showing the number of new locomotives and cars built, repairs to locomotives and cars, work done for other companies, repairs to cars of all kinds, and repairs and renewals to bridges and buildings. The shipbuilding schedule calls for information of material used, details of contract work given out, the equipment of the yard as to drydocks and marine railways and the product in the way of steel and wooden vessels of more than five tons gross; of small boats under four tons, of all vessels building but not launched, and of all repair work done.

## The Fuel Situation in War Time.

By T. Britt, General Fuel Agent, Canadian Pacific Railway.

Never in the history of the world has coal been of such vital importance. It is the life blood of the nations engaged in this unfortunate world wide war, and the success of the allies is very largely dependent upon its increased production and careful conservation.

It was customary in former years to send the surplus coal produced in Eastern Canada to the New England states and from western Canada to the western states, Central Canada and that part west of the Great Lakes and as far as Brandon, Man., being supplied with United States coal.

The total production of Canadian coal prior to the war was 15,000,000 tons a year and in the United States between 500,000,000 and 600,000,000 tons; the latter being the production for 1916.

During 1917 Canada will produce nearly 2,000,000 tons less, and the United more than in 1916. But as the increase in consumption is approximately 100,000,000 tons, there is a shortage of 50,000,000 tons to be made up by elimination of waste.

Sending eastern and western Canadian coal to the U. S. and U. S. coal to central and part of western Canada was with the object of sending coal by the most suitable rail traffic routes and waterways, and providing more even distribution.

If the eastern Canadian coal was moved west it would be against the current of traffic to Fort William, and if western Canadian coal was moved to eastern Canada it would put on to railways the burden of transporting the longest distance on the American continent.

The U. S. Government has been very considerate towards Canada and will continue to be so, the intention being to treat Canada on an equality with any state in the Union, but, while doing this, they expect and insist that we do the same as they are doing, viz., inaugurate a campaign for the intensive conservation of fuel.

It is not the purpose of this paper to point out in what way our share of the deficiency is to be made up, it being principally a matter of good engineering and true fuel conservation in the boiler-room.

Canadian railways have already reduced their annual passenger train mileage by 10,000,000 miles, and have further decreased the fuel consumption by lengthening out the times of other trains and by eliminating fast freights, and instead running trains with full tonnage, and by equipping locomotives with superheaters, and the best known modern means of lessening fuel consumption.

The C. P. R. has been helping the cause by breaking up and using old ties

for fuel—this even at considerable expense of labor, train service, etc., gathering and handling.

The U. S. have also made a start in reducing their passenger service and loading their trains to the tonnage limit, thereby effecting a saving of several million tons of coal per annum.

I think that we should go further, and I would submit for the consideration of this club, the necessity of the mechanical members getting together and inaugurating an active educational campaign among the firemen, both locomotive and boiler house men.

To my mind this should not be done by printed instructions, but by actual illustration by competent firemen. While it is all very well to write a fireman and tell him what he should do, it is far more educational for a competent instructor to show how it should and could be done.

There is a lot of fuel wasted by automatic stokers not receiving intelligent attention from the firemen. The stoker itself when in proper working order will do all that is required of it, but there are, however, occasions when it will not do what it is supposed to, it is then that a properly instructed fireman will give necessary assistance with a consequent saving in fuel.

The majority of our passenger trains, particularly the sleeping cars, are overheated, it being largely left to the discretion of the colored porter as to what is considered a comfortable temperature, the result is that the temperature is kept up to a point that means comfort for the porter and discomfort for the passengers.

Our houses are being maintained at an unhealthy temperature. Pneumonia takes a little more than one man in eight, and therefore it grasps from tuberculosis the grim honor of killing the most human beings.

Man is a marine animal, seven eighths water, he needs cool air and moisture around him, overheated dry air makes him susceptible to disease, and in a temperature of over 68 degrees it is difficult for men and women to exist healthfully.

If the people can be taught to live in this temperature, the number of pneumonia victims will shortly decrease. Fresh cool moist air is the foe of pneumonia, and persons who keep their houses cool and breathe pure fresh air have no fear of it.

Celebrated doctors have decided that 65 degrees is ample for persons in robust health actively engaged, 70 is too much, with 68 we have a fair healthy average.

Many activities which involve large consumption of fuel, and many methods





26957. Jan. 30.—Relieving C.P.R. from providing further protection at Main St., Sutton, Que.  
 26958. Jan. 31.—Authorizing C.P.R. to appeal to Supreme Court of Canada from order 26393, Aug. 3, 1917, which ordered it to build public crossing over its right of way between Lots 8 and 9, Con. 5, Kirkpatrick Tp., Ont.  
 26959. Jan. 30.—Ordering that 35 per cent. of the cost of work on bridge at London St., Windsor, Ont., referred to in order 25053, June 13, 1916, be paid by city.  
 26960. Feb. 1.—Authorizing C.P.R. to build extension to spur for City of Moose Jaw, Sask.  
 26961. Feb. 1.—Authorizing C.P.R. to build spur for A. Carruthers Co., Moose Jaw, Sask.  
 26962. Feb. 1.—Authorizing Greater Winnipeg Water District to lay pipe line under Grand Trunk Pacific Ry. at point shown on plan.  
 26963. Feb. 1.—Authorizing C.P.R. to build spur for First National Investment Co., Roche Perce, Sask.  
 26964. Feb. 1.—Approving, for use in railway passenger cars within the Board's jurisdiction, the Pyrene fire extinguisher as shown on plan dated New York Sept. 16, 1914.  
 26965. Feb. 2.—Authorizing C.P.R. to build two tracks across G.T.R. overhead, at mileage 56.8, Galt Subdivision, Ont.  
 26966. Feb. 4.—Ordering C.P.R. to install standard 3-pen stock yard at Armelgra, Alta., as soon as convenient in spring; to be completed not later than Aug. 1.  
 26967. Feb. 4.—Ordering Grand Trunk Pacific Ry. when view of tracks under coal chute, authorized by order 15899, Feb. 1, 1912, is obstructed by weather or other conditions, to protect workmen against movement of locomotive or car under plant by placing man on forward end of locomotive or car to warn workmen on tracks on which movement is being made.  
 26968. Jan. 30.—Ordering Canadian Northern Ry. to keep station waiting rooms at Bruderheim, Lamont, Chipman, Mundare, Lavoy, Ranfurly, Innisfree, Minburn, Manville, Islay, and Kitscoty, Alta., open and when necessary heated and lighted 30 minutes previous to scheduled arriving of passenger trains and to keep same open until departure of such trains, whether on time or not.  
 26969. Feb. 4.—Amending order 21167, Jan. 5, 1914, re Bell Telephone Co.'s tariffs.  
 26970. Feb. 6.—Authorizing G.T.R. to build track and siding, across diverted road allowance between Lots 30 and 31, Con. 6, Essa Tp., Ont., and connect with C.P.R. for interswitching, at Utopia.  
 26971. Feb. 9.—Relieving Toronto, Hamilton & Buffalo Ry. from providing further protection at Canboro Road, second crossing west of Fenwick station, Ont.  
 26972. Feb. 9.—Ordering Grand Trunk Pacific Ry. not to exceed 12 miles an hour on curves, with its trains from Lobstock Jct., to Chip Lake, Alta.  
 26973. Feb. 12.—Relieving C.P.R. from providing further protection at Wharf Road, Sand Point.  
 26974. Feb. 12.—Amending order 26939, Jan. 28, re charges for telephone interchange calls between North Gower, Kemptville and South Mountain, Ont.  
 26975. Feb. 12.—Approving clearances at coal tipples and works proposed over and adjacent to Grand Trunk Pacific Ry. spur to serve Great West Coal Co., Ltd., in s. e. ¼ 7, Tp. 53, Range 23, west 4th meridian, Alta.  
 26976. Feb. 9.—Approving location and plans of G.T.R. station to replace one at Pinkerton, Ont., destroyed by fire Sept., 1917.  
 26977. Feb. 11.—Amending order 25914, Mar. 2, 1917, re highway crossing of C.P.R. between Secs. 28 and 33, Tp. 43, Range 11, west 4th meridian, Alta.  
 26978. Feb. 12.—Approving plan, etc., of work to be done on Dolbear-Gray drain, under G.T.R. in Cons. 2 and 3, Brooke Tp., Ont.  
 26979. Feb. 12.—Amending order 26908, Jan. 14, re C.P.R. highway crossing at Gwynne, Alta.  
 26980. Feb. 14.—Authorizing C.P.R. to build spur for Stewart Sheaf Loader Co., Winnipeg.  
 26981. Feb. 11.—Authorizing G.T.R. to build spur for A. H. Waite, Oro Tp., Ont.  
 26982. Feb. 11.—Authorizing Saskatchewan Government to make highway crossing over C.P.R. Kelfield Branch, in s. w. ¼ Sec. 34, Tp. 34, Range 19, west 3rd meridian.  
 26983. Feb. 11.—Authorizing G.T.R. to build spur for D. W. Carter, Port Colborne, Ont.  
 26984. Amending order 25910, Mar. 2, 1917, re extension of Newlands St. across C.P.R. at Lougheed, Alta.  
 26985. Feb. 11.—Ordering G.T.R. to restrict operation of its trains over Ottawa Electric Ry. and 6 a.m., daily; except when necessary to make special movements between 6 a.m. and 11 p.m., use crossing, and to protect movement in both directions. Between 11 p.m. and 6 a.m., O.E.R. ductor to stop cars before passing over crossing; and conductor of each car to see tracks are clear, then signal to motorman to proceed.  
 26986 to 26987. Feb. 12.—Approving agreements between Bell Telephone Co. and Plum Holm & Elvida Telephone Co., Leeds County, Ont., Mar. 29, 1917; and West Lake Telephone Co., Algoma District, Ont., Jan. 25.  
 26988. Feb. 11.—Authorizing C.P.R. to build spur for Martin-Senour Co., Vancouver, B.C.  
 26989. Feb. 15.—Authorizing C.P.R. to remove station agent at Pakowki, Alta.  
 26990. Feb. 16.—Ordering Kettle Valley Ry. to

erect standard 1-A station building, as required by general order 54, Jan. 6, 1910, at Manning siding, B.C., by May 1.  
 26991. Feb. 18.—Ordering G.T.R. and C.P.R. to make effective following train service between Ottawa and Montreal: Leaving Ottawa, G.T. 8.15 a.m. C.P. 9.15 a.m.; C.P. 3.30 p.m.; G.T. 4.30 p.m.; leaving Montreal, C.P. 8.15 a.m., G.T. 9.15 a.m.; G.T. 3.30 p.m., C.P. 4.30 p.m.; to commence Feb. 24, until May 1.  
 General order 218. Feb. 11.—Modifying general order 78 (order 14115), July 14, 1911, prescribing

rules and instructions for inspection and testing of locomotive boilers and their appurtenances, to be adopted by railway companies, subject to board's jurisdiction; same to remain in effect until Dec. 31.  
 General order 219. Feb. 9.—Amending general orders 95 and 160 to provide that during existence of Canadian Railway Association for National Defence, and continuance of zone divisions under chairmen, said chairmen, instead of railway companies, shall file copies of all embargo notices, with the board, within time limited by said orders.

## Railway Rolling Stock Notes.

The G.T.R., during January, received 4 snow ploughs from Russell Snow Plough Co.

The G.T.R. has ordered 25 switching locomotives to be built at its Montreal shops.

The Essex Terminal Ry. has ordered 2 mogul (2-6-0) locomotives, 106,000 lb., cylinders 19 x 26 in., from the Montreal Locomotive Works.

Chilian State Railways have ordered from Montreal Locomotive Works, 20 Mikado (2-8-2) locomotives, 195,000 lb., cylinders 22 x 28 in.

Rhodesian Railways, South Africa, have ordered from Montreal Locomotive Works, 9 mountain type locomotives, 172,000 lb., cylinders 22 x 24 in.

The Grand Trunk Pacific Ry. has bought 18 all steel Hart-Otis hopper dump cars from the Birds Hill Sand Co. They have been numbered 393700 to 393717.

The Grand Trunk Pacific Ry. has bought 13 express refrigerator cars from Federal Refrigerator Despatch Co. They have been numbered 6050 to 6062.

Canadian Government Railways have received 20 mikado locomotives from Canadian Locomotive Co., and some of them have been loaned to the G.T.R.

Canadian Government Railways have ordered 14 sleeping cars and 7 dining cars from the Pullman Co., to be delivered in May. The cost will, it is said, be about \$850,000.

The C.P.R., between Jan. 15 and Feb. 15, received 146 steel underframe coal cars and 3 decapod locomotives from its Angus shops; and 2 snow ploughs from its Winnipeg shops.

Canadian Government Railways have ordered 6 six-wheel switching locomotives, 251,000 lb. in working order, for the Intercolonial Division, from Canadian Locomotive Co., for delivery in June.

The Timiskaming & Northern Ontario Ry. expected to receive delivery of the 100 steel frame box cars of 40 tons capacity, ordered from Canadian Car & Foundry Co. in June, 1917, towards the end of February.

Canadian Government Railways have ordered 4 ten-wheel locomotives, 162,000 lb. in working order with tender, 3½ ft. gauge, for the Prince Edward Island Division, from Canadian Locomotive Co., for delivery in June.

South African Railways have ordered, from Montreal Locomotive Works, 8 Mallet locomotives, 194,000 lb., cylinders 16½ and 26 x 24 in.; 10 mountain type locomotives, 200,000 lb., cylinders 22 x 28 in.; and 20 mountain type locomotives, 195,000 lb., cylinders 22 x 26 in.

The Minister of Railways has under consideration the ordering of a large amount of additional rolling stock for Canadian Government Railways and for the Canadian Northern, and as well possibly as soon to be rented to other railways which are short of equipment. The orders of locomotives, passenger and

freight cars will probably aggregate about \$7,000,000 or more.

Contracts for rolling stock placed on this continent by Russian representatives, have, it is reported, been suspended indefinitely, but that there is little danger of their being actually cancelled, the amount involved being virtually guaranteed. The Russian situation seems to be changing almost daily, but it scarcely seems probable under existing circumstances, that any of the Russian rolling stock built on the American continent, and remaining undelivered, will be shipped.

Following are details of the 4 narrow gauge 10-wheel locomotives, which Canadian Government Railways have ordered from Canadian Locomotive Co., for the Prince Edward Island Ry.:

Gauge	3½ ft.
Weight on drivers	74,000 lb.
Weight, total	95,000 lb.
Wheel base of engine, rigid	11 ft. 1 in.
Wheel base of engine, total	21 ft. 3 in.
Wheel base, engine and tender	43 ft. 9 in.
Heating surface, firebox	94.5 sq. ft.
Heating surface, tubes	1,054 sq. ft.
Heating surface, total	1,148.5 sq. ft.
Driving wheels, diar.	57 in. over tire
Driving wheel centres	cast steel
Driving journals	7 by 7 in.
Cylinders, diar. and stroke	16½ by 22 in.
Boiler, type	extended wagon top
Boiler pressure	175 lb.
Tubes, no. and diar.	184—1¾ in.
Tubes, length	12½ ft.
Brakes	Westinghouse American Superheater
Superheater	Locomotive Superheater Co., Schmidt Type A.
Valve gear	Walschaert
Weight of tender loaded	69,700 lb.
Capacity, water	3,000 imp. gall.
Capacity, coal	4 tons
Truck, type	4 wheel
Truck wheel, diar.	31 in.
Wheel, type	Steel centre, steel tired
Journal, diar. and length	4 by 6¼ in.
Brake beam	Simplex

Following are chief details of the 6 six-wheel switching locomotives which Canadian Government Railways have ordered from Canadian Locomotive Co., for delivery by June:

Weight, total	154,400 lb.
Wheel base	12 ft.
Wheel base, engine and tender	41 ft. 1½ in.
Heating surface, firebox	132 sq. ft.
Heating surface, tubes	1,391 sq. ft.
Heating surface, total	1,523 sq. ft.
Driving wheels, diar.	51 in.
Driving wheel centres	cast iron
Driving journals	8½ by 11 in.
Cylinders, diar. and stroke	21 by 26 in.
Boilers, type	Radial stay, straight top
Boiler pressure	180 lb.
Tubes, no. and diar.	158—2 in.; 21—5¾ in.
Tubes, length	12 ft. 5 in.
Prakes	Westinghouse American Superheater
Superheater	Locomotive Superheater Co., Schmidt type A.
Reversing gear	Casey-Cavin
Valve gear	Walschaert
Weight of tender loaded	96,600 lb.
Tank capacity	3,800 gall.
Tank, type	sloping back
Coal capacity	6 tons
Truck type	Arch bar
Truck wheel, diar.	34 in.
Wheel, type	Steel centre, steel tired
Journals, length and diar.	8 by 4¾ in.
Brake beam	Simplex

**Locomotive Men for France.**—The U. S. War Department has asked the Brotherhood of Locomotive Engineers to furnish 1,000 locomotive men, and 50 men for tank services, in France.

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

**Calgary & South Western Ry.**—The Alberta Legislature is being asked to incorporate a company with this title to build a railway from Calgary, southwesterly to the coal fields on Fish Creek, 70 miles. Clarke, Carson, McLeod & Co., Calgary, are solicitors for applicants.

**Capilano Timber Co.**—Since starting work in May, 1917, on its logging railway from east of the Vancouver creosoting works, North Vancouver, B.C., grading has been completed for 7.1 miles to a point opposite the Vancouver city waterworks intake, and rails have been laid from the water front northerly for about three miles. The line is carried across the Capilano River by a 200 ft. Howe truss span. It is proposed to extend this line, as the company's logging operations develop, to a point with 5 miles of Howe Sound, 6 miles from Britannia and 13 miles from Squamish, on a gradient not exceeding 1½%. A suggestion was made in Vancouver recently that this line could be taken over by the Provincial Government, standardized and made part of the Pacific Great Eastern Ry. between North Vancouver and Squamish. G. C. Johnston is General Manager of the C.T. Co. (Sept., 1917, pg. 350.)

**Central Canada Ry.**—A Peace River Crossing, Alta., dispatch, Feb. 18, states that S. C. Hill, who is in charge of the construction of the bridge across the Peace River at that point, expects to have pier 8, the last of the deep water piers, completed by the end of March. At the beginning of the winter all the piers, pedestals and abutments had been completed, with the exception of piers 6, 7 and 8, the three deep water piers, for which the underwater parts had been built. Pier 6 is completed, and pier 7 is practically finished, while all the preparatory work is ready for pier 8. Each of these piers is located in 40 ft. of water, and is carried to rock foundations, while they rise to 33 ft. above low water. All the work done on the piers has been done within frame buildings erected on the ice over the site of the pier. These buildings are kept heated day and night so that all the concrete mixing and other work can be carried on under favorable conditions. The piers are protected from the pressure of ice by breakwaters on the upper side, each of which requires 500 tons of concrete in addition to large quantities of rock. It is expected that the steel work on the bridge will be erected during the summer. (Jan., pg. 12.)

**Edmonton, Dunvegan & British Columbia Ry.**—The Dominion Parliament is being asked to authorize the extension of the railway from Tp. 71, Range 7, west of the 6th Meridian, northwesterly to the boundary line between Alberta and British Columbia, passing the southerly end of Swan Lake, 65 miles.

**Grand Trunk Pacific Ry.**—Press reports from Prince Rupert, B.C., state that the company proposes to start construction on a brick passenger station there, to cost \$250,000. It is also proposed to build a locomotive house and machine shop at Cameron Cove, together with a wharf 1,000 ft. long, as a part of its Pacific terminal development. W. P. Hinton, Vice President and General Manager, has just returned to Winnipeg from a trip of inspection over the line. (Feb., pg. 57.)

**Great Northern Ry.**—The Vancouver, Victoria & Eastern Ry. & Navigation Co. is asking the Dominion Parliament to

ratify an agreement between the company and the Northern Pacific Ry. respecting the equal joint possession and use of the company's tracks from the International Boundary at Sumas, to Vancouver, B.C.

Plans for the construction of a large shed on the company's dock at Vancouver, have been deposited with the city's building inspector. The new shed will be 200 x 100 ft., and is estimated to cost \$30,000. (Feb., pg. 57.)

**Greater Winnipeg Water District Ry.**—A press report states that it is proposed to build a spur on Dawson Road, St. Boniface, and some additional siding accommodation during this year. (Jan., pg. 12.)

**Hudson Bay Ry.**—It was reported in Winnipeg, Feb. 21, that the Canadian Railway Association for National Defence had recommended the taking up of 300 miles of rails on this railway for use on other Canadian lines. (Jan., pg. 12.)

**Intercolonial Ry.**—Tenders are under consideration for the building of a frame mail, baggage and express building at Sackville, N.B., and for a frame station at St. Octave, Que.

A press report states that it is proposed to extend and improve the Richmond yards, Halifax, N.S., at an estimated cost of \$6,000. We are officially advised that this not the case.

**Kettle Valley Ry.**—A press report states that the contract for the building of the branch line from Princeton to the Copper Mountain Mines, B.C., will not be let for some time yet. The last date for receiving tenders was originally Jan. 21, but the absence in the east of J. J. Warren, President, is said to have delayed matters. (Feb., pg. 57.)

**Kettle Valley Ry.**—The Dominion Parliament is being asked to extend the time for the building of the following lines:—From near Summer Creek, on One Mile Creek, to the Copper Mountain and Voight Mining Camps, 15 miles; from Princeton; from Vernon, southerly or southeasterly, by Kelowna to Princeton; from near Tulameen, westerly along the Tulameen River, for 50 miles; from near Princeton to the International Boundary, at Osooyoos Lake; from Otter Summit, to the Aspengrove district, 30 miles. Authority is also asked to issue bonds for \$70,000 a mile in respect of the first of the above mentioned lines. (Feb., pg. 57.)

**Magdalen River Ry.**—The Quebec Legislature has extended the time for the building of this projected railway along the Magdalen River valley to Little Falls, and authorizing the building from that point southerly and westerly to connect with the Atlantic, Quebec and Western Ry., and the Canada and Gulf Terminal Ry. at Gaspé, or any other point on either or both railways, also the power if the railway is built to Gaspé, to build wharves, docks and other deep water terminals. F. Murphy, New Carlisle, Que., is Secretary of the company. (Jan., pg. 12.)

**Pacific Great Eastern Ry.**—A proposition is being considered by the business men of North Vancouver for the electrification of the section of the line from North Vancouver to Whytecliffe, 13 miles. As soon as the details have been completed locally, the matter will be taken up with the Provincial Government. No grading has been done between Whytecliffe and Squamish, the ocean terminal.

The line has been completed from Squamish to Clinton, 167.7 miles, and a train service was in operation until the severe weather at the beginning of January. One train was run as far as D'Arcy, mileage 86, Jan. 26, but subsequently all traffic was closed down, and operations of every kind suspended. Grading has been nearly completed through to Prince George, some track has been laid beyond Clinton, and some bridge work done, but everything in the way of operation and construction was stopped by B.C. Government orders, Feb. 13.

It is held that upon a settlement of matters with the contractors, and the assurance of a Dominion subsidy, the B.C. Government will complete the line to Prince George, and provide for its operation. The question of the projected extension from Prince George to meet the Edmonton, Dunvegan and British Columbia Ry. in the Peace River Valley will, it is said, also be taken up. (Feb., pg. 57.)

**Quebec & Atlantic Ry.**—The Quebec Legislature has incorporated a company with this title to build a railway from Quebec to Chicoutimi, thence to the provincial boundary near Cape St. Charles, with branch lines northerly and southerly from the main line, and to make connection in Quebec City with the National Transcontinental Ry. L. Caron, Quebec, is interested in the company. (Dec., 1917, pg., 471.)

**Rouge River Ry.**—The Quebec Legislature has incorporated a company with this title to build a railway from near Grenville, Que., northerly along the valley of the Rouge River, and on to the National Transcontinental Ry.

**Toronto, Hamilton & Buffalo Ry.**—The Hamilton, Ont., City Council has approved the draft lease to the company of a part of the Mountain Park property for yard extension purposes. The rental is fixed at \$933 a year, with an annual payment of \$300 for damage to trees. The company and the Board of Railway Commissioners have yet to approve of the lease.

The Dominion Parliament is being asked to authorize the company to build an extension of its present line from its northwesterly terminus at Hamilton to Toronto, and to authorize it to enter into any agreements with the C.P.R. and the G.T.R. for a term exceeding 21 years, authorized by sec. 364 of the Railway Act. This section covers agreements for operation, right of way and other matters connected with the operation of a railway, all of which to be made subject to the Board of Railway Commissioners' approval.

**Whitby, Ont.**—We are advised that the Dominion Military Hospitals Commission is building, with its own material and labor, some railway tracks on the Provincial Asylum premises at Whitby, Ont., over which it is intended to operate a small locomotive and passenger car for carrying invalided soldiers between the hospital and the G.T.R. main line station. The commission will use a portion of the G.T.R. freight siding which at present serves the hospital buildings.

The Military Hospitals Commission, we are officially advised, has entered into an agreement with the G.T.R. under which the company permits the commission to operate a donkey locomotive and street car over its siding from the Whitby Jct. station, on the main line, to the Military Convalescent Hospital, 0.75 of a mile.

The only track laid by the commission is a siding at the north end, on to which the locomotive and car will be run to leave the G.T.R. siding free for switching purposes. At the south end of the siding a small siding has been laid, running for a few hundred yards over to the hospital. This action was taken owing to the impassable condition of the roads in the locality during the late autumn, winter and early spring, making it practically impossible for motor vehicles to transport invalid soldiers to and from the station. (Feb., pg. 77.)

### Freight and Passenger Traffic Notes.

The Prince Edward Island Ry. cut off four trains Feb. 4 owing to shortage of locomotive power.

The C.P.R. ticket office in Ottawa, it is said, will be moved, May 1, from the corner of Spark and Elgin Sts., to 85 Spark St.

The C.P.R. steamship from Vancouver, B.C., for Seattle, Wash., started on Feb. 22 to leave Vancouver at 11 p.m. instead of 11.30 p.m.

The C.P.R. has started operating a daily train service on its Okanagan Valley line from Sicamore, B.C., in place of the tri-weekly service operated hitherto.

The White Pass & Yukon Ry., for the first time in its history, had to use a rotary snow plough on its White Horse-Cariboo section in January, according to a Vancouver report.

Railway companies generally are urging shippers to load cars to their full capacity and to load and unload them as speedily as possible, for the purpose of conserving rolling stock, and expediting traffic.

The Salisbury & Albert Ry.'s first train from Salisbury through to Albert, N.B., for nearly six weeks, was run Feb. 8, the section from Salisbury to Hillsboro having been opened about two weeks previously.

The C.P.R., it is reported, does not intend to run any special trains out of Winnipeg to the beaches on Lake Winnipeg next summer. An adequate schedule of regular trains will be provided to take care of the traffic.

The Canadian Government Railways car ferry between Borden, P.E.I., and Cape Tormentine, N.B., during the first three months of its operation, carried 885 loaded cars from the mainland to the island; 780 loaded and 175 empty cars from the island to the mainland.

A Winnipeg press report, Feb. 13, states that in the curtailment of passenger traffic throughout the west, under the direction of the Canadian Railway Association for National Defence, there will be no reduction in the service on branch lines where there is only one train a day operated.

The Board of Railway Commissioners has ordered the following passenger train service between Montreal and Ottawa from Feb. 24 to May 1:—Leaving Montreal, C.P.R., 8.15 a.m.; G.T.R., 9.15 a.m.; G.T.R., 3.30 p.m., C.P.R., 4.30 p.m. Leaving Ottawa, G.T.R., 8.15 a.m.; C.P.R., 9.15 a.m.; C.P.R., 3.30 p.m.; G.T.R., 4.30 p.m.

The Alberta & Great Waterways Ry. put on a train service from Edmonton to the rail head 17 miles from McMurray, Alta., Jan. 28. The train runs over the Edmonton, Dunvegan & British Columbia Ry. to Carbondale, 14 miles, thence over its own tracks. The regular train service has hitherto been operated as far as Lac

la Biche, mileage 113 from Carbondale; the new terminus is at mileage 274.

Upon compliance with the Immigration Department's requirements, persons returning to Canada from temporary stays in the U.S. may obtain refund of head tax, in cases where it was collected from them and held on deposit during the time they were visiting in the U.S. The certificates must be returned to the U.S. immigration officer issuing them, who will authorize the payment of the tax deposited with the agent at the point where the ticket was issued.

The Great Northern Ry. is applying to the Board of Railway Commissioners to authorize the discontinuance of its train service between Cloverdale, Haselmere and Melrose, B.C. Appended to the application is a statement showing that the cost of operating the 7.8 miles between these points was \$305.58, while the receipts were \$120. This is a piece of line connecting the New Westminster Southern Ry., with its branch to Port Junction; and the Canadian Northern Pacific Ry. near Rosedale, and operated as part of the Vancouver, Victoria & Eastern Ry.

**Dominion Government Purchases.**—An order in council passed at Ottawa, Feb. 6, provides that the order in council of May 8, 1915, establishing the War Purchasing Commission, and the orders amending the same, shall apply to all purchases to be made by the different government departments, of any materials, supplies, stores, goods or articles of any kind. The War Purchasing Commission is directed to take into consideration, among other things, the existing arrangements for the purchase of supplies for the Canadian Government Railways, and any other purchases in respect to which it may be difficult, without detriment to the public interest, to enforce the order. Pending such consideration and report, the commission may, in respect of such purchases, modify the order to such an extent as may be deemed necessary or desirable in the public interest.

**Heating of Waiting Rooms.**—A circular issued by the Board of Railway Commissioners, on Feb. 11, requires railway companies to show cause, within 30 days of the receipt of the circular, why an order should not issue, requiring all companies, at agency stations where there is no night staff, to open station waiting rooms and, when necessary, provide heat and light, at least 30 minutes prior to the scheduled arriving time of all passenger trains, and to keep the waiting rooms open until the departure thereof, irrespective of whether the trains are on schedule time or not.

**Flagging Rules for Impassable Track.**—The Board of Railway Commissioners passed general order 216, Jan. 24, amending general order 188, of April 23, 1917, prescribing regulations for the uniform maintenance of way flagging rules for impassable track, by adding after the words "Frequent service shall mean 9 or more trains per diem," near the end of the order, the words "Fast train service shall mean a service at a speed of 35 miles or more per hour." General order 188 was published in full in Canadian Railway and Marine World for July, 1917, pg. 277.

**Right of Way Taxation.**—Judgment was given, on Feb. 4, in a British Columbia court, declaring that the land secured in the cities of Vernon and Armstrong, B.C., for right of way for a C.N.R. branch through those places was not taxable, but that all other land purchased by the company was taxable.

### A Loan Company's Unfortunate Railway Investment.

The Dominion Permanent Loan Co., Toronto, is being wound up under an order of an Ontario court. The company has been in existence for a number of years, F. M. Holland being its General Manager. It came forward in the railway financing field in 1901, at which time the late Hon. J. J. Stratton, M.L.A., of Peterborough, was its President, and the late T. P. Coffee, a Toronto lawyer, was largely interested. At that time Tracy W. Holland became interested in the charter of the Spokane & British Columbia Ry., incorporated in the State of Washington, and the D.P.L. Co. was the source from which it was financed. The S. & B.C. Ry., in the name of J. R. Stratton, T. P. Coffee, T. W. Holland and others, secured the incorporation of the Kettle Valley Ry. for the purpose of building the Canadian end of its projected railway. This line was surveyed from Grand Forks, southerly to the International Boundary, about three miles, which, with the extension to Republic in Washington, was opened for traffic in 1903. The company subsequently acquired, after considerable litigation with the Great Northern Ry. over some Indian reserve property, a right of way from Republic to Spokane, but has never done any construction. The company secured power from the Dominion Parliament for the building of lines east and west and north from Grand Forks, but nothing was done in the way of construction until the C.P.R. became interested, and took over practically the whole of the company's Canadian interests.

The same interests as were associated with the K.V. Ry. subsequently became interested in the old Musquodoboit Valley Ry. in Nova Scotia, and projected in connection with it the Halifax North Eastern Ry., together with a bridge across the strait to Cape Breton Island. After futile attempts to float bonds in England, the project was abandoned, and the line has been built by the Dominion Government as an Intercolonial Ry. branch.

The Dominion Permanent Loan Co.'s assets are reported to consist largely of the 30 miles of the Spokane & B.C. Ry., in the State of Washington, with the right of way from Republic to Spokane; some rolling stock; an interest in a land company, and some claims against the C.P.R. in respect of the Kettle Valley Ry. The S. & B.C. Ry. was carried by the loan company as an asset valued at \$4,000,000.

**Shipment of Silver Spruce Prohibited.** Under the War Measures Act, 1914, the Dominion Government has made regulations by which no railway or other transportation company shall accept any shipment of silver spruce, unless the bill of lading is accompanied by a certificate that such shipment contains no silver spruce suitable for the manufacturing of aeroplanes. This regulation applies to all silver spruce offered for shipment to any consignee except the Imperial Munitions Board. The penalty for infraction of the regulation is \$500.

**Vancouver Transportation Club.**—Following are the officers for the current year:—President, R. Greenhalgh; First Vice President, E. Farr; Second Vice President, C. H. Daniels; Directors: H. S. Durkee, J. A. Jewett, A. B. Coulet, R. Hay, R. M. McLean, W. G. Connolly, E. G. Gordon. The honorary officers are: President, R. Marpole; First Vice President, D. E. Brown; Second Vice President, H. Swinford.

# Mainly About Railway People Throughout Canada.

**Lady Mann** has taken a house on Westmount Boulevard, Montreal, and will spend some time there with her son.

**J. E. Quick**, General Baggage Agent, G.T.R., will it is said, retire on June 30 next under the company's pension rules.

**C. N. Monsarrat**, Chairman, Quebec Bridge Commission, has been elected a director of Canada Foundries & Forgings, Ltd., Welland, Ont.

**J. H. D. Munson**, K.C., of Winnipeg, for many years Chief Counsel there for the Canadian Northern Ry. and the Winnipeg Electric Ry., died on Feb. 8, aged 59.

**L. Mulkern**, Division Freight Agent, C.P.R., St. John, N.B., was in London, Ont., Feb. 13, to attend the funeral of his father, M. Mulkern, who died there aged 84.

**Sir John Wolfe Barry**, who made the plans for the projected bridge across the second narrows of Burrard Inlet, Vancouver, B.C., died in London, Eng., recently, aged 82.

**G. H. Ham**, of the C.P.R. headquarters staff, Montreal, was one of the principal speakers at the recent annual meeting of the Texas Passenger and Ticket Agents, at Dallas, Texas.

**E. O. Parent**, G.T.R. agent at Pembroke, Ont., is reported to have been given a permanent pass on all the company's eastern lines, in recognition of 15 years efficient service.

**W. J. Harmer**, formerly C.P.R. telegraph operator at Banff, Alta., and latterly Deputy Minister of Railways and Telephones for Alberta, has been appointed to the Dominion Senate.

**F. L. McPherson**, District Engineer, British Columbia Public Works Department, Nelson, is reported to have been appointed Assistant to the Provincial Engineer of Public Works, Victoria.

**D. T. Main**, Works Manager, C.P.R., Winnipeg, has been elected a member of the Canadian Society of Civil Engineers, and not an associate member, as incorrectly stated in our February issue.

**Norman L. Hardy** is reported to have been appointed acting Deputy Minister of Railways and Telephones for Saskatchewan, ex-Deputy Minister W. J. Harmer having been appointed a Senator.

**J. E. Proctor**, District Passenger Agent, C.P.R., Regina, Sask., was presented with some silverware by the local staff, Jan. 30, on leaving for Calgary, Alta., where he has been appointed to a similar position.

**E. O. Grundy**, who retired recently from the position of General Freight and Passenger Agent, Quebec Central Ry., Sherbrooke, Que., and who has been seriously ill, was reported out of danger early in February.

**John Molloy**, of Winnipeg, who died in St. Boniface Hospital, Feb. 18, aged 81, went to Winnipeg in 1872, and was on C.P.R. construction service for some time, afterwards engaging in Dominion land surveying.

**Mrs. Anna S. Lund Hertzberg**, widow of the late Col. P. H. Hertzberg, Royal Engineers, and mother of A. L. Hertzberg, M.Can.Soc.C.E., Engineer, Ontario District, C.P.R., Toronto, died at Christiania, Norway, recently.

**F. P. Brady**, General Manager, Western Lines, Canadian Government Railways, who spent a short time in Victoria Hospital, Montreal, at the end of January,

for treatment, returned to duty at Winnipeg early in February.

**J. P. McNaughton**, General Sales Manager, Dominion Iron & Steel Co., Montreal, was married in London, Eng., recently, to Nursing Sister Lida Duff, C.A.M.C., daughter of the late John Duff and Mrs. Duff, of Sydney, N.S.

**W. P. Hinton**, Vice-President and General Manager, Grand Trunk Pacific Ry., and C. H. Nicholson, Manager Grand Trunk Pacific Coast Steamship Service, were the principal guests at a luncheon given by the Transportation Club of Vancouver, B.C., Feb. 8.

**C. C. Rosenberg**, Secretary of the Railway Signal Association since 1906, died at Bethlehem, Pa., Feb. 2, aged 63. He entered Lehigh Valley Rd. service in 1875, and held various positions, including those of Supervisor of Bridges and Buildings, and Signal Engineer.

**Jas. A. Wilson**, travelling auditor, Canadian Northern Ry., while boarding a train at Flanders, Ont., recently, slipped and fell beneath the wheels, being killed instantly. His home was in Winnipeg, where he is survived by his widow, four sons and a daughter.

**Mr. Justice R. E. Harris**, of the Nova Scotia Supreme Court, formerly President, Nova Scotia Steel & Coal Co., and now acting as one of the arbitrators of the value of Canadian Northern Ry. common stock, has been appointed Chief Justice of Nova Scotia.

**J. J. Beck**, Superintendent, Union Station, Toronto, who has been in railway service for 46 years, is stated in press reports as likely to retire in the near future. It is probable, however, that he will remain in office at least until the completion of the new union station.

**W. R. Smith**, M.Can.Soc.C.E., Chief Engineer and General Manager, Edmonton, Dunvegan & British Columbia Ry., Alberta & Great Waterways Ry. and Central Canada Ry., has returned to Edmonton, Alta., after a successful operation for appendicitis at Rochester, Minn.

**S. Newmarch**, who died suddenly at Beaconsfield, B.C., Feb. 3, was born in Montreal, and was engaged for several years in railway construction in the west. He acted as superintendent of a party of construction men sent from Canada in connection with the construction of a railway at Kola Bay, Russia.

**L. K. Sillcox**, who has been appointed Master Car Builder, Chicago, Milwaukee & St. Paul Ry., Milwaukee, Wis., was, from 1909 to 1912, shop engineer, Canadian Car & Foundry Co., Montreal; 1912 to 1916, Mechanical Engineer, Canadian Northern Ry., Toronto, and since 1916, Mechanical Engineer in charge of car work, Illinois Central Rd., Chicago, Ill.

**John Try Harwood Ferguson**, Purchasing Agent, C.P.R., Vancouver, B.C., died at Calgary, Alta., Jan. 25, from tumor on the brain. He was born in Sept., 1880, and entered the C.P.R. Purchasing Department at Montreal, in July, 1896, since when he was, to Jan. 1, 1913, junior clerk; Jan. 1 to Nov. 23, 1913, chief clerk; Nov. 23, 1913, to Mar. 1, 1917, Assistant Purchasing Agent, Calgary, Alta.; Mar. 1 to June 1, 1917, Assistant Purchasing Agent, Vancouver, B.C., and from that date, Purchasing Agent there.

**G. D. Wadsworth**, who was appointed General Freight and Passenger Agent, Quebec Central Ry., Sherbrooke, Que., re-

cently, was born there, July 15, 1884, and entered Q.C.R. service in Nov., 1899, since when he has been, to Nov., 1900, messenger boy; Nov., 1900, to Oct., 1904, clerk in car record office, and stenographer to Superintendent; Oct., 1904, to Jan., 1906, clerk and stenographer, General Freight and Passenger Department; Jan., 1906, to Mar., 1916, chief clerk, same department; Mar., 1916, to Jan., 1918, Assistant General Freight and Passenger Agent, all at Sherbrooke, Que.

**Walter U. Appleton**, who has been appointed Superintendent of Motive Power, Canadian Government Railways, Moncton, N.B., was born there, Jan. 29, 1878, and entered Intercolonial Ry. service, Oct. 13, 1890, since when he has been, to Sept., 1895, junior clerk; Sept., 1895, to May, 1899, machinist apprentice; 1899 to 1909, clerk; 1900 to 1901, machinist; 1903 to 1909, chief clerk to Superintendent of Motive Power; 1909 to 1913, Assistant to Superintendent of Motive Power; 1913 to Feb., 1918, General Master Mechanic, I.R.C., and latterly Canadian Government Railways, all at Moncton, N.B.

**Sir William D. Reid**, a director, and formerly President, Reid Newfoundland Co., who was arrested at St. John's, Nfld., recently, on a charge of criminally libelling a member of the Colonial Government, appeared before the local magistrate there, Feb. 18, when the case was dismissed, the magistrate being reported as stating that the complainant failed to produce evidence of others or himself to deny the inuendo complained of, that he was in collusion for the purpose of promoting confederation, or that the expenses of the trip to Canada and the U. S., were defrayed by the Reid Newfoundland Co.

**G. R. Joughins**, Superintendent Rolling Stock, Canadian Government Railways, Moncton, N.B., who, as announced in our last issue, has retired under the pension rules, was presented with a fitted club bag, a gold watch chain, and an address by the railways shops' staffs, Jan. 26. He was born at Dublin, Ireland, May 17, 1885, and entered Canadian Government Railways service, May 1, 1898, since when he has been, to Aug. 31, 1901, Mechanical Superintendent; Apr. 15, 1904 to Oct. 1, 1915, Superintendent of Motive Power; Oct. 1, 1915, to his retirement, Superintendent Rolling Stock, all at Moncton, N.B.

**John Gray**, who died at Toronto, Jan. 30, from cancer of the stomach, was born at River Beaudette, Que., Sept. 28, 1865, and entered G.T.R. service, Oct., 1880, since when he was to 1883, assistant at Parkhill, Ont.; 1883 to 1889, operator and ticket clerk at various points; 1889 to Jan., 1913, agent at Milverton, Southampton, Hespeler, Ingersoll, St. Catharines, Ont., Buffalo, N.Y., and Hamilton, Ont., successively; from Jan. to Feb. 1913, General Agent, Toronto, and from Feb. 13 to the time of his death, Freight Agent there. The funeral at Toronto, Feb. 1, was attended by a large number of G.T.R. and other transportation officials of Toronto and district.

**Edward Fitzgerald**, who was made a Commander of the Order of the British Empire, recently, was born at Ottawa, Nov. 9, 1874, and educated at the Model School there. He entered C.P.R. service in July, 1892, as junior clerk in the Purchasing Department, and was appointed Commissary Agent Oct., 1898; Assistant to Purchasing Agent, May, 1905; Assist-

ant General Purchasing Agent, Mar., 1910; and assigned to British Government service as officer in charge of the War Office Purchasing Agency in Canada, May, 1915; Purchasing Agent, Imperial Munitions Board, Dec., 1915, and Assistant to Chairman, Imperial Munitions Board, June, 1916.

**Ejnar L. Landorph**, who has been appointed Resident Engineer, C.P.R., Kenora, Ont., was born at Copenhagen, Denmark, Sept. 9, 1888, and during the summer of 1910 acted as assistant teacher of surveying, etc., at the University of Copenhagen. In Jan., 1911, he graduated from that university as a civil engineer. He entered C.P.R. service June 24, 1912, as draftsman at Winnipeg, and from Nov. 7, 1912, to Apr. 30, 1913, was transitman, Brandon, Man.; May 1, 1913, to Nov., 1915, Resident Engineer, Brandon, Man.; Nov., 1915, to Apr. 1, 1916, Resident Engineer, Kenora, Ont.; Apr. 1, 1916, to Feb. 1, 1918, Engineer of Water Service, Winnipeg.

**John Leslie**, Comptroller, C.P.R., Montreal, who has been placed in entire charge of the accounting department, was born at Toronto, and entered railway service with the Toronto, Grey & Bruce Ry., as assistant cashier, and was subsequently cashier, accountant and auditor, successively. On the absorption of the railway by the C.P.R. in 1893, he was placed in charge of the accounts on the Ontario lines, at Toronto, until March, 1895, and until 1897 was at Montreal. From 1897 to Oct. 2, 1899, he was chief clerk to Auditor; Oct. 2, 1899, to Dec. 1, 1908, Auditor of Disbursements; Dec. 1, 1908, to Oct. 1, 1914, Assistant Comptroller, at which latter date he was appointed Comptroller.

**J. W. N. Johnstone**, who has resigned the position of General Passenger Agent, Reid Newfoundland Co., St. John's, Nfld., was born at Campobello, N.B., Oct. 4, 1878, and entered transportation service in the General Freight Department, C.P.R., St. John, N.B., serving in various capacities in that department from junior clerk to assistant to the chief clerk, until Feb., 1902, when he entered Reid Newfoundland Co.'s service as chief clerk to the General Freight Agent, St. John's, Nfld., was appointed General Passenger Agent, Aug. 21, 1906, and for a short time at the end of 1917, was also Assistant to the President (Sir William D. Reid). It is reported that he has been appointed private secretary to Sir William Reid, who has not been President since the last annual meeting.

**George Edward Smart**, who has been appointed Superintendent of Car Department, Canadian Government Railways, Moncton, N.B., was born at Edinburgh, Scotland, Dec. 23, 1873. From 1892 to 1897 he was in various positions in car shop, G.T.R., Montreal; 1897 to 1904, car inspector, G.T.R., Montreal; 1904 to 1906, General Inspector Heating and Lighting, Eastern Lines, C.P.R., Montreal; 1906 to 1909, General Car Inspector, Eastern Lines, C.P.R., Montreal; 1909 to Oct. 1, 1913, Divisional Car Foreman, in charge of passenger and freight car work, Eastern Division, C.P.R., Montreal; Oct. 1, 1913, to Feb., 1918, Master Car Builder, Intercolonial Ry., and latterly Canadian Government Railways, Moncton, N.B.

**John Alexander Dunbar Vickers**, Vice President and General Manager, Western Lines, American Express Co., Chicago, Ill., died there Feb. 16, after a long illness. He was born at Toronto, May 22, 1858, and educated at Upper Canada College. He entered express service at To-

ronto in 1879, and was, to 1889, Superintendent, Vickers Express, and Vickers Express Co., Ltd., of which his father was the founder; 1889 to 1891, Superintendent, Canadian Lines, American Ex. Co., Buffalo, N.Y.; 1891 to 1914, Superintendent, and afterwards General Manager, National Ex. Co., Chicago, Ill.; 1914 to the date of his death, Vice President and General Manager, Western Lines, American Ex. Co., Chicago, Ill. The funeral took place at Toronto, Feb. 20, and was attended by a number of express and transportation officials. V. G. R. Vickers, Vice President, The Holden Co., Ltd., Montreal, and formerly General Superintendent, Foreign and Money Order Department, Dominion Ex. Co., is a brother.

**Ralph Budd**, who has been appointed Executive Vice President, Great Northern Ry., St. Paul, Minn., was born at Waterloo, Ia., Aug. 20, 1877, and entered railway service in 1899, since when he has been, to 1902, consecutively draftsman, rodman, levelman, instrument man and Assistant Engineer, Chicago Great Western Ry.; 1902 to 1905, successively Roadmaster, General Superintendent of Construction, and Division Engineer, St. Louis Division, same road; 1905, Division Engineer, same road, Chicago, Ill.; 1906 to 1909, Chief Engineer, Panama Rd., Colon, Panama; 1909 to 1910, Chief Engineer, Oregon Trunk Ry.; 1910 to May 1, 1914, also Chief Engineer, Spokane, Portland & Seattle Ry.; 1911 to Jan. 1, 1913, also Chief Engineer, Spokane & Inland Empire Ry., and Spokane Traction Co.; Jan. 1 to Feb. 15, 1913, Assistant to President, Great Northern Ry., St. Paul, Minn.; Feb. 15, 1913, to May 1, 1914, Chief Engineer, same road; May 1, 1914, to his present appointment, Assistant to President, same road.

**William P. Kenney**, who has been appointed President, Great Northern Ry., St. Paul, Minn., was born at Watertown, Wis., Jan. 10, 1870, and entered railway service in Nov., 1888, since when he has been, to 1889, telegraph operator, Chicago Great Western Ry.; 1889 to Sept. 1, 1890, yard clerk and clerk in local freight office, same road, Minneapolis, Minn.; Sept. 1, 1890, to May, 1892, clerk and stenographer to General Agent, same road, Minneapolis, Minn.; 1892 to 1899, Contracting Agent, same road; 1899, Contracting Agent, Empire Line; 1900 to Sept. 15, 1902, chief clerk, General Freight Department, St. Paul & Duluth Ry., absorbed by the Northern Pacific Ry.; Sept. 15, 1902, to Apr. 1, 1903, chief clerk, General Freight Department, Great Northern Ry.; Apr. 1, 1903, to Jan., 1905, Assistant General Freight Agent, same road; Jan., 1905, to May, 1908, Assistant to Fourth Vice President, same road; May, 1908, to Sept., 1911, Assistant Traffic Manager, same road; Sept., 1911, to Oct., 1912, General Traffic Manager, same road; Oct., 1912, to date of his present appointment, Vice President in charge of traffic.

**Sir Percy Girouard**, K.C.M.G., D.S.O., is the subject of a unique distinction, in the petition of a mass meeting of residents of British East Africa, to the British Government, that he be appointed Military Governor of the Protectorate, with full powers to organize the local efforts for the further prosecution of the war, and especially to provide for the immediate requirements of the armies in Palestine and Mesopotamia. Sir Percy was born in Montreal, and gained railway engineering experience on the C.P.R. staff. He entered the British Army in 1888, and served in all parts of Africa during the several wars there of recent

years, his knowledge of railway work being especially utilized. He was Governor and Commander-in-Chief of the British East Africa Protectorate from 1909 to 1912, when he joined the board of directors of Sir W. G. Armstrong, Whitworth & Co., Elswick, Eng. During the present war, his services were taken advantage of for some time on the continent, but it was considered that there was more to be gained by having him in England, and he returned to his former position.

**A. R. Macgowan**, A.M.Can.Soc.C.E., who has resigned as Superintendent, District 5, Intercolonial Division, Canadian Government Railways, Edmundston, N.B., to enter the Delaware & Hudson Co.'s service at Carbondale, Pa., was presented by the local staff, Feb. 8, with a fitted leather club bag, with a cut glass jewel case and cameo necklace, for Mrs. and Miss Macgowan, respectively. He was born at Moncton, N.B., Jan. 16, 1883, and entered railway service in 1899, since when he has been, to June, 1902, clerk in Accountant and Treasurer's office, Intercolonial Ry., Moncton, N.B., June, 1902, to Mar., 1905, rodman and transit man, I.R.C., Moncton, N.B., Mar., 1905, to Jan., 1906, contractor's engineer, North Maine Seaport Ry., Bangor, Me.; Jan. to Nov., 1906, Resident Engineer, Somerset Ry., Moosehead, Me.; Nov., 1906, to May, 1915, Assistant Engineer, I.R.C., Moncton, N.B.; May, 1915, to Jan., 1916, Division Engineer, I.R.C. & Prince Edward Ry., Moncton, N.B.; Jan. to July, 1916, Principal Assistant Engineer, Canadian Government Railways, Moncton, N.B.; July, 1916, to Feb., 1918, Superintendent, District 5, Intercolonial Division, C.G.R., Edmundston, N.B.

**Temperance Act Infractions.**—John Gossip, a Canadian Northern Ry. forwarding agent at Ottawa, was fined \$304 in the Ottawa Police Court, Feb. 1, for two breaches of the Ontario Temperance Act. The first charge was of shipping by public conveyance a package containing intoxicating liquor addressed other than to the actual consignee, and the second was for having liquor in a public place.

**Trespassing on Railway Tracks.**—A Victoria, B.C., magistrate, on Feb. 6, fined a shipyard employe \$5 for trespassing on the Esquimalt & Nanaimo Ry. in making a short cut to his work. The company desires to prevent walking across, or along, its tracks, with a view to lessening accidents, and the case was brought before the courts as an example.

**Fire Extinguishers on Electric Railway Cars.**—The Board of Railway Commissioners issued a circular Feb. 25 stating it was considering the advisability of requiring electric railways to provide fire extinguishing apparatus on passenger carrying cars, including therein, combination cars, if any, and directing electric railway companies to show cause, within 30 days of the receipt of the circular, why such requirements should not be made effective.

**Toronto Ry. Track Assessment.**—The Ontario Railway and Municipal Board on Feb. 20 dismissed the company's appeal against the city's assessment of \$118,950 on its poles, ties and rails. It was contended for the company that this was the first time that the city had assessed the structures and fixtures, and that the company could only be assessed for the rails on the streets. For the city, it was urged that there was a right to levy the assessment, the fact that it had not previously been levied being no reason why it should not have been.

## Canadian Pacific Railway Western Lines, Construction, Betterments, Etc.

Grant Hall, Vice President and General Manager, Western Lines, C.P.R., was in Montreal, recently, arranging for the appropriations for work for 1918. We are officially advised that the following are the principal works to be undertaken:—

Approximately 500 miles of track will be reballasted and a large amount of ditching, cleaning cuts, riprapping, and widening of embankments will be undertaken.

Some 400,000 new tie plates and 205,000 new rail anchors will be bought and installed.

Eleven reinforced concrete bridges will be built, as follows:—Manitoba District, Nos. 27.6, 29.5 and 33.8, Carberry Subdivision; No. 92.5, Glenboro Subdivision; No. 61.6, Emerson Subdivision; No. 27.3, Minnedosa Subdivision; No. 2.7, Lariere Subdivision. Saskatchewan District:—No. 118.23, Neudorf Subdivision; No. 69.8, Outlook Subdivision; Nos. 13.6 and 42.9, Lanigan Subdivision.

Two bridges will be filled, viz.: No. 14.6, Cardston Subdivision, and No. 70.7, Wetaskiwin Subdivision, Alberta District.

A considerable amount will be expended in repairing and renewing bridges, including the rebuilding of No. 62.8, Lanigan Subdivision, and No. 130.5, Hardisty Subdivision, Saskatchewan District.

Fifteen new stations will be built, as follows:—Oakbank, Man.; Tramping Lake, Pimate, Battiam, Lanier, Bideford, Shackleton, Sask.; Amesk, Hayter, Whittla, Raymond, Magrath, Travers, Cowper, and Kirriemuir, Alta.

Thirty new section houses will be built. Additional yard tracks will be built at Swift Current, Sask., and at Ogden, Camrose and Coronation, Alta.

Large stockyards will be built at Swift Current and Moose Jaw, Sask., and small ones at 12 other points.

Icehouses will be built at Regina and Moose Jaw, Sask., Alyth and Kamloops, B.C.

The machine shop and boiler room at Weyburn, Sask.; the boiler house at Swift Current, Sask., and the car shops at Moose Jaw, Sask., will be extended; the passenger car shop at Vancouver will be extended and repaired; mastic floor will be laid in the Winnipeg locomotive shops, and boiler washing plants will be built at Kenora, Ont., and Moose Jaw, Sask.

The outward freight sheds at Regina, Sask., will be extended.

Coaling plants will be built at Broadview, Man.; Moose Jaw, Sask., and Lethbridge, Alta.

A new water supply will be installed at Gull Lake, Sask., and 12 existing pipe lines at various points will be relaid.

Automatic protection signals will be installed at Rosser, Poplar, Bradbury, Winnipeg Beach and Whytewold, Man.

Approximately 1,600 ft. of the Connaught tunnel will be lined.

A new transfer slip will be built at Vancouver.

It is said that the various betterments on the western lines this year will cost about \$6,000,000.

**Manitoba District.**—Tenders are under consideration for the erection of 13 no. 4 section houses at various points on the Manitoba District, and 1 standard station building at Oakbank, Man.

**Alberta District.**—A press report states that arrangements are being made to continue construction of the line from near Manyberries, Alta., easterly to Alta-

wan, on the Saskatchewan-Alberta boundary, 32 miles. This is the only unconstructed section of what has been spoken of for years as the Weyburn-Lethbridge line.

The transfer track connecting the C.P.R. at Stettler, Alta., with the Canadian Northern Ry., was reported completed Jan. 31.

**British Columbia District.**—The Vancouver City Engineer, in a report to the Mayor, Feb. 20, said: "If the C.P.R. should prove its right to maintain a bridge at Kitsilano, Vancouver, when they obtained this right, the question is did it carry with it the proviso that it must meet in the future the requirements of navigation as at present existing." The Kitsilano bridge is provided with a swing span, and as the Dominion Government has provided a 21 ft. channel from the bridge, it is desired to complete the channel under the bridge, and the question is who is to meet the cost. If the C.P.R. was to take care of navigation as it developed, the city claims the C.P.R. has to put in a new swing span sufficient to meet the present needs of navigation.

### Canadian Northern Railway Construction, Betterments, Etc.

A press dispatch states that one of the first pieces of construction work which the Dominion Government will undertake in connection with the C.N.R., will be to establish a connection between this line and the National Transcontinental Ry. This connection would start from Longue Lac, at 673 miles from Toronto, and extend to the National Transcontinental Ry. at Kowkash, 871 miles from Quebec.

The new station at Fort William, Ont., was opened Feb. 20. It is built of brick, with Tyndall stone trimmings and concrete foundations. The main portion, 41 x 57 ft., is two stories high with basement. The balance of the building is 30 x 80½ ft., and one story high. This portion is taken up by the baggage and express departments. On the ground floor of the main portion are a large general waiting room, women's waiting room, ticket office, men's and women's lavatories, a hall and stairway and a vestibule between the street entrance and general waiting room. The first floor contains office accommodation and agent's quarters. The floors throughout are of maple and the finish of oak. The building is steam heated and electric lighted.

The St. Boniface City Council special bridge committee has approved of the changes proposed to be made to the C.N.R. Provencher St. bridge. The new structure will be 14½ ft. higher than the level of the traffic approach. It is expected that the work will be completed by July 1.

A Munson, Alta., press dispatch, states that the company purposes to lay out at an early date a terminal yard, and to erect divisional buildings, and that tenders for the erection of a 4-stall locomotive house are under consideration. Munson is at mileage 303 on the line from Saskatoon to Calgary, near the junction with the line from Vegreville to Calgary. Surveys are reported to have been made for laying of a second track between Munson and Wayne, 19 miles, to provide sufficient track accommodation for the development of the colliery traffic from the Drumheller mining area. The present

track, it is stated, is to be relaid with 85 lb. rails. The running of about 30 freight trains a day is stated to be necessary in order to take care of the present traffic, and with the opening up of additional collieries between Munson and Wayne, this traffic is expected to increase considerably.

The Board of Railway Commissioners has authorized the building of a spur line to the Northwest Biscuit Co.'s factory at Edmonton, Alta.

Officers of the company in Vancouver, B.C., are reported to have stated that satisfactory progress is being made with the completion of the terminal station on False Creek flats. It is expected that trains will be operated into the station early in the spring.

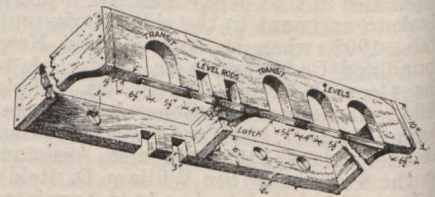
It was expected that the freight sheds at False Creek, Vancouver, would be completed by Feb. 28. The connecting tracks from the Great Northern Ry. over the fill, to the C.N.P. Ry. sheds is reported as about finished.

The filling on the reclaimed area of the False Creek flats, Vancouver, is being rapidly gone on with, and is now almost up to the permanent grade for at least half the distance from the south end of the bridge to what was the former shore of the upper False Creek basin.

The bascule bridge over the Selkirk Water, Victoria, connecting with the terminal areas being developed on the old Songhees Reserve, was reported completed Feb. 7. The bridge, when open, gives a clear span of 70 ft. (Feb., pg. 57.)

### Stand for Engineering Instruments.

All the trouble and waste of time in removing surveying instruments from their tripods and placing them in their boxes at the end of the day's work can be avoided if an office is provided with an instrument stand such as is shown in the accompanying illustration. This inexpensive expedient has been used by the



writer on several jobs, and has been found satisfactory in every case. The construction is very simple. Slots cut into a 1½ x 10-in. plank provide recesses into which the tripods and levels may be set. The tripods are then held in the slots by metal latches hinged at one side and fitting over a nail at the other. The feet of the tripods and the lower ends of level rods fit into holes cut in another plank set lower.—G. W. McAlpin, Junior Engineer, N.S., Engineers' Field Office, Mayville, Ky., in Engineering News-Record.

**Canadian Government Railway Employees Killed.**—The latest information available shows that in the Halifax, N.S., explosion disaster of Dec. 6, 58 employees of the Canadian Government Railways were killed, and also 15 ex-employees who had retired on pension. Details of the non fatal casualties among the employees, which were numerous, are not available.

G. J. Desbarats, C.M.G., Deputy Minister of Naval Service, is announced to have been appointed a member of an international board to settle outstanding questions between Canada and the U.S. in connection with fisheries.

# The Work of the Canadian Railway Association for National Defence.

A. E. Warren, Chief Operating Officer, Railways Department, Ottawa, has been added to the association's administrative committee.

## Canadian Transportation Conditions and the War.

The following is the association's first bulletin:—Every traveller and every shipper affects, one way or another, the two main problems of the Canadian railways: fuel consumption and freight car economy. In asking the support of the public for its work, the association offers the following summary of conditions leading to and arising out of its formation: The crisis in the American coal situation had made it necessary to assure the United States that coal supplied to Canada was being used for necessary purposes only. To reduce Canadian coal consumption, the railways had been asked to coordinate their services so as to prevent any overlapping or duplication of service which still might exist in Canada. The formation of the association resulted, in Oct., 1917. To that date the Dominion's domestic traffic had been kept moving expeditiously, despite war conditions, with the exception of one brief period due to an unprecedented period of cold weather and heavy snowstorms in the winter of 1916-17. The international freight train traffic had been satisfactory up to the time when certain organizations outside of Canada broke down owing to the special difficulties under which they were operating.

Meantime Canadian railways had made progress as follows, in meeting war conditions in their own sphere before the formation of the association. They had carried 400,000 troops from recruiting points to concentrating centres and from concentration centres to training grounds, and training grounds to ports of embarkation. These men had been fed and "slept" better than were the troops of any other belligerent nation mobilizing over such an extended area. Over 70,000 laborers for Europe had been carried across the continent. These also had been fed and "slept" under railway management. The colossal new burden of coal carrying, due to the taking of coal vessels from the St. Lawrence and the lakes for ocean service, had been assumed. The reduction of staffs to furnish army recruits had been met, in part, by adapting women to certain forms of work and leaving some in abeyance—a step which has contributed largely to the present urgent need for extra labor for the season's work on the railways. The sudden shiftings and reversals in the tides of traffic—in their general direction and character—had been dealt with successfully. First, the onset of a north-bound movement of raw materials in-bound for Canadian munition factories; second, the development of inter munition plant traffic in partly finished shells; third, the increased volume of food stuffs for export; fourth, the hundreds upon hundreds of cars of remounts; fifth, the sudden task of focusing all this traffic in two Canadian ports, in such a way as to meet Admiralty requirements; and, sixth, the cessation of northbound traffic due to the reduction in munitions trade, and the flow of Canadian raw materials, some of them never before exported from Canada into the United States. Meantime, the passenger train service had been reduced to the extent of 10,000,000 passenger train miles a year, a yearly saving of some 500,000 tons of coal. The volume

of grain handled out of Western Canada in the autumn of 1917 was 12.1% higher than the volume for the same period in 1916. This was the record up to Oct., 1917, when this association was formed.

The chief reason for creating the association was the necessity for conserving fuel during the winter. The desirability of embodying in concrete form the co-operative spirit which up to this time had been casual and informal among the Canadian railways, was secondary. In both respects the association has made progress. First, as to fuel; the speed of all trains has been so regulated as to give the maximum of tractive effort from a given amount of coal. Passenger train service has been reduced still further, so as to effect a saving of another 2,000,000 passenger train miles a year, making the total Canadian economy in this respect such that the U. S. railways, to equal it, would have to cut off proportionately 110,000,000 passenger train miles, instead of the 20,000,000 which, at the time of writing, is their record in reductions. The Canadian reduction means a saving of approximately 100 pounds of coal per mile, or on 12,000,000 miles—600,000 tons per annum. Further reductions are under way.

Second: As to further co-ordination of railway service, the association took charge, in a supervising way, of all traffic difficulties and worked out the speediest relief of any congestion or shortage that threatened. Potato cars were loaned from one road to meet the shortage on another road in the Maritime Provinces. Calls for refrigerator cars, apple cars, locomotives, box cars—all kinds of equipment—were met through the association's direction. Weather conditions on the line leading from some of the Western coal fields caused temporary embarrassment which was energetically dealt with by the co-operation of all roads through the association. A special officer was sent to supervise coal handling at the Niagara frontier, with excellent results. Meantime, a campaign for economy in the ordering of cars and in using their space has been promoted. The surplus of Canadian freight cars in the U. S. is being steadily reduced through pressure applied.

Up to Jan. 15, the association has succeeded in having 5,300 empty and overdue Canadian box cars started back for Canada. Of these already 2,893 were received empty and 1,300 came in loaded with anthracite to relieve the coal shortage in this country. Others are being released by the U. S. and being received at frontier points every day. These numbers are in addition to the normal reciprocal exchange in Canadian and U. S. cars, which goes on very much as usual at the various points of interchange.

These are first things accomplished by the Canadian railways working through their association. Other matters, even more important, remain to be dealt with. The car shortage, which has been ameliorated, will it is hoped, be entirely relieved by persuading shippers to load cars to their maximum capacity instead of to less than half their capacity as has been the practice in the past. Steps will be taken also to impress upon shippers and consignees the seriousness of holding cars longer than necessary. In all these things, and in future work which cannot now be anticipated, the sympathetic co-operation of the Canadian people—shippers, consignees and the travelling public—is a prime necessity. The association

asks for public support for a work vital alike to the individual Canadian and the safety and triumph of nation and empire in the world war.

Although it is true that Canadian railways are organized as nation-wide enterprises, and so have escaped the difficulties experienced by the U. S. lines; that they are large and yet few in number and so are able to work together successfully under the association; that Canadian freight in Canada is moving constantly by the most direct routes; and that surpluses of equipment on any one road are being used to make up any shortage on other Canadian roads: nevertheless—congestion on lines outside of Canada, labor shortage and extreme weather conditions, coupled with abnormal traffic demands, make it necessary to remind Canadian shippers and consigners to load cars to full capacity; to load them promptly and quickly; and in the case of consignees, to release cars at the earliest possible moment.

## How Canadian Shippers are Helping Canada.

The following is the association's second bulletin:—If one steel rail in a transcontinental line could be allowed to move out of place just because its share of the responsibility seemed trivial in comparison with the whole line, then the Canadian shipper, using even so few as two freight cars or one freight car a year, might be justified in supposing that the way he handled his shipments could make no difference to the tremendous problem of car shortage in Canada. But that one rail would wreck a train: and that one shipper, failing to understand his share in smoothing out the traffic problems of Canada, reduces the efficiency of the entire transportation system of the Dominion.

The average freight car, carrying your goods, Mr. Canadian Shipper, goes only half-filled—this is a fact. Government statistics show that Canadian cars are loaded to an average capacity of only 46% of their weight-carrying capacity. You may perhaps be loading a little better than that average. You may think it is nobody's "funeral" but your own, since you pay the railways the legal rate and should be allowed to waste space if you like. But the fact is that all Canada is vitally concerned with your treatment of the freight car. The waste of car space is not your "funeral" but the country's "funeral." The point is: There are fewer freight cars in Canada than are needed every day. Munitions shipments, shipments of most essential materials such as food, coal, raw materials, are being held up for lack of cars. Yet if you would see to it that your shipping department filled its cars to full cubic or weight carrying capacity, you could release at least half the cars you now require. You would be helping to double the freight car equipment of Canada at a time when cars are almost priceless. Furthermore: with our Canadian winter comes the danger of snow blockades, reduced locomotive efficiency due to cold weather; congestion at frontier points owing to possible interchange difficulties with foreign lines, a shortage of labor for clearing the right-of-way or terminals. With your assistance these dangers are reduced to a minimum. Full filled cars mean shorter trains. Shorter trains mean faster handling. Faster handling means better business for all concerned. Please have a personal

interview with the men who handle your shipping. They will remind you, of course, of the convenience of loading one order to a car. They may say there is additional labor cost for packing a car beyond a certain point. They may indicate that your shipping methods would thus have to be altered, or that your customer's convenience would not be as suitably met. Possibly not. But since orders for freight cars cannot always be filled; since munitions of war are often held up for want of cars; and since your prosperity depends upon the prosperity of the whole country and our successful conduct of the war—you will surely see the importance of making your allotment do maximum service in minimum time.

By an appeal for heavier loading the Director of Overseas Transport has succeeded in making 1,000 cars do the work of 1,200 which had previously been considered full cars. One implement concern in Canada found that by a skilful packing of parts and the building of a rough deck in each car, it was able to save 12 cars on a shipment of 800 waggons; 32 cars on a shipment of 3,000 riding ploughs; 52 cars on a shipment of 1,200 binders! A flour shipper told us he could not afford to load cars to full capacity because of the high labor cost involved. On investigation it was found that he had been trying to load each row of bags to the top of the car while the loaders were still working from ordinary floor level. Naturally the lift was heavy and awkward. When his shippers were shown the simple little trick of laying the bags in steps, running down from the ends of the car to the door the difficulty was solved. Instead of completing the end rows first, these rows were piled only about half or two-thirds the height of the car. Then the men laid a few bags in the next row and by standing on these bags were easily able to place the top layers on the end row. They now built up the second row to half or two-thirds the full height, until, with a few bags started on the third row it was easy to finish the second. And so on.

Like a body, this country of ours has nerves and arteries. Unlike a body, it has not one brain, but many brain centres: not one heart, but many thousands of hearts. Your plant, Mr. Canadian shipper, is a "heart." The railways are the veins and arteries, leading to that heart and away from it. Through these channels comes the stream of traffic vital to you, just as you are vital to the railways. As the heart takes in one thing and pumps out another, so your plant takes in one material and ships out another. Day and night, night and day, the thousands of "hearts" in Canada, keep pumping the vital stream of traffic over the great steel arteries of trade. Now if your body—like your nation—were engaged in some tremendous feat of strength—if there was a maximum of strain on your powers, would not that be a poor time for your heart to slow up, or your arteries to develop disease? Of course! For you would want your heart to handle his load with quiet, steady efficiency: and your arteries to carry his pulses smoothly and with speed. Canada's "arteries" became congested last year, owing to the severity of the winter, the heavy snow-fall, the scarcity of labor to meet emergency loads, the blockade of the frontiers due to the foreign congestion. It hurt you. It hurt the railways. It hurt Canada! This winter we are determined to keep Canada's traffic rolling smoothly and with speed, even though last year's conditions repeat themselves—giving and taking the current of commercial life from the "hearts" of Canadian

business—feeding and being fed at the same time. But without you "hearts" our preparations are useless. You must help the "arteries" and yourselves and the body politic, in this time of great strain by beating quicker and steadier than ever. On your behalf Canada's Railway War Board is watching the car supply, speeding up repairs, conserving traction power, perfecting the road beds, co-ordinating staffs. On the country's behalf, as well as on your own, when a car—like a pulse in the nation's veins—arrives on your siding, unload it quickly: when an empty arrives to be packed—pack it promptly and pack it full. You have heard of men with leaky valves in their hearts? . . . Well, the leaky valve in a nation's "heart" is a half-filled freight car—a weak "pulse." Make it a big pulse, a strong pulse, a full freight car!

#### Indirect Routing on Canadian Railways.

Much is written in Canadian newspapers about the necessity of making all Canadian traffic move by the shortest possible routes. This obviously is a most important point in times such as the present. Nevertheless this observation by Canadian newspaper writers is not quite as pertinent to the Canadian railway situation as might at first appear. Indirect routing was an evil with which the U. S. and British Governments were compelled to deal vigorously. As a matter of fact it is practically non-existent in the Dominion. Anyone who will study the railway maps of Canada, the U. S. and Great Britain will be impressed at once with the fact that the great majority of Canadian towns and cities are linked together by lines running east and west. He will be sure to observe how few north and south connections there are. This, as any one knows, is due to the peculiar geography of our country. The British Isles and the U. S. are comparatively square countries. They have depth as well as breadth. Their cities are often linked together by railway companies whose lines form right-angles, or broken circles. Although Canada has a great many miles of railway in proportion to her population, they are widely spread. With one or two possible exceptions there are not, in Canada, those areas of closely-packed population and keenly-competitive railway organizations that exist in England and in the United States.

Canadian companies have not had to fight so bitterly, and to carry goods by roundabout lines merely in order to capture trade from rivals. As a matter of fact, the volume of trade offering to Canadian roads since the war began has been so great as to make each road content to carry the goods which it could naturally carry the best, without trying to take from its competitor traffic lying naturally in the sphere of that competitor. It may be of general interest to the Canadian public to know, however, some examples of the way in which their railways, through the association, are exchanging traffic in the interests of efficiency.

In one case the C.P.R. diverted by way of the "Soo" line 1,000 cars of freight so as to relieve the company's main line along the north shore of Lake Superior. These cars passed south from Winnipeg to Minneapolis and by way of Sault Ste. Marie into Ontario. They consisted chiefly of grain for domestic consumption in Canada. One hundred cars of freight a day are being diverted from the C.P.R. at Quebec and travelling by the National Transcontinental to Halifax. While there is no saving in mileage, this, in the interest of the country, relieves the C.P.R.

main line to St. John for classes of export freight more urgently required there. In Toronto an arrangement was successfully carried out whereby 120 cars of freight eastbound for Montreal were turned over from the C.P.R. to the C.N.R. every day. The Grand Trunk during the winter has been diverting 150 cars of coal a day to the C.P.R. and T.H. & B., in order to lessen the congestion on the G.T.R. from the Niagara frontier to Toronto and other points. The Grand Trunk has also diverted 50 a day to the C.N.R. at Toronto. In Western Canada the Canadian Northern has on several occasions transferred surplus traffic to the sister railways in the west. These are not examples in which indirect routing is involved. They are cited as illustrating the operation of the association and the spirit actuating the Canadian railways.

#### Surplus of Canadian Cars in the United States.

The association directed attention recently to the fact that on Jan. 1 there were 61,124 Canadian cars on U. S. railways, and 41,766 U. S. cars on Canadian railways, a balance due Canada of 19,358 cars. On Jan. 15 there were 63,083 Canadian cars on U. S. railways, and 42,424 U. S. cars on Canadian railways, a balance due Canada of 20,659 cars. The adverse balance against Canada increased in the two weeks by 1,301 cars. In view of this, the association issued the following notice to Canadian railways:—"The demand for cars for movement of foodstuffs and other war supplies to Canadian ports is increasing and will become greater during the remainder of the winter season. Continued decrease in the supply of Canadian owned cars would result in serious interference with the transportation of both war supplies and necessary domestic traffic. Therefore, it is imperative that Canadian owned box cars be retained exclusively in service between points on Canadian lines until such time as the return movement of cars from foreign lines increases. Please issue instructions to all concerned accordingly and make such arrangements as will ensure compliance therewith."

On Feb. 15 there were 61,083 Canadian cars in the U. S., and 44,879 U. S. in Canada, a balance of 16,204 cars due Canada.

#### Full Loading of Box Cars.

The following circular has been issued to all railways:—"The continued shortage of box cars and the growing demand for equipment for the movement of foodstuffs and other supplies for overseas make it more imperative than ever that waste of cars through light loading be avoided. It has been drawn to the association's attention that many box cars having a carrying capacity of 94,000 lb. are arriving at the seaboard with shipments of export flour weighing much less than the car is capable of carrying. It has been demonstrated at several flour shipping points that cars can easily be loaded to capacity with export flour, and some shippers are following that practice. In the circumstances, it is felt that all shippers of export flour should arrange for capacity loading of cars. We are advised that export flour is shipped principally in sacks of three sizes, namely, 220, 140 and 80 lb., and tests which have been made show that 40 ton cars can be loaded as follows:—

220 lb. sacks	400 sacks	88,000 lb.
140 lb. sacks	671 sacks	93,940 lb.
80 lb. sacks	1175 sacks	94,000 lb.

It is urged that railways serving shippers who are forwarding export flour call upon such shippers to load all 30 ton box



cars to full carrying capacity, namely, 66,000 lb., and 40 ton box cars in accordance with foregoing statement. The car situation is so acute that it may become necessary for the railways to place an embargo on the acceptance of cars of export flour except when they are loaded to full capacity as above.

**The Location of Cars.**

The association has issued the following circular, referring to supplement 1 to general order C.S. 1 of the Commission on Car Service of the American Railway Association, dated Nov. 28, 1917, reading as follows:—"Inasmuch as cars are now being successfully relocated in accordance with regulation 6, regulation 4 of general order C.S. 1, which reads: 'An empty car at junction point with the home road must be delivered to the home road at such point, either loaded or empty' is hereby cancelled. It must be understood that this in no way abrogates the requirements specified in emergency rule 1, or regulation 2 of general order C.S. 1."

As the box car pooling arrangements of the American Railway Association do not apply in Canada, and present traffic conditions in this country are such as to render the above regulation undesirable, members of the Canadian association are notified that the above quoted ruling is not effective on railways operating in Canada, and member lines are directed that until further notice an empty car at junction point with the home road must be delivered to the home road at such point, unless special arrangements made otherwise between duly authorized officers of the interested roads.

**Shipments of Seeds, Fertilizers, Animals, Food, etc.**

The association has issued the following circular:—"Prompt and current movement of all shipments of field and garden seeds, fertilizer, food for animals, including corn from U. S., agricultural implements, required for spring planting, and commodities used in the preparation of disinfectants for spraying trees or plants, is essential in order that the Dominion and provincial governments' campaign for increased food production during 1918 may be wholly effective. It is desirable, therefore, that any railway having in effect an embargo issued by it, curtailing the movement of the above mentioned commodities, immediately modify such embargo to permit of the free acceptance of such shipments originating at or destined to a point in Canada. Similar exceptions should be made to any further embargoes that may be issued by Canadian railways during the period of movement of the above mentioned commodities. All concerned should be notified of the importance of avoiding delay in transit to all such shipments."

**Sailing Days for Shipments.**

The association has issued the following circular:—"As an indication of the saving in number of cars used in the handling of less than carload freight, through the adoption of the "sailing day" system of forwarding shipments, or similar methods, the following figures are taken from summary of reports furnished by member lines:—

	Number of cars l.c.l. freight loaded	Average load per car.
Nov., 1917	45,829	11,442
Dec., 1917	29,647	12,407
Number of cars that would have been required in December had average load per car been same as November, 3,214.		
Number cars saved through increased loading, 2,502.		

On U. S. railways during Oct., 1917, average load per car of l.c.l. freight was

14,821 lb., compared with 12,402 lb. during Oct., 1916. On one Canadian railway, the average load per car of l.c.l. freight during Dec., 1917, was 15,826 lb., compared with an average of 11,069 lb. during Nov., 1917, the increase of load per car thus obtained being generally attributable to the inauguration of the system of holding cars for second or third day forwarding. In view of the great opportunity for saving cars through revision of l.c.l. freight handling methods recommended by this association, and at the same time improving the handling of the freight, it is urged that all member lines continue to give the matter close attention.

**Capacity Loading of Cars With Export Freight.**

The association has issued the following circular:—"This will confirm telegram of Feb. 8, reading as follows:—"In view continued acute car shortage and urgent necessity saving coal in every way possible, Canadian railways are requested to notify all shippers of export freight routing via ports served by Canadian railways that, effective Feb. 12, export freight for overseas will not be accepted unless cars loaded to full weight carrying or cubical capacity."

Circular 46, concerning capacity loading of cars with export flour, specifies 671 140 lb. sacks for a 40-ton car. While it has been demonstrated that this number of sacks of the dimensions mentioned can be placed in the larger cars of 94,000 lb. weight carrying capacity, subsequent tests indicate that more economical practice calls for the loading of 650 140 lb. sacks in a car of 94,000 lb. capacity, and the latter, therefore, may be accepted as capacity carload.

**Loading of Cars to Axle Carrying Capacity.**

To Railways Operating in Canada:

In order to fully utilize freight car equipment, instructions limiting the loading of cars to 10% over marked capacity should be amended to permit of loading to axle carrying capacity all freight cars of forty tons stencilled capacity and over. A number of railways have already altered their loading instructions to conform to the foregoing, and in order that the full benefit may be derived from the arrangement, it is desirable that member lines which have not already done so amend their regulations to permit of the loading, and acceptance of cars loaded to axle carrying capacity in accordance with M.C.B. Association rules, when such cars have a marked capacity of 40 tons or over, and conditions other than the carrying capacity of the car will permit. Axle carrying capacity is arrived at from the following basis:—

Marked Capacity.	Size of axle.	Total weight car & loading.	Limit load.
80,600 lb.	5 x 9	132,000 lb.	132,000 lb. less light weight of car
100,000 lb.	5½ x 10	161,000 lb.	161,000 lb. less light weight of car
140,000 lb.	6 x 11	210,000 lb.	210,000 lb. less light weight of car

Cars of less than 40 tons capacity may be loaded to 10% in excess of their marked capacity. The Official Railway Equipment Register continues to bear notation. "limit of load allowed to pass over this system in excess of marked capacity, 10%, in the case of a number of the roads. This notation should be amended to conform to new regulations."

**Canadian Transfer Co.**—The following have been re-elected directors for this year:—C. Cassils, Hugh Paton, G. R. Starke, F. W. Molson and Sir H. Montagu Allan. F. M. McRobie was re-elected General Manager and Secretary.

**Railway Finance, Meetings, Etc.**

**Canadian Pacific Ry.**—Dividends have been declared payable Apr. 1 as follows: for the half year ended Dec. 31, 1917, on the preference stock 2%; and for the quarter ended Dec. 31, 1917, on the common stock 2½%, being at the rate of 7% per annum from revenue and 3% per annum from special income account.

**Guelph Junction Ry.**—The report for 1917, presented at the annual meeting of directors at Guelph, Ont., Feb. 6, shows that the earnings were \$45,544.40, an increase of \$2,583.20 over 1916. Payments were made to the city during the year, amounting to 25½% of the stock owned by the city, or \$43,380, in addition to \$904.25 for taxes, and \$250 as a subscription to the Patriotic Fund. A dividend of 7¾% was declared. The line is operated by the C.P.R. under lease.

**Salisbury & Albert Ry.**—At a public meeting in Hillsboro, N.B., Feb. 15, the member representing the district in the Dominion Parliament is reported to have said that the government had fixed the price to be paid for this railway, that the transfer would be arranged during the year, and that the line would be operated as an Intercolonial Ry. branch.

**Timiskaming & Northern Ontario Ry.** Passenger receipts for December, \$54,374.86; freight receipts, \$110,142.03; total receipts, \$164,516.89, against \$64,407.08 passenger receipts; \$111,494 freight receipts; \$175,901.08, for Dec., 1916.

**White Pass & Yukon Route.**—Gross earnings from Jan. 1 to Oct. 14, 1917, \$1,791,585, against \$1,779,406 for same period 1916.

**Change in British Railway Officials.**—W. F. Jackson, General Manager, North British Ry., has retired, and has been succeeded by Jas. Calder, heretofore Assistant General Manager. Jno. Walker, heretofore District Traffic Superintendent at Edinburgh, has been appointed Assistant General Manager. Wm. Andrew, Chief Goods Manager, has retired under the age limit and has been succeeded by Jno. Wilkinson, heretofore Assistant District Goods Manager. J. C. Christie, heretofore District Superintendent at Glasgow, has been appointed Assistant Chief Goods Manager, and M. S. Strang, heretofore Superintendent, Fife District, has been appointed District Superintendent at Glasgow.

**Grain Shipment via Vancouver.**—A Vancouver dispatch says that the first bulk shipment of grain from there has arrived safely at a British port. A steamship which was loaded at the Dominion Government elevator at Vancouver early in November with 100,000 bush. of wheat from the prairies, made the journey to Great Britain via the Panama Canal, and word is awaited anxiously as to the condition in which the grain in this test shipment reached its destination. The shipment was accompanied by A. W. Alcock, an official of the Board of Grain Commissioners at Winnipeg, to observe the condition of the grain at all stages of the voyage.

**Halifax Disaster Information.**—The very complete information published in Canadian Railway and Marine World, about damage done by the Halifax explosion, on Dec. 6, to the Canadian Government Railways and the Nova Scotia Tramways & Power Co.'s properties, has attracted considerable attention. The Director of the Halifax Disaster Records Office has written that the articles referred to have been of very great value to him.

## Canadian Transportation Men, Engineers, Etc. in the War.

Canadian Railway and Marine World is desirous of publishing all the information possible about the war work of Canadian transportation men, engineers, etc., and invites its readers to send in information for use in this connection. No doubt a large number of our readers receive many letters from the front, etc., extracts from which would prove of interest in these columns. We would be glad to be favored in this respect.

### Canadian Railway Troops' Activities.

A recent report to the Militia Department at Ottawa says:—"Two companies of Canadian railway troops had a novel and exciting experience when the train on which they were returning to camp was cut off, in the vicinity of Gouzeaucourt, by advanced parties of the enemy, armed with machine guns. The locomotive man and fireman were killed, and as the track was broken by shell fire, the train had to be stopped and abandoned. Several of the men became casualties, through enemy machine gun fire. The battalion in question offered its services to the army commander for pioneer work and the offer was accepted. Eight platoons, under the commanding officer in person, actually served in the front line area for 36 hours."

The report states that during last December several units of Canadian railway troops were employed in the northern sector of the British front. A great deal of the work undertaken was in a country very badly broken up with shell holes, which were full of water. Units were also engaged on the light railway lines, which were built immediately subsequent to the Cambrai offensive. During these operations they were subjected to unusually heavy shelling and several encampments had to be abandoned. The work done on these railways elicited the warm approval of the army commander.

In the Ypres area two battalions were engaged in standard gauge work and a new trestle bridge was completed. Some standard gauge work was also done in the Cambrai region, and it was necessary during these operations to fill one shell crater 20 ft. deep by 50 ft. in diameter. Heavy shelling in the Ypres area made some of the railway work very difficult.

The Dominion Express Co.'s Good Cheer Club at Winnipeg, is continuing its task of sending a monthly parcel of good and useful things to each of the company's employes who are serving in France, and monthly cheques to those who may be in England. Before the employe leaves Canada, the club presents him with a silver wrist watch. The club's officers at present are: W. A. McDonald, President; H. C. Hooley, Vice-President; A. Henderson, Secretary; Miss S. F. Fraser, Treasurer; A. E. Marchant, Purchaser.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association, up to Oct. 31, 1917, contributed \$16,754.10 to the Canadian Red Cross; \$20,257.13 to the Canadian Patriotic Fund, and \$13,765.16 direct to enlisted employes.

### PERSONAL NOTES.

H. P. Barker, formerly timekeeper, British Columbia Electric Ry., at New Westminster, B.C., is spending a furlough in Ireland, after being in the overseas forces for two years. He is reported to have been on board two vessels that were torpedoed, and to have had several close calls on land.

Temporary Lt.-Col. P. E. Bent, V.C., D.S.O., a recent addition to those granted the posthumous V.C., was a son of F. P. Bent, Superintendent Railway Mail Services, Halifax, N.S. The official record states, in regard to his action: "The coolness and magnificent example shown to all ranks by him, resulted in securing a portion of the line which was of essential importance for subsequent operations. This very gallant officer was killed whilst leading a charge, which he inspired with the call of 'Come on the Tigers.'"

Lieut. H. D. Brydone-Jack, who received the Military Cross recently, while attached to the headquarters staff, 31st Brigade, as reconnoitring officer, was formerly in the Surveying Department, C. P.R.

Major G. A. E. Bury, son of Sir George Bury, Vice President, C.P.R., who held a staff appointment in London, Eng., has returned to Canada owing to ill health. He had only returned recently to England to resume his work, after leave at home on the same ground.

Flight Lieut. J. F. Chisholm, R.N.A.S., son of G. C. Chisholm, General Solicitor, G.T.R., Montreal, has been awarded the Distinguished Service Cross.

Capt. W. M. Everall, A.M.Can.Soc.C.E., who has had two years' service in France, and was formerly Dominion Government Engineer, Port Arthur, Ont., is reported to have been appointed Assistant Engineer, British Columbia Public Works Department, Victoria.

Lieut. J. S. Galbraith, B.A.Sc., S.Can.Soc.C.E., of the Canadian Engineers, son of the late John Galbraith, formerly Dean of Applied Science Faculty, Toronto University, was given the Military Cross, by the King, at Buckingham Palace recently.

Ingolf Hanson, foreman steel car shops, Canadian Government Railways, Transcona, Man., has enlisted in the Railway Construction Corps, for service overseas.

Sir Arthur Harris, Director of Overseas Transport, Montreal, who was created a Knight Commander of the Order of the British Empire recently, for services in Canada in connection with ocean transport during the war, was presented to the King, Feb. 13.

Lt. Col. T. C. Irving, D.S.O., of Toronto, commanding 4th Canadian Divisional Engineers, who was killed in his dugout at the front by a shell on Oct. 29, 1917, left an estate of \$428, which goes to his wife.

Brig.-Gen. A. D. McRae, of Vancouver, of Davidson & McRae, formerly land commissioners, Canadian Northern Ry., who was, with the rank of colonel, in charge of transport and supplies for the Canadian overseas forces at London, General, is reported as having been given an appointment in the Imperial services.

E. Pope, Superintendent, Dominion Government Telegraphs, Quebec, Que., had three sons in the Canadian Expeditionary Force, all of whom were killed in action during 1917.

Capt. Maurice Pope, awarded the Military Cross recently for gallantly in action, was formerly in C.P.R. service at Montreal.

Col. G. S. Rennie, C.M.G., of the Canadian Army Medical Corps, formerly Chief Surgeon, Dominion Power & Transmission Co., and Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., and Lt.-Col. B.

R. Hepburn, formerly President Ontario & Quebec Navigation Co., have, according to a London cablegram of Feb. 13, been gazetted, or brought to the War Secretary's notice, for valuable services.

Lieut. Percy Roberts, Canadian Engineers, mentioned in dispatches recently by Field Marshall Sir Douglas Haig, was formerly on the Montreal Harbor Commissioners' staff.

Brigadier-General H. N. Ruttan, M.Can.Soc.C.E., formerly City Engineer, Winnipeg, has been retired from the command of Military District 10 there, owing to ill health.

Lt.-Col. Geo. A. Walker, R.E., formerly of Kingston, Ont., is reported to have been placed in charge of all British railway construction in Palestine. He is a graduate of McGill University, Montreal, and spent some years in civil engineering in British Columbia.

## Amendment of Rules for Inspection and Testing of Locomotive Boilers.

The Board of Railway Commissioners passed general order 218, Feb. 11, as follows:—Re general order No. 78, July 14, 1911, as amended by general order 106, June 27, 1913, and order 24803, Mar. 16, 1916, prescribing rules and instructions for inspection and testing of locomotive boilers and their appurtenances, to be adopted by railway companies. Upon the report and recommendation of the board's Technical Expert, concurred in by its Chief Operating Officer; and upon reading the submissions filed, it is ordered that general order No. 78 (order 14115), July 14, 1911, be modified as follows:—

Rule 5. Flues to be removed.—All flues of boilers in service, except as otherwise provided, shall be removed at least once in every four years, and a thorough examination shall be made of the entire interior of the boiler. After flues are taken out, the inside of the boiler must have the scale removed and be thoroughly cleaned.

Rule 11. Lagging to be removed.—The date for the removal of lagging for the purpose of inspecting the exterior of locomotive boilers, as provided by rule 11, except where indications of leaks exist, shall be advanced until Dec., 1918.

Rules 16 and 17.—Each time a hydrostatic test is applied, the hammer test required by rules 16 and 17 shall be made while the boiler is under hydrostatic pressure not less than the allowed working pressure, and proper notation of such test made on form 1.

Rule 18. Method of testing flexible staybolts with caps.—All flexible staybolts having caps over the outer ends shall have the caps removed at least once every two years, and also whenever the board's inspector or the railway company's inspector considers the removal desirable, in order thoroughly to inspect the staybolts. The fire box sheets should be examined carefully at least once a month, to detect any bulging or indications of broken staybolts.

The modifications herein provided for shall remain in effect until Dec., 1918.

The Canadian Society of Civil Engineers is applying to the Dominion Parliament for an act to amend its charter, by changing the name of the society to The Engineering Institute of Canada, and by replacing, wherever necessary, the word "society" in the charter, by the word "institute."

## Traffic Orders by Board of Railway Commissioners.

### Standard Passenger Tariffs Approved.

General order 214C. Reg. 25. Re application of the undermentioned railway companies for approval of their standard passenger tariffs of maximum mileage tolls. The said tariffs, issued to take effect Mar. 15, 1918, having been filed on the basis permitted by the board in general order 213, Dec. 26, 1917, it is ordered that, subject to the provisions of order in council P.C. 229, Jan. 30, 1918, and such other order in council as may be issued, the following standard tariffs of maximum mileage tolls for the carriage of passengers be approved; the said tariffs, together with a reference to this order, to be published in at least two consecutive weekly issues of the Canada Gazette: Elgin & Havelock Ry., C.R.C. 5; Northern Pacific Ry., C.R.C. 317.

### Standard Freight Tariffs Approved.

General order 215-B. Feb. 25. Re application of the undermentioned railway companies for approval of their standard freight tariffs of maximum mileage tolls. The said tariffs, issued to take effect Mar. 15, 1918, having been filed on the basis permitted by the board in general order 213, Dec. 26, 1917, it is ordered that, subject to the provisions of order in council P.C. 229, Jan. 30, 1918, and such other order in council as may be issued, the following standard freight tariffs of maximum mileage tolls be approved, together with a reference to this order, to be published in at least two consecutive weekly issues of the Canada Gazette: Elgin & Havelock Ry., C.R.C. 5; Essex Terminal Ry., C.R.C. 457; Northern Pacific Ry., C.R.C. 376.

### Minimum Weights On Peddler Car Traffic.

General order 217. Jan. 28. Re complaints of Canadian Manufacturers' Association and Toronto Board of Trade against proposal of railway companies, by schedules filed to become effective Oct. 15, 1917 (Michigan Central, Nov. 1, 1917), to increase aggregate minimum weight of less than carload shipments of fresh meat, dressed poultry, packing-house products, butter, and eggs, when loaded in refrigerator cars on private sidings in Eastern Canada, from 9,000 to 15,000 lb. a car, the said schedules having been suspended by the order 26634, Oct. 13, 1917, it is ordered that railway companies in Eastern Canada be granted leave to increase the aggregate minimum weight of less than carload shipments of fresh meat, dressed poultry, packing-house products, butter and eggs, when loaded in refrigerator cars on private sidings, from 9,000 to 12,000 lb. a car.

### Embargos Against Traffic.

General order 219. Feb. 9. Re general orders 95 and 160, dated respectively Nov. 2, 1912, and Feb. 24, 1916, requiring railway companies, whenever any such company issues an embargo against any traffic, to file with the board a copy of such embargo within 48 hours thereafter. Whereas the American Railway Association and the Canadian Railway Association for National Defence have adopted general regulations to expedite the transmission and handling of embargoes. Upon reading the said regulations; and upon the report and recommendation of the board's Chief Operating Officer, it is ordered that general orders 95 and 160 be amended to provide that during the existence of the Canadian Railway Association for National Defence and the continuance of the zone divisions under chairmen, as

provided by the said regulations, the zone chairmen shall file copies of all embargo notices to the board's secretary, within the time limited by the said general orders; and that the railway companies be relieved from filing such notices, as required by the said general orders. And it is further ordered that this order shall be and remain effective for the period the Canadian Railway Association for National Defence continues in existence and the regulations covered by the American Railway Association's general order, C.S. 17, and the circular of the Canadian Railway Association for National Defence, dated Jan. 20, 1918, are operative.

### Car Demurrage Code Rule.

General order 220. Feb. 11. Re applications of J. Coughlan & Sons, Vancouver, and the Canadian Retail Coal Association (Ontario), for a ruling in connection with rule 3, Car Demurrage Code. Upon the report and recommendation of the board's Chief Traffic Officer, and reading what is filed, it is ordered that the following clause be added to the said rule:—

"(d) Delays beyond free periods allowed for any two or more purposes under this rule shall be aggregated and charged for in accordance with rule 9; unless reconsignment effects actual transfer of ownership of the goods, in which case the charge against the new consignee for delay beyond the free unloading period shall begin with the lowest toll."

### Time for Unloading Grain.

26907. Jan. 14. Re complaint of Montreal Board of Trade's Transportation Bureau, et al, against the proposed limitation by C.P.R. of free time allowed for unloading carloads of grain and grain products at St. John or West St. John, N.B., for delivery to the Seely Line, from 10 days, including Sundays and holidays, to five days, excluding Sundays and holidays. Upon hearing the complaint at Ottawa, Nov. 20, 1917, in the presence of representatives of complainant and the C.P.R., and upon the report of the board's Chief Traffic Officer, it is ordered that the complaint be dismissed.

### Release Re Travelling in Non-Passenger Cars.

26927. Jan. 23. Re applications of Canadian Pacific, Canadian Northern, Grand Trunk, and Grand Trunk Pacific Rys., under sec. 340 of the Railway Act, for approval of a standard form, being a release to be signed by persons who, for special reasons, desire to travel in cars which are not intended to carry passengers, it is ordered that the following form of release of liability in respect of travelling in non-passenger cars, for use by the said railways be approved, namely, as follows:—

"RAILWAY COMPANY.  
RELEASE OF LIABILITY IN RESPECT OF TRAVELLING IN NON-PASSENGER CARS.  
In consideration of the ..... Railway Company permitting me, at my request, to travel between ..... and ..... or for part of this distance, in a car not intended to carry passengers, which I am not entitled by law to do, I do hereby release and discharge the said company of and from all claims and demands of whatsoever nature which I may now or at any time hereafter have or could maintain by reason or on account of any loss, damage, or injury, to person or property which I may sustain or suffer in getting to or from, on or off any such car, or while travelling in any such car, or in any manner in connection with or as a consequence of the journey so made, whether any such loss, damage or injury be caused by negligence or otherwise.  
"Dated at ..... this ..... day of ..... A.D. 19....  
Witness: .....

And it is further ordered that orders 25025, 24789 and 24917, dated respectively May 31, 1916, March 6, 1916, and April 22,

1916, made herein, be rescinded.

Order 27028, Feb. 25, approved a precisely similar form for the Toronto, Hamilton & Buffalo Ry., and rescinded order 24887, April 11, 1916.

## Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1916, from July 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Decrease
July	\$3,844,900	\$2,940,000	\$ 904,900	\$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,800	1,924,000	306,700
Oct.	3,941,600	3,350,500	591,100	629,200
Nov.	4,050,200	3,295,500	754,700	495,300
Dec.	3,273,200	3,207,900	65,300	758,500
	\$21,856,800	\$18,521,200	\$3,335,100	\$2,961,000
Incr	\$ 225,300	\$2,735,700		
Decr			\$2,961,000	

Approximate earnings for January, \$2,715,300, and for three weeks ended Feb. 21, \$1,975,400, against \$2,832,600 and \$1,694,300 for same periods 1917.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, compared with those of 1916, from Jan. 1, 1917:

	Gross Earnings	Expenses	Net Earnings	Increase
Jan.	10,158,307.86	7,726,829.36	2,431,478.50	341,070.27
Feb.	9,084,276.76	7,098,227.96	1,986,048.80	x308,293.94
Mar.	11,846,542.98	7,909,225.16	3,937,317.82	516,987.46
Apr.	12,355,519.60	8,180,541.98	4,174,977.62	441,241.66
May.	14,355,149.63	9,803,426.84	4,551,719.79	179,436.88
June	13,556,979.69	9,641,073.49	3,915,906.20	226,278.09
July	13,377,850.55	9,617,853.33	3,760,007.22	x257,084.51
Aug	12,414,537.25	8,596,998.76	3,817,538.49	x1,650,248.36
Sept	12,244,341.69	8,497,190.83	3,747,150.86	x1,382,608.30
Oct.	14,733,774.02	9,679,072.25	5,054,601.77	x 620,037.60
Nov.	15,191,162.91	9,933,270.27	5,257,892.64	x 306,067.50
Dec.	13,070,882.01	9,159,603.27	3,911,278.74	x1,110,149.87
	\$152,389,334.95	\$105,843,316.50	\$46,546,018.45	x\$3,930,480.73
Incr.	\$12,659,647.69	\$16,500,128.42		
Decr.			\$ 3,930,480.73	

xDecrease.  
Approximate earnings for January, \$10,570,000, and for two weeks ended Feb. 14, \$4,402,000, against \$9,941,000 and \$4,070,000 for same periods 1917.

## Grand Trunk Railway Earnings.

	Aggregate traffic receipts from Jan. 1 to Dec. 31:	1917	1916	Increase.
G.T.R.	\$52,205,158	\$47,826,799	\$4,378,359	
G.T.W.R.	9,795,440	9,191,107	604,333	
D.G.H. & M.R.	3,400,551	3,283,992	116,559	

Totals ..... \$65,401,149 \$60,301,898 \$5,099,251  
Approximate earnings for January, \$4,083,362, and for two weeks ended Feb. 14, \$1,427,976, against \$4,677,388 and \$1,754,133 for same periods 1917.

## Grand Trunk Pacific Ry. Earnings.

Approximate earnings of the Prairie Section, 916 miles, for January, \$440,209, against \$330,103 for Jan., 1917.

The claim of John Mackay, accountant, Toronto, against the City of Toronto, for \$42,000 in connection with a report on the Toronto Ry. and the Toronto Electric Light Co., when the question of acquiring the companies' properties, was to the fore about three years ago, has again been before the courts on claimant's appeal to set aside a verdict dismissing his claim. It had been previously decided that a good claim could not be made out against the city, as the work was not authorized by the city, and it was suggested as an alternative, that should the city accept a certain responsibility in the matter, \$7,500 would be a reasonable amount. Mr. Mackay's counsel stated that he was prepared to advise his client to accept an offer of \$7,500, leaving the question of liability to the court, but he did not consider that amount was a reasonable one.

# 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 accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canadian Government Railways.**—G. R. JOUGHINS, Superintendent of Rolling Stock, Moncton, N.B., has retired under the pension rules.

W. U. APPLETON, heretofore General Master Mechanic, has been appointed Superintendent of Motive Power. Office, Moncton, N.B.

G. E. SMART, heretofore Master Car Builder, has been appointed Superintendent of Car Department. Office, Moncton, N.B.

W. E. BARNES, heretofore Master Mechanic, Moncton, has been appointed General Master Mechanic, vice W. U. Appleton, promoted. Office, Moncton, N. B.

T. W. McBEATH, heretofore traveling fireman, Moncton, N.B., has been appointed Master Mechanic, District 3, Moncton, N.B.

C. D. BOVARD, heretofore acting Assistant Superintendent, District 2, Intercolonial Division, Campbellton, N.B., has been appointed acting Assistant Superintendent, District 3, Intercolonial Division. Office, Moncton, N.B.

J. H. WILSON has been appointed acting Assistant Superintendent, District 2, Intercolonial Division, vice C. D. Bovard, transferred. Office, Campbellton, N.B.

E. L. DESJARDINS, heretofore Assistant Superintendent, District 1, Levis, Que., has been appointed acting Superintendent, District 5, Eastern Lines, vice A. R. MacGowan, resigned to enter Delaware & Hudson Co.'s service. Office, Edmundston, N.B.

R. P. DOCKETT, heretofore blacksmith, has been appointed Foreman of Steel Car Shops, Transcona, Man., vice I. Hanson, enlisted for military service.

**Canadian Northern Ry.**—A. HECTOR has been appointed Travelling Freight and Passenger Agent, Halifax, N.S., vice A. T. Smith.

C. J. PIPER has been appointed Commercial Agent, Minneapolis, Minn., vice J. T. Whitlaw, resigned, as reported in our last issue.

**Canadian Pacific Ry.**—The following statement by the President has been given out:—"In order to relieve I. G. OGDEN, Vice President, from some of his onerous duties and to enable him to give his entire time to the company's financial department, JOHN LESLIE, Comptroller, has, by resolution of the directors, been placed in entire charge of the company's accounting department in all its branches, effective Mar. 1. Thereafter the officers of the department will report to him."

M. J. BUCKLEY, heretofore Locomotive Foreman, Glen Yard, Montreal, has been appointed Locomotive Foreman, Quebec, Que., vice J. Prendergast, transferred.

J. PRENDERGAST, heretofore Locomotive Foreman, Quebec, Que., has been appointed Locomotive Foreman, Hochelaga, Que., vice J. Miller, transferred.

J. MILLER, heretofore Locomotive Foreman, Hochelaga, Que., has been appointed Locomotive Foreman, Glen Yard, Montreal, vice M. J. Buckley, transferred.

R. C. CHAMBERS has been appointed electrician at Fort William, Ont., vice F. Totten, transferred.

E. L. LANDORPH, heretofore Engineer of Water Service, Winnipeg, has been ap-

pointed Resident Engineer, Kenora, Ont., vice H. H. Tripp, transferred.

T. LEES, heretofore Resident Engineer, Calgary, Alta., has been appointed Engineer of Water Service, Winnipeg, vice E. L. Landorph, transferred.

R. DAWSON, heretofore District Passenger Agent, Calgary, Alta., has been appointed District Passenger Agent, Brandon, Man., vice J. A. McDonald, transferred.

J. A. McDONALD, heretofore District Passenger Agent, Brandon, Man., has been appointed District Passenger Agent, Regina, Sask., vice J. E. Proctor, transferred.

S. T. LEWIS, heretofore transit man, Edmonton, Alta., has been appointed Resident Engineer, Medicine Hat, Alta., vice C. G. Washbon, resigned.

J. E. PROCTOR, heretofore District Passenger Agent, Regina, Sask., has been appointed District Passenger Agent, Calgary, Alta., vice R. Dawson, transferred.

W. H. HARRIS, heretofore Resident Engineer, Calgary, Alta., vice T. Lees, transferred.

F. TOTTEN, heretofore electrician, Fort William, Ont., has been appointed electrician at Calgary, Alta.

H. H. TRIPP, heretofore Resident Engineer, Kenora, Ont., has been appointed Resident Engineer, Edmonton, Alta., vice W. H. Harris, transferred.

**Canadian Pacific Ocean Services, Ltd.**—W. R. SERGENT, who has been associated with the Allan and C.P.R. steamship lines, and C.P.O.S., Ltd., for about 18 years, is reported to have retired from active duties of Chief Superintendent Engineer, but as continuing as an official in a consultative capacity.

KENNETH MCKENZIE, Superintendent Engineer in England, is reported to have been appointed Chief Superintendent Engineer of all the company's fleets, vice W. R. Sergeant, retired. Office, Liverpool, Eng.

**Delaware & Hudson Co.**—A. R. MACGOWAN, heretofore Superintendent, District 5, Eastern Lines, Canadian Government Railways, Edmundston, N.B., has been appointed Superintendent, Pennsylvania Division, D. & H. Co., vice C. A. Morgan. Office, Carbondale, Pa.

**Grand Trunk Ry.**—F. RUTHERFORD, heretofore Trainmaster, Battle Creek, Mich., is reported to have been appointed Superintendent of Transportation, Montreal.

A. M. ADAMS, heretofore agent, Hamilton, Ont., has been appointed Freight Agent, Toronto, vice John Gray, deceased.

T. J. WRENNICK, heretofore General Yardmaster, Hamilton, Ont., is reported to have been appointed Terminal Superintendent for the district covering the International bridge, Fort Erie and Bridgeburg yards, and also Black Rock, and River St. yard, Buffalo, N.Y., vice T. W. Saunders.

J. A. CLANCY has been appointed Trainmaster, Districts 27 and 28, Detroit Division, Western Lines, vice F. A. Rutherford, promoted. Office, Durand, Mich.

The following station agents have been appointed:—St. Jacobs, Ont., J. G. Buchanan; Shakespeare, Ont., R. Middleton; Thedford, Ont., W. A. McGregor; Owen Sound, Ont., G. S. Cline.

**Grand Trunk Pacific Ry.**—The following station agents have been appointed:—Venn, Sask., F. Hues; Lawson, Sask., H. Moe; Tofield, Alta., G. S. Gee; Smithers,

B.C., J. G. Stephens; Pacific, B.C., M. C. Newkirk.

**Grand Trunk Pacific Coast Steamship Co.**—R. BEAUMONT, heretofore Assistant to Manager, Vancouver, B.C., has been appointed Superintendent in charge of operation, and his former position has been abolished. Office, Prince Rupert, B. C.

**Great Northern Ry.**—W. P. KENNEY, heretofore Vice President in charge of Traffic, has been elected President, in place of L. W. HILL, who was also Chairman of the Board, and continues in that position. Offices, St. Paul, Minn.

R. BUDD, formerly Assistant to President, has been elected Executive Vice President. Office, St. Paul, Minn.

**Kettle Valley Ry.**—W. H. LITTLE-JOHN has been appointed Car Foreman, South Penticton, B.C., vice C. Mitchell, who has left the service.

**New York Central Rd.**—L. C. ANDERSON has been appointed Superintendent Passenger Transportation, lines west of Buffalo, N.Y., vice F. M. Smith, transferred. Office, Cleveland, Ohio.

**Railways Department.**—GORDON GRANT, M.Can.Soc.C.E., Chief Engineer, Quebec & Saguenay Ry., who was mentioned in Canadian Railway and Marine World for February, as having been appointed expert adviser to the Railways Department, has been given the title of Consulting Engineer to the Railways and Canals Department, with such duties as may be assigned to him by the Minister. He will continue to act as Chief Engineer, Q. & S.R., until it has been completed and handed over to the Canadian Government Railways operating department. Office, Ottawa.

**Reid Newfoundland Co.**—F. E. PITT-MAN, heretofore Assistant Treasurer, has been appointed Passenger Agent, vice J. W. N. Johnstone, resigned. Office, St. John's, Nfld.

**The American Railway Engineering Association's** annual meetings will be held at Chicago, Ill., Mar. 19 to 21.

**The Great Northern Ry.**, through J. J. Toomey, has foreclosed a mortgage of \$200,000 on the World building, Vancouver, B.C., under an order of a British Columbia court.

**Theft of Tickets.**—Alfred Housego, a C.P.R. employe at Moose Jaw, Sask., was convicted Feb. 3, of stealing two railway tickets from Moose Jaw to Vancouver, valued at \$78; and the two men who received the tickets were convicted of receiving stolen property.

**Canadian Northern Ry. Taxation in New Westminster.**—Up to the end of 1917, the C.N.P. Ry. owed New Westminster, B.C., \$124,000 odd for taxes, \$68,000 having been paid during the year on account. An agreement was reached for the payment of \$34,897 during Feb., 1918.

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

	Acres.
Alberta & Great Waterways Ry. ....	47.47
Calgary & Edmonton Ry. ....	955.07
Canadian Northern Ry. ....	4,154.60
Edmonton, Dunvegan & British Columbia Ry. ....	129.69
Grand Trunk Pacific Ry. ....	1.80
Grand Trunk Pacific Branch Lines Co. ...	68.84
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co. ....	2,789.00
<b>Total . . . . .</b>	<b>8,145.67</b>

**Canadian Railway AND Marine World**  
ESTABLISHED 1898

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ADVERTISING RATES furnished on application.  
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TORONTO, CANADA, MARCH, 1918.

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**The Dominion Government's General Railway Policy.**

There is a great deal of speculation as to the policy which will be decided on by the Dominion Government in regard to the general railway situation, and a large amount of matter on the subject has been published in daily papers. The greater portion, if not all of it, has probably little, if any, foundation and is largely speculative. The Ottawa Evening Journal, which prior to the formation of the Union Government was the Conservative organ there, and the proprietor of which is closely in touch with Sir Robert Borden, had the following in its issue of Feb. 23, which may perhaps be more reliable than what has appeared in a number of papers:

"The sub-committee of the cabinet which for the past month has been studying the railway problem has completed its investigations and submitted its report to the Privy Council. It is now being considered by the cabinet as a whole. While nothing official has been given out, it is understood that in the main the recommendations are as follows:

"That the C.P.R. be not now nationalized, but retained as a privately owned and operated system.

"That the Grand Trunk Pacific and G. T.R. be nationalized.

"That negotiations be opened up with the G.T.R. stockholders in England in regard to terms for the disposal of their stock.

"That the G.T.R., Grand Trunk Pacific, Canadian Northern and Intercolonial be operated as one state-owned system.

"That the railway rates be increased as a war measure, with a provision for the taxation of abnormal profits in order to prevent undue earnings from the increase.

"The sub-committee considered from every possible standpoint the possibility of nationalization of all Canadian railways, including the C.P.R. The question of nationalizing the C.P.R. was rejected chiefly for two reasons, viz.: because of the financial burden it would entail at a time of financial stress, and because of a disposition not to hastily interfere with the gigantic and most efficient organization which the C.P.R. has builded. Even the most ardent advocates of public ownership in Western Ontario and the prairie provinces hesitated at such an experiment in operation by the state.

"In regard to the G.T.R., it can be stated definitely that the government never had and has not now any intention of taking over the G.T. Pacific and leaving the G.T.R. They will deal with it as one enterprise. The taking over of the G.T.R., however, is a much more difficult proposition than most people appear to think. In the first place there is the difficulty involved in the fact that approximately 2,000 miles of this system are in the United States; and in the second place there is the still greater problem that over 100,000 of the stockholders live in England. It is very easy to talk, as the Hydro Electric Radial Ry. deputation from Ontario talked recently, of taking over this road, as if that could be done by the stroke of a pen, but the truth is that the government will reward handsomely any genius who is prepared to demonstrate to it how such a thing can be done other than by the process it proposes to follow: viz., negotiation and agreement. The truth is that the G.T.R. stock held in England cannot legally be expropriated, and, therefore, it must follow that any sensible or useful arrangement must be

based upon agreement between the stockholders and the government. Of course it is quite true that the government could go ahead and expropriate the physical assets of the system, but such a proceeding is not seriously proposed in any responsible quarter. On the contrary, the Prime Minister made it quite clear in the course of his remarks to the Hydro Electric Radial Ry. deputation that the government was disposed to give the English stockholders just consideration. In a word, the situation in regard to the G.T. R. can be summed up as follows: The sub-committee of the cabinet favors the taking over of the system; the Prime Minister and the cabinet are practically in accord with the proposal; but, owing to the fact that the majority of the stock is held in England, the matter cannot be dealt with hastily, but only after thorough consideration, negotiation and agreement.

"Freight and passenger rate increases are now practically certain to be allowed. The government is convinced that owing to advances in the cost of rolling stock and necessary improvement and maintenance, an increase in rates is absolutely necessary to maintain transportation efficiency. It is probable, however, that the increases will be temporary, granted purely as a war measure to meet extra normal conditions imposed by the war. The advances granted by the Board of Railway Commissioners were more of a permanent character. Taxation of war profits, as already stated, will be devised to look after the possibility of the increase in rates bringing extra normal profits to the C.P.R. It is probable that the Canadian Railway Association for National Defence will be retained in any event. It has achieved splendid results and would undoubtedly render good service under any new conditions that might arise."

**Objectionable Solicitation of Advertising.**

The Associated Business Papers, of which Canadian Railway and Marine World is a member, unanimously adopted the following resolution recently.

"Whereas certain associations of business men permit the name and influence of their associations to be used in the solicitation of advertising for their association publications, in a manner that is frequently highly objectionable, it is resolved that the Associated Business Papers in convention assembled in Chicago, on Oct. 13, 1917, hereby condemn such solicitations as an undignified and improper perversion of association influence, far removed from the original purpose of any business organization and equally removed from the methods that should govern the sale of legitimate advertising."

Freight rates advanced.—In general order 215-A passed by the Board of Railway Commissioners Jan. 24, the Quebec Railway, Light & Power Co.'s standard freight tariff of maximum mileage tolls, C.R.C. 103, was approved. It is an advance of 15% on the previous tariff. The board did not approve the company's application for a similar advance in passenger rates.

# Electric Railway Department

## The Montreal Tramways Company's New Franchise.

The Quebec Legislature, early in 1917, appointed a commission to draw up a new franchise agreement between the City of Montreal and the Montreal Tramways Co., the Commissioners being Senator J. P. B. Casgrain, Montreal; Senator C. P. Beaubien, Outremont, and F. J. Cockburn, of the Bank of Montreal. Mr. Cockburn resigned, as his engagements did not permit him to act, and A. W. Stevenson, accountant, Montreal, was appointed in his place. After considerable investigation and negotiation an agreement for a new franchise was prepared and was executed on Jan. 28, 1918, being signed by the commissioners, by representatives of the city, and by E. A. Robert, President, and Patrick Dubee, Secretary, Montreal Tramways Co. It was also signed on behalf of the National Trust Co., Toronto, and the Harris Trust & Savings Co., of Chicago. The agreement has been ratified by the Quebec Legislature in one of the clauses of the act to amend the city's charter passed recently, and is appended to the act as a schedule. As many of the features are unique and a departure from the usual form of franchise, its provisions are given as fully as possible as follows.

The original bill before the house was in French, and the following translation was made hurriedly and is subject to revision:—

An administrative commission is created which shall be known as the Montreal Tramways Commission and shall exercise the powers and perform the duties assigned to it by the contract. The Commission shall consist of three members who shall be appointed by the Lieutenant-Governor in council immediately after the coming into force of the contract. The president and acting president of the commission shall be similarly appointed.

The members of the Commission shall reside in the territory under the control of the commission. Every member of the commission shall be appointed for 10 years and shall retain office during good behavior; but he may, at any time, be dismissed for cause by the Lieutenant-Governor in council. The city and the company shall have the right to apply, by writ of quo warranto, to the Superior Court for the dismissal of any member of the commission, for fraud, bribery, refusal or neglect to bona fide carry out the powers or perform the duties assigned to him by this contract, or if he becomes incapable. The members of the commission shall not form part of any body charged with the government or administration of the city's affairs or of any other municipal corporation interested, nor be in the employ in any capacity of any of the parties or other municipal corporation interested, nor be shareholders nor bondholders nor holders of the company's bonds or debentures, nor have, directly or indirectly any contract or interest in any contract, with one of the parties or with any other municipal corporation interested, nor in any inventions, apparatus, machinery, processes or patented articles employed or which may be employed by the company, nor be shareholders in any company having a contract or being interested in a contract with one of the parties or with any other municipal corporation interested, nor be members of the Legislative Assembly or Legislative Council of Quebec Province. The quorum for meetings of the commission shall be two and each member shall have but one vote. In the absence of the president, the acting president shall preside at the meeting. Every decision of the commission must be voted for by two members. The remuneration of the members of the commission shall be fixed by the Lieutenant-Governor in council and shall be payable monthly by the company. The commission shall draw up rules for its government and for the disposal of matters brought before it. Such rules shall be obligatory, when approved, after notice given to the city, to the other municipal corporations interested and the company by the Quebec Public Utilities Commission which is authorized to do so. Such rules may be amended from time to time, subject to such approval. Every decision susceptible of appeal, given by the commission shall be notified without delay upon the city, the company and any other party to the case. The commission shall not give any decision before having called upon all parties interested to be heard. The commission

shall hear and decide all complaints or applications made to it verbally or in writing, by any person whomsoever.

Any party to the case, the company, the city or any municipal corporation interested may appeal to the Quebec Public Utilities Commission from any decision of the commission on any question of law or competence relating to the contract, as well as from any decision given by the commission in the cases mentioned in certain articles of the contract which are enumerated. This appeal shall be final except as regards questions of law and shall on pain of nullity, be taken within 15 days from the service of a copy of the decision, by the commission upon the interested parties. Such appeal shall be taken by means of an inscription deposited in the Public Utilities Commission's office, and notice thereof shall be served upon the other parties to the case or upon their attorney. In deciding such appeal, the Quebec Utilities Commission may confirm, reverse or amend the decision of the commission and give such decision as should, in its opinion, be given by the commission. The Quebec Public Utilities Commission shall proceed on such appeal brought before it under this contract as if the case or matter had originated before it.

The commission shall have the right to engage a secretary and such employees as it may need, to fix their salaries, to obtain the advice of experts, and advocates and pay such experts and advocates, to provide itself with offices and whatever it may need to enable it to perform its duties. All necessary expenses incurred by the commission in and for the performance of its duties, including the remuneration of its members and the salaries of its employees, shall be paid by the company and form part of its working expenses. The company shall pay such expenses at the request of the commission. The company may, if necessary, by proceeding as in the case of an ordinary appeal, have these expenses revised by the Quebec Public Utilities Commission.

To enable it to exercise all its powers and perform all the duties assigned to it, the commission has the right, at any time to examine any of the company's files or other documents, and to inspect the company's property, but, for the purpose of auditing the company's accounts, the commission shall employ a chartered accountant, if it does not do so itself. The commission shall make a report to the city, every year, on the state of the company's capital account and other accounts in connection with maintenance and renewals, as well as the reserve accounts and those connected with the lowering of tariffs.

The powers conferred by the contract on the commission shall not have the effect of removing the company from the jurisdiction of the Quebec Public Utilities Commission, but, in order to avoid all conflict of jurisdiction, it is agreed that any demand or complaint regarding the commission's jurisdiction and which might be taken before the Quebec Public Utilities Commission against the company, shall be initiated before the commission. In the event of an appeal not being allowed under this contract or of an appeal not being lodged when allowed, if the company neglects or refuses to comply with the commission's decision, the latter must report to the Quebec Public Utilities Commission, which shall take such measure and give such order as it may deem necessary for carrying out the commission's decision in the same manner and with the same effect as if such decision had been given by it. When the Quebec Public Utilities Commission decides upon an appeal from a decision of the commission, its decision shall be carried out by it as if it had decided in the first instance.

**Franchise Rights.**—The object of the contracting parties is to assure to the population by the contract a rapid and efficacious system of transport and means of communication. In execution of the laws 1 George V, (2nd session), chap. 77, secs. 14 and 15, and 7 George V, chap. 60, sec. 28, the city grants to the company, on the conditions mentioned in the contract, the privilege of constructing, equipping, maintaining and operating, from the putting into force of the present contract until March 24, 1953, a system of surface cars in the city, such as now exists and such as will later be augmented, and the company obliges itself to construct, equip, maintain, keep up and operate at its costs, the said system of tramways, in accordance with the limitations and during the term of the present contract. Consequently, from the coming in force of the present contract, the privileges, rights and franchises which the company now possesses in the city for the above purposes, and which are the results of the law, of contracts, bylaws, resolutions or other acts, are annulled; and the privileges, rights and franchises which it possesses or will possess in other territories for the same purposes will be annulled by the act alone of the annexation of these territories to the city, which territories will then be subject to the present contract. The company shall not, directly or indirect-

ly, sell, cede, transport or lease, in whole or in part, its system of tramways situated in the city or outside of it, nor the rights conferred upon it by the present contract, nor the rights which it possesses or will possess in virtue of contracts, bylaws or resolutions agreed to or to be agreed to in its favor by the city or by other municipal corporations. The company may, however, enter into new trust deed conditions for the purpose of enabling it to renew or replace the hypothecary obligations created by the trust deed agreements in force on June 30, 1917, and the debentures for \$1,500,000 falling due in May, 1922. The company guarantees the city against all claims that may be made against it and to indemnify it against claims which may be pronounced against it in connection with the construction, existence, the upkeep, the repairs and operation of the system of tramways. The company shall not, either in the city or outside of it, undertake any industrial or commercial operation other than that which is the object of the present contract or which relates thereto. The company shall not circulate or allow the circulation upon its lines in the city or outside of it, of the cars of any other company, nor connect its lines with those of another company without the consent of the commission. This does not affect the arrangement entered into between the company and the Montreal & Southern Counties Ry., relative to that part of the company's road on McGill St. between Youville and Commune Sts. Subject to the provisions of another article, the company's cars in the city and outside of it shall be operated by electricity or by any other motive power other than steam, approved by the commission, and the company will continue, for the present, to use the system known as trolley system. The company's lines and all its accessories, the rolling stock and everything used in operating the said system, both in the city and outside of it, shall be of the best and most modern production, constructed of first class material and in accordance with the latest designs and improvements known to art. The company must always keep its system of tramways, including everything pertaining to it and to its operation, both in the city and outside of it, in a good condition of maintenance and repair, so as to give a rapid, sure and efficacious service in accordance with the intention of the present contract. The corporation must keep account in its operations, of all the ameliorations and improvements to any part whatever of its system, both in the city and outside of it, including the rolling stock, which proves of recognized advantage, and it must effect the same when so ordered by the commission and within the delay fixed by it.

**Extension of Lines.**—The company must construct and operate the following double tracks on or before Nov. 1, 1918:—

On St. Patrick St., from Church St. to Monk Boulevard, and on Monk Boulevard from St. Patrick St. to Allard St., these lines to be connected with those of Church St.

From Westmount Ave. on the company's property and on the Cote des Neiges Road to Queen Mary Road, with connections both east and west to the tracks already on this last mentioned road.

On Park Ave., from Atlantic Ave. to Beaumont St., on Beaumont St., from Park Ave. to Bickerdike St., and on Bickerdike St. to Ball St.

On Kelly St., in Bordeaux Ward, from the Ahuntsic railway station to Tolhurst St., on Tolhurst St. from Kelly St. to Daze St., on Daze St. from Tolhurst St. to Meilleur St., on Meilleur St. from Daze St. to McDuff St., on McDuff St. from Meilleur St. to Poincarre St., on Poincarre St. from McDuff St. to Boulevard Gouin, with the necessary connections to connect this line with that leading to the Bas du Sault. The commission may suspend the construction of this line until the city shall have acquired the necessary right of way. The commission may also change the course of this line if the company can acquire the right of way elsewhere at a lesser cost. Seeing that the municipal underground works have not yet been done under this proposed line, the commission may order the construction of a single line, but it must be replaced by a double one when the works in question have been completed.

On DeFleurimont St. from Christophe Colomb St. to Papineau St., with connections to the existing lines on DeFleurimont St. and with connections to the lines on Christophe Colomb St. and Papineau St. to the north; on Rosemont Boulevard from Papineau St. to Boulevard Pie IX, with connections to the lines on Papineau St. and on Boulevard Pie IX, to the south; on Boulevard Pie IX from Rosemont Boulevard to the present double track of Boulevard Pie IX; on Bellechasse St. from Henri Julien St. to St. Denis St., with connections to the lines on St. Denis St., in both north and south directions; the construction of these lines thus forming a continuous line from St. Lawrence St. to Pius IX Boulevard inclusively, by way of Bellechasse, St. Denis, DeFleurimont

and Papineau St. and Rosemont and Pius IX Boulevards.

On Iberville St. from Masson St. to Belanger St., with connections with the present lines on Iberville and Masson Sts., and with connections with the lines to be constructed on Rosemont Boulevard, both east and west.

In the cases mentioned, apart from the exceptions contained in it, work must be commenced on or before June 1, 1918, and diligently continued. The commission is, however, authorized to prolong the time for the execution of these works if the company establishes before it,—the city having been heard—that it is impossible to complete them within the given time.

The company must construct and operate, both in the city and outside of it, all other new lines asked for by the city, or by any other municipal corporation, if, in the opinion of the commission, they are justified by the needs of the population and of traffic and if general financial conditions permit. If in the opinion of the commission the needs of the population and of traffic justify it and the general financial conditions permit it, the company must construct and operate in the city or outside of it all new lines ordered by the commission, even if these lines are not asked for by the city, by another municipal corporation or by the company. In each case the commission must fix the delay within which the work must be done or completed. Nothing herein contained will have for effect to deprive municipalities outside the city of the right to exact the routes and frequency of service to which they are entitled by their contracts with the company. No new line shall be constructed by the company within the city or outside of it without the previous authorization of the commission. Outside of the territory where the uniform tariff prevails, the cost of construction of any new line or of the prolongation of any existing line or of their operation, should not be a charge on the revenues of the company, so that the revenues of such new lines should be sufficient to avoid unjustly affecting the passenger and freight tariff on the other parts of the company's system.

No tramway lines shall be constructed in the public parks of the city except on Victoria and Viger Squares, and on these only when it will be absolutely necessary to do so to meet the pressing needs of traffic. The company, on the order and within the delay fixed by the commission, must make modifications, additions, reconstruction, alterations or necessary repairs to its lines, the pavings for which it is responsible, its rolling stock or to anything else pertaining to its system, either in the city or outside of it.

The company must, on the order of and within the delay fixed by the commission, remove at its own cost, all lines or parts of lines, whether situated in the city or outside of it, which the city may judge to have become useless, as well as the poles, wires or cables belonging to the same, and must also replace the paving whence such removals have been made to make it correspond with the rest of the street and of the sidewalks. If the company neglects to do this work within the given delay, the city or the municipal corporation interested, as the case may be, may do it at the cost of the company, with the consent of the commission.

The company, in constructing its lines must keep to the level of the different streets as furnished by the City Engineer, and must make no change in the same. In constructing or reconstructing its lines the company, after having made the excavations and fixed the rails and other apparatus, must remove the surplus earth and other materials taken from the excavations and must reconstruct at its own expense that part of the street excavated by it, so as to leave it in the same condition as it was before the excavation was made, and in so doing it must employ the material which the city may decide upon, provided that it is of the same quality as that employed on the street prior to the excavation having been made. But if the city takes advantage of the work of excavation to substitute another and more expensive paving than that hitherto employed on the said street, the company will then have the right to recover from the city the excess of the cost. The city may itself, however, construct a new pavement of another kind, but it can only charge the company the cost of the work which it could properly be required to do to place the street in the same position in which it found it.

If at any time a new level is established by the city in a street where the company's rails are placed, or if a new permanent pavement including one with an asphalted macadam base is ordered and laid by the city on the street, the company must, at its own cost, do the necessary work to remove its rails to the new level and to renew the paving between the rails and for 18 in. on each side of its track to correspond with the paving ordered by the city.

When the city make a new permanent pavement, including one with a base of asphalted macadam on any street where the company uses T rails, the latter must, within the delay fixed by the commission, and in a reasonable time, so as not to delay the city's works, replace at its own cost, these T rails by grooved rails or by any other model approved by the commission, and to do all the necessary work upon its tracks to make them correspond with the projected paving. This paving will be done by the city and at its cost.

If the city widens a street, the company, on the

commission's order, must remove its poles and its tracks, if there is space to do so, and replace them in the locality fixed by the commission, at the city's cost. When it becomes necessary to renew a wooden pole the company must substitute an iron one. In the construction of all new tracks the company must use in the city only iron poles.

The company must keep at its own cost in the city free and in a good state of repair the portions of the street and of the paving between the rails and 18 in. each side of them and also between the tracks in the streets where there are double tracks. In default of so doing, the city may do the work at the company's cost with the commission's consent.

When the company does work in the streets it must proceed diligently and without interruption, leaving free space for traffic and so arranging its materials as to interfere with it as little as possible. If in order to permit the city to do any work whatever, either itself or through any other person, upon any street whereon the company has tracks, it is necessary in the commission's opinion to remove and replace the tracks, this work, including the repaving between the tracks, between the rails and 18 in. on each side of the rails will be done by the city at its cost. If the city exacts it, the company must remake the part of the track removed at the city's cost, but the company cannot claim any damages from the city which may result from the interruption of its traffic or from any other cause.

Except in the cases above mentioned, and when it is otherwise provided in the contract, whenever the company makes trenches or openings in the paved streets or sidewalks, the city will remake itself the paving or the sidewalk at the company's cost, and in such case the company must abide by the municipal bylaws.

The company must provide for the drainage of its tracks according to the system approved by the Chief Engineer of the City and no connection with the city drains may be made by it without permit from the city.

Excepting in the case of minor repairs, the company, before doing any work in the streets or public places, whether in the way of constructing or repairing its tracks, poles, conduits, etc., which may affect in any manner the paving, sidewalks or other municipal works, must obtain a permit from the city.

The company cannot change, modify or displace any drain, water course or other subterranean construction belonging to the city, without the consent of the latter, and if such change, etc., is necessary it must be made by the city at the company's cost.

The company must, both in the city and outside of it, use grooved rails or such other model as may be approved by the commission, in permanently paved streets, including those with an asphalted macadam base, but it may use T rails on other streets.

In the city or outside of it, the width of the space between the tracks, the width of the tracks, the radius of the curves at the street curves, the projection of the sleepers outside the rails, the width of the rolling stock, the model of the cars and of their accessories, the type and the placing of the poles, the locating of the tracks on the streets, the weight and type of rails, the indicators signalling the regular stopping places of the cars, the lighting and heating of the passenger cars, the weight of the passenger cars as well as the freight cars and their maximum loads, the numbering of the cars, the maximum number of cars of which train shall be composed will be subject to the commission's approval.

Service.—The commission must determine, both in and out of the city, the speed of the cars, the stopping and transfer points, and the service and frequency thereof on each route or circuit by day as well as by night. It is within the commission's power to permit a greater speed than that allowed by law.

The company, both within and without the city must maintain its tramway service on the lines or circuits mentioned in schedule B to the contract, and must regularly maintain on each line or circuit the actual frequency of service indicated in the schedule until it may be otherwise ordered by the commission. The routes or circuits established by this schedule may be modified or changed from time to time by the commission, but no change can be made by the company without the commission's consent.

The company must station an agent at every transfer point that the commission may indicate, whether within or without the city. This agent must perform all the duties that the commission may determine.

The company must not use either within or without the city combination freight and passenger cars without the commission's consent.

It is forbidden both within and without the city to enter or to leave any car unless it has come to a complete stop.

Both within and without the city the conductors and the transfer point officials must speak both languages and announce equally in both languages the names on the routes of the cars.

Both within and without the city each car must be furnished with a gong which will be sounded before the car approaches within 40 ft. of each crossing. Every passenger car must carry in front and on each side a sign approved by the commission, indicating its route and destination in a man-

ner easily read. After sunset these signs will be illuminated. Every passenger car shall be well ventilated and kept always clean.

Both within and without the city the commission will determine the number of passengers that each car may carry. The company must inscribe this number in figures at least 4 in. high on the outside of the car.

Both within and without the city, the company will have the right to run its cars on the rails in preference to all other vehicles, which must leave the road free to them whenever they meet them or when they approach in the same direction, and which must not for any reason obstruct or inconvenience them.

The city will have the right, without any indemnity to the company, to make use of its poles for placing its fire alarm telegraph, patrol or electric lights wires thereon, or for affixing thereto placards conveying information of public interest, in the manner fixed by the commission, provided that no expense is thereby caused to the company and that the city will be responsible for all damages caused to anybody by the use made by it of the said poles.

Snow Removal.—The company, in accordance with the city's instructions, must keep its tracks clear of snow and ice, and the city may, if it so desire, remove, as it may decide, from one sidewalk to the other, the whole or a part of the snow or of the ice in any street or part of a street where the cars will be in operation, including the snow falling from the roofs of buildings, thrown or falling in the street, and that removed from the sidewalks and thrown into the streets with the city's consent, and the company will be required to pay half the cost of this work.

The city may open streets in such localities as it may deem proper, and for this purpose may cross the company's lands used as right of way without paying any indemnity to the company for the possession and use of the lands. The cost of the works executed on the part of the streets situated on the company's land and their maintenance will be at the city's cost.

If the city exacts it, the company must wash, water and sweep the streets or parts of the streets upon which it has tracks, and also transport all garbage, rubbish and other waste matter or snow, at a price which must not exceed the cost of the same to the company, plus 10% of profit, provided that in the commission's opinion this work does not impede traffic.

The company must make connections between its main line and all sidings which the city may require for communicating with its yards or other municipal establishments, and must perform all other work in connection with these sidings, which the city may not judge proper to do itself. These works will be done at the city's cost but at cost price.

All the work provided for by this contract and imposed upon the company will be executed under the commissions surveillance.

Approval of Contracts.—All contracts involving an expenditure exceeding \$50,000 either for work or for the furnishing of electricity, the purchase of material, the purchase or sale of immovables, made by the company must be submitted to the commission either before being signed or within days of the same. The commission must approve or disapprove of it within the eight following days. There will be an appeal by the company to the Quebec Public Utilities Commission from the commissions decision. If the commission disapproves the contract and no appeal is made, or if there is an appeal and the decision of the Quebec Public Utilities Commission disapproves the contract, then in either case the contract will be null and of no effect. This article will not apply to contracts involving the expenditure of any sum which the company may distribute to its shareholders or might distribute to them without the restriction hereinafter imposed, concerning the maximum dividend. This article is not to be interpreted as taking from the commission the right of surveillance and of control which it has in virtue of the other articles of this contract.

Electrolysis.—The company must employ the necessary means and apparatus to prevent damages being caused by the leakage or discharge of electricity into the soil, to the underground water pipes, conduits, drains or other municipal works. The company will be responsible to the city and to any other interested municipal corporation for all damages which may be caused by the leakage or discharge of electricity into the soil, and the company must guarantee them against it and indemnify them for any condemnation which may be pronounced against them in this connection.

The company's wires may be cut on the order of the Chief of the Fire Department if he believes it to be necessary to permit him to extinguish a fire, and in this case the company will have no right to any claim or indemnity either for damages caused to the wires or for any other cause.

Excepting when otherwise provided by this contract, whenever the city executes works of which the cost is repayable by the company, or whenever the company executes works of which the cost is repayable by the city, these costs will include only the actual expenditure without profit.

Rates of Fare.—The tariffs in force at the date of this contract, both within and without the city, which the company is authorized to collect in virtue of the law or of all contracts, bylaws or resolutions will continue in force until they have been modified by the commission. Within 60 days

following the nomination of its members, the commission must, if it is necessary, modify these tariffs so as to give full effect to the present contract, taking into consideration the expenditure upon work done by the company since the coming into force of this contract. The commission must, within the same delay render these tariffs uniform for the territory comprising the city such as it exists at the date of this contract, as well as the towns of Maisonneuve, Westmount, Outremont, Verdun, St. Laurent, Mount Royal, the territory of that part of St. Laurent parish and the territory of that part of the municipality of Cote Saint Luc to the east of the company's track which extends from Snowdon station to Cartierville, including the land occupied by this track. This territory will be known as the uniform tariff territory.

Outside of the uniform tariff territory, the commission may fix different tariffs for the different municipalities, as well for local traffic as for that from one municipality to another, or from a municipality to the uniform tariff territory and vice versa, provided that these tariffs, or any of them do not unjustly weigh upon the rest of the system, and provided further that these different municipalities may, with the commissions consent, agree to pay to the company a part of the cost of their respective services for the purpose of obtaining lower rates.

In the uniform tariff territory, as well as in the other municipalities, the commission may fix different tariffs for all passengers at certain hours of morning or evening, or at certain hours of both morning and evening. It may also fix higher tariffs for night hours from midnight till 5 a.m.

The commission may establish lower tariffs for school children and for apprentices which will only apply to week days. For school children these tariffs will apply only from 8 a.m. to 6 p.m., and for apprentices from 6 a.m. to 7 p.m. Children under five years of age will be carried free. The company must sell passenger tickets of the denomination which will be fixed by the commission, in all its offices and on board its cars.

The commission may, from time to time, as required, modify the tariff which will have been established in virtue of the present article, but in accordance with the provisions of this contract.

No change in the tariffs will come into effect until eight days after a notice published by the commission during two consecutive days, in an English and in a French newspaper published in the city. After the putting in force of a new tariff, passengers will not be able to use tickets previously purchased and which are not in accordance with such new tariff, but the company must redeem these tickets at the price at which they were sold.

**Transfers.**—The rates of passage established by the commission must provide for the issue of transfers, and the following bylaws must be observed: Every passenger in paying the price of his passage will be entitled to a transfer either gratuitously or at the rate fixed by the commission, as the case may be, from one car to another, at the localities where the routes or circuits meet or cross, or at other localities fixed by the commission, in order to enable the passenger to go without interruption from one point to another in the territory covered by the price of passage paid by him.

The payment of the price of passage cannot in any case permit a passenger to return to his starting point. The intention is that the company transport a passenger for a continuous journey over its lines within the limits covered by the price of passage paid, so long as this journey is continued in the same direction. For example, a transfer issued at the west permits a continued journey towards the east, the north or the south. The transfers issued to passengers, indicates the point or the locality of transfer and no transfer is to be utilized except at the locality and within the limit of time indicated by a perforation of the transfer.

It is forbidden to everybody to sell, change or give any transfer; to receive, to offer or to use for a passage on any car a transfer which has not been regularly issued for it; to throw away any transfer without having first destroyed it.

**Free Transportation.**—Save the exceptions provided for in the contract, no person will be transported gratuitously on the company's cars.

The policemen and firemen of the city, or of all other interested municipal corporations, the company's officers and employees, the members and employees of the commission, when they travel in the performance of their functions will be carried gratuitously, provided that they conform to the rules which will be established by the commission.

The company must at the city's demand have special tickets printed, which will only be sold to the city for the use of its employees. These tickets will be sold to the city at the ordinary price. These tickets must be in accordance with a pattern to be furnished by the city.

The company may make any arrangement which the commission believes just, with the Dominion Government for the transfer of letter carriers and mails, and with the Quebec Government for the passage of its officers and for the service of the Bordeaux prison.

**Freight Transportation.**—The commission may permit the company to transfer freight in part or in the whole of the city, as it now exists, and as it may be hereafter enlarged, also in a part or in the whole of all territory outside of the city, provided that this transport does not delay or hinder in any manner the transport of passengers nor

the execution of the works nor the transport of garbage, rubbish and other waste matter or snow which the company may be called to do for the city in virtue of the present contract. It will be for the commission to determine, in case it permits the transport of freight, what routes the freight cars will follow and during what hours of the day or the night these freight cars may circulate on the company's lines. The tariff shall be fixed by the commission. The freight tariff must be fair and reasonable and as uniform as possible, so that no person or company shall be favored to the detriment of another, but such tariff must be so fixed as to produce sufficient revenue for the passenger tariff not being affected. The commission may, from time to time, make rules for the transportation of freight, which, when approved by Quebec Public Utilities Commission, shall be binding on the interested parties. The commission shall determine what merchandise or other articles may be transported by the company. The transporting of live animals, carrion, dung or other substance of a nature to diffuse smells or cause nuisances, shall be done only in cars approved by the Superior Board of Health of the province. The company shall have the privilege of transporting as freight all building materials it may use for constructing or repairing its tracks, and also all building materials needed for municipal works by the city or any other municipal corporation where the company has tracks, and any excess quantity taken from excavations made in doing their works. The commission shall not have the right to authorize the company to leave its freight cars standing on the streets for loading or unloading the cars except in the case of work done by the company or by the city or by the said municipal corporations. If the transport of freight is allowed, the commission may order the company to establish loading and unloading stations at various places. This article is subject to the authority of the Board of Railway Commissioners of Canada in cases where such authority may be exercised.

**Workshops.**—The company shall establish and maintain its factories, workshops and principal offices within the city limits. The company shall also build and manufacture within the city limits all parts of its plant which can be manufactured there as advantageously as elsewhere.

**Labor Unions.**—The company shall, neither itself nor through any other persons, prevent its employees from organizing themselves into labor unions authorized by law. Each class or category of employes may form a separate union.

The company's employes shall have the right to one day of rest per week, the same to be fixed by the company's rules.

**Autobus System.**—If, in the commission's opinion, the needs of the population and of traffic justify and financial conditions permit, the company shall establish and put in operation in or outside the city an autobus system on such streets as the commission may designate and on such conditions as it may determine; provided the establishment and operation of such system shall not be a charge upon the company's revenues in the sense that the revenues from such system must be sufficient so as not to injuriously affect the passenger and freight tariffs on the tramways system.

**Guarantee Fund.**—The company, by yearly instalments of not less than \$100,000, and in any case within five years from the coming into force of this contract shall provide out of its own resources, to wit, those beyond the commission's control, a special fund of \$500,000, which shall be used to meet all liabilities and all other debts (except mortgage debts) incurred by the company prior to the coming into force of this contract through the operation of its system, and to provide for the payment in each year of any portion of excess expenditure as hereinafter defined, which shall be found by the commission to have been unnecessary for the payment of penalties imposed on the company and also to guarantee the fulfilment by the company of all obligations assumed by it under this contract. Said fund, when created, shall be maintained by the company at all times at the sum of \$500,000. If shall be deposited by the company in some chartered bank or trust company in such a manner as to remain available at all times. The interest thereon or income therefrom shall be the company's property. Upon the termination of this contract the fund shall be the company's property.

**Disposition of Gross Revenues.**—All revenues derived by the company from the operation of its entire system of tramways, as well as from all other sources whatsoever, whether within or without the city's corporate limits, shall, except as herein otherwise provided, constitute the gross revenues, and shall be disposed of for the following purposes and in the following order:

Within 60 days after the coming into force of this contract, the commission shall, for the first year of operation hereunder, allow the company, out of the gross revenues, a sum for each revenue car mile, exclusive of car house and car yard miles, made by cars equipped with motors, except cars operated to carry materials used in the company's construction and repair work, and other sums for each revenue car mile, for trailers, and for freight cars, always exclusive of car house and car yard miles. Such sums shall be known as the operating allowance, and shall be used for the payment of all operating expenses (exclusive of maintenance, renewals and depreciation), and all taxes levied against the company or its property. Such operating expenses shall include among other things, the commission's expenses, and the actual and

necessary expenses incurred by the company during the year for insurance and for the defence and settlement of claims and suits for damages made during the year, and an amount to be held in reserve estimated by the commission to be sufficient to pay all such claims and suits that have not been settled during the year. The company shall so increase the transportation services, under the commission's direction, that the permissible average car mile density, and in so doing, it shall year of operation under this contract shall not be excessive. Within 60 days after the close of the first year of operation under this contract, and annually thereafter, the commission shall redetermine and fix for the ensuing year the amount of the operating allowance and the permissible average car mile density, and in so doing, it shall base its action upon the actual and necessary expenses for operation incurred during the preceding year, with such adjustments as may be foreseen to be necessary on account of modifications of service, changing costs, or any circumstances tending either to increase or to diminish the necessary expenses of operation. If at the end of any year the commission shall find that the company has kept within the operating allowance or 2½% of its amount, subject to the conditions imposed as to density of traffic being in the judgment of the commission reasonably observed, then the commission shall permit the company to take out of gross revenues, as a charge prior to all other charges, except operating expenses and taxes, as hereinabove defined, a sum to be known as the operating profit, which shall be equivalent to ½% of 1% on the total average capital value for that year; and such operating profit shall belong to the company. In case the company shall have spent more than the operating allowance, plus the above percentage of 2½% during any year, then the excess over such allowance and percentage shall be known as the excess expenditure, and shall be taken from gross revenues up to an amount not exceeding ½% of 1% on the average capital value for such year, and the operating profit shall be reduced accordingly; and if the excess expenditure shall exceed ½% of 1% on average capital value, then the company shall receive no operating profit, but contrary, shall pay out of the guarantee fund, the amount by which such excess expenditure exceeds said ½% of 1%; provided, that if the company shall during such year, in anticipation of such excess expenditure, or immediately upon the close of such year, submit to the commission a detailed statement and explanation thereof, and if the commission shall find not later than 60 days after the close of such year that the excess expenditure, or any part thereof, was necessary and unavoidable in the rendition of service as required by the commission, then the commission shall permit the company to take out of gross revenues the additional sum required to cover said excess expenditure or such part thereof and shall also award the company the full amount of the operating profit, less any part of such excess expenditure which may be found to have been unnecessary, but if such unnecessary part shall exceed the amount of said profit, the balance shall be paid by the company out of the guarantee fund. The commission in determining the operating allowance for the ensuing year, shall take into consideration the excess expenditure incurred during the preceding year and found to be necessary as above provided. Any portion of the operating allowance which shall not be expended or needed for the expenses of the year, shall at the close of the year, with the approval of the commission, be returned to gross revenues to be disposed of as hereinafter provided.

**Maintenance and Renewals Fund.**—The entire plant and property used and necessary to provide the public transportation service shall at all times be maintained at the highest practicable standard of operating efficiency. For the purpose of maintenance, renewals, replacements and substitution made necessary by wear and tear, age, obsolescence, inadequacy, accidents or other cause, a sum shall be set aside for each revenue car mile, exclusive of car house and car yard miles, made by cars equipped with motors and other sums for each revenue car mile made by trailers and by freight cars, always exclusive of car house and car yard miles. Such sums shall be known as the maintenance allowance and shall be placed in the maintenance and renewals fund. Any items of property contained in the appraisal schedule, or thereafter added to the tramways system, which shall become worn out or which for any other reason shall at any time be deemed no longer useful as a part of such system, shall be disposed of under the commission's direction, subject to the provision of any deed of trust, upon the most advantageous terms obtainable, and the proceeds thereof, when required, the consent of any trustee for the company's bondholders, shall be paid into maintenance and renewals fund, or if such consent be not forthwith obtained, then proceeds shall be deducted from capital value. The proceeds from the sale of land and buildings shall not form part of said fund, but shall however be deducted from capital value. Out of said maintenance and renewals fund shall be paid from time to time the actual and necessary expenses of maintenance and renewals, and of replacements and substitutions as hereinafter provided, and any moneys not needed for such purposes during any year shall remain in said fund and be held in reserve until



# Toronto Railway Co's Annual Report and Meeting.

required for such purposes, or for investment in betterments, additions and extensions as herein-after provided. Whenever any portion of the plant is replaced or other property substituted therefor, the cost of such replacement or substitution up to the full reproduction cost of the unit or article so replaced or substituted for as fixed by the said appraisal, shall be paid out of the maintenance and renewals fund and any cost in excess of said reproduction cost shall be paid out of moneys supplied by the company as hereinafter provided and the amount thereof shall be added to capital value.

(To be concluded in next issue).

## Application for Increased Fares in London.

The London St. Ry. has sent the following letter to the chairman of the city council's No. 1 committee:—"Owing to the enormous increase in the cost of everything entering into the construction and operation of a street railway, the operating and maintenance charges of the London St. Ry. Co. have increased out of all proportion to the gross earnings. This has been due to the abnormal state of affairs throughout the world, which was entirely unforeseeable when the present arrangement between the city and the company was made. Understanding that your committee has charge of street railway bylaw matters, we beg thus formally to bring before you the fact that the company is forced to request, not only in its own interest, but in the interest of the city also, a modification of the present agreement, either by way of increased fares or otherwise. With the best interest of all concerned in view, the company would respectfully request the council to consider the matter, and confer with the company, and, if thought advisable, obtain information and data for the purpose of enabling the matter to be discussed intelligently from its various standpoints by both the city and the company.

"Our records show that the cost of labor has doubled since the date of the present arrangement, and is still advancing, and that the cost of all the materials used in the construction and operation of the road have increased in price from 100% to 300%, while during the entire period the fare per passenger has remained unchanged. In view of the above state of affairs, we feel some modification should be granted, and particularly so as the rate of fare in London is, we believe, lower than in any other place on the American continent. We would respectfully request prompt consideration, and at the same time may state that it is our intention in the meantime, for the purpose of ascertaining the views of the citizens, to point out, through the public press and otherwise, the conditions which make modification of the arrangement necessary at this time."

The company has contracted for advertising space in the local papers to acquaint the public with the facts.

**Toronto Civic Ry.**—At a meeting of the Toronto Board of Control, Feb. 20, the Works Commissioner estimated \$326,124 for maintenance and operation of the civic railway, an increase of \$68,805 over the previous year. He reported that two of the 13 cars on order had been received, and the estimate was for an increased and better service. Since this report another three cars have been received. The mayor stated that maintenance was costing too much, and that the type of cars used was not modern, and suggested that \$8,000 be provided for an experiment with one-man cars, and that a report be made on a new type of car. The operating expense per car mile was given as 18.37c.

Following are extracts from the report for the calendar year 1917:—While the gross income has shown an increase, the net income has been adversely affected, owing to increase in wages and to the abnormal war conditions causing the price of all classes of supplies to advance very materially.

Gross earnings .....	\$6,291,759.06
Charges for operating, maintenance, etc. ....	3,815,277.82
Net earnings .....	\$2,476,481.24
Dividends .....	\$960,000.00
Bond interest, etc. ....	146,887.66
	\$1,106,887.66
Payments to city:	
Percentage on earnings .....	\$970,512.41
Pavement charges .....	98,840.80
General taxes .....	117,678.11
	1,187,031.32
	\$2,293,918.98

The gross passenger earnings were \$6,202,562.67, an increase of \$321,057.39, over 1916. When one has in mind the large number of citizens who are still engaged in the war overseas, the income from the operation of the system must be recognized as satisfactory.

The operating charges have increased, through the large increase in the wages of conductors, motormen and shop hands; and owing to the fact that in nearly every line of material used in the upkeep of the plant, the price has advanced greatly; in some cases the material used has increased over 200%. The operating and maintenance cost for the year was \$3,815,277.82, an increase of 4.5% over 1916. The payments made to the city were \$1,187,031.32, an increase of \$74,021.57 over 1916.

The company's agreement with its employes, under which they were receiving 27½c. an hour, expired in June, 1917. They demanded a new agreement with a maximum of 40c. an hour, and other onerous conditions. After negotiations, and notwithstanding the company's offer to arbitrate, the men went on strike, which lasted for 2½ days. Upon their return to work an arbitration was held under the Lemieux Act, which resulted in a majority award of 37c. an hour maximum rate. In other respects the previous agreement was substantially confirmed. Owing to the scarcity of labor and war conditions, your directors reluctantly decided that they had no other course than to accept the award, although it meant an increase in operating expenses of about \$600,000 a year. The directors feel that this award was not warranted by the weight of evidence submitted to the board of arbitration; that it was not justified by any comparison with the rates of wages paid for similar work in Canadian or U. S. cities, and was not warranted by the company's earnings; that in fact the award was essentially unjust to the shareholders.

The seventh drawing of the company's currency and sterling bonds, under the terms of the mortgage deed dated Sept. 1, 1892, took place on June 21. Under the terms the company draws annually a certain number of bonds issued, thus reducing, during the 10 years mentioned, the outstanding bonds to 50% of the original issue, and all bonds so drawn are to be redeemed on or after Aug. 31 following the date of drawing, from which date no interest is payable on bonds so drawn. There has been drawn to date a total of \$1,592,519.98. Careful attention has been paid to the maintenance of the plant, rolling stock equipment and other properties. The directors declared, and paid out of the accumulated surplus earnings, four quarterly dividends of 2%.

## INCOME ACCOUNT.

Gross earnings .....	\$6,291,759.06
Operating, maintenance, etc. ....	\$3,815,277.82
Interest on bonds, etc. ....	146,887.66
Percentage on earnings .....	970,512.41
Pavement, taxes .....	264,271.30
	5,196,949.19
	\$1,094,809.87

## PROFIT AND LOSS ACCOUNT.

Balance from 1916 .....	\$5,408,873.68
Surplus earnings, after payment of all expenses, interest, taxes, etc. ....	1,094,809.87
	\$6,503,683.55
Dividends, 4 of 2% each, on paid-up capital .....	\$ 960,000.00
Balance from 1916 .....	\$5,408,873.68
Surplus carried forward .....	134,809.87
	5,543,683.55
	\$6,503,683.55

It will be noticed that while in the body of the report, under "Payments to City," pavement charges are shown as \$98,840.80 and general taxes as \$117,678.11, a total of \$216,518.91, in the income account "pavement, taxes" are shown as \$264,271.30, a difference of \$47,752.39.

The net earnings for 1917 decreased \$146,022.16 from 1916, the passengers carried were 158,087,984, an increase of 8,558,230, the transfers were 62,301,636, an increase of 958,873, and the percentage of charges, etc., to passenger earnings was 61.5, against 57 in 1916, 57.9 in 1915, 58.4 in 1914, 52.2 in 1913, 53.4 in 1912, 55.2 in 1911, 51.6 in 1910, 51.4 in 1909, 52.9 in 1908, and 53.9 in 1907, an increase in 10 years of 7.6.

The following directors were elected for the current year: Sir William Mackenzie, Sir Henry Pellatt, Senator F. Nicholls, Senator C. P. Beaubien, E. R. Wood, G. H. Smithers and F. W. Ross; Senator Beaubien replacing Sir Rodolphe Forget.

At a special meeting of shareholders, Feb. 26, called to pass a bylaw to increase the board of directors by two, no business was done, owing to the fact that the necessary number of shares were not represented, either by persons or proxies. The total number of shares in the company is 120,000, the number required to be represented being 80,000, and only 76,500 were represented, the directors holding proxies for 64,000. At a subsequent meeting of directors a dividend of 1% for the quarter ended Dec. 31, 1917, was declared, being at the rate of 4% per annum, instead of 8% as hitherto.

**Levis County Ry. Situation.**—The company's directors, including several from Montreal, met in Levis lately, and went over the lines, to consider what could be done to keep the cars operating, and under what agreement this could be accomplished. The company has been operating for some time at a loss, and an increase in the rates of fare has been proposed as one solution of the difficulty. The sale of the property to the municipality has also been spoken of.

**The Ottawa Electric Ry.'s franchise expires in 1923,** and the city's board of control has begun to look into matters connected with it with a view of deciding what action should be taken. The city must give the company a year's notice if it desires to take over the lines. (Feb., pg. 77.)

**The Quebec Ry., Light, Heat & Power Co.** develops 48,000 horsepower and has a surplus of 15,000 h.p. Besides it has about 28,000 h.p. yet unharnessed, and a campaign is about to be begun with a view to inducing western capital to start industries within range of the company's plant at Quebec.

# Cars for Montreal and Southern Counties Railway.

The Montreal & Southern Counties Ry. received recently the first two of three additional motor cars for interurban service, the main features being as follows:

Length over corner posts .....	43 ft. 4 in.
Length over vestibule .....	53 ft. 8 in.
Length over all, about .....	56 ft.
Distance between bolsters .....	30 ft. 8 in.

each two seats.

The car is heated with a hot air heater, located at front end of smoking compartment. There is a toilet lavatory room at front end of main compartment, equipped with standard dry hopper closet, also a 5 gall. water cooler, with faucet in an

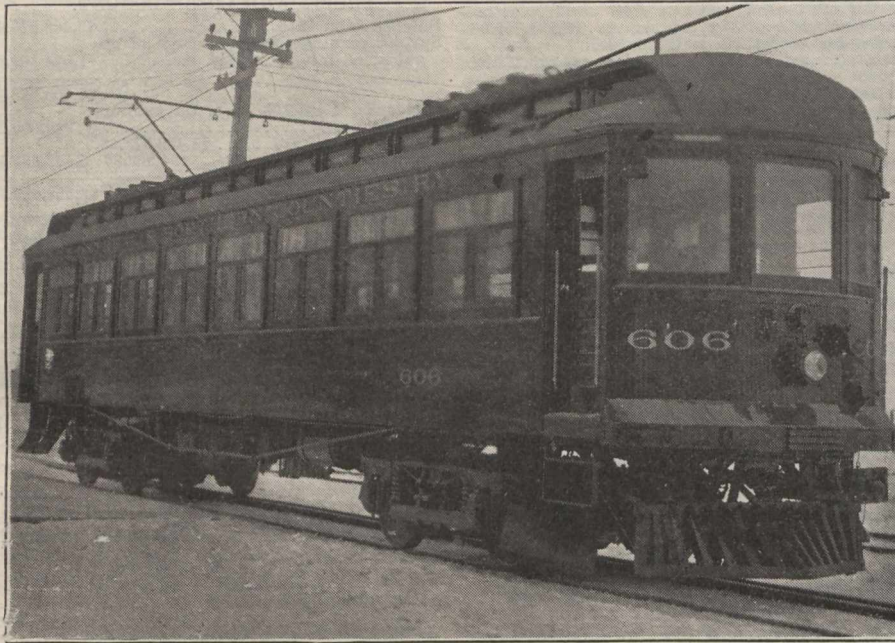
and held up with a spring latch when the door is opened. All vestibule doors are equipped with Ottawa Car Mfg. Co. standard hold backs.

The cars are mounted on trucks with steel wheels, and are equipped with a Westinghouse quadruple 306 motor equipment with controls, with train line receptacles at each end for train operator. The cars are equipped with two trolleys on Ohio Brass Co. trolley bases, also O.B. trolley retrievers. The air brakes are Westinghouse type A.M.M., with supplementary reservoirs and governor synchronizing system, arranged for trolley circuit. The cars are also equipped with Westinghouse electro pneumatic signal system, pneumatic sanders, luminous arc headlights, strong locomotive type pilots, also steel snow scrapers; also Tomlinson automatic car and air couplers. The cars are painted green and lettered in gold.

Owing to the limitation in weight due to the Victoria Bridge, over which these cars are to operate, the cars had to be built as light as possible consistent with strength. The weight, completely equipped, is 61,000 lb.

The cars were built by the Ottawa Car Mfg. Co., Ltd., the foregoing information having been furnished by the superintendent of its car department, J. A. Wilson.

The Toronto Ry. and the Queen St. Bridge.—The Toronto Ry. having failed to pay \$80,000, balance of its share of the construction of the Queen St. bridge carrying its tracks over the C.P.R., G.T.

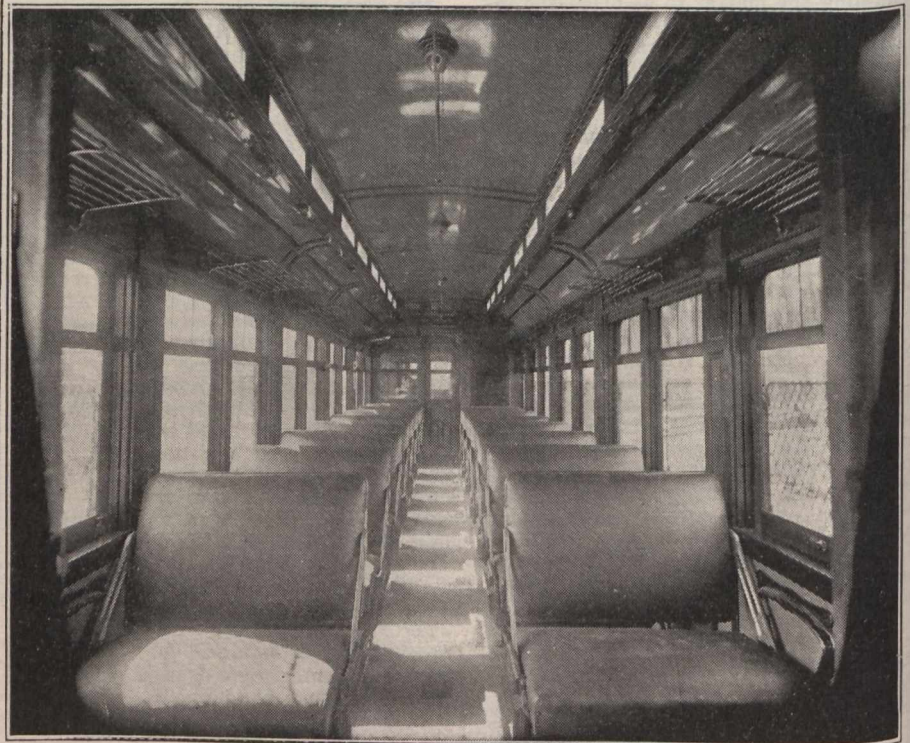


Montreal & Southern Counties Railway Car.

Width over eaves .....	18 ft. 6 in.
Width over side sills .....	8 ft. 1/4 in.
Height of top of rail to top of roof ..	12 ft. 8 1/2 in.
Normal seating capacity .....	60 persons

The car sides are straight and sheeted vertically with poplar sheeting, the roof is of monitor type, with ventilating deck sash operated by M. & S.C.R. standard deck sash fixtures, and glazed with opalescent glass. The side sash are of mahogany, the top sash are stationary and extend over two window openings, and are glazed with opalescent glass, set in lead cathedral design. All body side windows are equipped with wire screens of No. 12 gauge wire. The cars are built on a special light weight, all steel underframe, of through platform type. The side sills are of 5 in. x 3 1/4 in. at 11.6 lb. The centre sills are of 10 in. channel at 20 lb., continuous from bumper to bumper, the knees and bumpers are of 6 in. channel, the headstocks are built up of plates and angles, the bolsters are built steel castings; the body is strengthened up of pressed steel sections, plates, and with both top and bottom truss rods, and is also stiffened laterally by diagonal bracing in the underframe. There is also an anticlimber spring buffer at each end of car to take any small collisions. The floors are of Georgia pine, laid double with heavy felt between. The body side framing is of light and strong construction.

The interior of the car is finished in Mexican mahogany, full finish. All metal trimmings are of Ottawa Car Mfg. Co. standard reversible type, upholstered in lacquered. The seats are M. & S.C.R. standard reversible type, upholstered in green pegamoid. The side windows are equipped with national single cam sash locks and national compression cam anti-rattlers; also national spring plug rollers and nantasote curtains. Twelve polished bronze parcel racks are placed between



Montreal & Southern Counties Railway Car. Interior.

alcove reached from main aisle of car. The headlining is agasote painted green, the lights are in 6 circuits, arranged in clusters, along the upper deck, also along each deck rail, cross-over seats. Each vestibule door is equipped with a steel trapdoor to cover step opening when the door is closed. These trapdoors are hinged to the bottom of the vestibule door

R., C.N.R. and Don River, as ordered by the Board of Railway Commissioners, the City of Toronto obtained an execution against the company recently. The company applied for a stay of execution pending an appeal on the question of the Board's jurisdiction, but this appeal was dismissed Feb. 16, and subsequently it was announced that the amount was paid.

**London Street Railway Annual Report and Meeting.**

Following are extracts from the report for the calendar year 1917 presented at the annual meeting in London, Ont., recently:—

<b>Earnings—</b>		
	1917.	1916.
Passenger . . . . .	\$413,241.58	\$420,704.92
Miscellaneous . . . . .	4,620.78	5,609.85
<b>Gross earnings . . . . .</b>	<b>\$417,862.36</b>	<b>\$426,314.77</b>
<b>Expenses—</b>		
Maintenance way and structures . . . . .	\$ 55,411.47	\$ 51,567.22
Maintenance equipment . . . . .	46,713.80	32,410.21
Power . . . . .	37,101.88	37,994.08
Car service . . . . .	155,396.55	138,653.55
General . . . . .	36,470.65	31,775.89
<b>Total operating expenses.</b>	<b>\$331,094.35</b>	<b>\$292,400.95</b>
<b>Net earnings . . . . .</b>	<b>\$ 86,768.01</b>	<b>\$133,913.82</b>
<b>Deductions from net earnings—</b>		
Interest on bonds . . . . .	\$ 29,647.97	\$ 32,138.29
Interest . . . . .	1,760.00	922.85
Taxes . . . . .	7,661.84	7,241.91
Miscellaneous . . . . .	221.00	.....
<b>Total deductions . . . . .</b>	<b>\$ 39,290.81</b>	<b>\$ 40,303.05</b>
<b>Net income . . . . .</b>	<b>\$ 47,477.20</b>	<b>93,610.77</b>
<b>Construction and Equipment Expenditures.</b>		
Track and roadway construction . . . . .	\$ 43,771.33	.....
Electric line . . . . .	463.04	.....
Buildings and fixtures . . . . .	671.70	.....
Cars . . . . .	180.80	.....
Motor line truck . . . . .	1,588.35	.....
Real estate (in trust) ex. 1916 suspense . . . . .	5,900.97	.....
	\$52,576.19	.....
Net proceeds, sale of scrap . . . . .	5,883.21	.....
<b>Total . . . . .</b>	<b>\$46,692.98</b>	.....

tracks was done in 1917, the tracks being relaid with new ties and new rail in concrete foundations, and paved with brick. The directors, therefore, considered it inadvisable to declare a dividend for the 6 months ending Dec. 31, 1917, on account of the large decrease in the net income for 1917 and of the conditions as outlined in the foregoing statements.

Following are comparative statistics:—

	1917.	1916.
Passengers carried . . . . .	11,374,396	11,518,428
Expenses, per cent. of earnings . . . . .	79.24	68.6
Car earnings, per revenue passenger . . . . .	3.63c	3.67c
Transfers . . . . .	1,703,344	1,792,579
Total passengers . . . . .	13,188,803	13,311,006
Car earnings, per passenger . . . . .	3.13c	3.08c
Car mileage . . . . .	1,933,557	1,938,492
Gross earnings, per car mile . . . . .	21.61c	21.99c
Operating expenses, per car mile . . . . .	17.12c	15.08c
Net earnings, per car mile . . . . .	4.49c	6.91c
Miles of track . . . . .	36.10	36.02
Gross earnings, per mile of track . . . . .	\$11,575.13	\$11,835.46

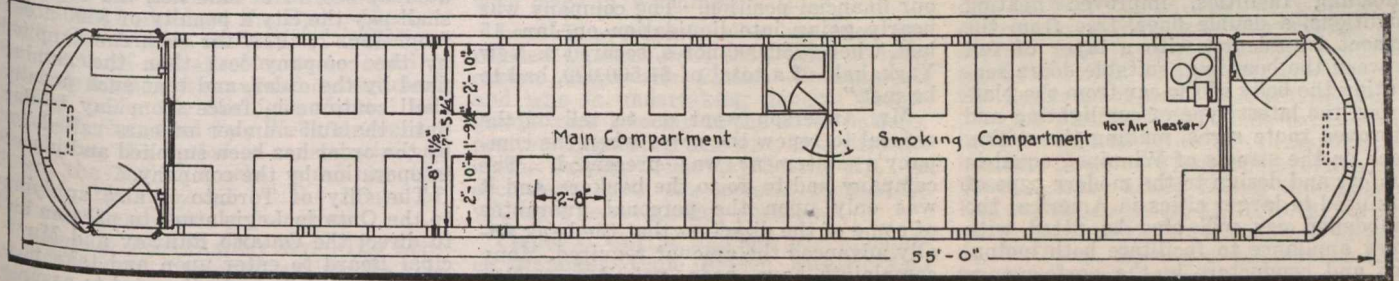
The officers were re-elected as follows: President, C. Currie, Akron, Ohio; Vice President, T. H. Smallman, London; other directors, P. W. D. Broderick, Toronto; Sir Herbert Holt, Montreal; R. R. Alexander, Cleveland, Ohio; W. M. Spencer and C. H. Ivey, London; Manager, C. B. King; Secretary-Treasurer, L. Tait.

**Electric Railway Traffic in Regina.**

In the matter under the above heading, published in Canadian Railway and

**Women Conductors Not Likely for Montreal.**

J. E. Hutcheson, General Manager, Montreal Tramways Co., in an interview recently expressed himself as opposed to the employment of women as conductors, giving the following reasons: "It would be extremely hard on a woman to have to tramp through the snow on freezing cold mornings, with a strong blizzard blowing, in order to be at the car yards at 4 o'clock. Nearly all our conductors are French; because most of the French population speak English, but not many English Canadians are conversant with French. This would debar many of the English speaking women of the city from replacing men in this capacity. The crowds at the rush hours are more than many men can handle and would be a most unpleasant, extremely difficult, if not wholly impossible, job for a woman to tackle. There are many aspects of the question of which the general public is ignorant. For instance, when we start a man we start him as a tripper. That means that we just put him on for a few trips morning and evening at the rush hours when we run extra, and we pay him by the hour. It is a couple of years before he takes a regular job. I would not like to see women conductors on in the rush hours. The situation is quite different and much easier to cope with in England. There, the cars are each one al-



Montreal & Southern Counties Railway Car. Floor plan.

Included in 1917 maintenance of equipment is \$10,627.33 for rebuilding cars, compared with \$1,978.33 in 1916. Five new p.a.y.e. cars were contracted for early in 1917, but delivery has been delayed, with the result that they will not be in service until the spring of 1918.

**General Review.**

	Jan. 1, 1915.	Dec. 31, 1917.
Road and equipment . . . . .	\$1,326,785.73	\$1,466,328.44
Bonds and capital stock . . . . .	1,133,000.00	1,232,480.00
<b>Difference in investment \$</b>	<b>193,785.73</b>	<b>\$ 233,848.44</b>

On Mar. 8, 1915, under the terms of the mortgage, the company commenced the redemption of its bonds at the rate of \$35,000 a year, bonds redeemed to date totalling \$105,000. While the company has improved its road and equipment on an average of \$46,514.25 a year, it has not been able to correspondingly increase its bonds and capital stock, with the result that on Dec. 31, 1917, there was invested in the road and equipment \$233,848.44 more than the total outstanding bonds and capital stock. With a surplus of only \$194,541.81 available, the financial operation becomes difficult.

While the gross earnings decreased in 1917, as compared with 1916, this was due in a measure to the large number of soldiers in training camp in the city in 1916, thereby causing an abnormal increase in 1916. The operating expenses show a large increase both in materials and labor, the total operating expenses being 79.24% of gross earnings, compared with 68.6% for 1916. Much reconstruction of

Marine World for February, there were two mistakes, "cash fares" being referred to instead of "cash and ticket receipts," and the word "specials" being used in the tabular statement instead of "transfers." The article is repeated correctly as follows:

A statement prepared by Regina Municipal Ry. officials shows that the traffic is about 65% greater in winter than in summer. Two days were selected for the test, viz., Monday, Sept. 10, and Monday, Dec. 10, both of which happened to be fine days, and typical of the season. The cash and ticket fares received on Sept. 10 were \$474.82, and on Dec. 10, \$795.56. The traffic figures for the two days on the various lines were:

	Sept. 10	Dec. 10	Per cent. increase
Red . . . . .	3,179	5,867	84.6
White . . . . .	2,109	4,013	90.3
Blue . . . . .	3,016	5,196	72.3
Green-red . . . . .	3,038	4,012	32.6
	11,342	19,088	68.3
Transfers . . . . .	1,574	2,212	40.5
	12,916	21,300	65.0

**Fares Raised in Brandon.**—The Brandon, Man., City Council, on Feb. 19, directed that a straight 5c fare be collected from passengers on the Brandon Municipal Ry., starting Feb. 20. Outstanding 6 for 25c tickets will be redeemed; workmen's tickets are now 6 for 25c, instead of 8 for 25c, and good only from 6 to 8 a.m. and 5 to 6.30 p.m.

lowed to contain only a stated number of passengers; they creep along with no confusion and everything runs smoothly and in orderly fashion. We are very short of men now, owing to the fact that very many are engaged in munition work. However, we have not yet taken into consideration New York's or England's solution of the problem. Before we do that we shall try replacing our men who have always had to be between 20 and 40 years of age, with men of from 40 to 60. We think a man over 40 will be quite capable of filling the position of conductor. The reason we did not accept them formerly was that we have a mutual insurance scheme by which the men pay certain sums of money to us and we pay them at any time that they are ill for a week or two. So, for our own protection we took men under 40."

**Electrolysis in Winnipeg.**—A press dispatch says that the long continued dispute between the Winnipeg Electric Ry. and the city over damage to the water mains by electrolysis will be settled, by the company paying the claim in return for an assurance that jitneys will be abolished.

The Hamilton Radial Ry., as a result of the heavy snowstorm at the beginning of the year, only cleared its double track as far as the canal, and one track across Burlington Beach. It was estimated it would have cost \$2,000 to clear the snow off the balance of the track.

## The Winnipeg Electric Railway and Jitney Competition.

In a statement issued Feb. 5, A. W. McLimont, General Manager, Winnipeg Electric Ry., said:—"The time has arrived when the public will have to decide as between the jitneys and the street railway company. In order to furnish the public with better transportation facilities the jitneys must be abolished. The continuation of both systems means inefficient service. Due to the effect of the jitney competition upon its revenues, the company is not in a position to make improvements, but upon the abolition of this competition, the company will be placed in a position where improvements can at once proceed that will provide Winnipeg with a much more adequate system of transportation.

"The company's idea of adequate transportation is to carry all passengers with the greatest degree of safety to the passengers and the public on the street; with the maximum of speed consistent with such safety, and with the maximum degree of regularity and certainty of schedule, with reasonable comfort to the passengers and over the shortest route to serve the maximum number of people.

"Towards accomplishing this, alterations will be made in the present rolling stock which will lower the car body, provide front exits, better and easier loading and unloading facilities, improved heating conditions, a double floor, free from the present trap-doors, with a layer of felt between the boarding, suitable doors separating the body of the car from the platforms, the latest type of car lighting and improved route signs, making the rolling stock on the streets of Winnipeg equal in comfort and design to the modern type of cars used in larger cities in America; the remodelled car will also be fitted with every appliance to facilitate both motormen and conductors in the performance of their duties in the most effective manner. By the adoption of this type of rolling stock the elimination of many unnecessary stops and the accurate designation of stopping points by the white pole system, the company will be enabled to supply a much more rapid and regular service.

"The company proposes to make a special study of the loading and unloading of cars at congested points with a view to moving traffic as quickly as possible and removing any defects that may now exist. It must be borne in mind that there are certain physical conditions existing in Winnipeg which partly account for some of the defects at present existing in the service. For instance, single track bridges cause congestion and irregularity, and at times climatic conditions in winter make regular and continuous operation exceedingly difficult to maintain and tend to cause temporary interruptions. A study is being made of the entire transportation problem, including the unfavorable conditions enumerated above, with a view to supplying the public with adequate transportation.

"If the jitneys are not eliminated, the company will be faced with the alternative of a deteriorated service or applying for a revision of its charter so as to find some means to increase its revenues. If the jitneys are to continue, the two systems must be put upon an equal footing, and the street railway company will have to be relieved of its obligation to pay a percentage of gross earnings, and will have to be put in a position of being al-

lowed to charge the same fares as the jitneys, doing away with all transfers, and will have to be relieved of its pavement obligations and other burdens imposed upon it under its contract with the city."

This statement came up for consideration at a public meeting held on Feb. 8, to discuss transportation matters. One of the speakers was E. Anderson, K.C., representing the Winnipeg Electric Ry., who stated that the success of the city and the success of the company go together. If the one goes to the wall, the other will be seriously affected. If the company goes into liquidation, it will be a black eye for the city, from which it will be very hard to recover. He continued:—"We want to lay before you exactly our position. We are losing \$400,000 yearly by reason of competition and other causes. Our operating expenses have grown very rapidly from \$1,369,000 in 1913, to \$1,762,000 in 1917. There will be a deficit of approximately \$70,000 this year, and therefore not a cent of dividend. The lifting of the competition will remedy the situation. We propose to take the money we would get as a result of the elimination of the competition and put it into the improvement of the service. I want to give you a clear conception of our financial position. The company was nearly going into liquidation on Jan. 15 last, when \$750,000 notes, secured in New York, half of a total of \$1,500,000, had to be met."

Mr. Anderson went on to tell of the refusal to renew the notes when the company's statement was presented. The company had to go to the bankers, and it was only upon the personal guarantee of some of the directors that the bank finally advanced the amount required. Many complaints have been voiced regarding the service. Has it occurred to these people that they are making the strongest argument they can in favor of the abolition of the jitneys? The position that exists as regard my clients, is principally due to the existence of the jitney. In view of our present situation, if the jitneys are allowed to continue on the streets, we have got to adopt some radical policy. We shall not be in a position to give the service that is demanded. We shall, maybe, be forced to either let the service run down to such a point that it will be absolutely inadequate, or ask for a revision of our contract, so that we shall be forced to ask nickel fares and discontinue the transfers. If the jitneys are eliminated then we will not ask for any change in fares."

He contended that the company had a franchise for an exclusive right of transportation on the streets of Winnipeg, with the exception of that provided by animal drawn vehicles. It was his personal view that if the company was permitted to charge a 5c straight fare, and was not obliged to give transfers, it need not fear jitney competition.

A. W. McLimont, the company's General Manager, also spoke. He stated that the local conditions of transportation must be dealt with as they were found. The company could not control the labor and could not control the operating expenses. The cost of supplies had increased by 247%. The payroll could not be paid by tearing up a mile of track or taking down a building. It has to be earned in hard cash. He stated that with

the revenue that is taken away from the company at present by competition, it could inaugurate improvements that would very materially remove the congestion existing.

R. B. Graham, counsel for the jitney men, said until the company has stated the minimum it would accept, or the maximum it would offer, the jitney men would not enter into any negotiations.

There was a good deal of rambling discussion, and nothing definite seems to have been done, the meeting adjourning to a day to be named by the city council's transportation committee.

The object of the committee in calling the meeting seems to have been to bring before the public all the information possible, and to obtain from the public expressions of opinion on the whole question, so that the committee would be in a better position to arrive at a solution of the jitney question.

## The City of Toronto and the Toronto Railway.

The City of Toronto is applying to the Ontario Legislature for the passing of an Act to provide that in default of the Toronto Ry. complying with the provisions of the Ontario Railway and Municipal Board's order set forth as schedule "G" to the act passed in the 7th year of His Majesty's reign, chap. 92, and validated by sec. 17 of said act, the company shall pay the city a penalty of \$500 a day from Jan. 1, 1918, for each car supplied by the company less than the number fixed by the order, and that such penalty shall continue in force from day to day until the full number of cars called for by the order has been supplied and placed in operation by the company.

The City of Toronto is also applying to the Ontario Legislature to pass an act to direct the Ontario Railway and Municipal Board to enter upon and take possession of the Toronto Ry., and to assume and take over all or any of the powers, duties, rights and functions of the directors and officers of the company, and supervise and direct the management of the company and its railway, under the provisions of the Ontario Railway Act, sec. 260.

**Toronto Suburban Ry. Express Service.**  
An express service has been started on the T. S. R., on the old line to Woodbridge and on the new extension to Guelph. Arrangements have been made to pick up and deliver in Toronto and Guelph by the company's own auto truck, and in Georgetown by a hired carter. There have been many enquiries from traders as to rates and service, and a fair amount of shipment is already offering. In the country districts farmers are pressing strongly for facilities for taking their milk, as the service will save them hours every day, the line passing through a good farming district. At present the milk has to be carted some miles to the steam railways.

**The Ottawa Electric Railway's Report**  
for the calendar year 1917, presented at the annual meeting on Feb. 4, is published in full on page 82 of this issue. The number of passengers carried increased from 27,033,798 to 29,347,692, and the net earnings from operation increased \$50,724.71, the most satisfactory feature being the reduction in operating expenses, which were the lowest in the company's history, being 56.8% against 58% in 1916. The directors and officers were re-elected.

**Electric Railway Projects, Construction, Betterments, Etc.**

**Brantford Municipal Ry.**—We are officially advised, in connection with recent press reports, that while the Brantford Railway Commission intends to build more track, there is very little chance that anything will be done this year. The difficulty of getting construction supplies and labor stand in the way. (May, 1917, pg. 203.)

**Calgary Municipal Ry.**—It is proposed to build a short section of line in Calgary, Alta., which will have the effect of saving 2,207 ft. on the Ogden line. The cut-off will start near the stockyards and run across the Pearce-Beattie-Walker syndicate's land to near the Canada Malting Co.'s elevator, then alongside the public right of way to the Ogden bridge. Plans for this work have been submitted to the city council by Commissioner Graves. (Oct., 1917, pg. 407.)

**Edmonton Radial Ry.**—We are officially advised in connection with the press report referred to in our last issue, that the extension is along 106th Ave., from 97th to 101st St., and is about 925 ft. long. It consists of a temporary track to connect the two streets named to facilitate the operation of one-man cars. It is desired that the cars may belt around if necessary. (Feb., pg. 77.)

**Hydro-Electric Power Commission of Ontario.**—The Board of Railway Commissioners has authorized the Hydro-Electric Power Commission of Ontario, subject to the terms of an agreement, to build a power development canal and construction railway, under the Michigan Central Rd. on lot 57, Stamford Tp., Welland County, and during the period of construction, to divert the M.C.R. tracks; plans for the work to be approved by the Board of Railway Commissioners' engineer.

**London & Port Stanley Ry.**—The London, Ont., City Council is asking the Ontario Legislature to authorize it to pass a bylaw, without obtaining the ratepayers' consent, to issue debentures for \$138,000 to enable the London Railway Commission to pay for the construction of the switch and bridge to Beatty Bros.' industrial premises, and other works necessary to cope with increasing traffic on the L. & P.S. Ry. (Sept., 1917, pg. 368.)

**Sandwich, Windsor & Amherstburg Ry.**—Complaints were made of the condition of the company's tracks at the Walkerville town council meeting, Feb. 12. The mayor is reported as having said, "These conditions will be remedied this spring, if the town has to do it for them and then send them the bill of costs." (Feb., pg. 77.)

**Toronto Suburban Ry.** has built a barn at the intersection of Bay and Dundas Sts., Guelph, to hold one radial car. It is necessary to house a car overnight and for certain hours during the day time at the Guelph end of the line. The building is 20 ft. x 15 ft., and besides having room for the car, contains a passenger waiting room and a freight platform. The building is 20 ft. high. Provision is made for heating the waiting room, and the lighting is taken from the city system.

The City of Toronto is applying to the Ontario Legislature to validate an agreement made between the city and the company, Oct. 16, 1917, extending the time within which the company may build and put in operation its railway upon the portion of Davenport Road lying east of Bathurst St. to the northern limits of the city as the same existed in 1899. (Jan., pg. 32.)

**Mainly About Electric Railway People.**

**E. H. Derricott** has been appointed Accountant, Lethbridge Municipal Ry., vice D. Donald, resigned.

**T. J. Stewart, M.P.**, of Hamilton, Ont., has been elected a director of the Quebec Ry., Light, Heat & Power Co.

**A. H. Foster**, Manager Guelph Radial Ry., was granted an increase of \$200 in salary, Feb. 14, making it \$1,300 a year. He has been appointed Fuel Commissioner for the City of Guelph, Ont.

**Duncan McDonald**, formerly General Manager, Montreal Tramways Co., was reported, Feb. 28, to be seriously ill with pneumonia.

**R. W. Shaw, M.D.**, has been appointed a member of the London Railway Commission, London, Ont., vice M. D. Fraser, K.C., deceased.

**H. C. Nickle**, Superintendent and Purchasing Agent, Kingston, Portsmouth & Catarqui Electric Ry., has been appointed fuel controller for Kingston, Ont.

**Lloyd Harris**, who has been associated with the British War Mission in Washington, on behalf of the Canadian Government, for several months, and who, among his other activities, is Secretary-Treasurer, Lake Erie & Northern Ry., has been appointed Chairman of the Canadian War Mission to the United States, with office in Washington, D.C.

**Lord Beaverbrook**, who has been appointed Chancellor of the Duchy of Lancaster, under the British Government, and who is undertaking general propaganda work relating to the allied nations' position regarding the war, is a director of the British Columbia Electric Ry. In accordance with the general custom, he will have to resign this position.

**Claude C. Curtis**, who has been appointed Manager, Cape Breton Electric Co., Sydney, N.S., was born at Battle Creek, Mich., Mar. 27, 1883, and graduated B.S. in mechanical engineering from the University of Michigan, in 1907. He entered the Stone & Webster Engineering Corporation service in July, 1907, and has been, to Nov., 1907, inspector on construction of power station, Lowell, Mass.; Nov. to Dec., 1907, in similar capacity at Pawtucket, R.I.; Dec., 1907, to Mar., 1912, Assistant Lighting Superintendent, Lighting Superintendent, and Manager, successively, Ponce Ry. & Light Co., Ponce, Porto Rico; Mar., 1912, to Aug., 1913, secretary to R. Robb and H. G. Bradlee, Stone & Webster Co., Boston, Mass.; Aug., 1913, to July, 1915, Superintendent, Houghton County Electric Light Co., Houghton, Mich.; July, 1915, to Feb., 1918, Superintendent Light and Power, El Paso Electric Ry., El Paso, Texas.

The Toronto Civic Transportation Commission, which was appointed some time ago to carry out preparatory work consequent on the probable taking over of the Toronto Ry. by the city on the expiry of the company's franchise in 1921, held a meeting, Feb. 5, to consider the situation following the vote given by the ratepayers, Jan. 1, in favor of the city taking over and operating the railway. The commission is reported to have decided to make arrangements for the preparation of plans and specifications for a car building plant for the building of cars for use on the civic lines, and also to prepare for the purchase of 250 cars for delivery by Sept., 1921.

**Electric Railway Finance, Meetings, Etc.**

**British Columbia Electric Ry. and allied companies:**—

	6 months to Dec. 31, 1917		6 months to Dec. 31, 1916	
	Dec. 1917	Dec. 1916	Dec. 31, 1917	Dec. 31, 1916
Gross	\$555,000	\$496,959	\$2,923,660	\$2,665,385
Expenses	388,222	360,593	2,323,863	2,125,679
Net	166,778	136,366	599,797	539,706

The working expenses for Dec., 1917, as shown, do not include any charge in respect of the cost of repairing damage caused by blizzard; this being estimated at \$150,000, is being charged against the reserve fund.

**Guelph Radial Ry.**—The directors, on Feb. 14, declared a dividend of 3½% on the capital stock, which is owned by the City of Guelph, Ont. This dividend, which will absorb \$6,000, was rendered possible because the city's light and heat commission had refunded the G.R.R. \$2,000 on account of overcharges for power in previous years.

**Hamilton St. Ry.**—The receipts for the fourth quarter, 1917, were \$201,748.21, of which the city's share on mileage and percentage was \$18,019.81. The total for mileage and percentage received by the city for 1917 was \$68,796.47 against \$64,062.97 in 1916.

**London & Port Stanley Ry.**—The City Treasurer reported to the London, Ont., city board of control, Feb. 15, that the amount advanced by the city to the London Railway Commission on account of debentures to date was \$994,905.48; the amount paid from the revenue funds of the L. & P.S.R. to June 30, as shown by the auditors' report, was \$167,189.83, a total of \$1,162,095.31. This expenditure is to be met as follows: Authorized debenture issue of \$1,000,000; further debenture issue asked for by the London Railway Commission, \$131,079.76; surplus earnings, 1915-1917, \$45,055.62, a total of \$1,176,135.38, leaving a balance of \$14,040.07 to meet unfinished work.

**London St. Ry.**—In accordance with the terms of the mortgage trust deed of Sept. 8, 1896, 35 debenture bonds of \$1,000 each were drawn for redemption recently, and are payable Mar. 8, after which they will cease to bear interest.

**Regina Municipal Railway.**—Approximate passenger receipts for Jan., \$21,500. Approximate increase over Jan., 1917, \$1,500.

**Toronto Ry.**—Receipts for January, \$562,707; city percentage \$84,406, against \$510,053 receipts and \$76,508 city percentage for Jan., 1917.

**Winnipeg Electric Ry.**—The Winnipeg Free Press of Feb. 9 said:—"The Winnipeg Electric Ry. has failed, for the first time in its history, to meet its financial obligations to the city on the date fixed under its charter. The company, under its franchise, must pay annually to the city exchequer 5% of its gross earnings. To this end it must, under its agreement, submit to the city treasurer on or before Jan. 15, its financial statement for the year ending Dec. 31, showing the amount of its revenue due to the city, and it must pay over to the city before Feb. 1 the amount represented by 5% of its gross earnings. The financial statement was submitted this year as usual, but the company has failed, so far, to pay over the amount due, which for last year is approximately \$99,000. Financial inability to meet this charge is the only reason the company offers for its failure to pay up. The board of control has instructed the city treasurer to draw the company's attention to the amount owing."

## Electric Railway Notes.

The Nipissing Central Ry. service between Haileybury, Cobalt, and Liskeard, was badly interfered with by snow storms in February.

Guelph Radial Ry. employes asked an increase of 3c an hour in their pay recently. The directors granted 1½c an hour war bonus, at their meeting Feb. 14.

The Nova Scotia Tramways & Power Co.'s conductors and motormen in Halifax, N.S., were stated in a press dispatch of Feb. 23 to have gone on strike.

The Edmonton City Council is asking the Alberta Legislature for authority "to collect street railway fares according to distance travelled, or on a zone system."

Regina, Sask., commercial travellers have asked the city council to direct the putting on of a special car on the Regina Municipal Ry., to meet late trains at the union station.

The Winnipeg City Council completed taking a census of traffic on the Winnipeg Electric Ry., Feb. 11. It is being tabulated and is expected to be presented to the city council early in March.

The Toronto Civic Ry. has received 5 car bodies from Preston Car & Coach Co., out of an order for 13, placed about a year ago. The equipment is being installed in the railway's own barns.

The British Columbia Electric Ry. succeeded in restoring the service on its Fraser Valley line, through to Chilliwack on Feb. 4. The line was badly damaged by a storm at the beginning of January.

The Chatham, Wallaceburg & Lake Erie Ry. was reopened for traffic Feb. 12, after being closed down for some weeks owing to severe snow storms. The branch to Erie Beach, is not yet reported cleared.

Some 200 Montreal Tramways Co.'s employes are stated, in a press dispatch, to have formed a local union, in affiliation with the Amalgamated Association of Street and Electric Employes of America.

Edmonton, Alta., citizens have complained to the commissioners, among other things, about "the very unsatisfactory handling of passengers transferring from the Calder St. car," on the Edmonton Radial Ry.

The Halifax, N.S., Board of Control has recommended to the city council a number of new traffic regulations for adoption in handling street traffic. Among these is one providing that all traffic shall keep to the right, instead of the left as hitherto.

It is stated in Ottawa, that owing to the adoption of liquor prohibition regulations in Quebec, the electric railway traffic between Ottawa and Hull has largely decreased. One paper says most of the cars carry three, four and five passengers, whereas they formerly had standing room only.

The Manitoba Legislature has before it a bill respecting electrolysis, for the purpose of providing a definite recourse for the city of Winnipeg in connection with injury to its water mains alleged to have been caused by the Winnipeg Electric Ry.'s conduit wires, etc. This matter has been the source of considerable controversy between the Winnipeg City Council and the company for some years.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., and representatives of the Chicago, Milwaukee & St. Paul Ry. gave a categorical denial, Feb. 15, to a report that the latter company intended taking over any part of the B.C.E. Ry. The C., M. & St. P. Ry.

has an arrangement with the B.C.E. Ry. regarding the hauling of freight into Vancouver.

Several Hamilton St. Ry. conductors were charged with stealing fares and tickets from fareboxes in Dec., 1917. Conductor Rodney was found guilty, but Judge Monk stated a case for the superior courts in which certain questions as to court procedure were submitted for consideration. These matters were argued Feb. 20, and the court reserved judgment. All the other cases were adjourned pending the settlement of the Rodney case.

Vancouver City Council representatives had a lengthy conference with British Columbia Electric Ry. officials, Feb. 12, upon matters connected with the improvement of the service in the city. W. G. Murrin, Assistant General Manager, informed the city's representatives that a new schedule was being operated, and that 10 additional cars had been put on the lines the previous day. It was shown that many of the points raised had been met by the new schedule, and consideration of the others was promised.

The Edmonton, Alta., City Council and its Public Utilities Committee met representatives of the union and non-union street railwaymen Feb. 6. The men did not ask for an increase of wages, but for a revision of the rules governing employment. After discussion it was agreed that a committee of the council and a committee of the men should each draft a set of rules and regulations, and then meet to discuss them, and attempt to agree upon rules for the approval of the council and the men as a whole.

The Toronto & York Radial Ry. car barn on the Metropolitan Division, Yonge St., Toronto, was burned, Feb. 7, about two-thirds of the building proper being a complete loss. Three large type inter-urban cars were totally destroyed, and 1 freight car and 3 other cars had the vestibules burned, while a further 4 cars were blistered. The company is securing information as to what cars are available for immediate service to replace those destroyed, it being considered necessary to use a similar type. The company's car barn on the Scarboro Division, at Kingston Road, was destroyed by fire, Feb. 24, together with one single truck car and 3 double truck cars. The loss, which has been estimated as \$70,000, is covered by insurance.

**Fares Advanced in Regina.**—Several changes were made in passenger fares on the Regina Municipal Ry. on Feb. 10, the only fares remaining unchanged being the straight cash fare of 5c from 6 a.m. to midnight, the night cash fare of 10c. from midnight to 6 a.m., and the children's tickets, good for children up to 14 years of age, which are sold at 10 for 25c. The following changes have been made:—Strip tickets, formerly sold, 6 for 25c., are now 5 for 25c.; book tickets, formerly sold, 25 for \$1, are now 21 for \$1; labor tickets, 8 for 25c., and formerly good from 6 to 8 a.m., and 5 to 7 p.m., are now only good from 6 to 8 a.m., their use from 5 to 7 p.m. being eliminated. The resolution authorizing the changes was passed by the City Council Feb. 8, on the mayor's casting vote. During the discussion it was stated it cost 6.57c. for every passenger carried, while the receipts were but 4.6c. per passenger. The estimated increase in revenue from the increase is put at \$31,700.

## Winnipeg Electric Railway Employes' Wages.

Winnipeg Electric Ry. employes notified the company, Feb. 15, that an increase of wages varying from 2c to 3c an hour was desired, and that the new schedule should become effective May 1. The present rates of pay are as follows: 28c for first six months service, 30c for second six months, 31c for first year, 33c for second year, 36c for third year. The 2c an hour increase is asked for those up to the end of one year service; the 3c for those having more than one year's service. It was stated that this would need an increase of over \$60,000 in the company's pay roll.

A. W. McLimont, General Manager, is reported to have said, Feb. 18, that new terms of pay had been agreed upon, and that a new schedule had been arranged, while on the same day the secretary of the union stated that negotiations upon certain essential matters not affecting the rates of pay were still under discussion.

## Regina Municipal Railway's Annual Report.

A Regina, Sask., paper has published the following figures showing the results of the operation of the Regina Municipal Ry. for the calendar year 1917, and stating that they have been certified by the auditors:

Total receipts .....	\$321,727.45
Operating expenses .....	199,572.98
Operating surplus .....	\$ 32,154.37
Fixed charges .....	96,066.66
Deficit .....	\$ 63,912.19
1914 deficit .....	\$ 6,034.14
1915 deficit .....	8,205.36
1916 surplus .....	21,430.51
1917 surplus .....	32,154.37

In commenting on these figures, the Regina paper says:—

In 1916, the surplus on operation was \$21,430.51, making last year's surplus an increase of approximately 50% over this figure. In all years since the inception of the system a deficit on operation was shown except in 1913, when there was a surplus of about \$1,000. Since 1915 there has been a steady improvement in the financial showing of the road on operation account as shown by the following figures:

1914 deficit .....	\$ 6,034.14
1915 deficit .....	8,205.36
1916 surplus .....	21,430.51
1917 surplus .....	32,154.37

Editor's Note.—In referring to "operation" above, of course fixed charges are not included. After deducting them for 1917, the deficit is nearly double the operating surplus.

**Underground Railways Proposed for Montreal.**—F. Stuart Williamson, M. Can.-Soc.C.E., formerly Chief Engineer, Central Ry. of Canada, has issued a booklet, "Municipal underground railways for the City of Montreal," in which he advocates the construction of rapid transit underground electric railways in Montreal, to be built by the city, and to be leased to and operated by the Montreal Tramways Co. The routes proposed are from Place d'Armes to Mile End, 2.84 miles; from Place d'Armes to Notre Dame des Graces, 3.98 miles; and from Peel St. to Moreau, 3.12 miles, a total of 9.94 miles. Particulars are given of methods of financing, the construction of subways adopted in Boston, New York, Providence and Philadelphia, together with extracts from various reports and papers relating to transportation in cities.

# Marine Department

## The Shipbuilding Situation and Outlook in Canada.

By Alexander Johnston, Deputy Minister of Marine and Fisheries.

[Considerable doubt is, at times, expressed as to whether shipbuilding is to become a permanent industry in the Dominion, or whether, when the governments cease placing orders on the present basis, the majority of plants which have been got together to cope with the emergency, will be closed and the staffs dissipated. In the situation, as it exists today, there is no room for the pessimist. The opportunity for which Canadian shipbuilders have been waiting is here, and it remains for them to make the most of it. There is no doubt that for several years to come the shipbuilding yards of the whole world will be fully occupied in replacing lost tonnage of all descriptions, as well as in keeping pace with the ordinary requirements of water transportation. Under existing conditions, there is ample opportunity for shipbuilding and allied trades to, at least, lay the foundations for a large and permanent shipbuilding trade on both oceans as well as on inland waters. The whole question is dealt with by the Deputy Minister of Marine in that department's report for the last fiscal year, as follows.—Editor.]

As the war has progressed, and an ever increasing amount of the ocean tonnage of the allied nations (now including the United States), and of the neutral nations, has been sunk, since Germany's declaration of unrestricted submarine warfare, the need of shipbuilding activity throughout the world to supply the wastage has become of paramount importance. This has been thoroughly realized both in the United States and Canada.

In the United States, since the outbreak of the war, 29 new shipyards have been organized, all of large proportions and thoroughly up to date, of these 15 are on the Atlantic coast, 13 on the Pacific, and 1 on the Gulf of Mexico, and substantial improvements and enlargements have been made to 28 existing yards. Of the improved yards, 14 are on the Atlantic and 2 on the Pacific coast, and of those that have been enlarged, 6 are on the Atlantic, 5 on the Pacific, and 1 one on the Gulf of Mexico. The lake yards, which under normal conditions only build for internal traffic, are now building overseas shipping, a good deal of it for Scandinavian owners.

In Canada, since the beginning of the war, the number of privately owned shipyards has been about doubled. Apart from the introduction of the larger yards, there has been in the Maritime Provinces generally, and in Nova Scotia in particular, a revival of the wooden shipbuilding trade, particularly in the form of small schooners, with or without auxiliary power, which are quickly and cheaply built, and at anything approaching the present abnormally high freight rates should pay handsomely.

All efforts abroad, as elsewhere, are of course, hampered by the shortage of steel, but this shortage is not likely to continue for any length of time after the restoration of peace, as the enormous demands for munitions of war will then cease. The revival of wooden shipbuilding activity in the United States has of late been remarkable, and it would almost seem to be in a fair way to rival in amount of ton-

nage the output of U. S. yards in the days of the clipper ship. The nearness of large supplies of timber has placed the wooden shipyards of Maine, the Southern States, and the Northwest Pacific coast in a position of great advantage. This last condition, of course, applies equally and perhaps even to a greater extent to our own Canadian yards in the Maritime Provinces and on the Pacific coast, and it appears that they are making ample use of it.

It can scarcely be disputed that no new form of industry in Canada affords greater possibilities than that of shipbuilding. The objections usually advanced to the establishment of the steel shipbuilding industry on a large scale in Canada are: that the facilities and experience of Canadian machine shops are not adequate to the production of the engines required for ocean going ships; and that the present high cost of shipbuilding material makes it an expensive venture. Neither of these objections, of course, applies to the building of wooden ships, which industry, owing to the great and immediate demand for freight carriers, has experienced a remarkable revival, both in Canada and the U. S. The first objection has been of late very much lessened, if not altogether removed. The great demand for the output of munitions has given a stimulus to the installation of large machine shops throughout Canada, and work is done on a scale which would have been quite impossible a few years ago. Although there are in Canada as yet no machine shops exclusively devoted to the production of marine engine, there are today in Toronto, Montreal, and Hamilton, and possibly elsewhere, shops able and willing to turn out for an adequate price marine engines for ocean going ships. The second objection, namely, the high cost of building materials and labor is countered by the fact of the abnormally high rate of the price for freighters, which is not only abnormally high now but still mounting, as the following taken from the New York Journal of Commerce of Feb. 27, 1917, show: "The price of steel steam tonnage for immediate delivery ranges from about \$215 to \$220 a ton, but very few prompt boats are available at that or any price. For delivery in 6 months the price at which owners are holding their boats is from \$155 to \$165 a ton."

The question which an intending shipbuilder will naturally put to himself is, will the demand for the products of my shipyard last for a sufficient length of time and at sufficiently high prices to assure me a reasonable return on the necessary outlay? The following considerations may enable him to come to a right conclusion. Since the beginning of the war, and up to Mar. 1, 1917, there had been destroyed by acts of war, and without regard to losses from natural causes, 4,811,100 tons of shipping, and the German submarines are at present sinking ships at the rate of 10% of that total tonnage each month; if continued at this rate for one year, nearly half the mercantile shipping of England will be lost at the end of the year. The Cunard Steamship Co. has actually placed orders in the U.S. for 11 big ships, ranging from 7,500 to 12,000 tons, and is placing additional or-

ders there, amounting in all to 260,000 tons, at a cost of about \$30,000,000. The merchant ships under construction or under contract for construction in the U. S. on Jan. 1, 1917, numbered over 400, with a total tonnage exceeding 1,500,000, and about half of this shipping was on foreign account and included nearly every nationality. The imperative demand of the U. S. Government for the prompt building of over 500,000 tons of war shipping will largely curtail their capacity for turning out merchant shipping for the next three years. Since the beginning of the war, new corporations organized for active shipbuilding operations in the U. S. have been formed with a total capital of \$150,000,000. As against the selling price of \$40 to \$50 a deadweight ton for tramp freighters prevailing before the war, present contracts can be had for \$150 a ton, and this for delivery at some time in the future.

There are some other considerations as well, perhaps, more nearly affecting Canadian output. Ships to the value of \$60,000,000 to be built in Canadian yards this year (1917) are already under contract. Included in this amount are orders for vessels amounting to \$25,000,000 placed on behalf of the Admiralty through the Imperial Munitions Board, 100 others are under construction at plants in various cities throughout the Dominion, as well as certain craft regarding which information cannot be given. In this situation of the shipbuilding industry, necessitated by the demand for tonnage to meet war conditions, the British Controller of Shipping, the British Admiralty, the Imperial Munitions Board, and two Dominion Government departments have had a part. Additional contracts for the building of merchant ships are likely to be placed, and there is also a likelihood that greater activity in the way of building dry docks will be shown by the shipbuilding industry. Negotiations are in progress with a view to introducing the manufacture of steel plates for ships and structural steel in Canadian plants. At present Canadian steel companies produce only lighter forms of structural steel. They have been engaged, however, of late, in filling orders for steel for munitions. However, the munition industry is only a temporary one which will cease to exist at the end of the war. Indeed it is stated an intimation has already been received that the output of large shells may be curtailed, because the great industrial development in Great Britain makes it possible to produce there a sufficient quantity of those projectiles to meet the requirements. If the rolling of ship plates and the making of structural steel is undertaken by Canadian firms, they may become permanent features of the country's industrial activities.

The question of freight rates after the war is of course, of the utmost importance to the shipbuilding trade. The present scale of freights will not, of course, continue after the war, and the main question to determine is how soon the break in the freight market will take place, following the cessation of hostilities. Some shipping people hold that the break will be sharp and sudden, others

that the very slight additions through new construction now being made to the tonnage of the world will tend to ward off any tendency to a sudden decline when the war is concluded. It is said in support of the latter contention that although some 5,000,000 tons of German and Austrian shipping now immobilized will be released, the shipping already sunk will decrease the world's fleet by 1,000,000 tons, while the 2,000,000 tons of new shipping at present in construction throughout the world is not expected to offset at once the losses due to the war, not to speak of the process of attrition due to natural causes (perils of the sea), which annually removes some 1,500,000 tons of shipping from the register. The prevailing opinion among shipping men seems to be that owing to the depletion of raw materials and foodstuffs caused by the war, not only in belligerent but neutral countries as well, the merchant marine of the world will be taxed to the utmost to make good the shortage, and freight rates will in all probability remain considerably above the normal for some years after the declaration of peace.

In competition with U. S. builders in the construction of steel ships, Canada is faced with the following difficulties: Steel plates for hulls and boilers are not yet produced in Canada in sufficient quantities; steel shapes for the frames of ships, and which are different in section from structural shapes for bridges and buildings, are not now rolled in Canada in sufficient quantities; and the organizing and training of an operating force to successfully establish such an industry requires much time and involves a large outlay. It would be difficult to exaggerate the importance of shipbuilding as a national undertaking to a country that has, like Canada, an extensive coast line both east and west, superb inland communication by lakes and rivers, and whose export trade is chiefly overseas. It is not to be expected that Canadian yards could turn out the enormous profits at present made by the U. S., as these now possess every form of material, from the iron ore and coal, through all the manufacturing processes, to the finished ship, and, save for the increased cost of labor, can turn out as cheaply a ship which today sells at \$150 to \$165 a ton, as one which in pre-war days sold at \$50 a ton; but possibly with the aid of one or other of the methods already adopted by some other governments for encouraging the growth of a merchant marine, it is not unreasonable to suppose that Canadian shipbuilding might be put on a firm, enduring, and profitable footing.

**Order of Coaling Steamships.**—An order in council has been passed under the War Measures Act, 1914, adding sec. 22B to the Defence of Canada Order, 1917, as follows:—"The competent naval authority may prescribe the order in which each vessel shall be supplied with bunker coal, or other fuel, at any port in Canada, and in exercising this power, he shall take into consideration the services in which the several vessels requiring fuel are engaged and their relative urgency."

**The Sullivan-Hall Shipping Co., Ltd.**, has been incorporated under the Dominion Companies Act, with \$20,000 capital and office at Winnipeg, to take over the grain and vessel brokerage, and marine insurance business, heretofore carried on there by the Sullivan-Hall Shipping Co., and to act as agents and brokers for railway, shipping and transportation companies, and to own and operate steam and other vessels and other transportation facilities.

## Result of the Enquiry into the Mont Blanc-Imo Collision at Halifax.

Mr. Justice Drysdale, of the Nova Scotia Admiralty Court, gave the following judgment on Feb. 4:—"Having been directed by the Minister of Marine to hold a formal inquiry into the cause of the explosion on the s.s. Mont Blanc on Dec. 6, 1917, I have to report as follows:—As directed I had associated with me, as nautical assessors, Capt. Demers, of Ottawa, Dominion Wreck Commissioner, and Capt. Walter Hose, R.C.N., of Halifax. I began the inquiry on Dec. 13, 1917, and having heard all the witnesses that could throw any light on the situation, and having conferred with the nautical assessors, I have reached the following conclusions, and desire to report as follows:—

"The explosion on the s.s. Mont Blanc was undoubtedly the result of a collision in Halifax harbor between the Mont Blanc and the s.s. Imo, caused by violation of the rules of navigation. The pilot and master of the Mont Blanc were wholly responsible for violating the rules of the road. Pilot Mackay, by reason of his gross negligence, should be forthwith dismissed by the pilotage authorities and his license cancelled. In view of the gross neglect of the rules of navigation by Pilot Mackay, the attention of the law officers of the Crown should be called to the evidence taken in this investigation, with a view to a criminal prosecution of such pilot. We recommended to the French authorities such evidence, with a view to having Capt. Lamodec's license cancelled and such captain dealt with according to the law of his country. It appearing that the pilotage authorities in Halifax have been permitting Pilot Mackay to pilot ships since the investigation commenced, and since the collision above referred to, we think they are deserving of censure. In our opinion the authorities should have promptly suspended the pilot. The master and pilot of the Mont Blanc are guilty of neglect of the public safety in not taking proper steps to warn the inhabitants of the city of a probable explosion.

"Commander Wyatt is guilty of neglect in performing his duty as Chief Examination Officer, in not taking proper steps to ensure the regulations being carried out, and especially in not keeping himself fully acquainted with the movements and intended movements of vessels in the harbor. In dealing with the Chief Examination Officer's negligence in not ensuring the efficient carrying out of traffic regulations by the pilots, we have to report that the evidence is far from satisfactory, that he ever took any efficient steps to bring to the notice of the Captain Superintendent, neglect on the part of the pilots. In view of the allegations of disobedience of the Chief Examination Officer's orders by pilots, we do not consider such disobedience was the proximate cause of the collision.

"It would seem that Halifax pilots attempt to vary the well known rules of the road, and in this connection we think Pilot Renner, in charge of the tramp steamer on the morning of the collision, deserving of censure. The regulations governing the traffic in Halifax harbor in force since the war were prepared by the competent naval authorities, but do not specifically deal with the handling of ships laden with explosives, and we have to recommend that such competent authorities forthwith take up and make specific regulations dealing with such subjects. We realize that whilst the war goes on, under present conditions explosives must move, but,

in view of what has happened, we strongly recommend that the subject be dealt with specifically by the proper authorities."

Immediately after the delivery of the judgment, Capt. Lamodec, of the Mont Blanc, and Pilot Mackay were arrested on charges of manslaughter, but were released on bail. Counsel for Capt. Lamodec submitted that as the latter was a French subject the Governor General's consent would be necessary before he could be put on trial. Commander F. W. Wyatt, Chief Examination Officer, who had been suspended and subsequently superseded, was arrested on Feb. 5, charged with unlawfully killing Pilot Wm. Haynes of the s.s. Imo, and was also released on bail.

### The Shipping Situation in Newfoundland.

St. John's. Nfld., press dispatch, Feb. 9. So critical has the shipping situation become in Newfoundland that the government has decided to create a ministry of shipping, to exercise control until the end of the war. The constantly dwindling tonnage, due to the requisitioning of vessels for war work and to losses from submarines and storms, has seriously affected the trade of the colony. Matters were brought to a climax recently when the British Admiralty notified the Newfoundland Government that it would be necessary to reduce the tonnage supplied for the colony's needs to one third of what has been available during the last year.

It is planned to place under the jurisdiction of the new ministry all the steamships which ply in and out of the innumerable harbors along the Newfoundland coast. Under the system which has been devised a number of steamships will be withdrawn from this inter-port trade and utilized to carry freight between St. John's, Nfld., Halifax and Sydney, N.S. At the Nova Scotia points connection will be made with the Intercolonial Ry. This will do away with the necessity of sending steamships on the long voyage to U. S. ports to take the colony's exports to that country and to bring in the needed imports. It will also facilitate commerce with all parts of Canada. Other coastal steamships will be diverted to the European trade. Efforts will be made, however, to do away with the necessity of dispatching many vessels across the Atlantic by developing new markets in Canada, the U. S., the West Indies and South America for dried cod fish, which is the most important commodity exported.

### Vessel Construction in Great Britain.

It was announced in the British House of Commons recently that 1,163,474 tons of shipping were built in Great Britain during 1917, and 170,000 tons were received there from abroad. It was also stated that the official estimate was not realized, as Great Britain had arranged to have a large tonnage built in the U.S., which, when the U.S. joined the Allies, she preferred to take over, and which was quite agreeable to Great Britain.

Leonard Steam Trawlers Ltd., has been incorporated under the Dominion Companies Act, with \$250,000 authorized capital, and office at Montreal, to build, own and operate steam and other vessels, for fishing and general transportation purposes, and to own and operate wharves, docks and other transportation facilities.



## Steam and Sailing Ships Under Construction Throughout Canada.

Following are particulars of shipbuilding which was reported in progress Dec. 31st, 1917. The figures given in each case show the gross tonnage:—

### Steamships, Atlantic Coast.

Canadian Vickers, Ltd., Montreal, 2 cargo steamers, 9,400, steel; 1 dredge, 2,360, steel; 12 trawlers, 3,050, steel; 23 drifters, 3,450, wood.

Wm. Crowell, Port Latour, N.S.—1 gas boat, 22, wood.

Davie Shipbuilding & Repairing Co., Levis, Que.—1 car ferry, 5,000, steel.

Grant & Horne, St. John, N.B.—1 cargo steamer, 2,800, wood.

C. A. Ham, Mahone Bay, N.S.—1 gas boat, 25, wood.

D. S. McLaren, Cardigan, P.E.I.—1 gas boat, 40, wood.

Marine Construction Co. of Canada, Ltd., St. John, N.B.—1 aux. schr., 750, wood.

B. W. Melanson, Gilbert's Cove, N.S.—1 general purpose, 276, wood.

C. A. Nickerson, Wood's Harbor, N.S.—2 gas boats, 22, wood.

Nova Scotia Steel & Coal Co., Trenton, N.S.—2 cargo str., 3,000 steel.

Quebec Shipbuilding & Repairing Co., St. Laurent, Que.—2 cargo str., 2,600, wood.

Quinlan & Robertson, Quebec, Que.—1 cargo str., 2,700, wood.

Southern Salvage Co., Liverpool, N.S.—1 cargo str., 2,500, wood.

A. H. Stevens, Tancook, N.S.—1 gas boat, 27, wood.

Wedgeport Navigation & Transportation Co., Wedgeport, N.S.—1 general purpose str., 340, wood.

Total, Atlantic coast, 55 steamships of 38,662 gross tons.

### Steamships, Great Lakes.

Abitibi Power & Paper Co., Montreal—2 tugs (1 gas boat), 151, wood.

British-American Shipbuilding Co., Welland, Ont.—2 cargo str., 4,700, steel.

Collingwood Shipbuilding Co., Collingwood, Ont.—3 cargo str., 7,200, steel.

J. W. Gerow, Rosspport, Ont.—1 fishing tug, 37, wood.

Great Lakes Dredging Co., Fort William, Ont.—1 cargo str., 1,700, wood.

Midland Shipbuilding Co., Midland, Ont.—3 cargo str., 6,000, steel.

Polson Iron Works, Toronto, Ont.—6 2,640, steel.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—6 cargo str., 12,091, steel;

6 trawlers, 1,530, steel.

Thor Iron Works, Toronto—1 cargo str., 2,437, steel; 2 trawlers, 540, steel.

Toronto Shipbuilding Co., Toronto—2 cargo str., 6,000, wood.

West, Beachy & Son, Simcoe, Ont.—1 tug, 18, wood.

Total, Great Lakes, 44 steamships of 63,853 gross tons.

### Steamships, Pacific Coast.

T. Atagi, Steveston, B.C.—1 gas boat, 32, wood.

Cameron-Genoa Mills Shipbuilders, Ltd., Victoria—4 cargo str., 6,500, wood;

1 auxiliary schr., 1,500, wood.

J. Coughlan & Sons, Vancouver—3 cargo str., 17,190, steel.

J. A. Croll, Port Alberni, B.C.—1 tug, 35, wood.

Foundation Co., Victoria—3 cargo str., 6,200, wood.

V. Hasegawa, Steveston—1 gas boat, 30, wood.

Wm. Lyall Shipbuilding Co., Vancouver—4 cargo str., 6,500, wood.

S. A. Moulton, Prince Rupert, B.C.—1 gas boat, 21, wood.

New Westminster Construction Co., New Westminster, B.C.—4 cargo str., 6,500, wood.

Pacific Construction Co., Port Coquitlam, B.C.—2 cargo str., 5,600, wood.

Walalce Shipyards, Ltd., North Vancouver—4 cargo str., 17,500, steel; 2 frt. and pass. str., 11,000, steel; 1 auxiliary schr., 1,500, wood.

Western Canada Shipyards, Ltd., Vancouver—3 cargo str., 3,900, wood.

Total, Pacific coast, 35 steamships of 84,008 gross tons.

Wooden Sailing Schooners, Atlantic Coast

T. K. Bentley, Advocate Harbor, N.S.—1 schr., 511, wood.

Omer Blinn, Grosses Coques, N.S.—1 schr., 375, wood.

Chester Basin Shipbuilders, Chester Basin, N.S.—1 schr., 135, wood.

Clare Shipbuilding Co., Meteghan, N.S.—1 schr., 350, wood.

G. M. Cochrane, Fox River, N.S.—1 schr., 450, wood.

J. Z. Degagne, Eboulements, Que.—1 schr., 98, wood.

Dowling & Stoddart, Port Clyde, N.S.—1 schr., 175, wood.

Ernst Shipbuilding Co., Mahone Bay, N.S.—1 schr., 162, wood.

Falmouth Shipbuilding & Transportation Co., Windsor, N.S.—1 schr., 405, wood.

L. F. Graham, Port Greville, N.S.—1 schr., 360, wood.

W. R. Huntley, Parrsboro, N.S.—2 schrs., 650, wood.

S. St. C. Jones, Little Brook, N.S.—1 schr., 62, wood.

Maurice Leary, Dayspring, N.S.—1 schr., 136, wood.

Dr. McDonald, Meteghan, N.S.—1 schr., 544, wood.

W. C. McKay, Shelburne, N.S.—3 schrs., 480, wood.

W. K. McKean & Co., Liverpool, N.S.—1 schr., 400, wood.

Nova Scotia Shipbuilding & Transportation Co., Liverpool, N.S.—2 schrs., 875, wood.

J. N. Rafuse, Conquerall Bank, N.S.—1 schr., 400, wood.

Robar Bros., Dayspring, N.S.—1 schr., 140, wood.

Smith & Rhuland, Ehrenburg, N.S.—2 schrs., 225, wood.

Southern Salvage Co., Liverpool, N.S.—1 schr., 185, wood.

P. A. Theriault, Belliveau's Cove, N.S.—1 schr., 339, wood.

Wagstaff & Hatfield, Port Greville, N.S.—1 schr., 400, wood.

Yarmouth Shipbuilding Co., Yarmouth, N.S.—1 schr., 175, wood.

### Pacific Coast.

Clarence Hoard, Victoria, B.C.—1 barge, 607, wood.

Total, Atlantic and Pacific coast, 30 sailing schooners and barges, 9,199 gross tonnage.

The steamships Empress of Asia, Empress of Russia, Empress of Japan, and Monteagle, owned by Canadian Pacific Ocean Services, Ltd., and operated on the trans-Pacific service, have been transferred from the United Kingdom register, with home port at London, to the Canadian register, with home port at Vancouver, B.C., which name now appears on the sterns of the vessels, instead of London, as heretofore.

## Enquiry into Pilotage in the Maritime Provinces.

Following on the findings of the commission appointed to enquire into the causes which led to the collision of the steamships Imo and Mont Blanc in Halifax harbor, Dec. 6, and the subsequent explosion on board the latter vessel, the Minister of Marine decided that it was necessary to enquire into the pilotage system in force at maritime province ports, and for this purpose the following order in council was passed Feb. 1:—"The committee of the Privy Council have had before them a report dated Jan. 30, from the Minister of Marine and Fisheries, submitting that he has had under consideration the pilotage system in operation at the ports of Halifax, St. John and Sydney, with a view to taking, at the earliest possible date, such measures for its improvement as may be deemed advisable. The minister observes that to enable him to deal with this matter it is essential that all the material facts of each case should be before him. As the question at issue concerns the conduct of the public business of Canada in respect of shipping at the ports named, the minister is of opinion that the most satisfactory method of eliciting the requisite information on which to base official action is by taking evidence on oath as to the said pilotage system. The minister therefore recommends that under the provisions of part 1 of The Inquiries Act, R.S.C. 1906, chap. 104, Thos. Robb (Manager, Shipping Federation of Canada); Capt. J. N. Bales (Deputy Port Warden, Montreal), and Capt. J. W. Harrison (Marine Superintendent, Furness, Withy & Co., Halifax), be appointed commissioners to enquire into and report upon all matters connected with the pilotage system and its administration at the ports of Halifax, St. John and Sydney, and to recommend to the minister what changes, if any, seem desirable therein."

The first sitting of the commission was held at Halifax, N.S., Feb. 9, Thos. Robb being chairman, and the taking of evidence concluded Feb. 14. Announcement has been made that the commission has reported, recommending that the Halifax Pilotage Commission be abolished, and that pilotage there be placed under the Marine Department.

### Regulations for Chartering Vessels.—

An order in council has been passed providing that a person shall not, without written permission from the Minister of Marine, directly or indirectly, on his own behalf, or in conjunction with any other person, enter into any agreement, or negotiations with a view to an agreement for the charter, whether for time or voyage, of any ship which is not a British ship, or otherwise for the use of any such ship for the carriage of goods to or from any port in the Dominion. Contravention of this regulation, or, in the event of the Minister's permission being obtained, failure to comply with conditions, carry penalties of \$5,000 fine or five years imprisonment, or both fine and imprisonment. The regulation is in force from Feb. 13, to the end of the war.

The first reinforced concrete freight motor vessel built in Germany is reported to have complete its trial trip at Hamburg. It is said to be made of "a new kind of concrete, which only weighs half as much as gravel concrete."

Admiral Sir C. E. Kingsmill, Director of Naval Service for Canada, has been created a Grand Officer of the Order of the Crown of Italy.

# The Necessity for the Establishment of a Canadian Ocean Merchant Marine.

By J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd.

The establishment of an ocean merchant marine is the most important domestic question before Canada today, for the continued prosperity of the Dominion will depend very largely upon our ability to ship our products to the markets of the world. This we cannot do unless we have the ships, and it would seem that the only way we can be assured of them is to follow the example of the United States and build them ourselves.

The people of Canada must be awakened to the urgency of this problem, and to its vital bearing on the future prosperity and development of our country. The extraordinary business expansion of Canada in the past year or two has left us somewhat complacent perhaps as to the future. But we must remember that this expansion has been due wholly to our participation in the war on the side of the allies, and is not a normal development. In three years' time we have nation, and our foreign trade balance become a lending instead of a borrowing sheet has turned tremendously in our favor. This happy condition might not have been effected in peace times in 20 years.

But what about the future? It is all very well to be optimistic, but facts are facts, and we cannot overlook them. Personally, I have always been a firm believer in the importance of foreign trade to the prosperity of any country, and I am one of those who are firmly convinced that Canada can develop her export business to enormous proportions, but realize only too well that such development can be possible only if she has the ships to carry that business. Now suppose the war were to end with Canada having made no attempt to establish a merchant marine of her own? What would happen? There would be a demand for tonnage such as the world had never known. Freight rates might be tremendously high, and the markets offering the best returns would get the ships. Ocean transportation in normal times is based on carriage of cargo in both directions; that is to say, the owner wants assurance that if he carries a cargo in one direction he will be able to get a return charter at an accessible point, and not have to run thousands of miles in ballast. Now, Canada's freight is mostly of the bulk variety, the class carried in peace times by the tramp steamship. But an export trade in raw products never made any nation wealthy. We must supply transportation for our manufacturers. We have a certain tonnage now, but only through the grace of the Admiralty. This tonnage probably will not be available after the declaration of peace. Great Britain, through mines, submarines, and marine risks, is losing ships faster than she can build them, even with her yards working night and day to meet the demand. Out of a total tonnage of some 20,000,000, Great Britain has lost at least 5,000,000 tons through the agency of the submarine alone. This represents the result of only one year of submarine frightfulness, and will not take into account the losses in the first two and a half years of the war, when such mighty liners as the Lusitania and the Arabic were sunk. In making this statement, I am not attempting to predict what the net loss of British tonnage will be when the war is finally concluded, but merely wish to show how a depleted tonnage will affect Cana-

dian interests. Great Britain's foreign trade is world wide, and if she is to retain it she will have to bend every energy toward that end, and this in the face of the greatest competition the world has ever witnessed. In South America, for instance, where before the war Great Britain and Germany had a practical monopoly, the United States will be a sturdy competitor, for she has improved the past few years to splendid effect in that field. This will mean that to retain the trade of the southern half of this hemisphere, so important to her merchants, Great Britain will have to divert a large portion of her merchant fleet to South American waters. And the same conditions will apply also to other countries, especially those supplying the raw materials for British mills, such as the United States and Australia.

What, then, will be the position of Canada? There will be a certain tonnage to the St. Lawrence, of course, but will the available freight tonnage, especially that of the tramp character, to care for the mighty export business of the Dominion be forthcoming? For one, I do not think so.

That is why I think the Dominion Government has a profound duty to establish a merchant marine that will make the Canadian farmer and manufacturer independent to a degree at least of the foreign shipowner for the carriage of his products. This merchant marine, in my opinion, should be built in Canadian yards—for we have yards in Canada sufficiently equipped to build a considerable fleet. This would not only supply work to the existing yards, whose wonderful development in the past two years been due almost wholly to Admiralty requirements, but would afford a new field of endeavor to the manufacturers of munitions, and continued employment to the thousands of skilled workers who have been very largely the product of that great war industry.

The vital need of the Canadian shipbuilding industry today is raw material. At present there are no steel mills in Canada for the manufacture of plates, channels, or angles, the reason being the total inability of the domestic steel industry to compete with its competitor. The Dominion Iron & Steel Co. did attempt to erect a plate mill at Sydney, but finding it absolutely impossible to make it a commercial success was compelled to sell it back to the U.S. The product of that particular mill is now being sold in Canada. The workmen who made the product, however are Pittsburgers, not Nova Scotians. How best a steel industry, to supplement the shipbuilding industry could be developed, I am not prepared to say, but any reasonable subvention would be justified. Perhaps the most effective method would be to order a certain amount of material, over a period of say 10 years, at a figure that would justify a fair profit on output and render the investment in such plants absolutely safe; meaning, in other words, that if a certain plant were not required after 10 years it could be dismantled without financial loss to its builders.

The upbuilding of a Canadian merchant marine is both a national and an imperial obligation, and it is one, in my opinion, that the government should waste no time to put into effect. This can best be done by the establishment of a

commission along the lines of the U. S. Shipping Board, which should be empowered to consider the merchant marine question in all its phases, to construct or purchase ships, and to do anything else that promised to rehabilitate the once important ocean marine of Canada. The ships constructed should be built on a programme that promised continuous activity to existing Canadian yards for at least 10 years, and the fleet established, whether by purchase or construction, should be capable of carrying at least 60% of the foreign trade requirements of the country, which is the percentage of British trade carried by British ships before the war.

Until the declaration of peace these ships should be operated under government control, when they should be sold to private interests at prices determined as equitable to all concerned. For public operation of ocean carriers has never proved practicable, and never will. The reasons for this are self evident. Successful ship operation lies pretty much with the personnel of the company operating. Private enterprise will always reward talent, and talent will go always where its services will be most recognized, except, of course, in times like the present, when many of the biggest men in the various countries at war are lending their services to the public at great personal sacrifice. But in ordinary times big brains cannot be tempted by the moderate salaries that are paid to government officials. And the government of no country can pay large salaries, as the people would not tolerate such a policy for an instant. Government operations of any character always deter private enterprise, as these operations can be carried on at a loss—another reason why the maritime nations have always preferred to encourage private enterprise by preference or subsidy instead of entering the field in their own behalf.

Why should the ships for the proposed Canadian merchant marine be built by the government, when the conditions for shipbuilding at present are so favorable will be, no doubt, a question that will occur to the layman who is uninformed as to the actual conditions. To understand the reason for this we must remember that the shipbuilder and the ship operator are entirely different people, just as distinct, in fact, as the builder of railway equipment and the operator of railways. The intrinsic value of a ship is not the value of the elements that have entered into her construction, but is governed wholly by the earnings she makes on the investment. These are abnormal times, and call for emergency measures. Thus ship construction at present high rates, even though the prevailing high freight rates might seem to justify it, is in a sense speculative. It is impossible to predict for how long the charges on ocean freight will remain high after the war, but it is self evident that even if there is not a sudden break in the market after the declaration of peace, there will be a gradual decline to pre-war levels, particularly if the struggle is prolonged to a date that will witness the consummation of the shipbuilding programme of the allied governments and of neutral nations, such, for instance, as Norway, which last year expended nearly \$200,000,000 in new tonnage and this year has an even more extensive programme.

Thus it is not fair to expect private builders to take such a great chance, especially considering the shortage of labor and material. Certainly, the Canadian owner is in no position to finance ships without some guarantee, as he has neither the money nor the established business to make such an undertaking feasible.

A Canadian merchant marine, built and operated with government assistance, while primarily serving Canada, would be free to trade in any part of the world, thus adding to the wealth of the Dominion by drawing upon the resources of other lands. This fleet would in addition, of course, increase the material prosperity of the country by finding ready and profitable markets for Canadian products and importing the raw materials needed by the manufacturing industries as well as the so-called luxuries that contribute so much to make life worth living. A merchant marine so developed would afford Canadian exporters a decided advantage in rates, as take the case of Japan, which besides retaining all its coastal privileges for the benefit of its own mercantile marine, is the second nation in the matter of marine subsidization. Even with present high rates, Japanese ports have a 50% preference over Hongkong, Shanghai and Manila. It is said, indeed, that because of national subsidization the merchants of Japan are enjoying pre-war rates, while the Philippine Islands and China are paying more than 100% over the old schedules.

Another vitally important reason for the establishment of a merchant marine, and one apart altogether from commercial or mercenary motives, is the creation of a trained organization upon which Canada can draw for the personnel of the navy which, soon or late, she is bound to possess. The most serious problem in creating a navy, or for that matter a merchant marine, is to furnish the necessary complement of officers and men. In this regard Great Britain has been particularly fortunate, but her good fortune can be attributed solely to an unswerving policy of interconnecting the two services. Thus in the present war we find that the fighting forces have had to draw very largely on the Naval Reserve of the mercantile fleets, and to the undying glory of the latter it can be said that they have acquitted themselves with the spirit and sacrifice that are the traditions of the service. But the creation of an organization in Canada will be more difficult than in Great Britain, where seafaring is the recognized avocation for families whose forbears have followed it for centuries. It has been the experience of every nation that the greatest difficulty in establishing a merchant marine is to make the life sufficiently attractive to induce the youth of the nation to follow it as a profession. Going to sea means giving up all the pleasures and comforts of home, and to offset the loss of these the boy must be promised compensating advantages. This condition is especially true of Canada, where the standard of living is very much higher than in any of the old world countries and where the social distinctions are less defined. Such a plan has been adopted on the Great Lakes, with the result that at present nearly all the officers are Canadian born, where only a few years ago the large majority were foreign.

Viewed from whatever angle possible, the importance of a merchant marine to the development of a nation cannot be overestimated. The war has shown that

no country can afford to depend on foreign carriers for the safety of its extraneous trade. Thousands of years of peace have proved beyond a doubt that the nations making the greatest development commercially have been those that have developed their mercantile interests. Cobden, the great English economist, once said: "I shall begin to have hopes for Turkey when I find Turkish ships, built in Turkish dockyards, manned by Turkish seamen, navigated by Turkish officers, and laden with Turkish cargoes, sailing out of Turkish ports." In these days we do not like to point to Germany as an example for anything. But no thinking person can overlook Germany's wonderful record of commercial growth in the 25 years before the war. In 1890 three-fifths of all Germany's mercantile tonnage was built in Great Britain. Ten years later, through a far-sighted policy of benevolent consideration, the German yards were constructing all the tonnage required by German owners and catering to foreign business as well. In the same decade, too, British shipping through the Suez Canal decreased from 90,000,000 to 7,000,000 tons, while that of Germany grew from 1,500,000 to at least 2,000,000 tons.

Before the war it was generally recognized that sea power would be the chief contributing factor to victory. That is why both Britain and Germany were working so feverishly on their naval equipment. But it was from the fighting ships that victory was expected, not the humble merchantman. And yet it is the peaceful cargo carrier that is playing the supreme part in the struggle, giving all due credit to the magnificent fighting ships that on constant vigil are holding the enemy at bay. In the war after the war, so called, the merchantman again will have to lead the van, and in my opinion the only countries that will have an even chance will be those who have the ships to send out on the trade routes of the world.

The establishment of a Canadian ocean merchant marine is a national opportunity and a national obligation.—Canadian Magazine.

The North Atlantic Conference, an association of steamship lines operating across the North Atlantic, is reported to have been revived, with the objectionable elements omitted. Mention has been made in a previous issue of the causes which led to the break up of the old association, and the part played by the C.P.R. in uncovering the German methods, whereby the German lines running to New York practically controlled the situation. It is announced that the new association includes all the principal British, Canadian, United States, French and Italian companies, which have united for trade purposes in the North Atlantic.

Tonnage Losses During the War.—In order to counteract the exaggerated statements attributed to the enemy as to the tonnage destroyed during war operations, the British Government has authorized the announcement that the total net loss of the world's ocean going tonnage, since the outbreak of war, including the losses from ordinary marine risks, as well as by enemy action, and allowing for enemy tonnage captured, is somewhat less than 3,000,000 tons, or approximately 9% of the tonnage available immediately prior to the war. The enemy claims to have destroyed 9,000,000 tons of allied and neutral shipping, against which it states that only 4,000,000 have been built.

## Changes in Cunard, Anchor and Donaldson Steamships Representation.

Prior to Jan. 1 last the Robt. Reford Co., Ltd., general agents, Montreal, with offices also at Halifax, N.S., St. John, N. B., Quebec and Toronto, had charge of the Cunard Line Canadian services, in territory in Canada east of Port Arthur; and also had charge of the Anchor Line (New York-Glasgow service) in the same territory, as well as supervising the Anchor-Donaldson Line business in Canada from the Atlantic to the Pacific. A separate office for the Anchor-Donaldson Line was maintained in Winnipeg, with H. E. Lidman as General Agent in charge. He also had an office for the Anchor-Donaldson Line in Vancouver, with C. A. Whitelock in charge. Mr. Lidman has resigned. The Cunard Line Canadian services, in the territory, Port Arthur and west to British Columbia in Canada, was handled through the Cunard Steamship Co.'s office in Winnipeg.

Under new arrangements which have been made the Robt. Reford Co. has been given charge of the Cunard Line Canadian services and the Anchor-Donaldson Line from the Atlantic to the Pacific in Canada and of the Anchor Line in Canada east of Port Arthur.

At Winnipeg the Cunard, Anchor-Donaldson and Anchor Lines business will be handled in the present office of the Cunard and Anchor Lines, D. W. Thomas being the manager in charge of the allied lines.

At Vancouver a joint office will be maintained for the Cunard, Anchor and Anchor-Donaldson Lines. A. B. Swezey, who was formerly connected with the Cunard Co. in New York, has been appointed manager of the joint office; and C. A. Whitelock, formerly connected with the Anchor-Donaldson Line at Vancouver, being appointed assistant manager.

The Winnipeg and Vancouver offices are maintained by the Cunard, Anchor, and Anchor-Donaldson Lines and are under the New York office's jurisdiction, where all staff appointments receive approval. The Winnipeg and Vancouver offices represent both the Cunard Canadian services, and the Cunard United States services. While the Robert Reford Co. has no direct control over the staffs at Winnipeg and Vancouver, these offices report to it in regard to the Canadian services.

U. S. Great Lakes Vessels for Ocean Service.—A Washington, D.C., press dispatch states that since last summer the U. S. Shipping Board has taken out from the Great Lakes to the ocean, 48 steamships, aggregating 150,000 tons, and that an additional 30 will be taken out on the reopening of navigation. Of the vessels taken out, 4 have met with disaster, the Codorus and G. N. Orr being driven ashore, where they still lie, the Saranac grounding in the gale which swept Halifax, N.S., after the disastrous explosion of a munitions vessel there, and the Tuscarora lost in another gale. A contract for salvaging the Saranac has been let. Twenty-one of these vessels had been in service on the lakes for some years and 27 were new vessels requisitioned from the yards. Of the older vessels, 16 had to be cut in two for the passage of the Welland Canal, but only one of the newer ones had to be divided. Of the 30 vessels still to be taken out, practically all of them will have to be cut, and this work is stated to be proceeding now, in order to be ready for the trip when the canal opens.

# Ships Under Construction in Canada for British Government.

**Steamships Ordered in Canada.**—Canadian Railway and Marine World for Aug., 1917, gave particulars of orders placed up to July, 1917, by the Imperial Munitions Board at Ottawa, for the British Government. The accompanying tables contain a complete list of all orders placed to date, viz., 41 steel steamships, total tonnage 202,500; and 46 wooden steamships, total tonnage 128,800, a grand total of 87 steamships with a grand total tonnage of 331,300.

## Steel Steamships Ordered for British Government.

Contractor.	No. of ships.	Individual Total	
		tonnage, d.w.	tonnage, d.w.
British American Shipbuilding Co., Welland, Ont. ....	3	3,500	10,500
Canadian General Electric Co., Toronto, Ont. ....	4	3,500	14,000
Canadian Vickers, Ltd., Montreal, Que. ....	4	7,000	28,000
Collingwood Shipbuilding Co., Collingwood, Ont. ....	2	2,900	5,800
J. Coughlan & Sons, Vancouver, B.C. ....	9	8,800	79,200
Midland Dry Dock Co., Midland, Ont. ....	3	3,400	10,200
Nova Scotia Steel & Coal Co., New Glasgow, N.S. ....	1	1,800	
	1	2,400	4,200
Polson Iron Works, Ltd., Toronto, Ont. ....	6	3,500	21,000
Port Arthur Shipbuilding Co., Port Arthur, Ont. ....	6	3,400	20,400
Wallace Shipyards, Ltd., North Vancouver, B.C. ....	2	4,600	9,200
Total .....	41		202,500

## Wooden Steamships Ordered for British Government.

Contractor.	No. of ships.	Individual Total	
		tonnage, d.w.	tonnage, d.w.
Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C. ....	4	2,800	11,200
Foundation Co., Ltd., Victoria, B.C. ....	5	2,800	14,000
Fraser, Brace & Co., Ltd., Montreal .....	4	2,800	11,200
Grant & Horne, St. John, N.B. ....	2	2,800	5,600
Great Lakes Dredging Co., Port Arthur, Ont. ....	2	2,800	5,600
T. M. Kirkwood, Toronto, Ont. (1) .....	2	2,800	5,600
Wm. Lyall Shipbuilding Co., Vancouver, B.C. ....	6	2,800	16,800
New Westminster Construction & Engineering Co., New Westminster, B.C. ....	4	2,800	11,200
Pacific Construction Co., Port Coquitlam, B.C. ....	2	2,800	5,600
Quebec Shipbuilding & Repair Co., Montreal, Que. ....	2	2,800	5,600
Quinlan & Robertson, Ltd., Montreal, Que. ....	4	2,800	11,200
Southern Salvage Co., Liverpool, N.S. ....	1	2,800	2,800
Toronto Shipbuilding Co., Toronto, Ont. ....	2	2,800	5,600
Western Canada Shipyards, Ltd., Vancouver, B.C. ....	6	2,800	16,800
Total .....	46		128,800

(1) The 2 vessels ordered from T. M. Kirkwood are being built by the Three Rivers Shipyards, Ltd.

### SUMMARY.

	No.	Total tonnage
Steel Steamships .....	41	202,500
Wooden Steamships .....	46	128,800
Grand Total .....	87	331,300

In addition to the 41 steel steamships mentioned above, two others, which were under construction for private owners, were bought by the board, making a total of steel steamships of 211,300 tons, the cost of the 43 being approximately \$40,000,000. The cost of the 46 wooden steamships, total tonnage 128,000, is approximately \$24,500,000. The total cost for the 89 steel and wooden steamships, with a tonnage of 340,100, is approximately \$64,600,000.

The value of the contracts let in the different provinces is as follows: Nova Scotia, \$1,340,000; New Brunswick, \$1,000,000; Quebec, \$11,600,000; Ontario, \$19,240,000; British Columbia, \$31,434,000.

The contracts by provinces are as follows:

Nova Scotia, 2 steel steamships, 1,800 and 2,400 tons; cost; \$840,000; one wooden steamship, \$500,000.

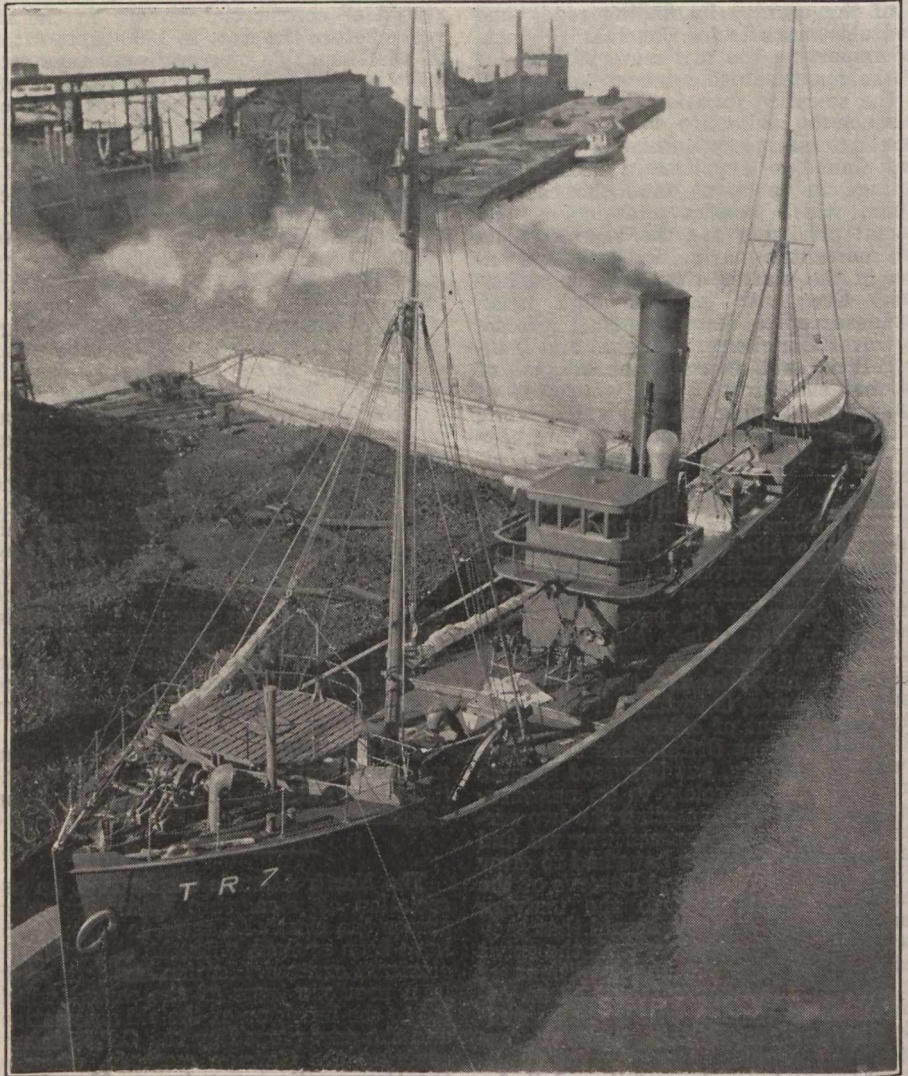
New Brunswick, 2 wooden steamships, each 2,800 tons, cost \$1,000,000.

Quebec, 4 steel steamships, 7,000 tons each, cost \$5,600,000; 12 wooden steamships, 2,800 tons each, cost \$6,000,000.

Ontario, 25 steel steamships, 2 of 2,900 tons each, 9 of 3,400 tons each, 13 of

The wooden shipbuilding yards are principally new, but a few have been enlarged from their former capacity. It is said that about 25,000 men are employed on the board's orders.

The tremendous increase in shipbuilding in Canada caused by the board's orders for 340,100 tons may be seen by the following figures for previous years. In 1874, when wooden ship construction was at its height, 190,756 tons were built; but subsequently there was much less activ-



Trawler T.R. 7, built for Canadian Naval Service Department.

3,500 tons each, and 1 of 4,300 tons, total 86,200 tons, cost \$17,240,000; 4 wooden steamships, 2,800 tons each, cost \$2,000,000.

British Columbia, 1 steel steamship, 4,500 tons, cost \$905,651; 2 of 4,600 tons each, cost \$1,679,000; and 9 of 8,800 tons each, cost \$14,750,000; 27 wooden steamships, 2,800 tons each, cost \$14,100,000.

Four steel steamships of 1,800 tons, 3,400 tons, 4,200 tons and 4,500 tons respectively, a total of 13,900 tons, have been completed. Four wooden steamships of 2,800 tons each have been launched and several others are about ready for launching.

New steel shipbuilding plants have been established during the past 12 months at Toronto and Welland, Ont., and Vancouver, B.C., and a number of existing plants have been considerably enlarged.

ity until the war years. In 1880 the tonnage built was 65,441; in 1885, 41,179; in 1890, 52,378; in 1895, 16,270; in 1900, 22,326; in 1905, 19,781; in 1910, 22,283; and in 1914, 43,346.

**Additional Wooden Steamships for British Government.**—Vancouver and Victoria papers stated early in February that the British Government had placed contracts direct for building 40 wooden steamships in British Columbia, with an aggregate tonnage of 140,000, that 20 of them would be built by the British-American Shipbuilding & Engineering Co., Ltd., of Vancouver, in which J. A. Sears is principally interested; that this company, which has been incorporated recently, had leased a site on the old Kitsilano Indian Reserve, and that the other 20 would be built in Victoria by a company headed by J. H. Price, President, Cameron-Genoa

Mills Shipbuilders, Ltd., the proposed name for incorporation being the Victoria Shipbuilding Co., Ltd. The papers referred to also stated that Capt. D. L. Jones was sent to British Columbia in July, 1917, by London, Eng., officials, to investigate the shipbuilding facilities, and that he reported the result of his enquiries to the Ministry of Shipping, of which Sir Jos. Maclay is the head, that he then made a second trip to Canada, and that the orders had been placed as a result of his investigations. One of the papers which published the story said Mr. Sears stated "he had no information personally regarding the contracts for the wooden vessels." We have been unable to obtain any verification of these reports, and from the best information available, we are inclined to think it is unlikely that the British Government will place any further orders for wooden steamships, but that there are possibilities of orders being allowed to be taken for allied or neutral governments.

ago, but were suspended owing to the elections, have been resumed by a Winnipeg syndicate, for a site on Industrial Island, in Vancouver harbor, for a shipbuilding plant. The property is under the Vancouver Harbor Commission's control, and, it is said, that the Dominion Government's consent must be obtained before a lease can be granted. It is also reported from Winnipeg that E. F. Hutchings, President, Great West Saddlery Co., is at the head of a syndicate which has secured a tentative contract from the Imperial Munitions Board for the construction of 12 vessels on the Pacific coast, that negotiations are proceeding for the acquirement of a site at some point along the B. C. coast, and if a good location can be secured a plant will be established for the construction of steel and wooden vessels. In any case, it is stated, the company's headquarters will be in Vancouver. Vancouver reports on this statement say that the syndicate is endeavoring to lease 11 acres altogether, but at present

erable progress has been made with the second slip alongside the present one. A sister ship of the s.s. War Dog, now in service, is expected to be launched in March, and a keel for a similar vessel laid in her place. The name stated to have been chosen for the new vessel is War Power.

James Cant, late of the Caledon Shipbuilding, Dundee, Scotland, is reported to have been appointed Superintendent, Wallace Shipyards.

**Western Canada Shipyards, Ltd.,** Vancouver, B.C.—The hull of the s.s. War Nootka, the launching of which was mentioned in our last issue, had the finishing touches put to her, while moored to the company's wharf, and towards the end of February was taken to the Ogden Point assembling sheds at Victoria, to have her machinery installed.

### Atlantic and Pacific Ocean Marine.

The Eastern Steamship Corporation's s.s. Governor Cobb, which replaced the s.s. North Land on the Boston-Yarmouth route recently, is performing a semi-weekly service between these points.

The Canadian Pacific Ocean Services s.s. Montreal was reported to have been sunk in a collision along the British coast, Jan. 30. She was built at Newcastle, Eng., in 1909, was 8,644 tons gross, and had been engaged in war service for some time.

The Allan Line steamship service between Glasgow, Scotland, and Boston, Mass., which has been in operation for about 25 years, has been discontinued, and employes at Boston, it is reported, have been dispensed with. The Allan Line is now a part of Canadian Pacific Ocean Services, Ltd.

The Great Northern Pacific Steamship Co. has had its authorized capital stock reduced from \$5,000,000 to \$325,000 consequent on the purchase of its two steamships Great Northern and Northern Pacific, by the U. S. Government. It is reported that \$4,244,617.55 was paid for them, in addition to \$9,348, the cost of delivering the vessels at the Government's naval station at Puget Sound.

A St. John's, Nfld., press dispatch states that about 15 sailing vessels carrying Newfoundland fish, are being held at Gibraltar, owing to the British Admiralty's policy of not allowing any sailing vessels to enter the danger zone in the Mediterranean. It is said that the vessels have on board about one tenth of the season's catch of cod, valued at over \$2,000,000, consigned to Italian and Greek ports.

The s.s. Percesien is reported to have been sunk and her crew landed at Liverpool, Eng., about Feb. 16. She was owned by the Gaspé & Baie des Chaleurs Steam-Glasgow, Scotland, in 1892, and has borne ship Co., Quebec, Que., and was built at the names of Canada and Pro Patria. Her dimensions were: length 185.5 ft., breadth 27.2 ft., depth 19.5 ft.; tonnage 782 gross, 502 register. She sailed from Halifax, N.S., Jan. 31, and for some years was operated between Montreal and Gulf ports, having latterly been placed on overseas service. Details as to the cause of the sinking have not been received, but it is stated that it is certain that she was not torpedoed.

The s.s. Aurora, which sailed from Newcastle, New South Wales, in June, 1917, with coal for Iquique, Chili, has not been heard of since leaving Sydney, June 20, where she had been compelled to put in in a leaking condition, and she has been given up as lost. She was formerly own-



Drifter C.D. 68, built at a St. Lawrence River port for Canadian Naval Service Department.

**The British-American Shipbuilding & Engineering Co., Ltd.,** Vancouver, which has been incorporated recently, is reported to be negotiating for the lease of a shipbuilding site on the old Kitsilano Reserve at Vancouver. This company is stated in B. C. to have contracts from the British Government for the construction of about 20 wooden steamships, but this has not been confirmed. See also Victoria Shipbuilding Co.

**Cameron-Genoa Mills Shipbuilders Ltd.,** Victoria, B.C.—The first of the four wooden steamship hulls built for the Imperial Munitions Board, and launched in January, is having her machinery installed at the board's assembly plant at Ogden Point. This is the vessel which was mentioned in our last issue as likely to be named War Tyee, but which is now stated to have been named War Yukon.

**Foundation Co.,** Victoria, B.C.—Satisfactory progress is reported on the second of the Imperial Munitions Board's wooden hulls at this yard. Launch is expected early in March.

**Wm Lyall Shipbuilding Co., Ltd.,** Vancouver, B.C.—The launching of the second wooden hull for the Imperial Munitions Board, was expected to take place toward the end of February, and it was reported that the vessel would be named War Puget.

**Vancouver.**—It is reported that negotiations which commenced several months

desires to secure 4 acres on Industrial Island, where vessels would be launched to the eastward.

**Victoria Assembling Plant.**—W. Luney, of Luney Bros., contractors, Victoria, B.C., is reported to have been appointed Superintendent of the Imperial Munitions Board's assembling plant at Ogden Point there, vice H. A. Bayfield, deceased.

**The Victoria Shipbuilding Co., Ltd.,** is given as the name of a company in course of organization, with J. H. Price, President, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C., chiefly interested. The company is said to have practically completed arrangements for the construction of about 20 wooden steamships for the British Government, and it is stated that plans and specifications have been prepared by Mr. Price and submitted to the British Government for approval, and that confirmation of the contract was expected by cable almost immediately. It would appear from these reports, which lack confirmation, that any negotiations which may have taken place have been direct with the British Shipping Controller in London, Eng., and not with the Imperial Munitions Board at Ottawa, which is dealing with the shipbuilding situation generally in the Dominion. See also British-American Shipbuilding & Engineering Co.

**Wallace Shipyards, Ltd.,** North Vancouver, B.C.—It is reported that consid-

ed by Bowring Bros., St. John's, Nfld., and was built at Dundee, Scotland, in 1876, for the sealing trade. She was utilized in 1882 as a relief vessel for the Greeley Arctic expedition, and was used for Antarctic exploration purposes in 1911-14. In 1914 she was acquired by Sir Ernest Shackleton for further Antarctic work, which was completed in Feb. 1917. She was then sold to Grace Bros. & Co., London, Eng., and later transferred to the New York & Pacific Steamship Co., London, Eng., for the coal trade in the Southern Pacific.

### Maritime Provinces and Newfoundland.

The Newfoundland Government has appointed a Shipping Board under the supervision of Hon. J. C. Crosbie, to supplement the work of the Tonnage Committee in providing shipping facilities.

The s.s. Acadien, formerly Senlac, bound from Louisburg, N.S., for St. Pierre, Miquelon, was reported, Feb. 22, to have been wrecked on the Newfoundland coast, and her crew of 10 men lost. Later reports state that she was refloated and towed to a Newfoundland port, Feb. 23, but no statement was made as to her crew, or condition. She was built at St. John, N.B., in 1904, and was screw driven, by engine of 66 n.h.p. Her dimensions were: length 182 ft., breadth 33 ft., depth 16.1 ft.; tonnage, 1,011 gross, 615 register.

The Eastern Steamship Corporation's s.s. North Land, while en route from Boston, Mass., to Yarmouth, N.S., recently, struck on Signal Rock, denting several plates and loosening rivets on the port side. The accident is stated to be due to the breaking loose of a bell buoy which drifted to the west of its correct position.

The Harbor Grace Railway Dock Co. held its annual meeting at St. John's, Nfld., Feb. 6. The report showed that considerable work had been done during the year, but owing to the high cost of fuel, labor, etc., the surplus revenue only permitted the payment of a dividend of 5%. The directors were re-elected, with the addition of Hon. F. McNamara and Hon. W. J. Ellis.

The Grand Lake Steamship Co.'s s.s. May Queen was practically destroyed by fire at Cushing's mill, St. John, N.B., Feb. 5. She was built at Carleton, N.B., in 1869 and was paddle driven by engine of 60 n.h.p. Her dimensions were, length 160 ft., breadth 24 ft. 7 in., depth 8 ft. 4 in.; tonnage, 539 gross, 340 register. She was owned formerly by the May Queen Steamship Co., and was purchased by the Grand Lake Steamship Co. in 1914, and operated on Grand Lake until July, 1917, and since then on the St. John-Fredericton route. She was practically rebuilt, and her machinery overhauled, in 1907, and carried about 500 passengers, with large freight capacity. She was valued at about \$90,000, and was insured for about \$25,000.

The Red Cross Line s.s. Florizel, en route from St. John's, Nfld., to New York, ran on the ledges near Cape Race, during a blizzard, Feb. 24, and became a total wreck. There were reported to be 140 persons on board, 78 of whom were passengers, about 100 being reported lost. Among the passengers were J. S. Munn, Managing Director, Bowring Bros., St. John's, agents of the vessel company, with his young daughter. The owning company is the New York, Newfoundland & Halifax Steamship Co. The Florizel was 1,980 tons and was specially built in 1909

for heavy work in ice, she having been utilized for sealing voyages. Her sister ship, Stephano, was torpedoed and sunk during the visit of German submarines to the U. S. coast some time ago.

### Ontario and the Great Lakes.

The Algoma Central Steamship Line's s.s. W. C. Franz is being overhauled at Midland by the Midland Shipbuilding Co.

The Bassett Steamship Co.'s s.s. Mariska is being thoroughly overhauled at Midland by the Midland Shipbuilding Co. A steel deck house is being fitted, and the fore-castle is being remodelled.

The C.P.R. s.s. Athabasca, which received some damage in the late autumn, through ice, is having about 20 plates in the bow replaced at Midland by the Midland Shipbuilding Co.

The City of Toronto is applying to the Ontario Legislature for power to invest its sinking fund in securities issued by the Toronto Harbor Commissioners, to the amount of \$1,725,000.

The Great Lakes Transportation Co.'s s.s. Glenlyon is being overhauled and remodelled at Midland by the Midland Shipbuilding Co. A steel deck house is being built forward, with accommodation for the master and mate. A new steel deck house is also being built aft, and a number of minor repairs are being made in the hull.

The Ogdensburg Coal & Towing Co., with head office at Ogdensburg, N.Y., and which has had a Montreal branch for years, was incorporated under New York laws in 1880, Jno. Hannan, Sr., being President. He died in April, 1916, and was succeeded by his son, Jno. Hannan, Jr., Thos. Pratt being Vice-President and R. E. Hannan Secretary Treasurer.

The United States Lake Survey reports the levels of the Great Lakes for January, in feet above mean sea level, as follows:—Superior, 601.93; Michigan and Huron, 580.76; St. Clair, 574.04; Erie, 571.91; Ontario, 246.07. Compared with the average January levels for the past ten years, Superior was 0.08 ft. below; Michigan and Huron, 0.94 ft. above; Erie, 0.28 ft. above, and Ontario, 0.72 ft. above.

The Collingwood Steamship Co., Ltd., held its annual meeting at Collingwood, Feb. 13, when the report for 1917 was adopted. It was announced that Capt. G. C. Coles, Managing Director, is arranging for the purchase of another steamship of a larger capacity and greater speed than the City of Meaford, to cope with the company's business. The officers for this year are: A. H. Johnson, President; W. G. Smart, Vice President; Capt. G. C. Coles, Managing Director and Secretary; G. T. Foulis, Assistant Manager; J. F. Zimmerman, Treasurer.

### British Columbia and Pacific Coast.

The Dominion Public Works Department has bought the small steam tug Dorothy Symons, registered at Vancouver, and has changed its name to Nakusp.

The Union Steamship Co. is reported to have purchased the auxiliary steam powered schooner Washington from Seattle interests, for use in the summer trade.

The C.P.R. British Columbia Coast Service has issued its summer schedule for the Alaska route, showing a weekly service from June 7 to Sept. 30, with the steamships Princess Alice and Princess Sophia, the latter opening and the former closing the service.

The negotiations between the Grand

Trunk Pacific Coast Steamship Co. and the Independent Steamship Co., San Francisco, Cal., for the acquirement of the latter's s.s. F. A. Kilburn, are reported to have been called off, owing, it is said, to the vessel's machinery being defective.

An Ottawa press dispatch stated early in February that it was reported on good authority that the Fish Committee of the Food Controller's Department had recommended that the Dominion Government take over the fishing trawlers operating off the Pacific coast and carry on the fishing business there as a national enterprise.

An order in council has fixed the harbor head line of Victoria, beyond which, wharves, breakwaters, piers and other similar structures are not permitted to be built, according to plans deposited with the Public Works Department, Ottawa, and the Department's District Engineer at Victoria. This order amends previous orders on the same matter.

The Seattle Dry Dock & Construction Co., of Seattle, Wash., has been awarded \$87,000 for rent and breach of contract to insure, in connection with the capsizing of a floating dry dock leased to Grant, Smith & MacDonnell, Ltd., contractors for the construction of the breakwaters at Victoria, B.C. The case has been before the courts since the early part of 1915, and the original claim was for \$250,000.

The Marine Department has issued a notice respecting the lighting, etc., of the Canadian Northern Ry. bridge across Selkirk Water to the Songhees Reserve, Victoria, B.C. The bridge consists of two approaches with a bascule span between. The bascule span is of the roller type, having a steel girder leaf with a concrete rest pier on each side of the opening, with a clearance of 77 ft. between piers, the bottom girder being 7 ft. above high water. A fixed white light on each side of the opening, 6 ft. above high water, marks the channel, but as the bridge is not being used at present, the bascule will be kept raised until trains are operated across.

The Union Steamship Co. of New Zealand, operating the Canadian-Australian Mail Line, is said to be negotiating with the Dominion Government for the use of the new government docks at Victoria, owing to the, it is alleged, unsatisfactory wharfage accommodation at times, in the inner harbor. One of the piers mentioned is occupied by the shed for equipping wooden steamships being built for the Imperial Munitions Board, with machinery, so that accommodation cannot be given there, but a local statement says that there is nothing to hinder the use of pier 3 for vessels calling at Victoria, if the Government would authorize the immediate construction of the proposed shed there.

It is reported that some trouble is expected in connection with the Kitsilano Bridge across False Creek, Vancouver, it being claimed that it is a hindrance to navigation. The bridge is owned by the C.P.R. and leased to the British Columbia Electric Ry. The Vancouver Harbor Commission has notified the companies that the span across the fair way will have to be removed in order that the s.s. Alaska, just about completed, can pass from the builders' yards to the sea. Taking into account the number of vessels under construction, and to be built at these yards, the removal and replacing of the span each time a vessel may require to pass would cost a large sum. The C.P.R. is said to have claimed that the bridge is there rightly and properly, and desires to know who is to pay the cost.

## Cargo Steamship Building for Dominion Government.

Canadian Railway and Marine World for February contained full particulars of the Minister of Marine's shipbuilding programme, which is already being put in effect, contracts for three vessels having been given and more being under consideration. Following are particulars of the contracts:

Canadian Vickers, Limited, Montreal, one steel cargo steamship:—

Length between perpendiculars .....	320 ft.
Breadth moulded .....	44 ft.
Depth moulded .....	25 ft.
Draft loaded .....	21 ft. 2 in.
Dead weight carrying capacity, .....	4,300 tons
Sea speed loaded .....	11 knots

Single deck, poop bridge and forecastle; straight stem; elliptical stern; 5 water tight bulkheads; single screw; triple expansion engines; 2 Scotch boilers, 180 lb. working pressure; forced draft.

Canadian Vickers, Ltd., Montreal, one steel cargo steamship:—

Length between perpendiculars .....	400 ft.
Breadth moulded .....	43½ ft.
Depth moulded .....	31 ft.
Draft loaded .....	25 ft. 1 in.
Dead weight carrying capacity, .....	8,100 tons
Sea speed loaded .....	11 knots

Two decks, poop bridge and forecastle; straight stem; elliptical stern; 5 water tight bulkheads; single screw; triple expansion engines; 3 Scotch boilers, 180 lb. working pressure, forced draft.

Collingwood Shipbuilding Co., Collingwood, Ont., one steel cargo steamship:—

Length between perpendiculars .....	251 ft.
Breadth moulded .....	43¼ ft.
Depth moulded .....	26 ft.
Draft loaded .....	22 ft. 2½ in.
Dead weight carrying capacity .....	3,750 tons
Sea speed loaded .....	9 knots

Single deck, poop bridge and forecastle; straight stem; elliptical stern; 4 water tight bulkheads; single screw; triple expansion engines; 2 Scotch boilers, 180 lb. working pressure; forced draft.

Wallace Shipyards, Ltd., North Vancouver, B.C., was stated by British Columbia papers, early in February, to have received a contract for 4 steel cargo steamships. This was not correct; in fact, up to the time of writing (Feb. 18), no order had been given this company, but negotiations were in progress and we were advised that it was probable they would be successful. The vessels under consideration are as follows:—

Length between perpendiculars .....	331 ft.
Breadth moulded .....	46½ ft.
Depth moulded .....	25½ ft.
Draft loaded .....	21 ft. 8 in.
Dead weight carrying capacity .....	5,100 tons
Sea speed loaded .....	11½ knots

Single deck, poop bridge and forecastle; straight stem; elliptical stern; 5 water tight bulkheads; single screw; triple expansion engines; 3 Scotch boilers, 180 lb. working pressure; forced draft.

Wallace Shipyards, Ltd., advised Canadian Railway and Marine World, Feb. 23, that it had secured an order from the Dominion Government for the 4 steamships specified above.

The plans and specifications for all the vessels have been prepared by Charles Duguid, Naval Architect, Marine Department. Alex. Johnston, Deputy Minister of Marine, and Mr. Duguid visited Washington recently, and made arrangements for a supply of sufficient steel plates and shapes for a year's work on these cargo vessels.

Other orders for cargo steamships will be placed as fast as possible, in connection with which the Marine Department has obtained the following information as to what berths will be available in the

different shipyards on the completion of the Imperial Munition Board's and other orders.

British American Shipbuilding Co., Welland, Ont., 1 berth in May, 1 in July, 1 in Sept. and 1 in Nov., 1918.

Canadian Allis-Chalmers, Ltd., Bridgeburg, Ont., expect to be able to start work on 6 steamships before June, 1919.

Canadian Vickers, Ltd., Montreal, will have the following berths vacant for 8,100 tons steamships: 2 in May, 1 in Aug., 1 in Sept., 1918.

Collingwood Shipbuilding Co., Collingwood, Ont.: 1 berth in April and 1 in May, 1918, for 3,750 ton steamships.

J. Coughlan & Sons, Vancouver, B.C., no berths available during 1918.

Davie Shipbuilding & Repairing Co., Lauzon, Que., will probably be able to start on two 5,000 ton steamships this year.

Midland Shipbuilding Co., Ltd., Midland, Ont., 1 berth in Oct. and 1 in Nov., 1918.

Polson Iron Works, Ltd., Toronto, 4 berths in Oct., 1918, for 3,750 ton steamships.

Port Arthur Shipbuilding Co., Port Arthur, Ont., 2 berths in July for 3,750 ton steamships.

Tidewater Shipbuilders, Ltd., Three Rivers, Que., a new plant, will be willing to undertake 4,350 tons.

Wallace Shipyards, Ltd., North Vancouver, B.C., will have 1 berth in April, 1918, for a 4,300 ton steamship; one in June, 1918, for a 5,000 ton steamship, and 2 more berths before June, 1919.

The Ogdensburg Coal & Towing Co. is reported to have been acquired by a Canadian syndicate, with the object of dividing the company into two separate corporations, one with \$200,000 capital to carry on the business at Ogdensburg, N. Y., and the other with \$1,000,000 capital to operate from Montreal. It is stated that arrangements have been made to supply coal to Canada Steamship Lines' vessels, and that W. L. McDougall, Montreal, will be President and General Manager of the company. Canadian Railway and Marine World for February contained notice that the Ogdensburg Coal & Towing Co., Ltd., had been incorporated under the Dominion Companies Act with \$1,500,000 capital and office at Montreal.

The Montreal, Ottawa & Georgian Bay Canal Co. is applying to the Dominion Parliament to repeal sec. 5, chap. 128, statutes of 1906, which provides the terms and conditions upon which the Dominion Government may acquire possession of the company's works, property and privileges, and to substitute the original provisions enacted for that purpose in the act of incorporation, viz., in sec. 43, chap. 103, statutes of 1894; and also to amend sec. 7, chap. 103, statutes of 1894, to provide that the amount of stock to be subscribed prior to the calling of the first general meeting of the company, shall be 5% instead of 20%. J. A. Ritichie, Ottawa is solicitor for the company.

Tide levels and datum planes in Eastern Canada, from determinations by the Naval Service Department's tidal and current survey, up to 1917, have been issued in booklet form.

"A ship isn't so dependent on her anchor." "Why isn't she?" "Because even if she loses it, she still keeps her hold."—Baltimore American.

## Ship Claimed to be Unsinkable.

New York press dispatches state that W. L. Saunders, Chairman, U. S. Naval Consulting Board, in a public speech there recently, stated that the U. S. Government had equipped its first military transport with a system of air and watertight cells, making it almost impossible to sink it with torpedoes; that the vessel is the former Austrian s.s. Lucia, now remodelled and renamed; that the hull is honey-combed with 12,000 cells or boxes, and that in the event of a torpedo attack, she would not sink, but would have the buoyancy of a lumber-laden, waterlogged schooner. He stated that the bulkhead system of protection for ships had failed in this war. The cells which have been applied to the Lucia are inserted inside the skin of the ship below the water line and are bolted to the frame work. Each unit is claimed to be absolutely air and water tight, and the floating capacity is said to be sufficient to keep the vessel from sinking when loaded and waterlogged. This system is the result of experiments made by a well known marine engineer, and it has also been applied to the lifeboats on the vessel. By the equipment of the vessel in this manner, from 15 to 20 per cent. of the cargo space is taken.

Considerable scepticism prevails in shipping circles as to the reliability of the arrangement, and it is stated that, as the result of tests, a speed board reported against the device, and the Lucia was not accepted as a successful, practically non-sinkable vessel.

It was reported in Great Britain recently, that numerous ideas had been offered to the British Government, with the object of making vessels non-sinkable, or of allowing them to remain afloat for a considerable time after being torpedoed, but all of them were practically discarded, for the reasons, either, that the devices utilized too much of the internal space, interfered too much with the speed of the vessel, were too costly and took too much time to install, or were wholly impracticable.

**Radiotelegraphy on Ocean Vessels.**—An order in council has been passed, amending the Defence of Canada Order, 1917, by providing that from Jan. 7, 1918, every British steamship registered in Canada of 1,600 gross tons and upward, sailing to or from any port in Europe, or in the Mediterranean Sea, shall be provided with an efficient radiotelegraph apparatus in good working order, properly installed and maintained, capable of transmitting and receiving messages for at least 100 miles by day or night, with two certified operators in charge. The owner or master of any such steamship sailing without being provided with such apparatus, shall be guilty of violating the provisions of the order.

Commonwealth Steamship Co., Ltd., has been incorporated under the Dominion Companies Act with authorized capital of \$750,000, and office at Toronto, to build, own and operate steam and other vessels and to carry on a general shipbuilding and transportation business.

The Cunard Co. had judgment entered against it recently on a claim for damage to wheat through water entering a port hole on the s.s. Pannonia, whilst en route from New York and Halifax to Great Britain. The court decided that there was no evidence on behalf of the defence that a spy had opened the port hole, but that there was lack of due diligence and ordinary judgment.

## General Shipbuilding Notes.

**Canadian Car & Foundry Co.**—The press dispatch mentioned in our last issue, to the effect that the company had been awarded a contract to build steel steamships to the value of \$10,500,000 for the U. S., is, we are advised, incorrect. No such contract has been given, the only order at present in hand is for 12 mine sweepers for the French Government.

Following are the dimensions of the 12 steel mine sweepers, valued approximately at \$2,500,000, which will be built at Fort William for the French Government:—length over all 143 ft., length between perpendiculars 135 ft., beam moulded 22½ ft., depth moulded to main deck 13¼ ft., and to quarter deck 14¼ ft.

A contract is reported to have been awarded to the Dominion Bridge Co. for the construction of the shipbuilding plant at Fort William, and another one to E. G. Penniman, Fort William, for the excavations, foundations, tracks for trucking the boats and the keel piling supports. The last contract mentioned, it is stated, is to be completed by the third week in March, and the first one early in April.

**J. F. Deveau, Meteghan, N.S.**—A 300 ton schooner was launched recently for Ritcey & Co., Lunenburg, N.S., and named Charles A. Ritcey.

**Dominion Shipbuilding Co., Ltd., Toronto.**—A permit has been granted for the construction of a one, or two, story main building on the company's site, on reclaimed land at the foot of Bathurst St., at a reported cost of \$173,000. The building will be of steel faced with hollow tile. Some details of this company, with a sketch of its site, were given in Canadian Railway and Marine World for Dec., 1917, page 490.

**St. Clair Jones, Weymouth, N.S.**—The tern schooner Speedway, of 400 tons, launched recently at Digby, N.S., is stated to have been chartered for a trip from St. John, N.B., to South Africa. It is reported that the builder declined an offer of \$100,000 for her just prior to launching.

**Newfoundland Shipbuilding Co., Harbor Grace, Nfld.**—The keel of a 600 ton auxiliary powered ship was laid early in February, and 4 similar ships of 500 tons each are reported to be under way. Some details of the type of vessel to be built at this plant were given in our last issue.

**Polson Iron Works, Toronto.**—The s.s. Asp was launched at Polson Iron Works, Toronto, Feb. 11, for Norwegian interests. Some difficulty was experienced in carrying out the launching owing to the heavy ice, which had to be cut away before the vessel could be sent down to the water. The Asp is a sister vessel of the s.s. Tonto, launched from the same works, for the same interests, Oct. 22, 1917. Her dimensions are: length overall 261 ft., length between perpendiculars 251 ft., breadth moulded 42½ ft., depth moulded 23 ft.; deadweight capacity, 2,500 tons; mean draft, 19½ ft. She is of the Frederickstad type, single deck, on the deep frame principle, with cellular double bottom all fore and aft, and peak tanks. There are 4 water tight bulkheads, 2 masts and 6 steam winches, one at each mast and derrick. She is of steel, to highest class Bureau Veritas, for ocean service, and will have steam and hand steering gear, electric light and evaporating outfit. The propelling machinery will consist of triple expansion engines, with cylinders 20½, 33 and 54 in. dia.

by 36 in. stroke, supplied with steam by 2 Scotch boilers, 14 ft. dia. by 12 ft. long, at 180 lb. working pressure. The launching of the vessel was somewhat delayed owing to the recent fire at the works, when the hull was scorched.

**The Port Arthur Shipbuilding Co., Port Arthur, Ont.,** which has under construction six cargo steamships and six trawlers, is reported to have received additional orders for five Welland Canal size freight steamships, and for eight other vessels. It has about 1,200 men employed, but it is announced that the staff must be considerably augmented to handle the amount of work on hand.

**Prince Rupert, B.C.**—W. P. Hinton, Vice President and General Manager, Grand Trunk Pacific Ry., is reported as having stated at Vancouver, Feb. 8, that a shipbuilding scheme was being considered which might mean a big development for Prince Rupert. We are advised that negotiations for the leasing of the shipbuilding plant and dry dock are going on. Both are being operated to full capacity on repair and overhaul work for the company's own steamships and for fishing vessels.

**J. N. Rafuse & Sons, Bridgewater, N.S.** launched recently a three masted schooner named Industrial at W. J. Foley's ship yard at Salmon River, N.S., of the following dimensions: length 113 ft., breadth 30 ft., depth 11½ ft. Arrangements are reported to have been made for the construction of a similar vessel at the same yards.

**Sault Ste. Marie, Ont.**—A deputation from Sault Ste. Marie called upon the Ontario Premier at Toronto recently, to discuss the possibility of establishing a plant at Sault Ste. Marie, for the construction of wooden steamships. The deputation also called on F. H. Clergue, at Montreal, to discuss the matter with him, but no announcement has been made as to the results of the visits. The question of a shipbuilding plant and dry dock at Sault Ste. Marie has been discussed for several years, and a company, in which Mr. Clergue was interested, was formed for the purpose of building the plant, but nothing was ever done.

**Tidewater Shipbuilders, Ltd.**—The Sorel Shipbuilding & Coal Co., Ltd., has been granted supplementary letters patent under the Dominion Companies Act, changing its name to Tidewater Shipbuilders, Ltd. The head office is at Three Rivers, Que., and Jas. M. Smith is General Manager. Canada Steamship Lines, Ltd., is interested in it. It was referred to in our last issue as Tidewater Shipbuilding Co., Ltd., that being the name used in a letter heading received in this office.

**Vessels for Foreign Register.**—A Vancouver press dispatch states that the Dominion Government is endeavoring to arrange with the Imperial Government to remove the restrictions placed on the building of vessels for foreign register. It is stated that in the event of this taking place, several French contracts will be placed there, and that construction on such vessels would be commenced immediately.

**The Wallace Shipyards, Ltd., North Vancouver, B.C.,** in addition to its orders from the Imperial Munitions Board, has on order 4 cargo steamships, 2 freight and passenger steamships and 1 auxiliary powered schooner.

## Mainly About Marine People.

**Francis King, M.A.,** Counsel, Dominion Marine Association, Kingston, Ont., has been elected a member of the National Committee of the Anglican Men's Movement.

**James Playfair,** President, Great Lakes Transportation Co., who has not been very well, left for California early in February and is expected to return to Midland, Ont., in April.

**R. Beaumont,** Assistant to Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, B.C., has been appointed Superintendent, in charge of the company's service at Prince Rupert, B.C.

**A. G. Hill,** formerly in charge of Babcock & Wilcox, Ltd., Toronto office, has been appointed production engineer in charge of the production of marine engines and boilers in the Toronto district, for the Imperial Munitions Board.

**Sir George B. Hunter,** Chairman, Swan, Hunter and Wigham Richardson, Ltd., Newcastle, Eng., and **Sir James McKechnie,** Managing Director, Vickers, Ltd., Barrow, Eng., are two of the recently created knights of the Order of the British Empire.

**W. H. Thompson,** formerly Travelling Passenger Agent, Allan Steamship Line, Toronto, and latterly serving with the Allied Shipping Board in New York, died there, Feb. 16, from pneumonia, aged 34. He was a son of Wm. Thompson, an officer on the C.G.S. Vigilant, and a native of Port Dover, Ont.

**Lord Furness,** head of Furness Withy & Co., and intimately associated with Canada Steamship Lines, Ltd., and numerous other shipowning and shipbuilding companies in various parts of the world, and who succeeded to the barony conferred on his father, Sir Christopher Furness, has been created a viscount, in recognition of his own and his companies' services to the Empire in shipping matters.

**David Seath,** formerly Secretary-Treasurer, Montreal Harbor Commissioners, died at Westmount, Que., Feb. 23. He had been failing in health for some time, and suffered a slight stroke of paralysis in May, 1917. He was born at Montreal, May 9, 1847, and for a number of years was engaged in commercial life. He was appointed Secretary of the Montreal Harbor Commissioners in 1898, and retired in 1917. He joined the Victoria Rifles in 1864, as a private, and was promoted through various grades to Paymaster, with the honorary rank of Major. He held the long service and Fenian raid medals.

**Henry A. Bayfield,** who died at Victoria, B.C., Feb. 13, was born at Charlottetown, P.E.I., and was educated there and at McGill University, graduating in 1896 with the degree of B.Sc. He was for some time engaged in wharf construction at St. John, N.B., and other eastern points, and subsequently went to Vancouver, B.C., where he conducted a private engineering practice. He was later appointed Superintendent of Dredges for British Columbia under the Dominion Public Works Department, and latterly acted as engineer in charge of the Imperial Munitions Board's assembly plant at Ogden Point, Victoria, where machinery is being installed in wooden hulls built on the Pacific coast. He was an associate member of the Canadian Society of Civil Engineers from 1901, and a councillor of the society in 1909.



# Dominion Marine Association's Annual Meeting and Report.

The annual meeting was held in Toronto, Feb. 20, A. A. Wright, President, in the chair. The executive committee's report, as printed below, was presented and adopted, after various clauses had been discussed.

A letter having been read from the Board of Grain Commissioners, announcing the receipt of a notification from the Terminal Elevator Co. that it was not prepared to continue, for the season of 1918, the arrangements in force in 1917 in connection with cargo allowances, the association decided to maintain the attitude taken by the executive committee in favor of a renewal of the 1917 arrangements.

J. T. Mathews, L. Henderson, W. H. Smith and F. King were appointed a committee, with power to add to their number, to interview Marine and Public Works Departments' officials at Ottawa, for the purpose of getting the regulations respecting turning of vessels at Fort William changed to an equitable basis.

A letter having been read from the Secretary and Business Manager of the National Association of Marine Engineers of Canada, enclosing a 1918 minimum wage scale and classification for steamships operating in the Great Lakes district, which it was stated had been sent to all owners, asking an increase in pay, it was decided that, in accordance with previous custom, the question be dealt with by individual owners.

The committee appointed to interview the Marine and Public Works Departments' officials, in reference to the turning of vessels at Fort William, were authorized to urge on the Marine Department the necessity of enacting regulations respecting drinking water on vessels, so that Canadian vessels would thereby comply with U. S. requirements.

The Upper Canada Tract Society was granted \$200, towards the expenses of the Toronto Sailors' Institute for 1918.

The question of dredging at Wolfe Island, in the St. Lawrence River, having been considered, it was decided to recommend to the Dominion Government that the work be done.

The resignation of W. L. Reed, formerly of the Canadian Northwest Steamship Co., as a member of the executive committee, was accepted, the company having gone out of business.

The question of aids to navigation was referred to the incoming committee.

It was decided to protest again the proposed power development work at Rapide Plat, in the St. Lawrence River, by the New York & Ontario Power Co.

The committee named as above, to interview Marine and Public Works Departments' officials, was authorized, in conjunction with J. Donnelly, to ask the Marine Department to amend the boiler inspection regulations, particularly in regard to the pressure allowed and the hydrostatic tests required every year.

The following were appointed a committee on aids to navigation: A. A. Wright, W. J. McCormack, A. E. Mathews, J. F. Sowards, James Bassett, H. N. McMaster, G. E. Fair and W. H. Smith.

The four vacancies on the executive committee, caused by the expiry of the terms of W. E. Burke and A. E. Mathews, and W. L. Reed, Toronto (resigned), were filled by the re-election of Messrs. Burke and Mathews and by the election of James Bassett, Toronto, and J. F. Sowards, Kingston. The other members of the

committee, whose terms have not expired, are: A. A. Wright, J. T. Mathews, G. E. Fair, C. B. Harris and J. F. M. Stewart, Toronto; L. Henderson and John Waller, Montreal, and W. J. McCormack, Sault Ste. Marie.

J. T. Mathews was elected President, W. J. McCormack, Vice President, and G. E. Fair, Second Vice President.

## EXECUTIVE COMMITTEE'S REPORT.

The following report was submitted, signed by A. A. Wright, President, and Francis King, Counsel:—In preparing the following report of the association's work for the year 1917, the executive committee has made no effort to extend its scope beyond that covered in previous years, and has made reference only to those matters of interest to shipping on Canadian inland waters which have been the subject of consideration or action at meetings of the association or of its committees, or which have been otherwise dealt with by the association's officers during the year. The report is thus somewhat limited in extent, for the number of meetings held in 1917 has been much smaller than usual, and largely owing to war conditions the opportunity to seek or promote reforms by legislation or otherwise has been wanting, while at the same time and for the same reasons the pressing need of opposition to unwise legislation or of scrutiny of exploitations adverse to shipping interests has been correspondingly lessened. The items dealt with may be referred to under separate headings, as follows:—

**Legislation.**—Omitting orders in council and departmental regulations, which have not heretofore been included under this heading, it may be said that the only legislation before the Dominion Parliament in 1917 directly affecting shipping and requiring consideration by the association was the proposed amendment of the Railway Act, designed to bring carriers by water under the Board of Railway Commissioners' jurisdiction. The association's successful opposition to this proposal is reported in the following paragraph:—The Dominion Statutes for 1917 thus contains no general public statute relating to shipping.

**The Railway Bill, Sec. 358.**—In the course of the last few sessions of parliament the association has successfully opposed a number of bills introduced for the purpose of bringing carriers by water under the jurisdiction of the Board of Railway Commissioners. In the session of 1917, however, the argument turned on a section in the general bill to amend and revise the Railway Act, and it was necessary to bring opposition, not to a private bill but to a government measure. The section in the present Railway Act is as follows:—

"The provisions of this act in respect of tolls, tariffs and joint tariffs shall, so far as they are applicable, extend to the traffic carried by any company by sea or by inland water, between any ports or places in Canada, if the company owns, charters, uses, maintains or works, or is a party to any arrangement for using, maintaining or working vessels for carrying traffic by sea or by inland water between any such ports or places."

The bill proposed to amend this by a slight verbal alteration and by the addition of four important lines so that the section would read as follows:—

"The provisions of this act, shall, so far as deemed applicable by the board, extend and apply to the traffic carried by any railway company by sea or by inland water, between any ports or places in Canada, if the company owns, charters, uses, maintains or works, or is a party to any arrangement for using, maintaining or working vessels for carrying traffic by sea or by inland

water between any such ports or places, and the provisions of this act in respect of tolls, tariffs and joint tariffs shall, so far as deemed applicable by the board, extend and apply to all freight traffic carried by any carrier by water from any port or place in Canada to any other port or place in Canada."

A protest was filed against the proposed amendment, and the progress of the bill in committee was carefully watched. Upon learning that those favoring the legislation were relying to some extent upon the supposed existence of similar legislation in the United States, evidence was procured to prove that neither the Interstate Commerce Committee nor the new Shipping Board exercised any such jurisdiction as that proposed over common carriers, and care was also taken to inform the public of the impracticability of the proposal. In due course the matter came up for argument in the House of Commons Railway Committee, and a representative delegation from the association, supported by the leading boards of trade and many mercantile and shipping concerns throughout the Dominion, made a strong case against the amendment of the section. As a result the committee struck out the amending words in bold face type in the second quotation set out above, leaving the section substantially as it had stood heretofore and as first above quoted. The bill has not yet been enacted, but it is assumed that the section will finally appear in accordance with the committee's report.

**Drinking Water on Ships.**—Just prior to the opening of navigation in 1917 your Counsel's opinion that the new U.S. regulations as to pure drinking water would apply to Canadian ships entering U. S. ports, was confirmed by rulings of the officials charged with the enforcement of the law. In the short time remaining before the opening it was practically impossible to comply with these regulations, for they required that unless drinking water was taken on board from an approved source it must be purified by approved means, including among other things the installation of a separate system entirely distinct from the ordinary water piping, and also the installation of an approved plant for sterilizing the water. The Marine Department at Ottawa was consulted, and later a deputation waited upon the Deputy Minister. Full information was supplied to him as to the difficulties in the way, and a day or two later he visited Washington in the hope of making an arrangement in the interests of Canadian ships. He was successful, and the arrangement reached, suspended the regulations in U. S. ports as to Canadian vessels until the spring of 1918, on the understanding that in the meantime regulations of a similar nature would be adopted in Canada, and it was agreed that proof of compliance with these Canadian regulations would be accepted in U. S. ports. Since that time many members of the association, as opportunity arose, have installed plants on their ships approved by the U. S. authorities. Members have also been advised from time to time that, in the absence of Canadian regulations, ships must be prepared to show compliance with those of the U. S. on entering ports of that country; and full information as to approved installations has been circulated. The Department has also been reminded of the arrangement to enact Canadian rules, but up to this date has not sent notice of any action or submitted any proposals for considerations.

**Canadian Regulations regarding Grain**

**Cargo Outturns.**—Early in 1917 the Board of Grain Commissioners submitted to the various interests, enquiries as to the continuance of the regulations in force since 1915, and in due course at a meeting of the grain section it was resolved to ask for the re-enactment of the same regulations for the ensuing season. Some eastern elevators were opposed to this, and the loading houses sought a larger contribution from the carrier. The Commission therefore called a conference at Montreal on April 12, and all parties were represented there. After full argument and after a proposal from the representatives of this association, to meet an important objection, by allowing the ship to contribute a straight 15 lb. per 1,000 bush. on wheat, barley and oats, instead of  $\frac{1}{4}$  bush. per 1,000 bush. as heretofore, the Commission recorded an agreement to the re-enactment of the regulations for another season, with the one amendment above mentioned. The regulations were later promulgated accordingly, but under protest from the loading houses as to their contribution: a protest which has now been renewed in writing as to 1918. At this conference the special committee appointed by the grain commission to devise some permanent arrangement, made recommendations in favor of some plan that would include the shipper of the grain in the contributions towards adjustment. The commission was asked to assist in procuring the necessary amendment of the statute to permit this and also to work out some equitable scheme that could be enforced. The commission reserved any decision.

**Buffalo Grain Clearance Corporation.**—On April 11, 1917, the day preceding the conference with the grain commission at Montreal, a conference of representatives of this association, The Lake Carriers' Association and the Grain Clearance Corporation, was held at Buffalo. It was then resolved at the outset that the Clearance Corporation ought to continue its services if arrangements could be made, and after full discussion of reports a working plan was outlined in the following terms:—

1. That the contribution of the ships shall be on the basis of  $\frac{1}{2}$  bush. per 1,000 bush. from all ports to all ports;
2. That in order to provide funds for operating and for the purposes mentioned in clause 4, the ships shall respectively pay \$200 on first arrival with grain cargo, subject to this contract (majority opinion seems to be that this item should be a fixed amount, but may be on sliding scale, based on capacity of ships or other conditions);
3. The 12c. and 24c. of the former contract may be increased to 15c. and 30c.;
4. Such contribution on first arrival shall be evidenced by receipt showing terms on which contribution is made, substantially that such contributions are to be repaid as soon as practicable after close of navigation, subject to the deduction of such amount from each contribution as may be necessary to give the corporation a sum, including its surplus earnings, sufficient to repay the voluntary contributions already received this year from carriers; to pay the deficit of 1916, excluding capital; and to pay back to the corporation one quarter of its exhausted capital;
5. That this agreement is for one year only and that any surplus earnings over refunds and total deficits shall be credited pro rata to the subscribers of 1917, and new arrangement to be made for 1918.

This proposal was approved by members of this association present at the Montreal conference on the following day and was at once submitted to all members by circular. On April 16th parties met again at Buffalo and settled a form of contract, similar to that previously in use, but containing the amendments above set out. This contract was then printed and upon being sent by the corporation to individual vessel owners for signature was generally adopted and entered into. In the meantime the representatives of the loading houses, who had protested at one-sixth of a bushel, after some consideration agreed to pay on shipments to the

U. S. the same amount as on Canadian shipments, but they continued their protest, and on April 21 met the grain commission at Winnipeg to present their argument for certain lower contributions. The commission, however, quite properly held to the opinion that the arrangement was concluded at Montreal, and in due course the loading houses through C. B. Piper gave the required assent to continue their contributions on the basis of one-sixth of a bushel, and the commission's regulations were then issued as above reported. Nevertheless, the final agreement of the loading houses was made under protest, and notice was served upon this association that readjustment must be made before another season opened. This noticed has just been repeated, as appears from a letter received from the secretary of the grain commission after this report was prepared. The commission invites an expression of this association's views. Unfortunately the reorganized business of the Grain Clearance Corporation again proved unsuccessful, and it was forced to discontinue operations June 30, 1917.

**Shortage in Outturns, generally.**—A fair indication of the outturns of cargoes loaded at Fort William and Port Arthur in the autumn of 1917 is given by the returns sent out periodically by the Board of Grain Commissioners. An appendix to this report is made up from these returns covering periods from Aug. 22 to Dec. 18, 1917. It will be noted that the damaged grain shown in this statement forms part of the reported shortages and that the net shortage during the period mentioned, and excluding damaged grain, amounted to 0.42 bush. per 1,000 bush. of the bill of lading quantities. The detailed returns show that in number the shortages greatly exceeded the overages, only 102 cargoes turning out in excess of the bill of lading quantity, while 432 ran short.

**Grain Bill of Lading adopted by Lake Carriers' Association.**—A proposal for such a bill of lading as this was discussed at the conference in Buffalo, called to consider the winding up of the Grain Clearance Corporation, but in view of the existing regulations in force in Canada it was not considered possible to bring such a bill of lading into general use. At a later meeting of the Lake Carriers' Association a form was tentatively adopted and submitted to the Dominion Marine Association for approval. It was considered at a meeting of the association's grain section in Toronto on Sept. 11, but for the reason above mention and because the Wheat Export Co. was not at once prepared to consider the proposal, no action was taken. The new lake carriers' bill of lading was shortly afterwards formally adopted and put in print. A form intended for use on shipments from Canadian ports appears in an appendix to this report. This association is advised that the clause as to general average is allowed by the decision of the U. S. Supreme Court in the Jason case, notwithstanding the provisions of the Harter Act: and your Counsel has expressed the opinion that in view of the wording of the Canadian Water Carriage of Goods Act, a similar decision would probably be reached by Canadian courts. The Lake Shippers Clearance Association, by letter from Fort William dated Dec. 31, 1917, advised that this form had not then been used on any of its shipments.

**Control of Grain Trade as a War Measure.**—During the year general supervision has been exercised as to certain designated particulars, by a Board of Grain

Supervisors appointed by order in council; and latterly a corporation known as The Wheat Export Co., Ltd., has been directly charged by the Dominion Government with the export business, and, represented by Jas. Stewart, this corporation has now been in control and in relations with members of this association throughout the autumn trade. On Sept. 11 a joint meeting of this association's executive committee and its grain section met Mr. Stewart at Toronto to consider his proposals to simplify shipment and avoid congestion and delay, and also his further request for the fixing of a maximum freight rate. Members present all expressed the wish to facilitate his work as much as possible, and volunteered to accept the same maximum rate as that agreed upon on the previous day with the Lake Carriers' Association for the Buffalo trade, namely,  $4\frac{1}{4}$ c. No decision was reached and although correspondence ensued, this association was not asked to take action as a body on a matter regarding which no agreement binding members could be made, and the question was left to individual members to be dealt with at discretion.

**Payment of Freight Charges by Railway Companies.**—Upon notification from the railway companies' freight agents that vessels would no longer receive settlement of freight at Georgian Bay elevators, the matter was considered at a meeting of the association's grain section in Toronto in April and it was resolved to notify the Winnipeg Grain Exchange that shippers must prepay the freight or make some other satisfactory arrangement. Notice was given accordingly by wire and by letter. Correspondence ensued and in due course the required arrangements were made to protect the interests of the carrier.

**Clearances at Fort William and Port Arthur.**—In October a suggestion was received for simplification of the requirements regarding clearances at these ports, and the association asked the Minister of Customs to endeavor to find means to enable a ship to make a single clearance for each voyage, instead of a clearance each time she was moved from one port to the other, and also to enable clearance to be obtained at all hours and even during process of loading. The Minister favored the proposal, particularly with reference to the possible improvement in dispatch, and agreed to send a special officer to the ports to investigate and report. The matter is still under consideration and the question should be revived with the new ministry.

**Coasting Laws.**—On June 26, in view of the war conditions, and after an understanding that reciprocal action would result in the U. S., the Canadian Government proclaimed a suspension of the restrictions relating to the coasting for foreign vessels, on condition that similar privileges were in effect granted to Canadian vessels by the U. S. Government. This proposal was communicated officially to this association, shortly in advance of the passage of the order, but no opposition was offered to it, as previous protests against violation or suspension of the coasting laws had suggested reciprocal abrogation as an unobjectionable measure. Upon the passage of the order in council the various U. S. port authorities were at once instructed from Washington to suspend the enforcement of the law in their country and permit coasting of Canadian ships without imposing penalties, pending the preparation and adoption of the necessary amendment to act of Congress. It was not until Oct. 5, 1917, that the U. S. Senate finally adopted

the House of Representatives Bill 5609 without amendment.

**International Joint Commission.**—Early in the year an application was made to this commission for approval of plans for a ship channel in the St. Clair River, along the Port Huron side, with compensating works in the river lower down to maintain the levels of Lake Huron and Lake Michigan. The proposal came in due course before this association for consideration, and careful investigation was made. The undertaking promised substantial advantages, and relying upon the opinion of the Dominion Department of Public Works engineers, the Dominion Hydrographer and the officers of sister organizations, your committee, after examination of the plans, resolved to allow the application to proceed without criticism, other than comment upon the futility of measure to conserve these waters for navigation at their eastern outflow unless withdrawals at Chicago are placed under effective control. No other question directly affecting this association has come before the commission during the past year, and no notice of any public hearing has been issued; but a proposal of the New York & Ontario Power Co. for works in both channels of the river, in connection with the power development at Waddington, N.Y., will be before the commission at an early date. This is referred to under a separate heading in this report. The final report on the Lake of the Woods investigation has been published, and this, with the printed report of the consulting engineers in four volumes, have been received by the association.

**Shipping Registries.**—The last annual report contained a reference to arrangements made by this association with the sailors' institutes at Port Arthur and Kingston, for the opening of registry books, in which seamen could have their applications for employment recorded and owners could record their requirements. Similar arrangements were reported, more or less satisfactory, in certain other ports. But at Toronto, where no medium was available for this purpose, the negotiations of this association with the Upper Canada Tract Society led to the establishment of a Toronto sailors' rest and this association made a grant of \$400 towards the expense of this institution. Your committee is pleased to report that while the Toronto building is the smallest of the society institutes for sailors it has, however, proved very successful, thanks to the co-operation of owners and men. The report of the society having the institute in charge, records that up to the end of Aug., 1917, there had been over 8,000 visits made to it by sailors and others frequenting the water front and that for the same period, by actual count, 1,232 men had entered their names for employment in the free shipping registry and that of this number over 650 had been supplied with work. The report adds that part crews were also sent to Hamilton, Welland Canal, Port McNicoll, Sarnia, Belleville, Kingston, Cobourg, Thorold and Port Dalhousie. In a recent letter the society has commended the institute to the continued support of this association.

**Wage Schedule.**—No action was taken upon a schedule of wages submitted anonymously to this association early in 1917. The subject was discussed at the annual meeting and deferred for later consideration if necessary. Recently a letter was received from the secretary and business manager of the National Association of Marine Engineers for Canada stating that the organization named proposed to rearrange their classification of boats and wage scale for 1918 and sug-

gesting that a representative from the Dominion Marine Association confer with the writer with a view to making a satisfactory arrangement. The letter was acknowledged and held for consideration, your secretary being instructed in the meantime that the subject is a matter between individual members and their crews. While this report was in preparation a further communication was received from the same source enclosing a printed "wage scale and classification." It is understood that copies have been sent to all owners.

**Extension of Limits of Inland Waters.** In accordance with a resolution of this association's grain section a request was presented to the Marine Department for support in a proposal to amend the Canada Shipping Act, Sec. 72, so as to extend the limits of the Inland Waters of Canada, from Father Point and Point Orient, as far east as the eastern extremity of the Island of Anticosti. It was represented that the present limitation was an old one, dating from a period long antecedent to the development of the pulp and lumber trade from the north shore of the St. Lawrence, and that the new trade was burdened with unnecessary inconvenience and expense through having to employ additional men with coasting certificates; a difficulty accentuated by present war conditions. The proposal did not meet with approval in the department and the Deputy Minister held that the law must adopt a limit for the inland waters corresponding to the natural geographical division, and that the present location of that line is the correct one.

**Pilotage Charges — Montreal to Quebec.**—The association was consulted by the Marine Department regarding a request from the Montreal pilots that the tariff on seagoing and coasting vessels between Montreal and Quebec be increased 25c. a foot. The proposal was submitted by circular to members of this association and no opposition being raised in the meantime, the general consent being expressed by steamship agents at Montreal, a subsequent meeting of this association's grain section approved of the charge, and the amendment asked for was in due course inserted in the regulations.

**Canadian Masters and Crews on U. S. Ships.**—Correspondence at the instance of members of this association, interested in the continued employment of the same officers and crew on ships transferred to U. S. registry, brought information from the Commissioner of Navigation at Washington that following an executive order of the U. S. President, dated July 3, 1917, the Secretary of the Department of Commerce had prescribed regulations which permit Canadians under certain conditions to act as watch officers on ships of the country named. There is no law against the employment of a Canadian crew on such a ship.

**Smoke on Navigable Channels from Burning of Brush, Etc.**—Considerable correspondence took place with the Ontario Lands, Forests and Mines Department with a view of improving the existing legislation designed to prevent forest fires, and to bring about amendments placing further limitations upon the periods during which farmers and settlers may set fire to brush or slash or rubbish. Dr. Zavitz, of the department, gave the question attention and made certain suggestions which were considered at a meeting of your executive committee. It was then decided that it would be unwise to press for any amendment of the law at present and that the matter be held over for later consideration.

**Turning Vessels in the Kaministikwia River.**—As the result of correspondence and conference following recommendations of this association, sec. 15 of the regulations governing Fort William harbor, established by order in council of February 8, 1916, was amended by order in council of Feb. 2, 1917, by the addition of the following paragraph:—

"Provided, however, that steam vessels exceeding 200 tons gross, but not exceeding 260 ft. in length, may be turned with a tug in that section of the Kaministikwia River lying between the bend above C.P.R. elevator D and the westerly limit of the G.T.P.R. rail dock and provided further that steam vessels of such tonnage and length may also turn in that section of the Kaministikwia River lying between C.P.R. slip 1 and elevator C, but the turning of such vessels in the last mentioned portion of this river shall not take place without the use of a tug, unless sanctioned by the harbor master."

This amendment met with general approval from members of this association, and resulting as it did from the action taken at the instance of the association, consultation might have been expected before further amendment took place. Yet on Nov. 7, 1915, without any notice to or consultation with the association another order in council was adopted submitting the following rule in place of that above quoted.

"Sec. 15. Any vessel not exceeding 200 tons gross, or in the case of a package freighter not exceeding 275 ft. in length, may turn in any part of the Kaministikwia River under her own power; any vessel exceeding 200 tons gross, but not exceeding 260 ft. in length, or in the case of a package freighter not exceeding 330 ft. in length, may be turned with a tug in that section of the river lying between the bend above C.P.R. elevator D and the westerly limit of the G.T.P.R. wharf and may also turn in that section of the Kaministikwia River lying between C.P.R. slip 1 and elevator C, but the turning of such vessels in the last mentioned portion of this river shall not take place without the use of a tug, unless sanctioned by the harbor master. All other vessels must turn in the turning basin constructed at the head of McKellar channel."

The District Engineer of Public Works, upon whose recommendation the rule first quoted was adopted, was not consulted as to the present amendment and it appears to have arisen in the Marine Department. Objections have now been raised to the new order in council and the next executive committee will require to deal with the whole question.

**Canals.**—No representations have been made by this association to the Railways and Canals Department during 1917, save in so far as pending questions have been the subject of further discussion with one or other official. As in other departments, expenditure has been cut down to a minimum and no special alterations have this year been submitted to the association for consideration. The usual communications have passed with reference to permitted drafts of water, location and marking of obstructions and special navigation regulations, and these have been circulated to members.

**Lake Levels.**—Reference has been made in previous reports to the accentuation of natural fluctuations, particularly in restricted channels, by the withdrawals of water for power and other purposes, for instance by the diversion of the Mississippi River, through the Chicago drainage canal. The low water period, and the consequent loss in the carrying capacity of vessels, was specially commented upon in the 1915 report. Levels were considerably higher in 1917, and for convenience of reference and comparison with future years a table of levels, prepared from the monthly bulletins of the U. S. Survey of the Northern and Northwestern Lakes, is inserted as an appendix to this report.

**Power Development in Navigable Waters.**—The past year has been relatively free from difficulties in this respect. Only two proposals directly affecting navigable

channels on the main St. Lawrence route were noticed during 1917 and they made no progress. One related to the Long Sault Rapids and one to the St. Lawrence River at Coteau. Correspondence took place regarding each and direct investigation was made by members of the association in the departmental offices at Ottawa. It is understood that no formal application is now under consideration, in connection with either of these proposals. The New York & Ontario Power Co., however, is preparing to apply to the International Joint Commission for approval of certain proposed works in the St. Lawrence River, above and below the Rapide Plat, above Morrisburg, in connection with the development of their power at Waddington, N.Y., in the Little River, south of Ogden Island; and just as this report was going into print the president of the company submitted verbally to your secretary an outline of these proposals. Briefly, the company desires to make a rock fill between the foot of Ogden Island and Canada Island, in order to prevent the water of the main channel from flowing across past the foot of Ogden Island, and in order to improve the flow in its tail race; and it also desires to build a submerged dam, by a process of filling in the section of the main channel from the outer bank of the Morrisburg Canal, at its head, to Ogden Island, leaving a navigable depth above this fill of 20 to 25 ft., in order to divert sufficient water for their purposes into the Little River. It is argued for the company that this last mentioned fill will increase levels in the canal, and that the fill at the foot of the island may improve levels further upstream in the Rapide Plat. The Hydro-Electric Power Commission of Ontario is said to desire this development and to have contracted for 15,000 h.p. to be brought across the river from Waddington. These proposals will require very careful consideration and should be specially referred to the executive committee for 1918 for action.

**Harbor and Channel Improvements.**— Suggestions referred to the association, or brought forward by members, have been considered and acted upon at meetings throughout the year. Recommendations have been made by letter and by personal interview, and the various district engineers have very kindly consulted your secretary whenever occasion arose. It would be impossible to relate in detail all the points covered, but mention may be made particularly of the various improvements recommended in the Kaministikwia River, which have been favorably considered and to some extent already made the subject of departmental action; measures taken under the Navigable Waters Protection Act, to block the erection of certain proposed docks which would have encroached on the Mission River turning basin; the improvement of Goderich harbor by dredging and extension of breakwaters; the ship channel in the St. Clair River, along the Port Huron frontage, referred to elsewhere in this report; recommendations as to improvement of the Livingstone channel in the Detroit River; the removal or buoying of wrecks or temporary obstructions in various localities; the cut or channel at the foot of Wolfe Island near Clayton, N.Y.; improvements in Kingston harbor at the mouth of the Cataraqui River; the channels and dredging operations in Lake St. Louis; and various questions relating to the navigation of the canals. As in all other departments, save those immediately concerned with the provision of war materials, expenditure on public works has been cut to a minimum, and at pres-

ent no new projects of importance under this heading can receive any serious consideration.

**Aids to Navigation.**—As usual matters requiring immediate action have been dealt with by your officers as occasion arose, and much correspondence has passed, relating to unlit lights or misplaced marks, and to the better operation of certain aids or their later operation at the close of navigation. In view, however, of the general curtailment of expenditures it has not been possible to expect any substantial additional undertakings. Your committee on aids to navigation has doubtless realize this, and although a call was issued for one meeting to deal with some few pending recommendations, no quorum was obtained and no formal action has been taken. Your president, owing to the pressure of his duties as Assistant Director of Shipbuilding in the Naval Service, has not been able to attend meetings of the Lighthouse Board as often as he would have liked to, but for the reasons first mentioned this disability has not proved serious to the association.

**The Late D. Murphy.**—Your executive must record the great loss the association has suffered in the death of Dennis Murphy, President of the Ottawa Transportation Co., a member of the executive committee since the organization of the association, a past president of the association, and one of its best known, most highly esteemed and most cordially and universally liked members. Mr. Murphy's residence in Ottawa and his genial, generous nature placed the association constantly in his debt, for he never failed to welcome his friends with real hospitality when they were within reach, or to take active measures to help them in their difficulties at every opportunity whether they were absent or present. His warm heart and lovable disposition will always remain a pleasant memory with every member of the association. Upon his death in March last expressions of condolence were sent to his family, and a wreath of flowers from the association was among the many floral offerings. The association was also officially represented at the funeral.

**General Business, Membership and Tonnage.**—In this report the more important questions dealt with by your committees and officers during the year are briefly summarized. The usual general correspondence with representatives of various branches of the government and of sister organizations as well as with members of the association and other parties has taken place. The steam tonnage enrolled in the association in 1917 was 160,418 net registered tons against 166,997 tons in 1916; and the barge or sailing tonnage, 25,808 net registered tons, against 29,469 tons in 1916; a total of 186,226 tons to compare with 196,466 tons in the previous year. This continued decrease results partly from conditions due to the war, which have led to the continued abstraction of tonnage from inland waters, and partly from the fact that considerable tonnage, some of it acquired recently, has not yet been enrolled in the association. Members have continued the enrolment of their ships, irrespective of location, but losses and sales have been continuous and a fair comparison with the tonnage of previous years is therefore impossible.

### Canadian Lake Protective Association's Annual Meeting.

The report presented at the annual meeting at Toronto, Feb. 20, called atten-

tion to the casualties to vessels owned by members of the association in 1917, the record being extremely light, once more demonstrating the effectiveness of the association's work.

Under the association's constitution, its executive committee is the same as that of the Dominion Marine Association, the President of the latter being Chairman of the C.L.P.A., and the executive committee comprises the Dominion Marine Association's two vice presidents, and other members of its executive committee, whose names are given in the report of that association's annual meeting, elsewhere in this issue.

### Dominion Register of Masters, Mates and Engineers.

On the Marine Department's representation as to the desirability of keeping a register of the names and addresses of all persons in the Dominion who hold certificates of competency as masters, mates and engineers of seagoing and other steamships, an order in council has been passed as follows:—"Every person residing in Canada, not more than 65 years of age, who holds a certificate of competency, other than a temporary certificate, as master, mate or engineer, whether for seagoing or other ships, shall, on or before Apr. 30, 1918, send a statement to the Minister of Marine at Ottawa, on forms provided for the purpose, giving his full name and address, nationality, date of birth, and date and number of every certificate of competency held by him. Every such person thereafter changing the nature of his employment or his address shall forthwith notify the Minister. Temporary employment, during winter months, or when ship on which he may be engaged, may be undergoing repairs, need not be notified. Every person knowing, or having reason to believe that any person employed by him, or by any body corporate of which he is manager or superintendent, is under 65 years of age and is the holder of a certificate of competency as master, mate or engineer, whether for seagoing or other ships, shall ascertain if such person is the holder of such certificate, and if he is, and does not produce a certificate that he has reported as required by the first part of this order, shall thereupon send a statement to the Minister, containing the particulars as required, on a form provided for the purpose. Every person when required by the Minister, or by an authorized person, shall post up in a prominent place on his premises, where it can be easily read by employes, a form provided, calling attention to this order, with instructions for obtaining forms, etc.; and every person shall at all reasonable times permit any authorized person to enter his premises and make such enquiries as he may desire for the purpose of ascertaining what, if any, certificates any employes may hold, and other information in connection therewith. Any person refusing or neglecting to make any statement, enquiry or answer under these provisions, or refusing to post up and keep posted up, any notice in accordance with these provisions or refusing to permit any authorized person to enter his premises, or make any enquiry under these provisions, and any person knowingly giving any particulars which are untrue or misleading, in any statement, shall be guilty of an offence and liable on summary conviction to a fine not exceeding \$100, or imprisonment for not exceeding 2 months, or to both fine and imprisonment.

# Specifications of Auxiliary Engine Room Machinery for Standard Wooden Steamships for British Government.

Canadian Railway and Marine World for January contained a very full summary of the specifications for the hulls of wooden steamships being built in Canada for the British Government, under orders placed by the Imperial Munitions Board at Ottawa, together with plans, and the February issue contained the full specifications for the marine engines for these vessels, together with plans. Following are the specifications for the auxiliary engine room machinery:—

**Independent Feed Pumps.**—To be of the long stroke Simplex type, generally known as the Weir type, having steam cylinder 10 in., pump 6 in. diam. by 12 in. stroke, and capable of discharging 20,000 lb. of water per hour, at not more than 12 double strokes per minute, against a boiler pressure of 180 lb. to the sq. in., when driven by steam at the same pressure. The cylinder to be of cast iron, fitted with piston of cast iron, having Ramsbottom packing rings or a single deep packing ring with cod piece. The steam valve gear to be of shuttle or similar type, designed for positive starting from rest and against full load. Piston rods and all valve gear of steam end to be of polished steel of approved design, and to be fitted with adjustable bearings on all principal pins.

Pump end to have cast iron body and valve chest, the valve chest being preferable in separate casting from the body of the pump. Pump cylinder to be fitted with a hard gun metal liner of approved quality appropriately secured. The valve chest to be fitted with suction and discharge valves of the triple disc type, or similar valves fitted with guards and adjusting gear. The whole of these parts, including the seats, to be of gun metal.

The pump should be designed with a suction and discharge branch, provided at either side for convenient arrangement of piping, and must be fitted with a control tank, having float control to steam valve, except in the case in which a filter of the gravity or tank type is fitted, in which event the control float should be attached to the filter. Pump rods to be of rolled brass or Muntz metal.

In cases where two pumps are fitted, they are to be supplied with a discharge valve, manifold box, having connection with the main and auxiliary feed lines on boilers, and so arranged that either pump can work on either line of feed piping. Where a single pump is fitted, this box will consist of a double valve chest arranged in a similar manner. These valve boxes are to be of cast iron, with brass fittings and screw down stop valves. This pump, or pair of pumps, to be fitted with the usual manifold boxes for steam valves, permitting same to be supplied either from the control or direct steam supply pipes, and straight through shut-off valves of gun metal are to be fitted on exhaust.

In these ships fitted with the standard engine supplied by the board, one only of these pumps will be fitted, as the standard engine is already supplied with ram feed pumps driven from the air pump levers. For ships fitted with the Polson engine this pump will be supplied by the Polson Co. For ships fitted with the Inglis engine, a pair of the above pumps will require to be supplied by the board, as this engine is not supplied with the ram feed pumps driven from the air pump levers. Plan of the pump and gear and

specification in detail proposed to be supplied must be submitted by each pump contractor for the approval of the board's technical adviser.

**General Service Pump.**—A vertical duplex pump, having cylinders 6 in. diam., pump 4 in. diam. by 6 in. stroke, or equivalent pump capacity and ratio of cylinder to pump, to be fitted and arranged for general service, which includes boiler feed circulating, deck, fire and sanitary service. This pump is to be of the type generally known as the Worthington, in which the valve gear of the one side is driven by the movement of the engine on the other side.

The cylinders to be of best cast iron. The valves to be of the flat type and arranged with compression valves, to ensure start and continuous working. The piston to be fitted with Ramsbottom rings, piston rod to be of wrought iron or steel and the valve gear of wrought iron or steel; all the part to be of the most substantial design, to approval.

The pump end to have cast iron cylinders and valve chest, fitted with a hard brass or gun metal liner and brass valve seats, valve guards, etc., the valves being of the Kinghorn triple disc type. The pump rods to be of hard rolled brass, or Muntz metal, and the pump pistons to be of brass with water-grooves, or of cast iron fitted with brass liners of the same type. These pumps to be fitted with steam and exhaust valves of brass.

A duplex ballast pump for low pressure service, capable of pumping about 100 tons of water an hour, and having a steam cylinder 7½ in. diam., pump 9 in. diam., and with stroke of 10 in., to be fitted in the engine room. Cylinder to be of hard cast iron fitted with piston having Ramsbottom rings, piston rod of wrought iron or steel, valve gear of substantial design of wrought iron or steel, having main pins fitted with adjustable bearings. The pump end of cast iron fitted with brass liner and cast iron valve chest fitted with brass valve seats and guards, etc. Valves to be of rubber. Pump rods to be of rolled brass or gun metal and the pump pistons of brass with water grooves or of cast iron with brass liners and water grooves as may be approved. Pumps to be fitted with steam exhaust valves of brass.

Pumps in general are to be of the type specially designed for service at sea, and to be fitted with all necessary drain cocks, pipes, lubricator cocks, etc. In each case full detailed plans and specifications of the article proposed to be supplied, showing the size of the various principal parts are to be submitted for the approval of the board's technical adviser before contract be entered into.

**Auxiliary condenser** to be of the surface atmospheric type, having approximately 400 sq. ft. of cooling surface, to be capable of condensing steam from five 7 x 12 inches, and the electric light plant, at one time. The condenser shell to be of cast iron or wrought iron; the water boxes and covers to be of cast iron; the tube sheets to be of rolled brass, carried out to the edges of the water and flanges. Tubes to be of brass and to be fitted with brass ferules, collared at one end, packed with cotton packing. Condenser to have exhaust pipe led into the main waste steam pipe via funnel, having an area of one and a half times the total area of the exhaust pipes led into the condenser. The

drain from this condenser to lead to the gravity filter, if this type be fitted, or alternately to a small drain tank placed in the engine room, described in the engine specifications.

**The feed heater** to be of the exhaust surface type, of sufficient heating surface to deal with 25,000 lb. of feed water an hour, from a temperature corresponding to a vacuum of 25 in. to atmospheric boiling point or thereabouts. The heating surface to consist of straight copper tubes arranged in an approved manner, secured to the heads in such a way as to obviate expansion troubles. The heater body to be of cast iron, as also the heads and covers. Heater preferably to be placed horizontally and to be fitted with air extraction pipes, drain cocks, steam valve for cleaning and supplying live steam in case of necessity. Safety valve and pressure gauges to be fitted as required by classification societies.

**Feed water filter** of the gravity type to deal with about 25,000 lb. of feed water per hour. This tank will be placed on the suction side of the feed pumps, on the discharge side of the air pump, and to be fitted with buckets containing coke or coir matting, to extract grease and dirt from the water. The design of this tank to be approved by board's representatives, as also the size. The necessary inlet and outlet, and by-pass valves for feed water, to be fitted and also wrought iron covers. Float to be arranged in a portion of the tank to control the independent feed pumps. Alternately, quotations to be given for a pressure feed filter to be placed between the feed pumps and the main boilers, of a type which consists of cages or discs covered with huck toweling, or other similar material, to extract the grease from the water. Filter of ample size to deal with 25,000 lb. of feed water an hour. Body to be of cast iron, cages or discs to be of wrought iron. All necessary valves and fittings to be supplied.

**Evaporator.**—Evaporator to be supplied capable of evaporating 15 tons of sea water a day at a pressure not exceeding 10 lb. by gauge. The evaporator shell to be of cast iron; heating surface to consist of copper tubes conveniently arranged for accessibility and removal for cleaning. Vapor valves, steam valve, brine valve and blowdown to be fitted as usual. To be lined with non-conducting composition clad with sheet iron.

Full details of the above fittings, including specifications and detail plans of what is proposed to be supplied are to be furnished by the contractors with tender. No tender will be considered which does not give fullest possible details of the appliances which it is proposed to supply. Quotations should be detailed, so that a comprehensive price is quoted for each of the above mentioned items, and the plans should be to scale, so that they may be used by the board's drafting staff for engine room arrangement purposes.

**The New York State Barge Canal.** from Lake Erie to the Hudson River, will, according to a report by the State Engineer, be opened for traffic by May 15. Some comparatively minor contracts still remain uncompleted, but he states that a carefully prepared statement shows the rate of progress to be maintained up to May 15, which, if adhered to, leaves no doubt as to the opening date.

## Canada Steamship Lines' Annual Report.

A Montreal press dispatch, Feb. 23, stated that the annual statement shows that, while there was a large increase in gross revenue, there was also a large increase in expenses, with the result that the net for 1917 shows a slight decrease compared with 1916.

After deductions of bond and debenture interest and all other charges there was a profit of \$2,178,401. This compares with \$2,391,027 in 1916, making a decrease of \$212,626. The surplus account shows that after adding the balance from last year and allowing for the \$2,479,166 paid on account of current and deferred preferred dividends, there was surplus of \$2,374,754, an increase of \$547,411.

The President, James Carruthers, in his report to the shareholders, says that the company's tonnage was much greater than in 1916, despite the losses that had occurred, and the future could only be considered as promising of development and expansion on the high seas. In speaking of dividends, he stated that the deferred dividends on the preference shares had been paid, and that it has been decided to resume them quarterly. Altogether the company's situation could be summed up as highly satisfactory.

## New Steamships for Canadian Pacific Ocean Services Ltd.

Canadian Railway and Marine World for May, 1917, contained some details of new steamships purchased and ordered by Canadian Pacific Ocean Services, Ltd., for the Atlantic service. One vessel then under construction at Newcastle, Eng., was purchased while on the ways for delivery about Aug., 1917, and arrangements were made with John Brown & Co., Glasgow; The Fairfield Shipbuilding & Engineering Co., Glasgow; and Harland & Wolff, Belfast, for the construction on a cost and percentage basis, of two steamships 605 ft. long between perpendiculars, with a speed of 20 knots an hour, and two steamships 546 ft. long between perpendiculars, with a speed of 16 knots an hour. Owing to wartime restrictions, it has not been permissible to publish particulars of progress on these vessels from time to time, but it is evident that notwithstanding the general pressure in all shipbuilding yards, these orders have been pushed forward. One of these vessels arrived at St. John, N.B., Feb. 14, on her maiden voyage, in charge of Capt. Webster, formerly of the company's s.s. Metagama. Local reports give her dimensions as: length 520 ft., beam 67 ft., depth 42 ft.; tonnage, 15,000 gross. It is also stated that the propelling machinery consists of combined reciprocating and turbine engines, maintaining a speed of 17 knots an hour. Accommodation is provided for about 2,000 passengers.

## Telegraph, Telephone and Cable Matters.

A. Entwistle, assistant agent, C.P.R. Telegraphs, Edmonton, Alta., was presented with a wrist watch by the local stax recently, on leaving for Calgary to report for military service.

The Great North Western Telegraph Co. has opened offices at St. Cyr, St. Ulric and Riviere Blanche, Que., and has closed its offices at Abenakis Springs Hotel and Chaleurs, Que., and Kashbaw, Ont.

The Pacific Cable Board's report for the year ended Mar. 31, 1917, shows receipts of \$1,683,870 and expenditures of \$779,240. After placing \$450,000 to the renewal fund, there was a surplus of \$454,600. There was an increase of \$130,635 in receipts and an increase of \$69,755 in expenses. There were no interruptions nor repairs reported during the year. The special war allowance to employes was increased to 20% of the net salary for the year.

## Among the Express Companies.

C. J. Crawley has been appointed agent, Canadian Northern Ex. Co., Humboldt, Sask., vice H. E. Race, transferred.

LeBaron Coleman, agent, Canadian Ex. Co., Halifax, N.S., who lost his life in the recent disastrous explosion there, entered express service in 1880, as messenger, Intercolonial Ex. Co., and when that company was taken over by the Canadian Ex. Co. in 1890, he continued in the service, and in 1899 was appointed route agent, and in 1905, agent at Halifax.

The Board of Railway Commissioners has refused the application of the Freight and Express Underwriters, Toronto, that the last paragraph of rule 6 of the Canadian Car Demurrage Rules, prescribed by general order 201, Aug. 1, 1917, be changed to read as follows:—"Notice of claim for refund of demurrage under this rule, to be presented to the carrier's agent within 15 days."

The Board of Railway Commissioners has extended the express collection and delivery limits in Windsor, Ont., to include, by the water front from the eastern to the western city boundaries, by the western city limit from the river, London St., McEwan Ave., Martin St., Cameron Ave., London St., Wellington Ave., Elliott St., Dougal Ave. Giles and Howard Aves., Erie St. and the eastern limit to the river; also outside that area, in McDougall St., from Giles Ave. to Tecumseh Road. This order became effective Jan. 28.

Archibald J. Seaton, who was appointed Superintendent, Eastern Division, Canadian Ex. Co., Montreal, recently, was born in Middlesex County, Ont., Nov. 26, 1867, and entered the company's service in 1886, since when he has been, to 1887, clerk, Galt, Ont.; 1887 to 1901, messenger; 1901 to 1908, agent, St. Thomas, Ont.; 1908 to 1912, route agent, Montreal; 1912 to June 15, 1917, Assistant to Superintendent, Eastern Division, Montreal; June 16, to Dec. 31, 1917, Assistant Superintendent, Eastern Division, Montreal.

An order in council has been passed providing that every express company carrying imported goods into or through Canada shall provide secure and sufficient suffrage warehouses at the customs port of delivery, for the storage of goods so carried in bond by express, pending entry at the Customs House. The warehouses shall be subject to the approval of the Minister of Customs, and also the scale of fees payable as storage, and he shall also determine from time to time, the rental to be paid by the Customs Department for the space allotted to express companies in the customs examining warehouse, etc. The previous regulations enacted Apr. 10, 1917, have been repealed.

The Dominion Ex. Co. was sued at Montreal recently for \$150, the value of a trunk and contents, lost by the company. The company admitted liability to the extent of \$50, to which it claimed to be limited by the stipulation on the contract,

the sender not having declared the value of the trunk to be greater. The person suing claimed that he could not read the contract, it being in English, and urged that the terms of the contract should have been in both English and French as required by the Quebec law. The judgment declared that the law did not require the use of both languages on the one paper. If, however, the plaintiff had asked for a copy of the contract in French, or asked to have it explained in French, he was entitled to it. As he had not done so, judgment was entered for the \$50 which the company admitted.

The Board of Railway Commissioners has ordered that the express collection and delivery limits in Winnipeg, unless otherwise provided in the express classification, or published tariffs, shall include, in that portion of ward 7 between the east end of Point Douglas railway bridge and the Redwood bridge included within Roland St. and Johnson and Noble Aves. on the one side and the Red River on the other, also in Union and Martin Aves. between Watt St. and the C.P.R., and in Watt and Levis Sts. from Martin to Johnson Ave.; from the Redwood bridge by the west bank of the river, the present northern city limit, Main St., Lansdowne Ave., McGregor St., Machray Ave., Parr St., Burrows Ave., McPhillips St., thence C.P.R. west to Bury St., Quelch St., Alexander Ave., McPhillips St., Lipton St., St. Matthews Ave., Sherburn St. Portage Ave., Midland Ry., north bank of the Assiniboine River to the line of Cambridge St., Academy Road, Oxford St., Haskins Ave., Cockburn St., to the C.N.R. yards, Daly St. from Carlaw Ave., Jubilee Ave., Osborne St., Florence Ave., Fisher St., Morley Ave., Eccles St., and the west bank of the Red River to Redwood bridge; also outside of the said enclosed area, in Notre Dame Ave. from McPhillips St. to the C.P.R. Pembina Branch and the Prairie City Oil Co., and in Winnipeg Ave. from McPhillips St. to the Grain Growers Grain Co. The order became effective Feb. 18.

J. A. D. Vickers, Vice President and General Manager, American Express Co., Chicago, Ill., who died there Feb. 16, after a long illness, was born at Toronto, May 22, 1858, and educated at Upper Canada College. He entered express service at Toronto in 1875, with the Vickers Express Co., of which his father was the founder. From that time to Feb., 1882, he held various positions in that office, and at the latter date was appointed Superintendent, and also acted as Treasurer and Auditor. On the absorption of the company by the American Ex. Co., he was appointed Superintendent of the Canadian Division, and held this position until the National Ex. Co. extended its service over the New York, Chicago & St. Louis Ry. and the G.T.R., to Chicago, and over the Toledo, St. Louis & Western Ry. to St. Louis, Mo., in May, 1891, when he was placed in charge of these lines as Superintendent, with office at Chicago, Ill. He was promoted to General Superintendent, July 1, 1905; General Manager, Western Department, Nov. 27, 1906, which position he held until June 11, 1914, when he was appointed Vice President and General Manager, Western Lines, American Ex. Co., his territory covering 55,000 miles of railways, about 7,000 offices and 18,000 employes. V. G. R. Vickers, Vice President, The Holden Co., Ltd., Montreal, and formerly General Superintendent, Foreign and Money Order Department, Dominion Ex. Co., is a brother. The funeral at Toronto, Feb. 20, was attended by a number of express and transportation officials.