

Canadian Railway and Marine World

April, 1919

Broad Gauge Steel Coal Hopper Cars Built in Canada for Bengal-Nagpur Railway.

The accompanying illustrations show one of 70 steel coal hopper cars for the Bengal-Nagpur Railway, India, which have the following general dimensions:

Length over buffers.....	41 ft. 3 in.
Length over end sill.....	37 ft. 1 in.
Length of body inside.....	35 ft. 0 in.
Truck centers.....	27 ft. 8 in.
Width over side sill.....	9 ft. 10½ in.
Height from rail to top of sides.....	9 ft. 9 in.
Size of hopper door openings.....	6 ft. 2¼ in. x 3 ft. 3 in.
Buffer height (unloaded).....	3 ft. 7½ in.
Wheelbase of truck.....	5 ft. 8 in.
Journals.....	5½ ft. x 10 in.
Capacity.....	100,000 lb.

The center sills are 21 in. deep, and built up of plates and angles, to shape approximating a girder of uniform strength, commonly known as the fish belly type of car center sill. There are

web stiffeners as shown in the accompanying illustrations. Heavy cast steel center fillers are placed between these center sills, and bolster, and are riveted thereto through the draft sill and bolster flanges. A heavy bottom cover plate is applied under the bolster extending from side sill to side sill of car.

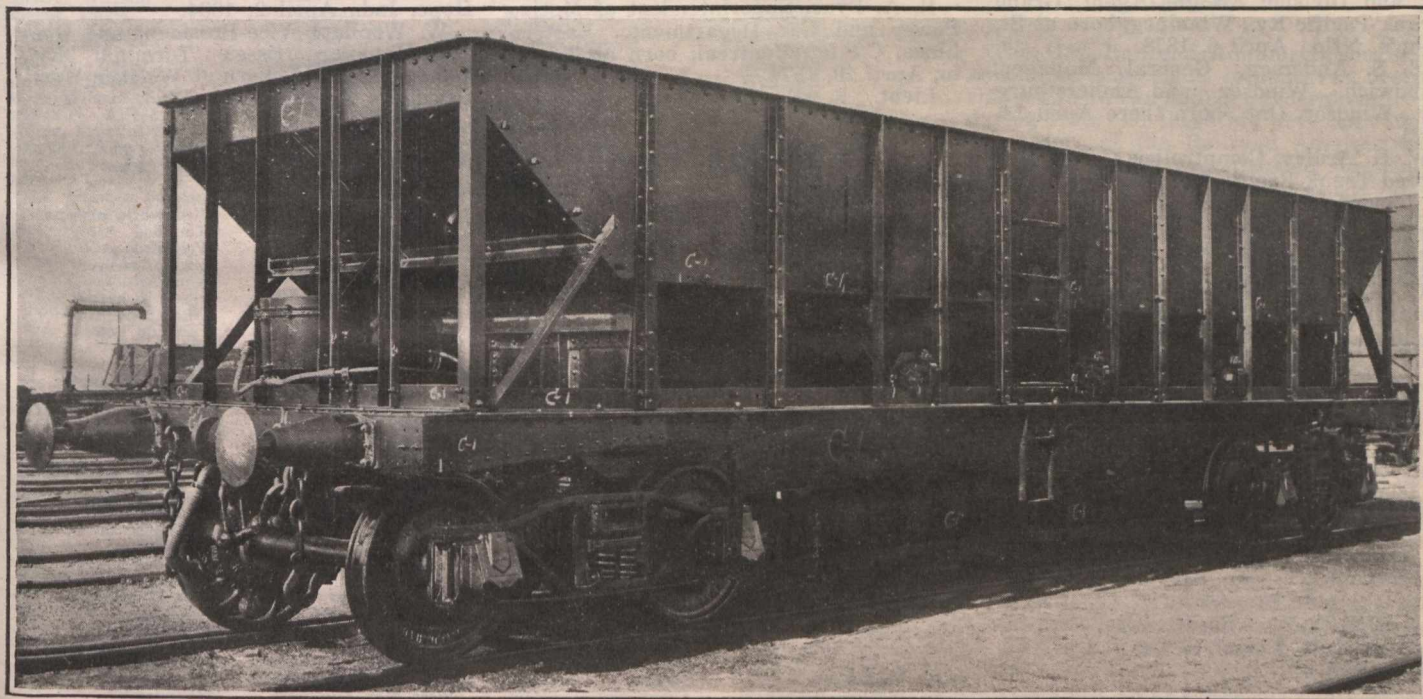
The sides are ¼ in. steel plate, built up into sections, and reinforced by 3 x 3 in. angle side stakes. Sections are spliced together with narrow plates, or bars, on inside of car, and in addition the side stake angle outstanding legs are riveted together as shown in the illustration. This building up into sections is done to facilitate knocking down into convenient sizes for ocean shipment. Side sheets or

The cross ridges are built up of ¼ in. plates, spaced apart and sloped and riveted together at the top by upstanding flanges. The space between the cross ridge plates contains the device for operating the hopper doors.

Transverse bracing and side slope sheet supports are built up with 5 x 3 and 3 x 3 in. rolled steel angles, spaced apart and secured to center and side sills, and side stakes, by structural knees and gussets, all as shown in photograph.

The inside cross diaphragms or girders are located midway between the cross ridges and are built up of plates and angles.

The hopper doors are built up of plates and angles and are operated with



Steel coal hopper car for Bengal-Nagpur Railway.

two center sills per car, extending the length of car between bolsters, each center sill consisting of ¾ in. web plate, with single flange angles, 4 x 3½ x ½ in.

The draft sills are 15 in. standard rolled steel channels, extending from inside of bolster to end sill. The draft sills are securely attached to the bolster and end sill.

The end sills are 10 in. standard rolled steel channel, secured to draft sills, side sills and buffer diagonal brace, or structural knees and gussets. The end sills are reinforced on top for the side buffers by ¾ in. thick cover plates, and 5 x 3 x ¾ in. standard rolled steel flange angles.

The buffer diagonal braces are 8 in. rolled steel ship channel, extending from behind the buffers to the bolster and center sill construction.

The body bolsters are built up of heavy flanged plates, reinforced by angles and

girder webs are reinforced at the top with 3½ x 3½ in. angles, and at the bottom by the flanged side slope sheet for as much as can be gathered in by rivets spaced as shown in the illustration. Side sills are 5 x 3½ in. angles. Sub side sills are built up of plates and angles, and extend from end sill to bolster, and are connected thereto.

The end construction consists of corner posts of 3½ x 3½ in. angles and end posts of 3 x 3 in. angles, all securely riveted to end of car and end sill construction.

The flooring is built up of ¼ in. plates, and slopes towards the center hoppers at an angle of about 40° from the horizontal. Side slope sheets are inclined from the top of the center hoppers to a point about half way the height of the sides, at an inclination of about 35° from horizontal.

the ordinary chain lifting device.

The side bearings are the latest rocker type.

The forged draw hooks have the shank drawn out to extend beyond bolsters, through railway standard draw bar volute spring, and are secured thereto with 2 in. standard nut and split cotter.

The buffers are the Bengal-Nagpur Ry.'s standard.

The safety chains are of the usual European type.

The screw couplings are made from nickel chrome steel, with an ultimate strength from 145,600 to 168,000 lb. per square inch, and with an elongation in 2 in. of 15% minimum to 23% maximum.

The brake equipment consists of the usual vacuum brake quite common with cars on the continent. The system includes two 21 in. detached cylinders, with suitable reservoirs and all necessary fit-

tings, hose, couplings and so forth. Each car is equipped with 2 rapid action valves.

The trucks are M.C.B. arch bar type for cars of 50 ton capacity for 5½ ft. gauge of track, which is the Bengal-Nagpur Ry. standard.

The journal boxes and contained parts and axles are the usual 5½ x 10 in., except for the wide gauge as mentioned above.

The wheels are chilled iron, 37 in. in diameter, and were specially designed for the Bengal-Nagpur Ry.

The bolsters are cast steel, with center plates, side bearing pad and brake adjuster brackets cast integral. The bolsters are M.C.B. design throughout, except they are stronger on account of the wide gauge used by the Bengal-Nagpur Ry.

The cars were designed so as to be readily knocked down into convenient sections for packing and ocean shipment. They were built by the National Steel Car Co., Hamilton, Ont.

Birthdays of Transportation Men in April.

F. G. Adams, Commercial Agent, G.T.R., and Division Freight Agent, Grand Trunk Pacific Ry., Winnipeg, born at St. John's, Nfld., April 6, 1878.

S. S. Anderson, General Manager, Sandwich, Windsor and Amherstburg Ry., Windsor, Ont., born there April 14, 1881.

W. H. Ardley, Comptroller, G.T.R., and Grand Trunk Pacific Ry., Montreal, born at London, Eng., April 24, 1858.

Jas. Black, Freight Claim Agent, C.P.R., Vancouver, B.C., born near Seaforth, Ont., April 19, 1858.

C. G. Bowker, General Superintendent Ontario Lines, G.T.R., Toronto, born at Medford, N.J., April 21, 1871.

G. C. Briggs, Supervisor of Buildings, Eastern Lines, Canadian National Rys., Toronto, born at Cockermouth, Eng., April 23, 1886.

A. V. Collins, Travelling Auditor, Canada Steamship Lines, Ltd., Toronto, born at Island Pond, Vt., April 21, 1868.

R. J. Collins, Chief Dispatcher, Edmonton Division, Alberta District, C.P.R., Edmonton, born at Winnipeg, April 39, 1883.

Sir Henry L. Drayton, K.C., Chief Railway Commissioner for Canada, Ottawa, Ont., born at Kingston, Ont., April 27, 1869.

W. A. Duff, Assistant Chief Engineer, Canadian National Rys., Moncton, N.B., born at Hamilton, Ont., April 20, 1877.

A. Gaboury, Superintendent, Montreal Tramways Co., Montreal, born there, April 6, 1875.

Lt.-Col. F. A. Gascoigne, D.S.O., Secretary-Treasurer, Canadian Pacific Ocean Services Ltd., Montreal, born at Gosport, Hants, Eng., April 2, 1866.

B. C. Gesner, Moncton, N.B., formerly Air Brake Inspector, I.R.C., now Eastern Sales Agent, Galena-Signal Oil Co., born at Cornwallis, N.S., April 23, 1859.

J. Murray Gibbon, General Publicity Agent, C.P.R., Montreal, born at Ude-wella, Ceylon, April 12, 1875.

V. A. Harshaw, Manager, Fredericton & Grand Lake Coal & Ry., Co., and New Brunswick Coal & Ry. Co., Fredericton, N. B., born at Mono, Ont., April 26, 1865.

J. M. Horn, General Freight Agent, Western Lines, Canadian National Rys., Winnipeg, born at Allanton Mills, Lanarkshire, Scotland, April 12, 1880.

J. H. Johnston, Superintendent of

Bridges and Buildings, Eastern Lines, G.T.R., Montreal, born at Uxbridge, Ont., April 22, 1866.

G. W. Lee, Commissioner, Timiskaming & Northern Ontario Ry., North Bay, Ont., born at Renfrew, Ont., April 15, 1871.

W. E. McGill, Assistant Superintendent, Montreal Terminals Division, Quebec District, C.P.R., Montreal, born at Toronto, April 5, 1884.

J. A. Macgregor, Superintendent, Edmonton Division, Alberta District, C.P.R., Edmonton, born at Dufftown, Scotland, April 5, 1873.

B. R. Marsales, District Freight Agent, Canadian National Rys., Saskatoon, Sask., born at Guelph, Ont., April 13, 1887.

P. Mooney, Assistant General Freight Agent, Eastern Lines, Canadian National Rys., Quebec, Que., born at St. Catharines, Que., April 19, 1871.

Paul J. Myler, President, Canadian Westinghouse Co., Ltd., Hamilton, Ont., born at Pittsburg, Pa., April 24, 1869.

J. H. Norton, Division Freight Agent, Canadian National Rys., Halifax, N.S., born at Shaftesbury, Eng., April 21, 1884.

G. D. Perry, General Manager, Great North Western Telegraph Co. Toronto, born at Whitby, Ont., April 19, 1858.

R. A. Pyne, Superintendent of Motive Power and Car Department, Eastern Lines, C.P.R., Montreal, born at Toronto, April 10, 1874.

Lieut. R. S. Richardson, formerly

Superintendent, District 3, Transcontinental Division, Canadian Government Railways, Fort William, Ont., now of No. 13 Light Railway Company, Royal Engineers, British Expeditionary Force, born at Napanee, Ont., April 9, 1865.

E. W. Smith, Superintendent, Dining and Parlor Car Service, G.T.R., Toronto, born at North Bridge, Mass., April 21, 1869.

David A. Starr, M.I.E.E., General Manager, Clyde Valley Electrical Power Co., Glasgow, Scotland, born at Halifax, N.S., April 11, 1858.

J. A. Sutton, District Fuel Agent, Canadian National Rys., Cochrane, Ont., born at Moncton, N.B., April 12, 1894.

J. J. Sullivan, Roadmaster, C.P.R., Lauder, Man., born at Fishers, N.Y., April 29, 1866.

G. M. Thomas, District Freight Agent, Canadian National Rys., Hamilton, Ont., born at Dundas, Ont., April 21, 1876.

W. S. Tilston, Chief of Montreal Board of Trade Transportation Bureau, born at Manchester, Eng., April 14, 1877.

C. H. Towle, Assistant Superintendent, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont., born at Enfield, Me., April 13, 1878.

W. H. Winterrowd, Chief Mechanical Engineer, C.P.R., Montreal, born at Hope, Ind., April 2, 1884.

W. Woollatt, Vice-President and General Manager, Essex Terminal Ry., Walkerville, Ont., born at Weedon, Hertfordshire, Eng., April 2, 1855.

Canadian Pacific Railway Honor Roll 41.

Anning, Harry	Tuber	Montreal	Died while prisoner
Armit, John W.	Driver	Lethbridge	Wounded
Austen, Charles A.	Yard foreman	Kenora	Wounded
Avery, Albert	Car cleaner	Winnipeg	Died of wounds
Axford, William Clyde	Switchman	Brandon	Wounded
Bailey, Joseph	Clerk	Montreal	Killed in action
Baillie, George I.	Apprentice	Montreal	Killed in action
Battle, Albert F.	Helper	Ogden	Killed in action
Beatty, Henry E.	Cashier	Fredericton	Wounded
Beresford, Arthur M.	Clerk	Vancouver	Wounded
Betton, John Richard	Wiper	Kenora	Died of wounds
Booth, Arthur	Wiper	Moose Jaw	Killed in action
Blundell, John	Agent	Two Creeks	Died of wounds
Boyle, Ebenezer A.	Operator	Revelstoke	Died of wounds
Brick, Daniel	Car heater and iceman	Toronto	Wounded
Brown, Andrew Lindsay	Clerk	Broadview	Wounded
Brown, Walter E.	Clerk	Calgary	Wounded
Buften, Francis Henry	Car Inspector	Toronto	Wounded
Bulger, Richard E.	Apprentice	Ogden	Wounded
Buck, George	Cook	Montreal	Wounded
Busted, Holger	Trainman	Minnedosa	Wounded
Cameron, Wellington	Ass't agent	Alliston	Wounded
Cameron, William J.	Laborer	Owen Sound	Wounded
Campbell, James	Ass't foreman	West Toronto	Died of wounds
Charles, James	Helper	West Toronto	Wounded
Cobb, John	Laborer	Toronto	Wounded
Cochrane, William Rr.	Patternmaker	Winnipeg	Killed in action
Connors, Charles W.	Loco. Fireman	Brandon	Presumed dead
Cook, Frederick	Checker	Fort William	Wounded
Copp, William Robert	Agent and operator	West Moncton	Wounded
Cottrell, William D.	Ass't agent	Strassburg	Killed in action
Crawford, William E.	Apprentice	Brandon	Presumed dead
Crefield, Charles S.	Steward	B.C. Coast Service	Wounded
Daley, Dennis	Clerk	West St. John	Wounded
Dashwood, Albert F.	Car repairer	Toronto	Killed in action
Dowd, Joseph Williard	Agent	Airdrie	Wounded
Dresner, Julius M.	Clerk	Winnipeg	Wounded
Elliott, William	Apprentice	Kenora	Wounded
Emmett, John Edward	Helper	Ogden	Wounded
Fallon, Bartholomew J.	Clerk	Montreal	Wounded
Farley, Ralph Derborn	Agent	Scotstown	Wounded
Field, George B.	Instrumentman	Golden	Wounded
Fitzsimmons, Frank	Machinist	Ogden	Wounded
Ganter, Wilfrid U.	Loco. fireman	MacLeod	Wounded
Garvin, George F.	Brakeman	Laurentian Div'n	Wounded
Gilbert, Thomas	Trimmer	Cartier	Shell shock
Gilpin, Joseph E.	Wheelborer	North Bay	Wounded
Grant, John	Bridgeman	Nelson Div'n	Killed in action
Griffin, Arthur	Apprentice	Ogden	Wounded
Griffiths, Vincent S.	Loco. fireman	Calgary	Wounded
Hadley, William J.	Machinist	Montreal	Killed in action
Hanrahan, Thomas P.	Baggageman	Webbwood	Wounded
Harbord, Stanley G.	Apprentice	Winnipeg	Wounded
Harrison, Jack W.	Laborer	Winnifred	Wounded
Hastings, Alfred H.	Stenographer	Prince Rupert	Killed in action
Hayes, Arthur Bruce	Brakeman	Assiniboia	Wounded
Hemenway, Lyle	Car checker	Outlook	Wounded
Henry, William John	Car cleaner	Winnipeg	Killed in action
Hollett, Alfred W.	Waiter	Montreal	Wounded
Holmes, Harold F.	Clerk	Montreal	Wounded
Honeychurch, Wm. H.	Cleaner	Ogden	Killed in action
Hooser, William S.	Clerk	Woodstock, N.B.	Wounded
Horrocks, Harry	Car washer	Montreal	Wounded

Hourd, Wesley	Clerk	Winnipeg	Died of wounds
Howard, John A.	Loco. fireman	Moose Jaw	Wounded
Howard, Norman Scott	Car checker	Toronto	Killed in action
Hoyle, John G. R.	Heavy punch hand	Montreal	Died of wounds
Hudson, George Arthur	Loco. fireman	Moose Jaw	Wounded
Hughes, Joseph S.	Clerk	Ottawa	Wounded
Hunter, Thomas	Clerk	Montreal	Wounded
Hurst, William Albert	Transferman	North Bay	Wounded
Irvine, Gordon	Trainman	Winnipeg	Died of wounds
Jacobsen, Serge	Clerk	Winnipeg	Died of wounds
Jackson, William J.	Agent	Limerick	Killed in action
Jenkinson, Thomas	Constable	Toronto	Died of wounds
Jones, Robert Bolton	Draftman	Montreal	Wounded
Jordan, Ernest Forfar	Third officer	B.C. Coast Service	Wounded
Kaufman, Arthur	Assistant	Espanola	Wounded
Kershaw, Joseph	Helper	Winnipeg	Wounded
Kirby, John	Laborer	Lambton	Killed in action
Kosko, Michael	Machinist	Ogden	Wounded
Landry, Charles	Carpenter	Farnham	Wounded
Lewis, Charles	Cleaner	MacLeod	Wounded
Lord, John Emanuel	Clerk	Winnipeg	Wounded
Lowing Bertram	Loco. fireman	Brandon	Wounded
McCarthy, Leo	Yardman	Windsor, Ont.	Wounded
McCaskie, Arthur A.	Stenographer	Calgary	Wounded
McCullough, John R.	Agent	Brockville	Wounded
MacDonald, Robert A.	Storekeeper	Quebec	Killed in action
MacFarlane, Walter A.	Chief clerk	Toronto	Wounded
McGowan, James	Blacksmith	Chapleau	Wounded
McGregor, Wilfred Leo	Brakeman	Cranbrook	Killed in action
McIntosh, John	Apprentice	Winnipeg	Wounded
McLean, John A.	Ass't agent	Erin	Wounded
McRobert, Paul Redvers	Ass't agent	Hartney	Wounded
Manwood, Herbert	Clerk	Vancouver	Wounded
Miquielon, Philip A.	Freight checker	Innisfail	Wounded
Moore, Stanley G.	Operator	Esquimalt	Killed in action
Morrow, Robert	Timekeeper	Kenora	Died of wounds
Moss, Fred	Flanger	Montreal	Died of wounds
Much, Frnak Llewellyn	Clerk	Montreal	Died of wounds
Muedeking, Henry W.	Wiper	Sutherland	Wounded
Murray, Charles Harry	Ass't checker	Kamloops	Gassed
Neale, Arnold Selwyn	Section foreman	Markinch	Killed in action
Newton, Frank	Accountant	Bankhead	Wounded
Nicholson, Edward H.	Loco. fireman	West Toronto	Wounded
Nixon, Frank Stroner	Clerk	Vancouver	Died of wounds
Oldfield, William	Trucker	Toronto	Presumed dead
Osborne, David	Bridgeman	B.C. District	Wounded
Ouellette, Lionel	Checker	Sudbury	Wounded
Parkins, Frank A.	Brakeman	Quebec District	Wounded
Patterson, David	Laborer	Farnham	Wounded
Penfield, Hetley	Car repairer	Outlook	Wounded
Perry, Wilfrid	Bridgeman	Souris	Wounded
Phillimore, Alfred	Car inspector	Winnipeg	Killed in action
Phillips, Edward S.	Loco. fireman	Moose Jaw	Wounded
Pickering, Tom Haydn	Clerk	Winnipeg	Killed in action
Pover, Edward	Car oiler	Vancouver	Wounded
Puncher, Leonard G.	Transfer foreman	North Bay	Wounded
Quilty, Charles Barnard	Yardman	West St. John	Killed in action
Quinn, Robert	B. & B. foreman	Cranbrook	Wounded
Reeve, Henry	Porter	Calgary	Died of wounds
Robbins, James John	Night chargeman	Goderich	Wounded
Roberts, William Henry	Clerk	Edmonton	Wounded
Robertson, Robert T.	Clerk	Montreal	Wounded
Robson, Albert George	Boilerwasher	Moose Jaw	Wounded
Rowlands, Benjamin	Clerk	Sault Ste. Marie, Ont.	Died while prisoner
Rutter, Arthur Murray	Operator	Fredericton	Died of wounds
St. Quintin, George W.	Cook	Vancouver	Wounded
Saddington, William	Loco. fireman	Kenora	Wounded
Scott, Gordon Maurice	Caretaker	Qualicum Beach	Wounded
Scott, Leslie	Section foreman	Portage Div'n	Killed in action
Scurfield, Ralph	Operator	Souris Div'n	Gassed
Selwood, Albert P.	Clerk	B.C. Lake Strs.	Killed in action
Sharpe, Charles	Clerk	Winnipeg	Died of wounds
Shaw, John	Clerk	Winnipeg	Killed in action
Shields, Percy W.	Boilermaker	Winnipeg	Killed in action
Slatery, Edward	Car cleaner	Montreal	Killed in action
Sloman, Herbert	Apprentice	Montreal	Died of wounds
Smith, Frank Vincent	Carpenter	Winnipeg	Gassed
Smith, John	Trucker	Ottawa	Wounded
Stacey, James	Trucker	Ottawa	Gassed
Stoddard, Stuart G.	Clerk	Fort William	Wounded
Stokell, Thomas W.	Carpenter	Winnipeg	Wounded
Stoneley, Joseph	Car repairer	Medicine Hat	Wounded
Street, Percy	Constable	Toronto	Killed in action
Surbeck, Theodore A.	Rodman	Weyburn West	Killed in action
Tait, Robert Baird	Clerk	Winnipeg	Wounded
Thomas, William P.	Apprentice	Ogden	Killed in action
Thompson, Arthur O.	Brakeman	Alberta District	Killed in action
Thornton, Vinal T.	Trainman	Woodstock Div'n	Wounded
Thorpe, Thomas	Loco. fireman	Kenora	Wounded
Tongs, Edward	Loco. fireman	Brandon	Wounded
Towle, Robert Sidney	Loco. fireman	Brandon	Died of wounds
Trumble, Marshal	Hostler	Swift Current	Wounded
Turner, Arthur	Clerk	Fort William	Wounded
Wade, Robert	Apprentice	Winnipeg	Wounded
Wadlow, Arthur G.	Yardman	Calgary	Wounded
Walnick, Alex	Waiter	Montreal	Wounded
Walker, William	Loco. fireman	Kenora	Died of wounds
Welsh, Archibald M.	Loco. fireman	Bredenburg	Wounded
Watson, William	Fitter's helper	Schreiber	Died of wounds
Whyte, Joseph James	Brakeman	MacLeod	Believed killed
Wilkins, A.	Tel. groundsman	Calgary	Killed in action
Williams, Charles C.	Acting Agent	Kirkella	Wounded
Williamson, James	Checker	Saskatoon	Wounded
Wilson, Arthur Bird	Clerk	Toronto	Shell shock
Wilson, Charles H.	Sectionman	Wawota	Wounded
Wood, Albert Edward	Loco. fireman	Regina	Presumed dead
Woods, William Lucas	Laborer	Strathmore	Wounded
Woodman, Frederick J. H.	Clerk	Montreal	Wounded
Woodridge, Henry	Helper	West Toronto	Wounded
Wootton, Francis E.	Conductor	Brandon	Wounded
Wright, Albert Edward	Car inspector	Ignace	Wounded

Manitoba Railway Mileage, Government Guarantees, Etc.

The Manitoba Railway Commissioner's report gives the following as the railway mileage in the province at the close of the financial year:—

	Miles
Canadian Northern Ry.....	2,011.59
Canadian Pacific Ry.....	1,724.66
Grand Trunk Pacific Ry.....	266.78
Great Northern Ry. lines.....	191.95
Canadian Government lines.....	145.54
Winnipeg Joint Terminals.....	37.95
Greater Winnipeg Water District Ry....	35.00

Total 4,413.47

The report expresses gratification that the province was not called upon to make any outlay during the year respecting guarantees of the province regarding the Canadian Northern Ry. securities, which total \$25,502,873.33. Construction in the province by the C.N.R. up to the close of the last fiscal year, as the result of the above guarantees, was 1,875.61 miles. The report further points out that the Dominion having become the owner of the common stock of this company, the financial position of the province in this regard had become considerably improved.

Locomotive Deliveries in the United States.

The U.S. Railroad Administration has announced that 2,622 locomotives were shipped to railways under federal control during 1918. Of these 744 were built under orders of the Railroad Administration, while 1,410 were contracted for prior to the government's operation of the railways.

In the total were 200 decapods, built for the Russian government, but which were never delivered, the situation which arose in that country necessitating a change in plans.

For the calendar year 1918 there were 700 passenger cars delivered to class 1 railways and for the same period 40,850 freight cars were delivered. Of freight cars built during the year, 15,250 were classified as standard Railroad Administration cars. Of the total number of freight cars delivered, 8,663 were built in railway shops.

Quebec & Saguenay Ry. Construction Suit.

—In May, 1918, the Quebec Superior Court gave judgment in favor of O'Brien & Doheny, contractors, for \$381,988.42, balance due for work done and materials supplied for the construction of the Quebec & Saguenay Ry., up to the time construction was suspended in the autumn of 1912. An appeal from this judgment came before the Court of Review at Montreal, recently. The contractors claim that construction was suspended on the company's failure to pay for the work as it progressed to the amount of 90% of the estimates as certified by the company's engineer. In fixing the amount of their claim, the contractors took advantage of a clause in the contract setting out that in the event of suspension of the work, through no fault of the contractors, the engineer should proceed to make a final estimate of the work done, which should at once become due, together with all the 10% retained out of former estimates. The main question raised in the appeal is whether the contractors are entitled to a privilege upon the railway to the extent of the plus value given by their work to secure payment of the amount of their claim.

Casualties to Members of European Staff.

Chandler, Arthur E.	Clerk	London	Died of wounds
Rankin, Colin	Clerk	Glasgow	Killed in action
Voysey, Alfred E.	Chief Ass't to European Manager	London	Killed in action

Shown on Honor Lists to date:—Killed, 867; Wounded, 1,870; total, 2,737.

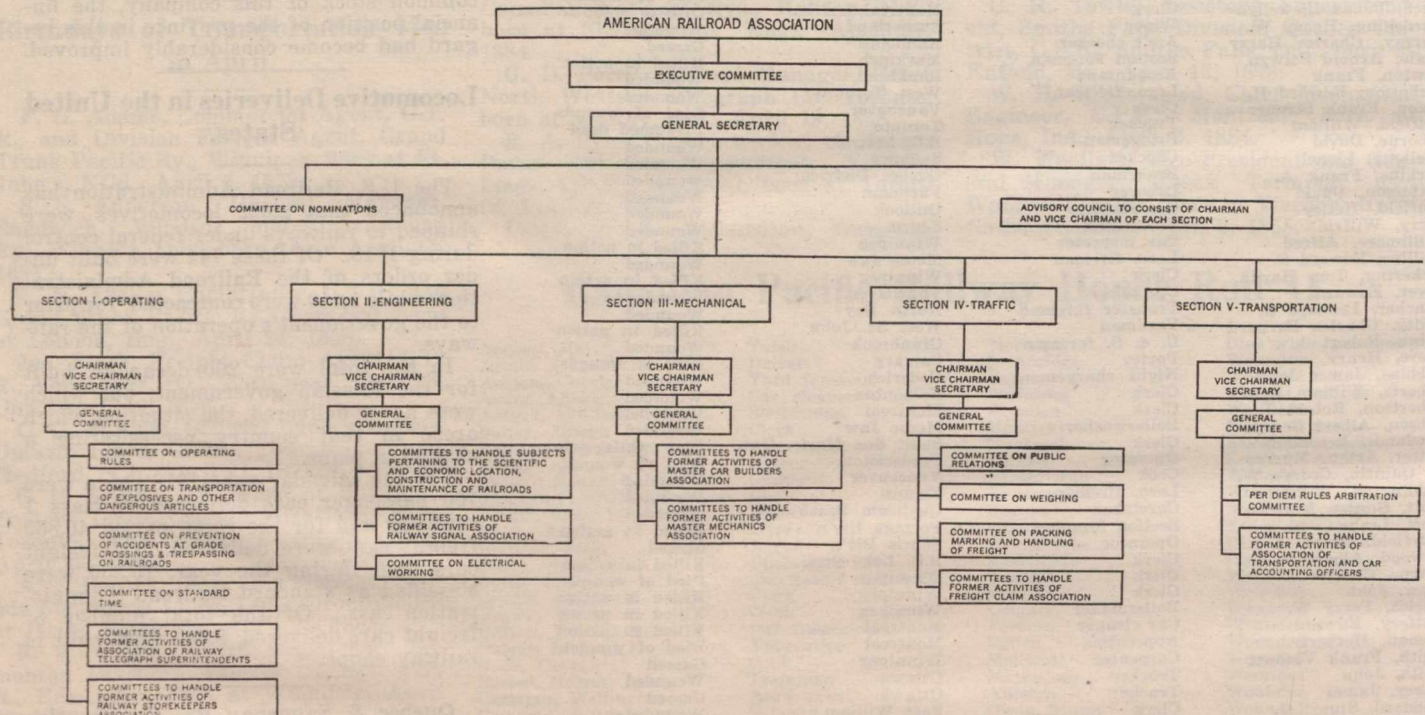
Amalgamation of Railway Associations as the American Railroad Association.

The Director General of United States Railroads issued the following circular recently:—To provide, during the period of Federal control, a responsible channel through which the Director General may obtain recommendations for the advancement of railway practice, the American Railway Association has revised its articles of organization and by-laws and will change its name to the American Railroad Association. The scope of the association has been enlarged and will cover the former activities of the American Railway Association, American Railway Master Mechanics' Association, Association of Railway Telegraph Superintendents, Association of Transportation and Car Accounting Officers, Freight Claim Association, Master Car Builders' Association, Railway Signal Association, Railway Storekeepers' Association, and will consist of five sections, viz.: 1—Operating, 2—Engineering, 3—Mechanical

the executive committee. The executive committee has also appointed the following temporary general committees for each of the sections:

Section 1.—Operating.—W. J. Fripp, General Manager, New York Central Rd. (Chairman); J. H. Young, Senior Assistant Director, Division of Operation, U.S. Railroad Administration; C. G. Burnham, Federal Manager, Chicago, Burlington & Quincy Rd.; A. D. MacTier, Vice President, Eastern Lines, Canadian Pacific Ry.; R. E. McCarty, General Manager, Pennsylvania System, Lines West of Pittsburg; C. L. Bardo, General Manager, New York, New Haven & Hartford Rd.; M. H. Clapp, Manager, Telegraph Section, U. S. Railroad Administration; J. F. Caskey, Superintendent of Telegraph, Lehigh Valley Rd.; G. G. Yeomans, Member, Advisory Committee, Purchasing Section, Division of Finance and Purchases; E. J. Roth, Manager, Stores Sec-

chical Director, Mechanical Department, Division of Operation, U.S. Railroad Administration; C. B. Young, Manager, Inspection and Test Section, Division of Operation, U.S. Railroad Administration; F. F. Gaines, Chairman, Board of Railroad Wages and Working Conditions, U.S. Railroad Administration; T. H. Goodnow, Superintendent Car Department, Chicago and North Western Rd.; H. R. Warnock, General Superintendent Motive Power, Chicago, Milwaukee and St. Paul Rd.; J. E. O'Brien, Mechanical Superintendent, Missouri Pacific Rd.; A. P. Prendergast, Mechanical Superintendent, Texas and Pacific Rd.; J. W. Small, Mechanical Assistant, Regional Director, Southern Region, U.S. Railroad Administration; C. F. Giles, Superintendent of Machinery, Louisville and Nashville Rd.; W. J. Tollerton, General Mechanical Superintendent, Chicago, Rock Island and Pacific Rd.; C. E. Fuller, Superintendent Motive Power and Machinery, Union



cal, 4—Traffic, 5—Transportation. Railways under Federal control are members of the association and are directed to be represented and participate in the activities of each section through their proper officers.

The accompanying diagram shows the plan of the new organization. In referring to the change of circular used the American Railroad Association says:

"The membership of the railways now members of The American Railway Association is not affected and their status is not changed. It is desirable that all railways now members of any of the organizations to be amalgamated with the American Railway Association, if membership is not now held therein, should assume membership in the American Railroad Association, which will afford mutual discussion and consideration, by the railways under Federal control and those which are not, of methods for the scientific and economical construction, maintenance and operation of American railways."

Tentative rules of order for each of the five sections of the American Railroad Association have been approved by

tion, Division of Finance and Purchases, U.S. Railroad Administration.

Section 2.—Engineering.—Earl Stimulation of Way and Structures, Baltimore & Ohio Rd. (Chairman); C. A. Morse, Assistant Director, Engineering and Maintenance Department, Division of Operation, U.S. Railroad Administration; H. R. Safford, Engineering Assistant, Central Western Region, U.S. Railroad Administration; C. F. W. Felt, Chief Engineer System, Atchison, Topeka & Santa Re Rd.; R. S. Parsons, Chief Engineer, Erie Rd.; J. A. Atwood, Chief Engineer, Pittsburg & Lake Erie Rd.; Geo. Gibbs, Chief Engineer of Electric Traction, Long Island Rd.; E. B. Katte, Chief Engineer of Electric Traction, New York Central Rd.; R. E. Trout, Signal Engineer, St. Louis-San Francisco Rd.; W. H. Elliott, Signal Engineer, New York Central Rd.; F. P. Patenall, Signal Engineer, Baltimore & Ohio Rd.

Section 3.—Mechanical. C. E. Chambers, Mechanical Assistant to Regional Director, Allegheny Region, U.S. Railroad Administration (Chairman); Frank McManamy, Assistant Director, Me-

Pacific Rd.; I. S. Downing, General Master Car Builder, Cleveland, Cincinnati, Chicago and St. Louis Rd.; J. S. Lentz, Master Car Builder, Lehigh Valley Rd.; J. R. Gould, Superintendent Motive Power, Chesapeake and Ohio Rd.; A. Kearney, Superintendent Motive Power, Norfolk and Western Rd.; M. K. Barnum, Assistant to General Superintendent Maintenance of Equipment, Baltimore and Ohio Rd.; Jas. Coleman, Superintendent Car Department, Grand Trunk Rd.; W. H. Winterrowd, Chief Mechanical Engineer, Canadian Pacific Ry.

Section 4.—Traffic. R. C. Wright, Assistant Director, Division of Traffic, U.S. Railroad Administration, (Chairman); Traffic Assistants of the seven regional directors of the U.S. Railroad Administration; J. H. Howard, Manager, Claims and Property Protection Section, Division of Law, U.S. Railroad Administration; H. C. Pribble, General Claim Agent, Atchison, Topeka and Santa Fe Rd.; H. C. Howe, Freight Claim Agent, Chicago and North Western Rd.

Section 5.—Transportation. George Hodges, Chairman; C. M. Sheaffer, General Supt. Transportation, Penn-

nsylvania Rd., Eastern Lines; H. G. Kelley, President Grand Trunk Ry.; E. J. Pearson, Federal Manager, New York, New Haven and Hartford Rd.; E. H. Coapman, Federal Manager, Southern Rd.; J. J. Bernet, Federal Manager, New York, Chicago and St. Louis Rd.; G. E. Evans, Staff Officer, Operation, Louis-

ville and Nashville Rd.; W. L. Park, Federal Manager, Chicago Great Western Rd.; G. E. Simpson, General Supervisor Transportation, Chicago, Milwaukee and St. Paul Rd.; W. C. Kendall, Manager, Car Service Section Division of Operation, U.S. Railroad Administration; J. W. Roberts, Superintendent

Freight Transportation, Pennsylvania System, Lines West of Pittsburg; J. W. Nowers, Car Accountant, Atchison, Topeka and Santa Fe Rd.; J. A. Wagner, General Manager, Des Moines Union Rd.

These committees will organize their respective sections and serve until their successors are elected.

Locomotive Coaling Plants.

By J. A. Burnett, A.M.E.I.C., Consulting Engineer, Montreal.

The subject of coal handling for locomotives is one of considerable importance, and as improvements have been introduced within the last few years, it is thought that the subject may be of interest.

Formerly the ramp or gravity system was in use. This comprised a long ramp, or incline, of about 5% grade; then a series of bins or pockets. These bins were furnished with side chutes, to allow the coal to be dumped into the locomotive

save heating in winter, and should be well boarded in, with well fitted door and windows. The roof of this cabin should be well waterproofed, as water drips in quantity from the coal bin above.

The buckets are prevented from over-running, by means of a limit switch, installed at top of each bucket shaft, and are actuated by means of a steel ear, rivetted to the bucket. The motor is at once cut off, and the solenoid brake holds the mechanism at a stop; meanwhile the

sometimes done.

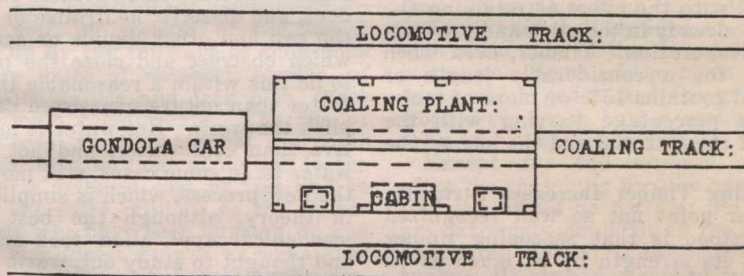
The electrical control should comprise an ammeter of rugged design, and main switch, mounted with fuses on a panel about 18 x 24 in. As the prevailing voltage throughout Canada is 550 for 3 phase service, the slate used must be carefully selected, otherwise metallic veins will result in burning and damage to parts. In connecting the limit switches, the wire used should not be smaller than no. 10 B. & S. gauge, as there is considerable vibration to the structure and a lighter wire will break.

The roof of the coaling plant should be covered with asbestos shingle, so as to fireproof the structure.

Costs relative to 300 ton coaling plant, operating at 80% capacity, or 240 tons daily, are as follows:

First cost	\$15,000
Interest per year, \$15,000, at 6%	900
Electric power, 10 h.p. at \$30 per h.p.	300
1 day attendant, partly skilled, at 75c.	900
2 day helpers at 60c	1,440
1 night attendant, unskilled, 60c	720
Maintenance, 5% on \$15,000	750
Insurance, 2% on \$15,000	300
Locomotive service in spotting 5 cars coal a day, \$5 a day (nominal)	1,825
Total cost per year	\$7,135

LOCOMOTIVE COALING PLANTS:



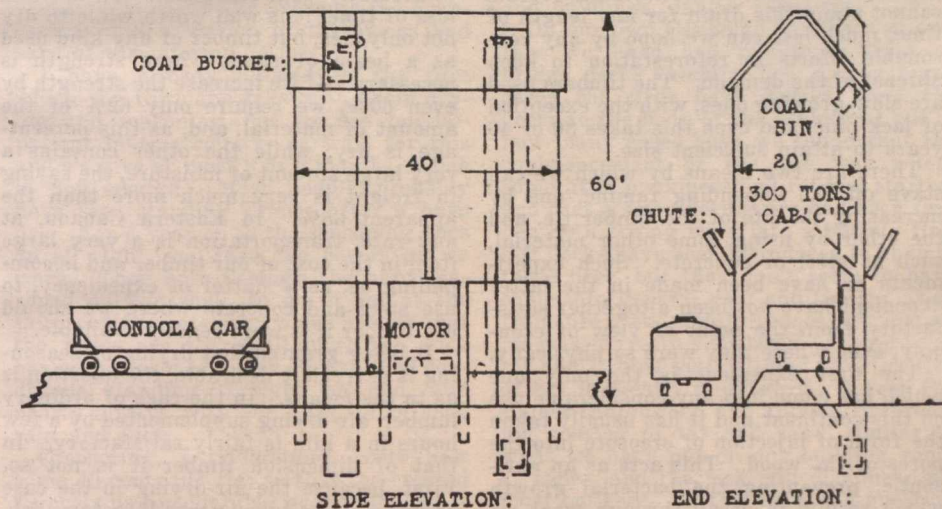
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tenders. However, the Holman type of coaling plant was introduced, using the balanced bucket system and with a storage bin overhead. The advantages were many, among them being: saving in land area, less fire risk, and inasmuch as it frequently happened that a locomotive ran out over the end of the coal shed, it was a safer arrangement. It was also found that only light weight locomotives were able to climb the ramp, and these often had to be brought on from a distance, adding to the expense. It would be safe to say, therefore, that no more gravity coaling plants will be installed on our railways.

The balanced bucket type has been found easier to maintain than any hoist using the continuous bucket or conveyor system, and, where electric power is available, the electric driven hoist is preferred, and in most cases the cost for electric power does not come very high. The accompanying illustration shows plan and side elevations of the structure.

In general, it is found that the hoisting is done during the day time, and about three hours are needed to dump the gondola cars and hoist the coal to the bin overhead. The maximum load on the motor is about 10 to 12 h.p., the speed of hoisting being 70 ft. a minute. The buckets are designed to hoist 2,000 lb. a lift, but at times the weight runs to 3,000 lb.

The motor, if electric, is of the wound rotor type, and controlled by reversing drum controller, and solenoid brake. A powerful hand brake is also provided operated by a lever in the cabin, and applying by a band to the end of the cable drum. This is seldom used, and is merely a precautionary measure. The cabin should be quite small, about 5 x 9 ft., to



coal is dumped and fills the bin overhead. The night attendant has only to keep guard, there being no hoisting of coal at night. At times, in severe winter weather, the night attendant will be obliged to trim the coal in the bin, to permit it to flow into the chutes, and thence into the locomotive tender.

The bucket pits should be waterproofed below the ground line, and all pitches, for the flow of coal, should be steep enough so that the coal shall flow freely. Sixty degrees from the horizontal is recommended. Where fleeting sheaves are used, they should be of C.I., bronze bushed and equipped with grease cups. Where sheaves are running idle, they should be securely keyed to the shaft, and the shaft should turn in its bearings, in preference to the sheave turning in the shaft, as is

Coal handled per day	240 tons.
Coal handled per year	87,600 tons.
Cost per ton for storing and handling, 8.2c a ton of 2,000 lb.	

In general, this type of coaling plant has been found to be safe, economical, and of pleasing appearance, and it can be operated by electric, steam or gasoline power.

The foregoing paper was read before the Engineering Institute of Canada in Montreal recently.

Railway Supplies for South Africa.—Lloyd Harris, Chairman, Canadian Trade Commission, London, Eng., states that big railway development is pending in South Africa, which should give Canadians an opportunity of getting a market for rails, cars, etc.

The Preservation of Railway Ties.

By H. K. Wicksteed, B.A.Sc., C.E.

The question of a future tie supply for railways has, for a decade or more, been a serious one in the United States, owing to the rapid depletion of the forests, and within the past five years the anxiety has spread to Canada.

Nearly five years ago the writer became, in the course of other business, acquainted with Geo. W. McMullen, of Picton, Ont., a man who had made the conservation of waste a life study and who had made wonderfully successful studies in other fields. The conversation turned on one occasion to the subject of the preservation of timber, and in the course of it some facts and theories of extraordinary interest were developed. Mr. McMullen had, in the course of other investigations, become possessed of a fairly complete laboratory and was in close touch with modern bacteriology and practical chemistry. As a result of the acquaintance, experiments of great interest have been made, involving an entirely new process of drying timber, and more especially with reference to railway ties, the supply of which has become, within the last few years, a most momentous question with the railways. More particularly has this become so in Canada, owing to the depletion of the forests and the great increase in railway mileage during the past half decade.

Average Life of Railway Ties.—Assuming the average life of ties, for instance, at six years, the Canadian Northern Ry. alone will need over 4,000,000 a year and the other two trunk roads something more than this, or say from 12,000,000 to 15,000,000 in all. Our northern forests cannot stand this drain for any length of time, much less can we hope by any reasonable efforts in reforestation to keep abreast of the demand. The timbers used are slow-growing ones, with the exception of jack pine, and even this takes 30 or 40 years to attain sufficient size.

There are two means by which we can stave off the impending famine, one by increasing the life of the timber tie, and the other by using some other material, such as steel or concrete. Such experiments as have been made in the latter expedient have not been altogether satisfactory from the point of view of economy, even where they were so physically.

The first expedient is the only one which has come into any considerable use on this continent and it has usually taken the form of injection of creosote into the pores of the wood. This acts as an antiseptic, preventing the bacterial growth which results in decay through what we are accustomed to call "rot." The creosoting process, while a great advance on the use of raw woods, is by no means a perfect cure; first, because it is expensive, nearly doubling the cost of the tie; second, the timber is somewhat weakened in the process, owing principally to the high temperatures to which the wood is subjected; third, to be at all effective the timber should be thoroughly seasoned or dried, and this is hardly practicable by existing means, except by the consumption of a large amount of time and space and the locking up of a considerable amount of capital for that time. The Germans stack and air-dry their ties for 18 months or more before treatment, and even then do not get a dry tie or perfect product, and in America it seems to be seldom that more than one-third to one-

half of this time is allowed.

Dry Woods Almost Indestructible.—According to notable chemists, dry woods or cellulose are almost indestructible by any ordinary agency such as the tie is exposed to. The bacterial growth requires moisture and oxygen for its development. It would appear, therefore, that if we thoroughly dry a piece of timber, and keep it dry, it will last indefinitely. We know from actual experience that this is so. Everyone has used or seen old timber in the form of beams and joists taken from buildings two or three centuries old and perfectly sound. In these cases moisture has been excluded. Again, every one has seen, or at any rate read, of piles and foundation timbers many centuries old in a perfect state of preservation. In these cases oxygen has been excluded. We all know that exposed timber will generally last longer when coated with paint or tar or some waterproofing material. The exceptions are where the timber has been waterproofed before it was seasoned, with the effect of retaining the moisture already in the stick and preventing its evaporation. Timber, even when air-dried for a considerable length of time, still contains 15% or more of moisture, the percentage varying with the nature of the material and the size of the stick.

Seasoning Timber Increases Strength.—Another point not so well recognized or understood is that seasoning timber increases its strength by as much as 80 to 100% in some cases, over that of the green stick. It will be seen at once that, consistently with reasonable expense and loss of time, it is well worth while to dry not only ties, but timber of any kind used as a beam or strut, where strength is necessary. If we increase the strength by even 60%, we require only 62% of the amount of material, and, as this percentage is dry, while the other contains a very large amount of moisture, the saving in freight is very much more than the apparent 38%. In Eastern Canada, at any rate, transportation is a very large item in the cost of our timber and is compelling us, as a matter of expediency, to use steel and concrete where we should use timber if it were readily available.

It being granted that drying or seasoning is extremely desirable, the question is as to the means. In the case of ordinary lumber, air-drying supplemented by a few hours in a kiln is fairly satisfactory. In that of dimension timber it is not so. First, because the air-drying in the case of large sticks takes years to accomplish, because the temperatures used in the ordinary kiln are so high as to injure the strength of the timber; third, because, even when carried on with the greatest care and deliberation, the outside laminae dry first and shrink before the heart of the stick has any chance, and this shrinkage causes checks and cracks which, for many purposes, render the stick useless.

When the "wooden walls of England" were a reality, the seasoning of large sticks was carried on by immersion in sea water for three years, more or less, the saps and resins were dissolved and washed out, and the pores of the wood left open and filled only by water. The subsequent drying was then easily, quickly, and uniformly carried on throughout the stick, and the resultant deposits of salt acted as antiseptics, just

as the creosote does in the modern process. This was perhaps the most perfect seasoning possible, or ever accomplished. The process was very likely suggested to the English shipbuilder by his observation of the condition of logs and driftwood which, after years of immersion, had been cast upon his shores by the Gulf Stream and local winds and currents. The Eskimo knows no other process than this and his woods are very perfect and lasting; but, in these days of rush and hurry, it cannot be expected that anyone will prepare his material three or four years in advance. Probably the excellent reputation which Canadian white pine had with the British Admiralty was largely due to its long immersion in the waters of the Ottawa and the St. Lawrence before it was finally loaded on shipboard.

Wash Out Sap and Other Liquids.—In the experiments made in the last two years, as above mentioned, an effort was made to use the same process that nature does, and dissolve, neutralize or wash out the sap and other liquids or semi-liquids which obstruct and close the pores, and to do this within a reasonable time, much faster than nature unassisted can accomplish the work. Hot water is more effective than cold water, and hot vapor of water is, in some cases, still more so. In the new process, which is simplicity itself in theory, although the best form of mechanical application took much time and thought to study out, warm vapor, or in other words, warm air, saturated with moisture, is circulated among the ties. This opens and cleans the pores of the wood just as a Turkish bath does in the case of a man. The liquid components of the saps and resins, filling the vesicles themselves, expand with the heat, and force their way out, to be diluted and carried away by the warm vapor. After some hours of this treatment, the amount of moisture is reduced by very slow degrees, until, at the end, it is practically dry and the timber is removed with not more than 5% of moisture left in it. The rapidity with which this is done depends upon the size of the sticks and the nature of the timber, just as it does in other methods, but no subject has yet been found which did not, in the end, yield to treatment. Care is taken not to let the temperature of the kiln get above 160° F. so that no injury may be done to the fibre of the wood.

Coating to Exclude Moisture.—Timber so treated is, I believe, indestructible, except by fire, so long as it is kept dry. Even without further treatment, it will undoubtedly long outlast unseasoned material. It is, in this shape, in pre-eminently good condition to receive creosote, but we believe that creosote is absolutely unnecessary and that the elements of decay being altogether removed from the inside, all that is necessary is to keep them from entering from the outside. Some waterproofing coating is desirable, and in the case of ties a cheap one is the only one which can be economically used. In the experiments so far conducted a heavy oil tar was found, which answered the purpose perfectly, and which is an almost worthless by-product of the refineries. The ties are merely dipped in a hot bath of this material for a few minutes and, on coming out, are sanded by a sand blast, to absorb any superfluous

stickiness and make them easier to handle, just in the same way as an asphalt road is sanded. Timber for building, where neat joints and carpentry are required, would probably be better treated with some pigment mixed with oil or varnish, but for rough work the asphalt or mineral tar seem to be all-sufficient and very inexpensive. The estimated cost of the drying process is 7c to 8c; of the protective coating 3c or 4c a tie. Taking the higher figures and adding a margin, it would appear that 15c will cover the total cost.

Increases Supply of Tie Timber.—The prospect which is opened up by this process is something more than merely getting the equivalent of the process-creosoted tie at a less cost. It is, besides, the potentiality of using for ties, timbers which are now useless for the purpose, or nearly so. The northern birch, for instance, is a strong, reliable wood, used by the Indians for every purpose requiring a hard wood, but unavailable for ties or bridge timber on account of its superabundant sap and its consequent tendency to rot rapidly. The poplar and the balsam are others for which there is at present practically no demand. These timbers are particularly interesting to us just now, on account of the recent opening up by the railways of thousands of square miles of northern forests, of which, with spruce and jack pine, these are the main constituents. The use of these woods for commercial purposes means not only millions of dollars to the railways in reduced cost of ties and in freight, but more millions to the people of Canada who have been burning up and wasting this forest growth as something not only worthless, but as actually impeding settlement.

Conserve the Northern Forests.—It is quite conceivable—I think we may say probable—that the settler in New Ontario, or Northern Saskatchewan, or Alberta, will find it profitable to conserve the forest on a considerable portion of his land, cutting from year to year only the mature timber, so as to encourage the young growth. Aside from the question of ties and pulp wood, what a large potential value there is in poplar, balsam and spruce! In Winnipeg's early days, poplar lumber was the principal material in house building, and there was no fault to be found with it, except its shrinkage, which drying would have prevented.

Balsam is to this day the principal cut of the little country mills in northern Nova Scotia for home use, and is an excellent material for inside carpentry. Spruce is the finest material for spars, probably, of any kind; and only its perishability prevents it from making a cleaner, straighter, and stronger telegraph pole than the crooked, twisted cedars we are using. Birch is already coming to its own in the manufacture of furniture. Our northern settler has been in the habit of burning up most of these timbers as almost worthless, in order to grow potatoes in their stead. A century ago the settlers in Southwestern Ontario thought much the same about the white pine and the black walnut, and some of the wealthiest residents in that portion of the country today are those whose fathers, either by accident or design, left some of the original forest standing.

The foregoing portion of this paper was written two years ago, and there is practically no change in it except in respect to one or two details, as a result of more testing which has been carried on, and as to the figures of costs which would be considerably higher than those quoted.

A number of ties have been put in the Canadian Northern track, and while the times have been somewhat too strenuous of late for experimenting, and changes in staff have led to the neglect of the examination of these from time to time, some of them have been taken up and tested for absorption of moisture and for signs of rot.

I have one sample of a tie dug up only a few days ago which had been under the track in the Trenton yard for over three years; and I have also another sample of a birch tie, which has never been under the track at all, but which shows how absolutely perfect the drying part of the process is and what available timber birch is, though absolutely a worthless timber if it is used in outside work without seasoning, and the reason is unquestionably the amount of sap which it contains. If this is dried out and the wood sterilized, it is as strong and lasting as most other hardwoods, and better than some. It is incidentally the only hardwood in Northern Ontario and Quebec.

As a result of our experiments with these ties, we concluded that they were in the right direction in the main, but that the asphaltic waterproofings were imperfect. They melted and ran under a strong hot sun; and when abraded, as was inevitable in the case of ties, the waterproofing was gone. Some of the more tarry products which penetrated the grain of the wood were much better, and we believe them to be very good indeed.

Except for the expense, creosoting after the seasoning process has been carried out would be perfect; but I for one am extremely doubtful of the efficacy of creosoting for an unseasoned stick of timber. It always seems to me like putting a coat of paint or varnish on green wood. This merely closes up the outside pores of the wood and prevents the evaporation and oxidation of the juices and saps of the interior.

I have already alluded to the care which the Germans take with their drying and seasoning, but we are too impatient in this country to wait for this and we give at most 8 or 9 months, which is not enough. Most people probably have seen standing timber after a bush fire. For a year or so the seasoning goes on all right, and then the borers get to work. They bore through the hard seasoned outside shell, so as to get at the juices of the interior; which shows that the juices are there, although the stick has been seasoned under almost ideal conditions standing straight on end, and nearly always with the bark on to shed rain and snow.

Creosoting, I understand, costs now some 40 cents per tie; so that the treated tie costs us considerably over \$1.00 and is heavier and harder to handle than the untreated tie. One of the advantages claimed for the seasoning is that it very greatly reduces the weight instead of increasing it, and that as a result we have less to pay for transportation and for trackwork. The seasoning can be accomplished in a month or less (the time varies with the character of the timber), so that even if we resort to creosoting we save time and interest on money invested in green ties, and we save room in our piling yard and drying sheds.

I have dealt in the above practically altogether with ties, because it is one problem which is bothering us railway men a great deal. Even before the war and the recent enormous advance in prices, we had become so impressed with the growing scarcity and increasing cost of timber ties that we had been making

all kinds of experiments with metal and concrete ties—not in order to cheapen the first cost, but to lengthen the life of the tie and so make it annual cost less.

If we go into concrete at all, it has always seemed to me that we should alter our whole system of support to a longitudinal instead of a transverse bearing, and this again would alter the most economical form of rail to be used. Possibly we might, with a long stringer of concrete giving us the necessary stiffness and rigidity, dispense with enough steel to pay for part of the increased price to the bearing; but imagine what we should get in the way of drainage and precautions against frost heaving in our climate! I have seen reinforced concrete ties doing very excellent work in the tropics, but our frost conditions alter the whole aspect of the matter. Shimming upon the top of a concrete tie would be a very different matter from drawing the spikes out of a wooden tie and putting longer ones in; or, as we have to do sometimes, putting a complete new tie on top of the old one.

I am afraid that for many years to come we must continue to use wooden ties, at any rate on all but the most perfect and most heavily congested parts of our railways; and this being the case, and the supply diminishing while the demand increases, it behooves us to make them as long-lived as possible.

There are, besides the item of ties, a great many other utilities about a railway which we have hitherto been accustomed to build of wood, but for which latterly we have been substituting structures of steel, concrete and other materials; and the reasons for the substitution have been the same—increased life and lower maintenance charges, and also, in the case of timber trestles, water tanks and buildings, danger from fire.

On our own Canadian Northern at any rate we have had numerous cases of bridge decks catching fire, and in many cases the fires have spread from the decks to the body of the structure; but in how many cases have we found that the commencement of the fire was where some little punkiness and rot had started, and that a smouldering fire had been fanned by a strong wind into a blaze! Ballast decks have been introduced to obviate these fires, but they don't seem to have come into general use; and the tie, aside from fire risk, certainly does not last so long as if freely ventilated. Prevent the rot and I think you will find that the risk of fire is greatly diminished. Season the timber thoroughly, and apply a fireproofing coating of tar and sand, similar to what we have put on our building roofs at times, and the risk will disappear almost entirely. In this case, the question of abrasion, of the rubbing off of the protective coating, does not come in at all; but the protective coating, whatever it may be, should not be put on unseasoned timber.

We all know of old bridges and other structures which have been protected from the weather and have stood up for a generation or more, and been replaced only because too small or too weak for modern loads; and in many cases where wooden bridges have been replaced by steel and concrete, it is somewhat questionable whether the change was economical in the fullest sense of the word, and whether it would not have been better policy, as an intermediate step, to take more care in preserving the timber and to put concrete abutments and piers under it.

One of the main reasons for much of

the substitution of steel for timber in the recent past has been the growing scarcity of the latter and the cheapness of the former; but still more recently the conditions have been reversed, and steel has become very difficult to obtain, while timber has not increased in price in the same ratio. These, of course, are largely temporary conditions, brought about by the exigencies of war, but they are not going to readjust themselves in a few months.

Practically all of our dimension timber has come of late years from British Columbia or the Southern States, and the cost to us here is largely a matter of freight rates. Freight rates are based on weight. If we can remove the 30 or 40% of moisture which many of our timbers contain and at the same time increase its strength by proper treatment before it starts on its journey, it follows that smaller quantities will often answer our purpose and that these quantities will be lighter in weight and cost us less per cubic foot, so that there is a double gain, and I believe that in the aggregate it is a very important gain indeed.

There are many advantages in the use of timber structures in certain situations; and if we could increase their life and lessen the risks from fire, I think we should all feel much less inclined to rush into massive structures of steel and concrete. Permanent work which will last through the centuries is all very well, in its proper place, in connection with great undertakings which will themselves be useful for centuries. Railways, in this country at any rate, are not always of this character, and I have known several cases (I have at this moment in mind some very expensive and well constructed works) which have been a stumbling block and deterrent to improvement, because they were built in the wrong place and the authorities did not want to throw them away. How many of our railways are located in the wrong place to suit modern conditions of traffic, not so much because of blunders or shortsightedness on the part of the original builders, but because the financial and economic conditions of the present day are entirely different from those of a generation ago—and who can say to what extent these conditions may be changed another generation hence!

Take the case of the Canadian Pacific across the western plains, for instance. It has been relocated and rebuilt for miles; but who shall say that the original location and construction were wrong? Is not the financial success of the C.P.R. direct evidence to the contrary, and that the light grading and cheap timber trestles and bridges were absolutely right and good policy?

Take the opposite case of the Grand Trunk, built two generations ago to the high standards of the English roads. Not only was the road handicapped from the start by enormously high capitalization, but it was deterred from making desirable changes in location by the existence of such expensive works. I have myself been told that a certain location was unacceptable because it would "scrap" a \$50,000 structure. The Canadian Pacific is today built on that identical location and is hauling nearly double the Grand Trunk loads.

Consider the now developing railway situation in Canada. Two transcontinental roads have been built across the continent, with the avowed intention of competing in a great many cases with one another. The change in economic and sociological conditions has brought it

about that these two lines have come under the same ownership and management. One of these has cost about double what the other has. Without asking the question whether one might have been dispensed with altogether, it is safe to say that the money which has gone into expensive construction could be put to very much better use today if it were available.

Because we have just made a great effort and surprised ourselves by borrowing nearly a billion dollars from our own people, there is no reason why we should rush into indiscriminate expenditures. There is an enormous amount of work to be done to bring our railways to the highest standing of efficiency, and it behooves us to be sure that our money is spent judiciously. There will be none too much to go round, and anything in the way of economy which can be effected consistent, of course, with due respect for the safety of the public—(don't let us confuse economy with parsimony)—will be well worth doing.

I must confess that I have nothing to teach anybody and am quite incompetent to do so. The development of railways has gone on so fast that I have become somewhat taxed in changing old ideas and convictions for new ones fast enough to keep up with the times; but I have thought much about the fundamental reasons for things and have watched with with concern a growing tendency towards extravagance and luxury among railways as well as individuals.

If a timber structure will answer its purpose as well as a steel one and save money for a much needed improvement elsewhere, by all means let us use the timber. If ties can be treated with or without creosote, so that they will last so much longer than untreated ones, so that the annual charge against the railways will be less even though the initial expense is greater, by all means let us investigate the treatment.

What I want to do is to give for discussion a subject worth discussing. My friend, Mr. McMullen, died while he was pursuing his investigations—literally so, for he passed away on a train out of Chicago, where he had been attending a convention of the American Railway Engineering Association. His son, Barrett McMullen, has carried on his work. Whether the final outcome will be that the seasoning will be merely a preliminary to creosoting, or whether other and cheaper preservatives may be found, I cannot say. I am firmly convinced of one thing only and that is, that the proper seasoning of timber preliminary to treatment or use has never received proper attention; that Mr. McMullen's process accomplishes it perfectly; and that if it is used freely, the use of timber for ties or otherwise will be much more justifiable and truly economical than it has been in the recent past.

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

Transportation Statistics.—The Statistics Act, 1918, required every transportation company to make returns, by August 1 in each year, to the Dominion Bureau of Statistics, the same to be made up to June 30. A bill introduced in the House of Commons, by the acting Minister of Trade and Commerce, proposes to amend the act, by providing that the returns shall be made annually by Mar. 1, and for the year ending Dec. 31.

Alaska Railway Service Maintained Despite Icy Rails.

Difficulties of railway operation in Alaska are apparent from the Alaskan Engineering Commission's official publication, which describes conditions between mile 57 and mile 68 early in December. Despite these adverse conditions service was not discontinued. This section of the line is low and flat and is affected by the adjoining glaciers. Warm rains, followed by sudden cold weather, made about an inch of ice on the rails in this section and, there being no machinery to remove it, gangs of laborers at a temperature 12 deg. F., worked continuously in relays Saturday, Saturday night, Sunday and Sunday night, picking the ice off the rails ahead of the trains. According to a later issue of the Alaska Railway Record the operating department was not discouraged by this and other troubles along the line, through service being maintained even when dog teams had to be used to transfer mail and passengers across snow-filled gaps.

Imperial Munitions Board's Appreciation of Railway Services. The Board's work at Ottawa having been completed, the members of the staff necessary for the completion of the liquidation of the assets have moved to the Imperial Oil Building, Toronto, except a few of the Records Department officers, who are remaining in Ottawa temporarily. Before leaving Ottawa, the Chairman, Sir Joseph Flavell, wrote E. W. Beatty, President, C.P.R.; D. B. Hanna, President, Canadian Northern Ry.; J. E. Dalrymple, Vice-President, Traffic, G.T.R.; and F. P. Brady, as General Manager, "Eastern Lines, Intercolonial Ry Co." expressing his great appreciation of the assistance given the board by the different railways' entire operating staffs, and stating that on many occasions during the last three years the board had asked officers of the different companies to give special consideration to the movement of traffic and in all cases had met with generous response.

Grade crossing elimination at Detroit, Mich., is viewed as a single problem by a city engineering commission which has just reported. The needs of the city for the next 15 years have been carefully studied, and a progressive programme has been laid out for the completion of all the necessary work in that time. Other important factors of the problem discussed are the relative advantages of full and partial elevation, the clearance and design of subways, the relation to industry facilities, the relation to streets in outlying districts of the present and future, the city planning aspect and the apportionment of cost.

Intercolonial & P.E.I. Ry's Employees Provident Fund. F. P. Brady, Chairman, Provident Fund Board, announces that the committee of tellers, appointed by him to count the ballots cast for the election of two members of the board to be elected by the employes, have reported that W. P. Hutchinson and B. A. Bourgois received the highest number of votes, and were therefore elected.

Railway Materials for India.—The Canadian mission in London advised the Canadian Trade Commission in Ottawa recently of the Indian Government's desire to get in touch with Canadian rail, angle, splice and bolt manufacturers, with a view to placing orders.

Transportation Appointments Throughout Canada.

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

Canadian National Rys. — S. R. CAIRNS, whose appointment as Inspector, Sleeping, Dining and Parlor Cars, Eastern Lines, Ottawa, Ont., was announced in our last issue, has been appointed Sleeping Car Agent, Montreal.

L. E. CROWDER, heretofore machinist helper, Radville, Sask., has been appointed Locomotive Foreman, Gravelbourg, Sask. This is a new position.

G. ERICKSON has been appointed Roadmaster, Oba Subdivision, Ontario District, vice R. Ferguson transferred.

R. FERGUSON, heretofore Roadmaster, Hornepayne, Ont., is reported to have been appointed Roadmaster, Atikokan-Rainy River Division, Fort Frances, Ont.

M. L. FLETT has been appointed Commissary Purchasing Agent, Sleeping, Dining and Parlor Car and Hotel Department, Office, Toronto.

D. McK. FORD, heretofore chief clerk, Eastern Lands Department, Canadian Northern Ry., Toronto, has been appointed chief clerk, President's office, Canadian National Rys., Toronto.

E. L. MacDOUGALL has been appointed Sleeping and Dining Car Agent, Rose-dale, Toronto.

C. R. MacKENZIE, formerly Assistant to General Manager, Western Lines, Canadian Government Rys., Winnipeg, has been appointed Assistant to General Manager, Eastern Lines, Canadian National Rys., at Montreal.

Y. MOODY has been appointed Assistant Superintendent, Sleeping, Dining and Parlor Cars, Toronto.

S. J. POTTER, heretofore Assistant Paymaster, Eastern Lines, Canadian Northern Rys., has been appointed Paymaster, Lines east of Port Arthur, Ont., Canadian Northern Ry System, Office, Toronto.

JAMES ROBB has been appointed Inspector, Sleeping, Dining and Parlor Cars, Eastern Lines, Toronto.

W. L. STITT has been appointed Sleeping and Dining Car agent, Ottawa, Ont.

REGINALD H. M. TEMPLE, General Solicitor, Canadian National Rys., Toronto, has been transferred to Winnipeg, and given charge of the Legal Department there. The position of Western Counsel, Canadian Northern Ry., Winnipeg, held formerly by O. H. CLARK, has been abolished. W. W. EVANS, heretofore Solicitor, Canadian Northern Ry., Winnipeg, and T. H. GILMOUR, heretofore Solicitor and Claims Agent, Canadian Government Rys., Western Lines, Winnipeg, have resigned.

JOHN WARDROP has been appointed General Agent, Industrial and Resources Department, Western Lines. Office, Winnipeg.

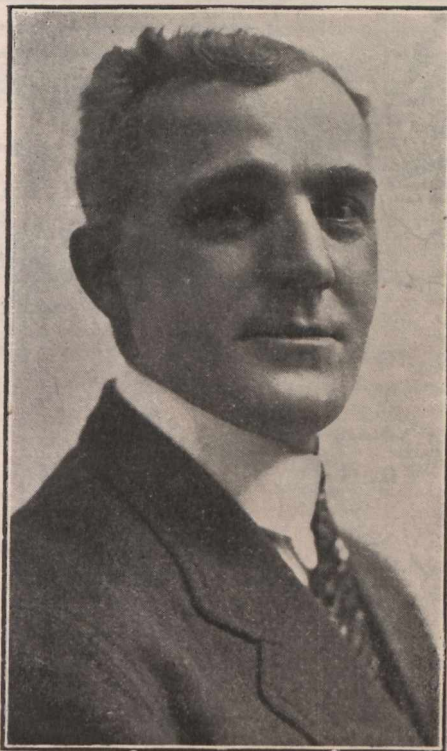
D. O. WOOD, heretofore Assistant Export and Import Agent, C.P.R., Toronto, and for a time, Superintendent of Inland Transportation, British Ministry of Shipping (Canada), Montreal, has been appointed Traffic Manager, Export and Import Department, Canadian National Rys., with general supervision of export and import traffic, and of arrangements made for the transportation of such by the C.N.R., via Atlantic and Pacific coast ports. Office, Toronto.

Canadian Pacific Ocean Services Ltd. — A. H. ALLAN, formerly General Assistant, H. & A. Allan, Agents, Allan Line Steamship Co., and latterly on active service, has been appointed Freight Manager, Great Britain and European Continent, C.P.O.S. Ltd. Office, London, Eng.

H. S. CARMICHAEL, heretofore Passenger and Freight Manager, London, Eng., has been appointed Passenger Manager there.

G. C. DEW, heretofore Assistant Freight Agent, C.P.R., Montreal, has been appointed Asiatic Freight Agent, C.P.O.S. Ltd. Office, Montreal.

R. S. ELWORTHY, heretofore General Agent, Passenger Department, C.P.R., Minneapolis, Minn., has been appointed General Agent, C.P.O.S. Ltd., Chicago, Ill. Owing to a typographical error in the spelling of his name, the announce-



J. J. Horn,
Superintendent, Kenora Division, Manitoba District, Canadian Pacific Ry.

ment in our last issue, this appointment is repeated correctly.

R. W. GREENE, heretofore in city ticket office, Grand Trunk Pacific Ry., Winnipeg, has been appointed Travelling Passenger Agent, C.P.O.S. Ltd., there.

W. T. MARLOW, formerly Import Freight Agent, C.P.R., and latterly Deputy Director General, British Ministry of Shipping (Canada), Montreal, has been appointed General Freight Agent, in charge of freight traffic, Atlantic and Pacific services, C.P.O.S. Ltd. Office, Montreal.

G. D. ROBINSON, formerly Export Freight Agent, C.P.R., and latterly Director, Ocean Steamship Department, British Ministry of Shipping (Canada), Montreal, has been appointed European Freight Agent, C.P.O.S. Ltd. Office, Montreal.

Canadian Pacific Ry. — W. T. BENNETT, heretofore chief clerk, Auditor of Pay Rolls Department, has been appointed

Auditor of Pay Rolls, vice R. F. Gauld deceased. Office, Montreal.

JOHN BURNS, heretofore Assistant Works Manager, Angus shops, Montreal, has been appointed Works Manager, Angus shops, Montreal, vice H. Osborne, who has retired after long and faithful service.

T. J. CALLARY has been appointed Claims Investigator for Auditor of Claims, Montreal.

R. A. DART, heretofore General Yardmaster, Calgary, Alta., has been appointed Assistant General Yardmaster there.

W. H. GORDON, heretofore Trainmaster, Lethbridge, Alta., has been appointed Trainmaster, Field, B.C.

C. S. GOWANS, heretofore acting Import Freight Agent, Montreal, has been appointed Import Freight Agent, Montreal.

D. J. GOWANS has been appointed Inspector of Hotels. Office, Montreal.

S. C. GRAHAM, heretofore Local Freight Agent, Edmonton, Alta., has been appointed General Yardmaster, Calgary, Alta., vice R. A. Dart.

G. HIAM, formerly District Freight Agent, Fort William, Ont., and recently returned from active service overseas, has been appointed District Freight Agent, Cleveland, Ohio, vice M. S. Thorne promoted.

R. E. LARMOUR, heretofore General Agent, Freight Department, New York, N.Y., has been appointed General Freight Agent, Eastern Lines, vice E. N. Todd transferred. Office, Montreal.

P. J. MELVIN, heretofore acting Export Freight Agent, has been appointed Export Freight Agent. Office, Montreal.

J. A. MORICE, heretofore Contracting Agent, Foreign Freight Department, Toronto, has been appointed Agent, Foreign Freight Department there.

F. H. SPROULE, heretofore agent, Gull Lake, Sask., has been appointed Local Freight Agent, Medicine Hat, Alta., vice D. Patterson.

M. S. THORNE, heretofore District Freight Agent, Cleveland, Ohio, has been appointed General Agent, Freight Department, New York, N.Y., vice R. E. Larmour promoted.

E. N. TODD, heretofore General Freight Agent, Eastern Lines, Montreal, has been appointed General Foreign Freight Agent, in charge of export and import traffic, via both Atlantic and Pacific seaboard. Office, Montreal. This is a new position.

D. W. DONAHUE, heretofore Division Superintendent, Michigan Central Rd., Chicago, Ill., has been appointed Division Superintendent, Canadian Division, vice Jas. Balkwill, deceased. Office, St. Thomas, Ont.

Michigan Central Rd. — E. G. THOMAS has been appointed ticket agent, St. Thomas, Ont., vice C. L. Singer, promoted.

Grand Trunk Ry. — P. A. CLEWS, Grand Trunk Ry., heretofore City Agent, London, Eng., has been appointed General Agent, Freight Department, G.T.R., and Canadian Express Co., there, vice F. G. English, killed in action.

Grand Trunk Pacific Ry. — G. H. BARTLEY, heretofore dispatcher, Grand Trunk Pacific Ry., has been appointed Chief Dispatcher, Biggar, Sask., vice J. H. Groat, whose appointment as Superintendent there, was announced in our last issue.

The Grand Trunk Pacific Railway System Placed in the Hands of the Minister of Railways, as Receiver.

While the serious condition of the G.T.P.R. finances has been well known for several years, the announcement made on Mar. 8, that the Dominion Government had appointed the Minister of Railways, Hon. J. D. Reid, as receiver for the system, including all subsidiary companies, came with dramatic suddenness, and was probably as great a surprise to the company's officials as to the public. The correspondence which led up to this action, the order in council appointing the receiver, and subsequent correspondence, are given in the order of their dates as follows:

G.T.R. Says it Will Be Unable to Pay Interest.

Frank Scott, Vice President and Treasurer, G.T.P.R., wrote the Finance Minister, and acting Prime Minister, Sir Thomas White, Feb. 25, as follows:

With reference to the balance of the appropriation of the vote of \$7,500,000 by parliament, \$923,311 was paid to your company on your certificate no. 10, dated Jan. 28, 1918, approved by the acting Deputy Minister of Railways. This certificate expressly states that this sum is 'on account of cash deficit in the operations of the company from April 1, to Nov. 30, 1918, inclusive,' and 'is required to enable the company to meet its operating obligations.' The small balance of the vote amounting to about \$28,000, will, I understand, be required for the same purpose. There seems no doubt that the deficit in operation should have priority over all other charges.

"I have already informed Mr. Kelley, President of the company, and yourself, that it is not the intention of the government to ask parliament to provide a fur-

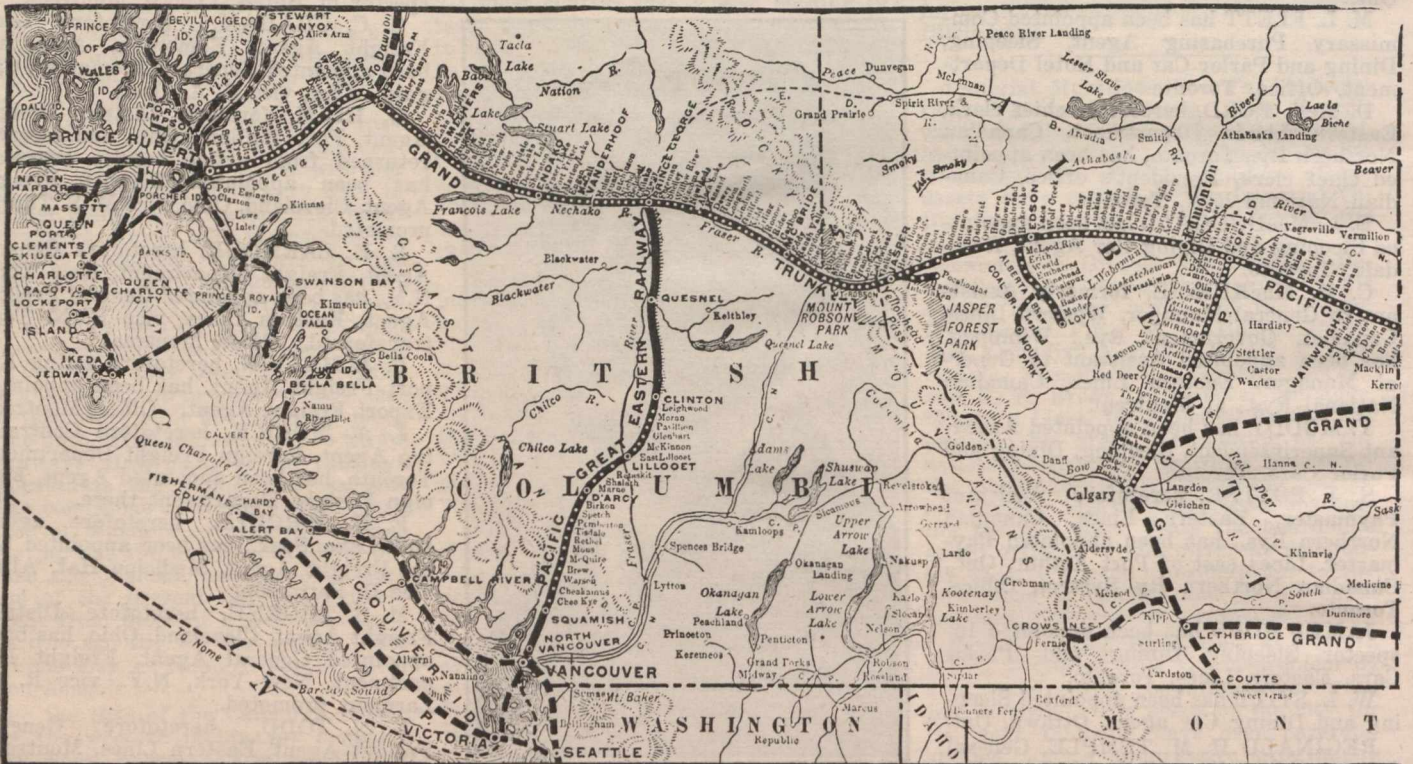
Mar. 5, simply acknowledging his letter of Mar. 4, stating the company's intention to discontinue operations after Mar. 10.

Order in Council Appointing the Minister of Railways as Receiver.

The following order in council was passed at Ottawa, Mar. 7:—

Whereas under the authority of The Appropriation Act no. 2, 1918, the Governor in council advanced \$7,471,399.93, or thereabouts, to the Grand Trunk Pacific Ry. Co., for certain purposes in said act defined, including the meeting of deficit in operation of the G.T.P.R. System, such sum being in addition to other large sums previously advanced under previous authority for similar purposes.

And whereas a letter dated Mar. 4, 1919, from the Vice President of said



"Referring to our recent conversations, I am in receipt of a cable from Mr. Smithers stating that in the anticipation of receiving the balance of the appropriation of \$7,500,000, viz., \$951,911, to apply for interest on Grand Trunk debenture stock due Mar. 1, payment was duly advertised. In consequence, however, of the remittance being coupled with the condition that it is to be used only for operating obligations, the company will be unable to meet the interest due on Mar. 1, and a serious situation will result. I respectfully beg to draw your attention to the matter, in order that the actual position, and possible consequences may be fully appreciated."

The Acting Prime Minister's Reply.

Sir Thomas White replied to Mr. Scott Feb. 28 as follows: "I beg to formally acknowledge receipt of your letter of Feb. 25, which you personally handed to me at my office here. I note what Mr. Smithers states in his cable as to the G.T.P.R. Co. being unable to meet the interest due upon its securities on Mar. 1.

ther vote for the G.T.P. while our negotiations with the G.T.R. remain in their present unsatisfactory condition. As I indicated to you, it will be for the G.T.R. directors to determine the question of their responsibility in respect of the interest maturing tomorrow upon securities guaranteed by their company."

The interest on the G.T.P. debenture stock was, however, paid when due, viz: Mar. 1.

G.T.P.R. Gives Notice of Cessation of Operation.

Frank Scott wrote Sir Thos. White Mar. 4 as follows: "I am instructed to inform the government that in view of the fact that the increased rates applicable to the G.T.P.R. have not been sufficient to meet the increased operating expenses, it will not be possible for that company to continue its operations when the present funds have been exhausted, which will be about Mar. 10. May I ask you to be so good as to acknowledge the receipt of this letter?"

Sir Thos. White wrote Frank Scott,

company was received by the Minister of Finance, as follows:—

"I am instructed to inform the government, that in view of the fact that the increased rates applicable to the G.T.P.R. have not been sufficient to meet the increased operating expenses, it will not be possible for that company to continue its operations when the present funds have been exhausted, which will be about Mar. 10. May I ask you to be so good as to acknowledge receipt of this letter."

And whereas should the operation of the G.T.P.R. System be discontinued, great detriment to the public interests would ensue, and the intention of parliament in authorizing the said advances would be defeated. And whereas the continued operation of said system is essential in the present position of Canada, resulting from the war, which has not yet been terminated by peace, especially in connection with the transport of returning Canadian troops and of supplies and equipment and freight, and other services made necessary by the war. And whereas for the protection of the public interests and for the purposes aforesaid, it is essential that the opera-

tion of said system should be continued without interruption. And whereas the duty of continuing such operation is thrown upon the Government of Canada, inasmuch as there are no effective provisions in existing laws whereby such continued operation could be otherwise secured.

And whereas immediate action by the government is impossible, therefore His Excellency the Governor General in council, under the authority of the War Measures Act, 1914, and of all other authority in that behalf, is pleased to order and it is hereby ordered as follows:—

1. In this order, unless the contract otherwise requires:—

(a) "Grand Trunk Pacific Ry. System" means and includes (1) the lines of railway and their appurtenances and the undertaking and works of the G.T.P. Branch Lines Co. of the G.T.P. Saskatchewan Ry. Co. (2) the lines of telegraph and their appurtenances and the undertaking and works of the G.T.P. Telegraph Co. (3) the steamships, vessels and their appurtenances and the undertaking and

maintenance, of the said lines of railway or telegraph or steamships, vessels, hotels, properties or works, or any of them, or any part thereof, also records, statements, and documents relating to such business, operation, or maintenance or any part thereof.

(d) "Exchequer Court" means the Exchequer Court of Canada.

(e) The singular number includes the plural, and the plural the singular; the male gender includes the female, and the female the male.

(f) "Person" includes corporation.

(g) "Government Receiver" means the receiver appointed by this Order.

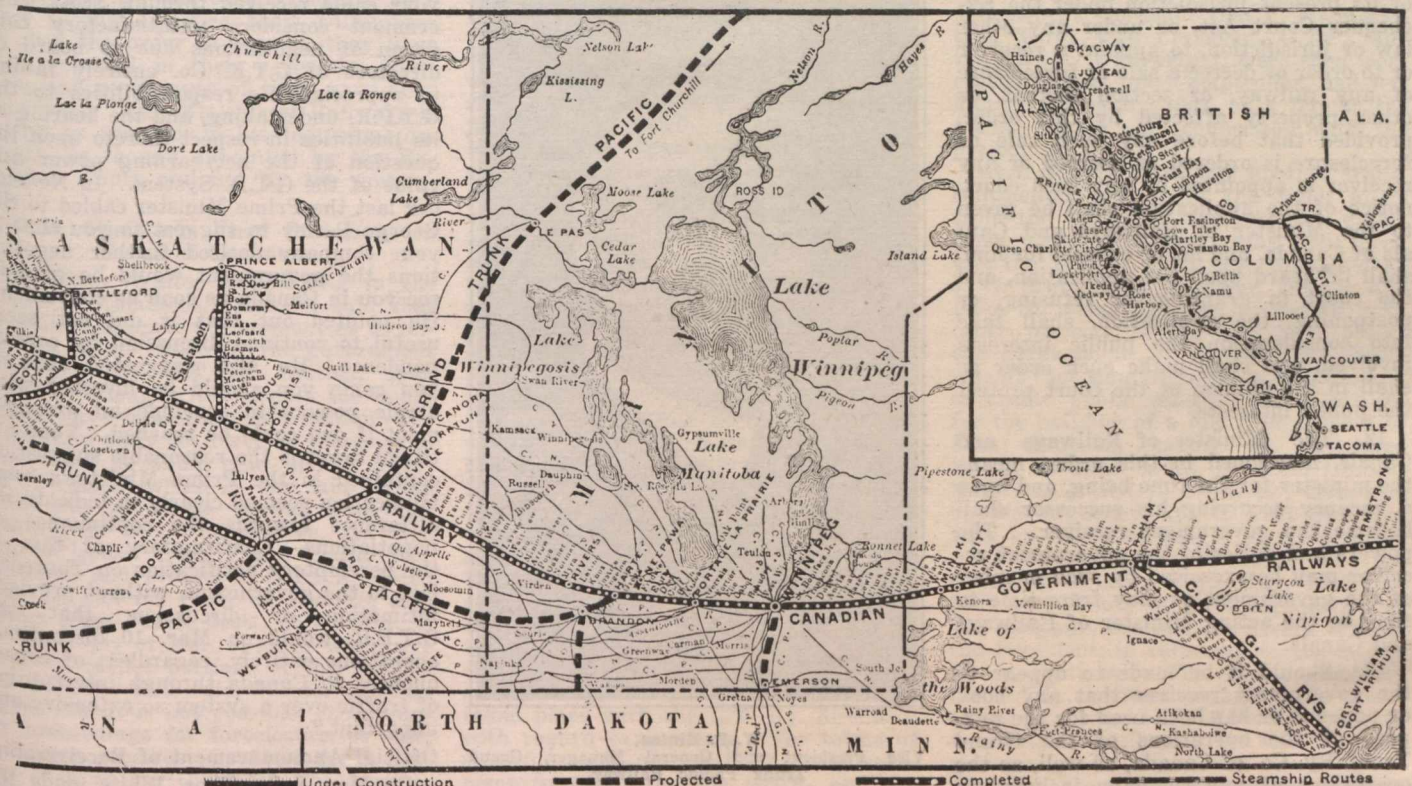
2. The Minister of Railways and Canals is hereby appointed receiver of the G.T.P.R. System and such receiver shall have and exercise, with respect to the said system, and every part thereof, and to the companies included therein, powers under sec. 26 of the Exchequer Court Act.

3. On the application of the Government receiver, the Exchequer Court may make such orders respecting such re-

pedient for the carrying out of the provisions of this order, according to their true spirit and meaning.

6. Each company included in the G.T.P.R. System, and its officers, shall facilitate the carrying out of the powers and duties of the government receiver and all books and papers, real or personal property, of each of the said companies, in its possession, or under its control, or the control of its officers, or any of them, shall, without delay, be handed over to the said receiver, or his nominee, or placed under his control in such manner as he may direct.

7. Any officer of the company included in the G.T.P.R. System, who obstructs the government receiver in carrying out his powers and duties; or fails to hand over to him, or his nominee, or to place under his control, any book or paper, real or personal property, in accordance with the foregoing provisions, shall incur a penalty for each breach of said provisions of the amount hereinafter stated, viz., in the case of a president, a vice president or a director, \$10,000; in the



works of the G.T.P. Steamships Co. (4) the properties, hotels, and appurtenances and the undertaking and works of the G.T.P. Development Co.

[Editor's Note.—Another order in council, passed Mar. 13, states that through inadvertence there were omitted from the definition of "G.T.P. Ry. System" in sec. 1 of the order passed Mar. 7, the necessary words relating to G.T.P. Terminal Elevator Co. Ltd., and it was therefore ordered that the following be inserted at the end of the definition of "G.T.P. Ry. System" in sec. 1, viz: "(5) The properties, elevators, terminals, and appurtenances and the undertaking and works of G.T.P. Terminal Elevator Co. Ltd."]

(b) "Officers" means and includes directors, President, vice presidents, managers, Secretary, Treasurer, clerks, servants and employes.

(c) "Books and papers" means and includes books of accounts, or of entries, relating to the business, or operation, or

receiver, and his powers and duties, and the carrying out thereof, including the issue of receiver's certificates, as the court may deem necessary, or expedient, in the public interest.

4. Subsec. 5 and 6 of sec. 26 of the said act shall apply to the government receiver, and to the G.T.P.R. System and every part thereof and to the companies included therein, except that no remuneration of the receiver shall be fixed by the court.

5. The Government receiver may, on or after Mar. 10, 1919, or on such earlier day as the G.T.P.R. Co., or any company included in the G.T.P. System may cease to operate efficiently, its undertaking and works, or any portion thereof, take possession of such undertaking and works, or any portion thereof, and the Exchequer Court may, from time to time, make and enforce such orders in aid of the Government receiver, with respect to taking of such possession or otherwise as the court may deem ex-

pedient for the carrying out of the provisions of this order, according to their true spirit and meaning.

case of a manager, with the authority of or similar to that of a general manager, or of one acting for or assisting a general manager, \$5,000; in the case of a secretary or of a treasurer, or of one acting for or assisting a secretary or treasurer, \$2,500; in the case of any clerk, servant or employe, \$1,000.

8. Any penalty incurred under the foregoing provisions may be sued for and recovered, with costs, in the Exchequer Court, by suit or proceeding in such court instituted by the Attorney General of Canada.

9. Nothing in this order contained, and nothing done or to be done under the authority hereof, shall render the Government of Canada or the government receiver, or anyone acting under the authority of the government receiver, or of the Exchequer Court, liable to the Grand Trunk Ry. Co. of Canada, or to any company included in the G.T.P.R. System, or to any creditor, or holder of any bonds, debentures, debenture stock or other se-

curities of the said companies, or any of them, for any claim by reason of the making of this order, or of anything done or to be done under the authority hereof, or under the authority of the government receiver or of the Exchequer Court, nor shall afford any defence to, nor shall prejudice any claim, action, or proceeding of the Government of Canada which the government might lawfully make or take, had this order not been made.

10. All officers, except the board of directors, of any company included in the G.T.P.R. System, shall continue to discharge for the government receiver, till further orders, or directions, by him, duties in connection with the operation and management of the undertakings and works of any company included in the G.T.P.R. System, similar to their present duties, so that no interruption in the operation and management thereof may occur.

11. Nothing herein contained, or done, or to be done, hereunder, shall prejudice the exercise by the Exchequer Court or by any court of any province of Canada, of its present jurisdiction under the Exchequer Court Act, or under any other law or jurisdiction, to appoint a receiver or to order or decree a sale or foreclosure of any railway, or section thereof, or other property affected by this order, provided that before any such sale or foreclosure is ordered or decreed or any receiver is appointed by any such court, notice of the application shall be given to the Minister of Railways and Canals of Canada, and he, or counsel for him, shall be heard upon the application, and the court in granting, or refusing, or postponing, the application, shall take into consideration the public interests involved, and shall make such order as shall in the opinion of the court protect the public interests.

12. The Minister of Railways and Canals, mentioned in this order, means the minister for the time being, and upon a vacancy occurring his successor shall become the government receiver. The powers and duties of the government receiver may be exercised by such member of the government as may from time to time be the acting Minister of Railways and Canals.

13. Should it be made to appear to the government receiver that any book or paper is or has been used for the purpose of the operations of the Grand Trunk Ry. Co. of Canada, as well, as the operations of any company included in the G.T.P.R. System, and that for such reason the same should not be handed over to the receiver, or placed under his exclusive control, the government receiver may, on such terms and conditions as he may deem necessary, allow the joint use of same to be continued. The government receiver may open such books and accounts as in his opinion may be necessary, to separate and transfer from any such book or paper, jointly used, accounts and entries relating to any of the companies included in the G.T.P.R. System, and may so separate and transfer the same and the said receiver shall keep the accounts of his receipts, expenses and disbursements in connection with each of the companies included in the said system, and their works, undertakings and properties, or parts thereof, in such manner that one may be distinguished from another, and that the interests of the various parties interested therein may be ascertained.

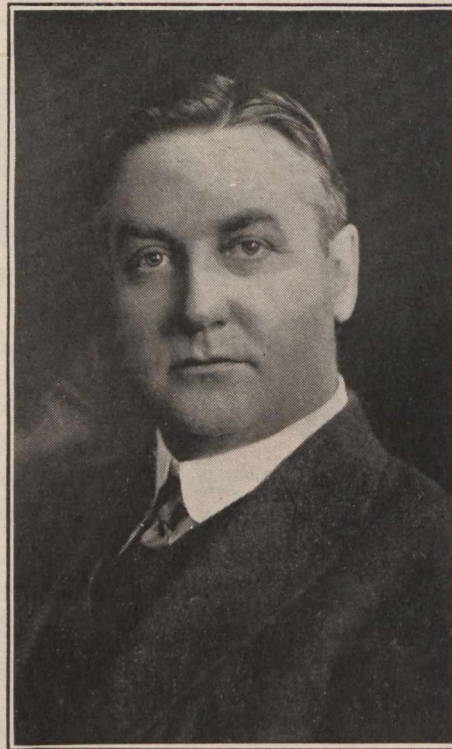
14. The Governor in council may, from

time to time, under the order of the Exchequer Court, and upon the security of receiver's certificates, or otherwise, advance to the government receiver such sums as may be required to enable him to exercise his powers, and to perform his duties as receiver; the sums so advanced shall be paid out of any unappropriated monies in the Consolidated Revenue Fund of Canada.

15. No transfer of any shares in the capital stock of any company included in the G.T.P.R. System shall, after the appointment of the government receiver, be made, and no such transfer shall be entered on any register or transfer book. Any transfer contrary to this provision shall be null and void, provided that the government receiver may, on the application of any person interested, or of his own motion, permit any transfer to be made or completed.

Chairman Smithers Cables.

Frank Scott wrote Sir Thos. White Mar. 7 as follows: "I have been instruct-



W. P. Hinton,
Vice President and General Manager, Grand
Trunk Pacific Railway.

ed by Mr. Smithers to forward the following cable message to you, as from him:

"H. G. Kelley has handed me cable message, from Frank Scott, containing extract from your letter saying that it is not the intention of the government to ask parliament to provide further vote for G.T.P.R. while negotiations with the G.T. remain in their present unsatisfactory condition. I beg to recall that when ministers came over last summer, it was stated in parliament negotiations would be resumed in London. I accordingly saw ministers with members of board several times, and at last was told that the ministers could make no advance in their original offer without the consent of the full cabinet in Ottawa. In these circumstances progress in negotiations was impossible, but with a view to facilitating matters, just before the Prime Minister left for Canada, a committee of the board and myself saw him with two of his colleagues, and made a fresh pro-

posal, involving a very big reduction on our first offer. This offer was not accepted, but on Nov. 5 the High Commissioner for Canada sent for me and said he had a message from the Prime Minister asking me if we wished to continue negotiations, and if so, he thought I should go to Canada. I told the High Commissioner that, looking to the fact that the government had given no sign of any intention of departing from their original offer, I thought it was useless going out, unless I had some further explanation or assurance as to the government's intentions. To this we have had no reply, and I really fail to see how the company can be held responsible for the unsatisfactory condition of our negotiations. Mr. Kelley is returning in a few days and I think it would be advisable if you could cable any reply you may wish to make to this communication before he leaves."

Sir Thomas White Cables Chairman Smithers.

Sir Thos. White cabled A. W. Smithers, Mar. 8 as follows: "Replying to your cable received through Scott, government considers unsatisfactory condition of negotiations due to board of directors of G.T.R. Co. entirely failing to appreciate its responsibilities to the G.T.P.R. undertaking, and the bearing of its liabilities in respect thereto upon the question of the net earning power and value of the G.T.R. System. In November last the Prime Minister cabled to Sir George Perley to suggest to you that if your company desired further negotiations the government would be glad to see you in Canada as soon as convenient. He pointed out that it did not seem useful to continue discussion by correspondence. He also suggested that if you came you should be invested with ample powers to conclude an arrangement if one could be reached. Your attitude towards the reasonable suggestion contained in the Prime Minister's communication seemed clearly to indicate indifference towards the continuance of negotiations. Confirmatory of this is the peremptory notification on Thursday last to the government, without previous intimation or discussion, that the G.T.P.R. would on Mar. 10 discontinue operations entirely, regardless of consequences to Canada through interruption of traffic over a system so extensive and important."

Official Announcement of Receivership.

On Mar. 8 Sir Thos. White made the following announcement: "Hon J. D. Reid, Minister of Railways, has been appointed receiver of the G.T.P.R. System. The appointment follows an official notification which Sir Thomas White received on Mar. 6 from the Vice President of the G.T.P.R. Co., notification that, in view of the fact that the increased rates applicable to the G.T.P.R. have not been sufficient to meet the increased operating expenses, it would not be possible for the company, owing to lack of funds, to continue its operation beyond Mar. 10. In view of this notification, it became necessary that the government should, in the public interest, immediately take steps to ensure the continued operation of the system. Under existing legislation this could not be accomplished by an application to the courts for the appointment of a receiver. The War Measures Act, however, was found to provide adequate authority for action by the government, and consequently an order in council was passed appointing the

Minister of Railways receiver of the G.T.P.R. System, which includes the branch lines, telegraph, steamships, hotel and development and other companies. W. P. Hinton, Vice President and General Manager of the G.T.P.R. System, has agreed to conform to the requirements of the order, and to facilitate the carrying out of the powers and duties required of the minister as receiver. The immediate object of the order, viz, to prevent interruption in the operation and management of the system, has therefore been already attained. An important feature of the order in council, is that which preserves to the government any other and ultimate remedies which it possesses under the provisions of trust mortgages securing issues which it has guaranteed or otherwise as creditors of the system. Similarly, the rights and remedies of other parties are not interfered with by the order."

G.T.P.R. Operation Carried On.

The Minister of Railways commenced to act as receiver on Mar. 10, W. P. Hinton, Vice President and General Manager, G.T.P.R., and other company officials having signified their willingness to obey the order in council, they have been retained in their respective positions and no changes of titles have been announced. The Minister of Railways is acting as receiver in his individual capacity, as though appointed by the Exchequer Court and not by the government.

Finance Minister's First Statement in House of Commons.

Sir Thos. White, in speaking in the House of Commons, Mar. 10, said that he wished to make a statement as to important action taken by the government respecting the G.T.P.R. System, upon which he thought it desirable the house should have immediate information. The facts were fully set forth in correspondence which he would read, and in an order in council which he had laid on the table and which, as it was somewhat lengthy, he would summarize. He then read a letter from Frank Scott, Vice President and Treasurer, G.T.P.R., dated Feb. 25, and his reply of Feb. 28, also letters from Frank Scott, dated Mar. 4, and his reply of Mar. 5, all of which are given in earlier portions of this article. The minister then said, "Under existing legislation, it is not possible, except under proceedings for foreclosure, or sale, to have a receiver appointed for a system such as the G.T.P.R. The government, therefore, was confronted with what it regarded as the imperative necessity, in the national interest, of providing for the uninterrupted operation of the system. It was found that the War Measures Act gave the government complete jurisdiction for the action which it took, viz: by order in council to appoint the Minister of Railways as receiver for the system. Sir Thomas then read a summary of the order in council of Mar. 7, the full text of which is given in an earlier portion of this article. The minister continued, "While, under the War Measures Act, the order in council has the full effect of a statute, as parliament is sitting, it is manifestly desirable that the government should introduce legislation validating and confirming the order in council, and sanctioning what the government has done. Within a day or two I shall introduce the necessary resolution to that end. I received on the 8th inst. a letter from the Vice President of the G.T.P.R., containing a

cable from the Chairman of the G.T.R. board, A. W. Smithers, which refers to a statement made in one of the letters I have read to the house." He then read a letter from Frank Scott, dated Mar. 7, and his reply of Mar. 8, both of which are given in earlier parts of this article.

F. S. Cahill, M.P. for Pontiac, Ont., asked if it was the government's intention to continue governing by orders in council. Sir Thos. White replied that if the government had not the powers under the War Measures Act, and the G.T.P.R. had carried out its expressed intention of discontinuing operation, the entire system, embracing all the subsidiary companies, would have been at a standstill, with serious consequences.

R. L. Richardson, M.P. for Springfield, Man., asked if the G.T.P.R. was actually in default. Sir Thos. White replied that it was not, but the notification received was that it would discontinue operation.

Legislation Confirming Appointment of Receiver.

Sir Thos. White, on Mar. 20, moved in the House of Commons that the house go into committee to consider a resolution that it was expedient to bring in a measure to ratify and confirm the order in council of Mar. 7 appointing a receiver and which is given in an earlier part of that article. D. D. Mackenzie, leader of the opposition, expressed the opinion that the War Measure Act was never intended to be used for purposes of this kind, and there was only sec. 6 that could possibly be used for such an action. As the war had ended there was no occasion for using the measure, and the regular course of applying through the Exchequer Court should have been adopted. The resolution was passed, and the house went into committee thereon.

Sir Thomas White there reviewed the whole enterprise from its foundation until the present situation arose, and contended that the G.T.R. had apparently come to the conclusion that it would not continue to be responsible for the payment of the interest upon the G.T. Pacific Ry. securities, that it would not be responsible for the deficit in its operation, but would cast the entire burden upon the Dominion Government. He then discussed the Drayton-Acworth report; and the negotiations which had since taken place with the G.T. Ry. directors, with regard to purchase. The terms of an offer made on behalf of the government to take over the G.T.R. and the G.T. Pacific Ry. and to assume all the obligations of both companies, were an annual payment of \$2,500,000 a year for three years, \$3,000,000 a year for the next four years and \$3,600,000 annually thereafter, the G.T.R. to distribute these sums as it might determine among the holders of 4% and other stock. An alternative proposal was to submit the matter to a board of arbitration, the award to be by way of annual rental for 99 years. The company made a counter offer in Aug. 1918, by asking for an annual payment of £977,000, an amount equal to the net earnings of 1913. The government was carrying on the line with the Minister of Railways as receiver, and he was maintaining the service. What would be done later had not been determined, but unless a satisfactory situation ensues, the government would be obliged to have recourse to whatever legal remedies it might have, and it had many.

A long discussion followed, many mem-

bers taking part., and the resolution was concurred in. A bill giving effect to the resolution was then introduced by Sir Thomas White and read a first time.

The Inception of the G.T.P.R. Project, Legislation, Etc.

The idea of the extension of the G.T.R. to Western Canada was brought prominently into notice in 1903, was not a new one, as years before the construction of the C.P.R. to Sault Ste. Marie, the G.T.R. had a charter to build from some point on its line terminating at North Bay through Algoma westerly. An understanding was reached between the two companies, and the G.T.R. project was abandoned for the time. It was revived again in 1902, but the first public announcement was not made until the beginning of 1903, when simultaneously with the appearance of notices to the effect that the G.T.R. would apply to the Dominion Parliament at its then forthcoming session, for the incorporation of the Grand Trunk Pacific Ry. Co., with power to build a line from Gravenhurst, or North Bay, to the Pacific Coast, announcement was made that F. W. Morse, then Third Vice President, G.T.P., and the late W. Wainwright, were then General Assistant and Comptroller, had left Montreal in Mar., 1902, on a trip to the Pacific coast in connection with the project.

At this time there was another transcontinental project in the field, apart from the Canadian Northern Ry. enterprise, which were then taking final form, viz: the Trans Canada Ry., promoted by J. G. Scott, then President Quebec and Lake St. John Ry., and connected with other projects having for their object the development of Quebec. Mr. Scott was at that time engaged in endeavoring to create public interest in his project for the building of a line from Quebec to Port Simpson, having an estimated length of 2,830 miles, or from Chicoutimi, the Q. and L. St. J. Ry. terminus, on the Saguenay Ry., to Port Simpson, with an estimated length of 2,700 miles.

At the half-yearly meeting of the G.T.R. in London, Eng., May, 1903, the 30th anniversary of the incorporation of the company, Sir Charles Rivers Wilson, the President, in referring to the G.T.P. Ry. project, said: "To such a company the G.T.R., without engaging the credit of its own shareholders, would bring as a valuable contribution, its influence, experience and established connections. The bill has been introduced and the form and extent of the government assistance are under discussion with Sir Wilfrid Laurier and his colleagues. As a result of the discussions with the government the plans took a new form, the agreement between the promoters of the G.T.P.Ry. and the government was made public July 30, and the measure providing for the construction of a national transcontinental railway was introduced. The agreement, which was dated July 29, was ratified by chap. 71 of the Dominion statutes for that year.

Then the late C. M. Hays, then President G.T.R., proposed an extension of this span to the Pacific coast, his idea was to start from North Bay, Ont. He never contemplated an easterly extension to Quebec and the Maritime Provinces, which were promised a line by the then government.

At the half yearly meeting of the G.T.R. shareholders the President said: "At the wish of the Dominion Government and of popular opinion, there has

been grafted upon the original idea a much larger scheme, contemplating the construction of a road straight across the continent from New Brunswick in the east, to the Pacific coast in the west. The government will themselves be the owners of the line from New Brunswick to Winnipeg, and the G.T.P. Ry. will be restricted in its ownership to the road west of Winnipeg. It would be inopportune for me to allude to any future connection which the G.T.R. may have with the scheme, only bearing in mind, of course, that nothing will be done without the shareholders' consent."

The agreement provided for the construction by the Dominion Government of a railway to be built entirely within Canada from Moncton, N.B., to Winnipeg, Man., and to be leased upon completion by the G.T.P.Ry. for 50 years, for the first seven years on the basis of paying the working expenditures, and for the remainder of the term at a rental of 3% a year upon the ascertained cost of construction, such lease to be renewable. The G.T.R. undertook to build a line from Winnipeg to the navigable waters of the Pacific Ocean, at or near Port Simpson, or such other point on the Pacific coast as might be agreed upon. The line was to be built to a standard equal to that of the G.T.R. main line between Montreal and Toronto, and as to gradient, etc., was to conform to the standard of the eastern section, to be built by the Dominion Government. By way of assistance to the company in the construction of the line, the act provided that the Dominion should guarantee payment of the principal and interest of an issue of bonds for an amount sufficient to produce a sum equal to 75% of the cost of its construction, such amount not to exceed \$13,000 a mile in respect of the prairie section from Winnipeg to the eastern limit of the Rocky Mountains, such limit to be fixed by the Chief Engineer for the company and the Chief Engineer for the government, and \$30,000 a mile for the mountain section. Although 75% of the cost of each section might be exceeded by the respective sums a mile. The company was to pay the interest on the bonds issued in respect of the prairie section from the date of issue, the government only having to pay to prevent default, such payment to be a debt due by the company to the government. For the first seven years after issue of the bonds for the mountain section, the government was to pay the interest, and for the next three years the company was to be primarily liable for the interest, the government amount paid to be a debt due by the company to the government. During this three years the government was not to exercise its right of foreclosure under the mortgage. After the 10 year period the government would be in a position to exercise its full rights under the mortgage. The company agreed that the G.T.R. Co. should guarantee the payment of the remainder of the bonds required to be issued in respect of the line from Winnipeg to the Pacific coast, such bonds to be a second charge, subordinate to those issued under the Dominion guarantee. The G.T.P.R. was to provide rolling stock and equipment for the operation of both divisions at a minimum cost of \$20,000,000.

The G.T.P.R. Co. was incorporated by chap. 122 of the statutes of 1903, with an authorized capital of \$45,000,000, of

which not exceeding \$20,000,000 could be issued as preferred stock. The company was authorized to build a line from Moncton to the Pacific coast; a branch line from the main line southerly to North Bay or Nipissing Jct., on the G.T.R., a branch from the main line southerly to Montreal, a branch line to Port Arthur, Fort William, or other port on Lake Superior as might be approved by the government, and branches to Brandon, Regina, Prince Albert, Calgary, and to Dawson. The company was authorized to issue bonds for \$30,000 a mile on the line from Moncton to Winnipeg; \$20,000 a mile on the prairie section, and \$50,000 on the mountain section, and bonds on the branch lines to the same amount as authorized for the section of main line which they might join. The Dominion Government was given the right to nominate one of the directors.

While these measures were before parliament, the late Hon. A. G. Blair, then Minister of Railways, objected to the terms of the contract and resigned his office.

An amending act, passed in 1904, confirmed an agreement made between the government and the company, providing among other matters, for the leasing to the company of any completed sections of the Transcontinental Ry., before the completion of the whole line; declaring that the government would implement its guarantee of the bonds of the prairie and mountain sections of the western division, providing that in the event of the government deciding to operate the eastern division, the company should for 50 years have such haulage rights over it as might be necessary for the conducting of operations of the western division, and giving the government power in such a case, of acquiring any branch lines which might have been constructed connecting with the eastern division.

The G.T.P. Branch Lines Co. was incorporated by the Dominion Parliament in 1906, with an authorized capital of \$50,000,000, of which \$20,000,000 could be issued as preferred stock to build 18 branch lines in New Brunswick, Quebec, Ontario, Manitoba, Saskatchewan, Alberta, British Columbia, and Yukon. These lines included those mentioned in the charter of the G.T.P.R., with the exception of the line to Port Arthur or Fort William.

The Saskatchewan Legislature in 1909 authorized the guaranteeing of the G.T.P. Branch Lines Co's. bonds, providing for the construction of 195 miles of branch lines, and in 1910 the mileage to be built under provincial guarantee of bonds was increased to 670. These branch lines have practically all been built. Subsequently the legislature authorized the guaranteeing of \$3,800,000 of bonds for terminal construction at Regina, Saskatoon, Moose Jaw, Prince Albert, Swift Current, and Battleford, to which was added in 1912, a guarantee of bonds for \$1,300,000 for bridge construction. The Saskatchewan Legislature also passed an act incorporating the G.T.P. Saskatchewan Ry, which entered into an agreement with the Saskatchewan Government for the construction under a guarantee of bonds, of 205 miles of branch lines, which was increased by 270 miles in the following year. These branch lines were partly in extension of the branches already built, or of branch lines therefrom.

The Alberta Legislature in 1909 authorized the guaranteeing of the G.T.P. Branch Lines Co's. bonds in respect of

491 miles of branch lines, and in 1912 guaranteed the company's bonds for an additional 58 miles.

Construction of the Lines.

The surveys for the line were proceeded with at once, the starting point being Portage la Prairie, Man., and work had been so far completed that an Sept. 1, 1906, the government had approved of plans for the line almost to Edmonton, Alta., 720 miles, and contracts had been let for grading. The location was through a fine farming country and gave a line with easy curvature, and gradients not exceeding 0.4% against eastbound traffic, and 0.5% against westbound traffic. The preliminary location to the Pacific coast, where the terminus had been located, and which was subsequently named Prince Rupert, was practically completed in 1907, and the fund the following year, when it was announced by the late Sir Collingwood Schrieber, Chief Engineer for the government, that the Prairie Division would extend from Winnipeg to Wolfe Creek, approximately 916 miles, and the Mountain Division from Wolfe Creek, viz, the Yellowhead Pass to Prince Rupert, 859 miles. Revisions during the course of construction, reduced these figures to 912.7 miles for the Prairie Division, and 835.6 miles for the Mountain Division. The location on the Mountain Division showed an easy curvature, the sharpest curve having a radius of 955 ft., the gradients of the Prairie Division being exceeded only at one point in the vicinity of Tete Jaune, where for 19 miles the gradient against eastbound traffic was 1%. The location between Portage la Prairie and Winnipeg was settled during 1908, and the connection with the Canadian Northern Ry. tracks, in that city, was arranged for with the part use of terminals in 1913, and confirmed by legislation in 1914.

The track was laid with 80 lb. rails, the first rails being laid out of Portage la Prairie at the end of 1906, in which year 35 miles were laid. The Lake Superior Branch was built in 1907 and 1908, from the National Transcontinental Ry., which had been built easterly from Winnipeg, to Fort William, and this line was opened in connection with the completed sections of the line in the west, through traffic being operated between Winnipeg and Edmonton, from Sept. 13, 1909. A temporary train service was given over 120 miles of the main line west of Edmonton from Feb. 1, 1910, and complete operations through to the Pacific coast from Sept. 6, 1914. Branch line construction in Saskatchewan was started at Melville, in 1909, and subsequently at other points in Saskatchewan and Alberta.

During the course of construction, in his report for the year ended Mar. 31, 1909, Sir Collingwood Schrieber said that the cost of the prairie section had greatly exceeded the estimated cost owing to the increased weight of rail used—80 lb. instead of 65 lb.—the increased cost of rails from \$25.25 to \$36.59 a ton; the increased cost of ties from 25c each, to 50c, 60c and 70c each; the increased cost of timber for bridges, etc., and the increased cost of labor. These remarks were also applicable to the mountain division, and to an accentuated degree, as labor and materials continued to advance.

In his report for the year ended Mar. 31, 1917, Sir Collingwood Schrieber showed that that total expenditure on the

line up to Dec. 31, 1916, had been \$131,070,730.64, of which \$37,910,534.88 had been expended on the Prairie Division, and \$93,160,196.76 on the Mountain Division. At that period it was estimated that the value of the work remaining to be done to comply with the acts of parliament, the contracts and the specifications was \$2,297,500 on the Prairie Division, and \$2,334,385 on the Mountain Section.

Mileages of Lines.

	Miles
Main line, Winnipeg to Prince Rupert	1,748.00
Saskatchewan Branches.—	
Melville to Canora.....	55.20
Melville to Regina.....	98.40
Regina to Weyburn and Northgate	155.00
North Regina to Riverhurst....	114.40
Young to Prince Albert.....	111.80
Biggar to Loverna.....	104.60
Oban to Battleford-Carruthers	95.00
	734.40
Alberta Branches.—	
Tofield to Calgary.....	201.50
Bickerdike to end of steel.....	56.70
Coalspur to Mountain River....	31.00
Pocohontas to Snaring Jct.....	14.20
	303.40
Mileage operated.....	2,785.80
Lake Superior Branch (leased to Dominion Government).....	188.80
Mileage owned.....	2,974.60

In addition the company has graded 26 miles of a branch from Harte to Brandon, Man., and some mileage of branch lines under provincial guaranteed bonds in Saskatchewan.

The Lake Superior Branch, 188.8 miles, while owned by the G.T.P. Ry. was leased to the Dominion Government for 99 years, at \$600,000 a year when the National Transcontinental was placed in operation. Prior to that time it was operated by the G.T.P. Ry. in conjunction with the section of the N.T. Ry. from Lake Superior Jct. to Winnipeg, under the terms of an arrangement with the government.

Subsidiary Companies.

The G.T. P. Coast Steamship Co., was incorporated to carry on a freight and passenger business on the Pacific coast, and in 1910, inaugurated a service between Seattle, Wash., Victoria, Vancouver and Prince Rupert. Two steamships—the Prince Rupert and the Prince George—were built for this service, and to these there were subsequently added two steamships purchased and renamed the Prince John and the Prince Albert. Other vessels were utilized, in the service, either by purchase or charter, and one of the purchased vessels has been sold. The latest vessel acquired is the motor schooner Tillamook. The present fleet comprises the four Princes, the motor ship, and a tug.

The G.T.P. Telegraph Co. was incorporated in 1906 by the Dominion Parliament with authorized capital of \$5,000,000, and a telegraph line has been built for commercial as well as railway purposes.

The G.T.P. Terminal Elevator Co. was incorporated under the Dominion Companies Act, Jan., 1909, with authorized capital of \$1,000,000, to lease and operate a terminal elevator then under construction on Mission River, Fort William, Ont., and it subsequently built an elevator at Tiffin, Ont.

The G.T.P. Townsite and Development Co. was formed to acquire townsites and other lands along the line, and develop the property so acquired. Townships were acquired at divisional points, at the Prince Rupert terminus, and at other points on the line. The entire common stock of \$3,000,000 is held by the G.T.P.

Ry., or its nominees, and the remaining \$2,000,000 is preferred stock. The company held in 1909, according to a statement of the Ministry of Railways in May of that year, 81 townsites and a three-quarter interest in the townsite of Prince Rupert, in all, 78,648 acres. The company has built hotels at Ottawa, Winnipeg, Edmonton, and Prince Rupert and started to build one at Regina.

Bond Issues, Etc.

The securities authorized to be issued to provide funds for the construction of G.T.P.R. lines amounted to \$215,434,896, of which there has been issued and there is outstanding, \$190,601,784.86. These issues are guaranteed as follows:—

By the Dominion of Canada.—		
1st Mortgage bonds, due 1962.....	\$68,040,000.00	
4% Sterling bonds due 1962.....	8,440,848.00	\$76,480,848.00
By The Grand Trunk Ry. Co.—		
4% Series A bonds due 1955.....	\$10,206,000.00	
4% Series B bonds due 1955.....	9,963,000.00	
4% Lake Superior bonds due 1955....	7,533,000.00	
4% Perpetual debenture stock.....	34,879,252.86	
4% debenture stock due 1923.....	15,000,000.00	
4% bonds due April 1919	10,000,000.00	
5% Secured notes due 1925	9,720,000.00	97,301,252.86
By the Province of Saskatchewan.—		
4% bonds due 1939... \$	11,347,848.00	
4½% terminal bonds due 1943.....	1,882,240.00	13,230,088.00
By the Province of Alberta.—		
4% bonds due 1939 \$	2,430,000.00	
4% Coal Branch bonds due 1942.....	1,159,596.00	3,589,596.00
Total guaranteed bonds \$190,601,784.86		

In addition the company has received by way of loan, secured on mortgage, the sum of \$6,000,000, and another of \$8,000,000, on account of which \$5,892,366.49 was paid out by the Dominion Government in 1917, and the balance was subsequently included in a revote.

Operating Results.

The first official report of the company's earnings was for the year ended June 30, 1913, the principal figures up to 1917, the latest issued, being as follows:—

	Gross Earnings	Operating Expenses
1913	\$8,162,204.86	\$7,275,498.84
1914	8,244,593.13	7,591,147.67
1915	6,660,584.23	7,383,665.47
1916	6,963,188.88	5,902,843.24
1917	6,651,298.18	6,857,032.99
*1917	1,593,019.00	1,796,346.61

* Grand Trunk Pacific Branch Lines.

The Company's Officers.

Following are the executive officers:— President, H. G. Kelley, Montreal; Vice President Traffic, J. R. Dalrymple, Montreal; Vice President and General Manager, W. P. Hinton, Winnipeg; Vice President and Treasurer, Frank Scott, Montreal; Vice President and General Counsel, W. H. Biggar, K.C., Montreal; Assistant to President, D. E. Galloway, Montreal; Assistant to the President and General Manager, A. A. Tisdale, Winnipeg; Secretary, H. Phillips, Montreal.

The General Superintendent is H. H. Brewer, Winnipeg; General Freight Agent, A. R. Rosevear, Winnipeg; and General Passenger Agent, W. E. Duperow, Winnipeg.

Railway, Finance, Meetings, Etc.

Grand Trunk Pacific Ry.—A London press report for 1918 states that the G.T.R. had paid interest on the G.T. Pacific Ry. bonds due Mar. 3. The bond issues on which the half year's interest is said to have been paid, are: \$9,720,000 of G.T.P.Ry., 5% secured notes; and \$34,879,252 of G.T.P.Ry. 4% of perpetual debenture stock.

Lacombe and Blindman Valley Electric Ry.—The Alberta Department of Railways reports for 1918 states that the Alberta Government holds the majority of stock in this company, and that the line is managed by a board of directors consisting of the members of the government, F. Ford, Edmonton; N. L. Harvey, acting Deputy Minister of Railways; H. A. Warner, and R. H. Douglas, of the provincial engineering staff. The report states that the line handled during the year 5,000 passengers; 5,500 tons of freight, 100,000 bush. of grain, and 7,800 pkgs.

Pacific Great Eastern Ry.—Under the terms of the Pacific Great Eastern Ry. Agreements Amendment Act, 1913, the British Columbia Legislature guaranteed the payment of certain debenture stock of the company of which \$5,925,195 has been issued. This stock was pledged to the Union Bank as collateral security for the repayment of a loan of \$4,800,000 at 6%. The Union Bank being desirous of having the loan repaid, the company arranged for it to be taken over by the Bank of Commerce, with the approval of the B.C. Government. This loan falls due June 30. The B.C. Legislature has passed an act guaranteeing this loan unconditionally from time to time until repayment has been made.

The B.C. Legislature has also passed an act transferring to the Pacific Great Eastern Ry. the assets of the P.G.E. Development Co.; vesting in the railway company all the powers of the development company, and authorizing the railway company to sell any of the development company's lands. The Development Co. is to be dissolved, its liabilities being transferred to the railway company.

Quebec and Saguenay Ry.—At the judicial sale of this railway at Montreal, Mar. 4, the Financial Controller, Rail-

	Net Earnings	Passengers Carried	Tons of Freight Carried
1913	\$886,711.02	551,620	1,561,457
1914	653,445.46	691,686	1,792,445
1915	(-723,081.24)	641,479	1,454,061
1916	1,060,345.58	369,495	1,972,054
1917	(-205,734.61)	402,230	1,725,708
*1917	(-203,327.61)	283,741	1,040,763

(-) Deficits.

ways Department, made a bid of \$3,489,313.53, which was the only one. This was accepted by the directors, and all the papers were signed. The terms of sale were that 20% was paid with the bid, and the balance within fifteen days. The sale was arranged as being the easiest and most complete procedure for the transfer of the line to the Dominion Government. The vendor was the Quebec Savings and Trust Co., as trustee for the bond issue which was held wholly by the Quebec Ry., Light, Heat and Power Co. A press report states that the Dominion Government will also pay interest on the purchase price from the date when the matter was arranged until its completion on Mar. 4.

Mainly About Railway People Throughout Canada.

J. O. Apps, whose appointment as General Agent, Mail, Baggage and Milk Traffic, C.P.R., Montreal, was announced in our last issue, was born at Tara, Ont., Nov. 9, 1877, and entered railway service in 1893 as clerk, Local Freight Department, Illinois Central Rd., Chicago, Ill., remaining there until 1896. He entered C.P.R. service in Nov. 1897, since when he has been to Mar. 1903, clerk in General Superintendent's office; Mar. 1903, clerk in General Superintendent's office; Mar. 1903 to May 1907, chief clerk, General Baggage Department; May 1907 to Jan. 1909, Assistant General Baggage Agent; Jan. 1909 to Feb. 1919, General Baggage Agent, all at Montreal.

John J. Beck, Superintendent, Union Station, Toronto, died Mar. 22, aged 70. He had been in railway service for nearly 50 years, his first service being with the Great Western Ry., now part of the G.T.R., as brakeman, eventually becoming freight conductor, passenger conductor, between Toronto and Sarnia, and agent at Niagara Falls and Buffalo. He was appointed Superintendent, Toronto Union Station in 1906, and hoped to hold the position until the approaching removal to the new station, when he intended to retire. S. V. Beck, Freight Agent, G.T.R., Windsor, Ont., and John Beck, C.P.R. ticket office, Toronto, are sons.

E. N. Bender, General Purchasing Agent, C.P.R., Montreal, announced the engagement of his daughter, Margaret Irene, to Capt. Jno. Black, 5th Canadian Infantry Brigade, Headquarters, France, and formerly of St. Stephen, N.B.

Ernest A. Blow, who has been appointed to a position in the Industrial and Resources Department, Canadian National Rys., Winnipeg, went west from Whitby, Ont., in 1879, since when, except for a short period, he has been in newspaper service for a time as editor of the Portage la Prairie Review, and latterly on the Manitoba Free Press.

W. A. Bowden, Chief Engineer, Railways and Canals Department, Ottawa, has been appointed a member of the Dominion Power Board.

Lady McLaren Brown, wife of the General European Manager, C.P.R., after visiting her sister, Mrs. C. E. Neill, in Montreal, is now staying with her mother, Mrs. Crerar, in Hamilton, Ont.

Samuel Robert Cairns, who has been appointed Sleeping and Dining Car Agent, Eastern Lines, Canadian National Rys., Montreal, was born there, Oct. 31, 1869, and entered transportation service, Feb. 1, 1906, since when he has been, to Apr. 1907, sleeping car conductor, main line, Montreal to Vancouver, C.P.R.; Apr. 1907 to July 1912, chief instructor, Sleeping and Dining Car Department C.P.R., Montreal; July to Nov. 1912, Travelling Inspector, Richelieu and Ontario Navigation Co., Montreal; Jan. 1913 to Apr. 1914, in private business; Sept. 1915 to Jan. 1919, inspector of munitions, Imperial Munitions Board at various points in Canada and the U.S.; Feb. to March, 1919, Inspector, Sleeping, Dining and Parlor Cars, Eastern Lines, Canadian National Rys., Ottawa, Ont.

James Coleman, Superintendent, Car Department, G.T.R., has been appointed a member of the American Railroad

Association's temporary general mechanical committee.

Wilfred Lawson Crighton, whose appointment as General Advertising Agent, Canadian National Rys., Toronto, was announced in our last issue, was born at Derby, Eng., Nov. 9, 1871, and entered railway service in May 1891, since when has been, to May 1896, advertising clerk, C.P.R., Toronto; May 1896 to June 1901, in advertising department, C.P.R., Montreal; June 1901 to Feb. 1919, Advertising Agent, Canadian Government Rys., Moncton, N.B.

George Coster Dew, who has been appointed Asiatic Freight Agent, Canadian Pacific Ocean Services Ltd., Montreal, was born at Toronto, Aug. 9, 1886,



L. C. Thompson,
General Storekeeper, Eastern Lines, Canadian
National Railways.

and entered transportation service, Mar. 15, 1907, since when he has been, to May 8, 1908, stenographer, C.P.R., Toronto; May 9, 1908 to Aug. 31, 1911, stenographer, C.P.R., Montreal; Sept. 1, 1911 to Feb. 9, 1913, clerk, C.P.R., Montreal; Feb. 10, 1913, to Feb. 28, 1914, chief clerk, C.P.R., Montreal; Mar. 1, 1914 to Dec. 31, 1916 Contracting Agent, C.P.R., Montreal; Jan. 1, 1917 to Feb. 28, 1919, Asiatic Freight Agent, C.P.R., Montreal.

Robert S. Elworthy, whose appointment as General Agent, Passenger Department, Canadian Pacific Ocean Services Ltd., Chicago, Ill., was announced in our last issue, was born in London, Eng., Sept. 10, 1877, and entered transportation service, July 21, 1891, since when he has been, to Apr. 1, 1904, clerk, and Assistant Ticket Agent C.P.R., Chicago, Ill.; Apr. 1 to Dec. 31, 1904, City Passenger Agent, C.P.R., St. Louis, Me.; Jan. 1, 1905 to Mar. 31, 1909, chief clerk, Passenger Department, C.P.R., Chicago, Ill.; Apr. 1 1909 to Nov. 1, 1910, General Travelling Agent, Minneapolis, St. Paul and Sault Ste. Marie Ry., Minneapolis, Minn.; Nov. 1, 1910 to Apr. 30, 1912, City

Ticket Agent, same road, Minneapolis, Minn.; May 1, 1912 to Oct. 31, 1913, City Ticket Agent, C.P.R., Chicago, Ill.; Nov. 1, 1913 to Dec. 31, 1915, chief clerk, C.P.R. rail and steamship lines, Chicago, Ill.; Jan. 1, 1916 to Feb. 1, 1919, General Agent, Passenger Department, C.P.R., Minneapolis, Minn.

Edward Fitzgerald, Assistant to Chairman, Imperial Munitions Board, and formerly Assistant General Purchasing Agent, C.P.R., returned to Ottawa early in February from England, where he was in consultation with the Hudson's Bay Co.'s Governor and committee, in connection with his new duties as Deputy Chairman of the company's Canadian Advisory board at Winnipeg. He assumed his new duty at Winnipeg in March, and is living at the Fort Garry Hotel. In publishing Mr. Fitzgerald's portrait in Canadian Railway and Marine World for March, he was referred to as "Deputy Chairman, Canadian Advisory Board, Hudson's Bay Co., and latterly Assistant General Purchasing Agent, C.P.R." It should have read, "formerly Assistant General Purchasing Agent, C.P.R., and latterly Assistant to Chairman, Imperial Munitions Board, Ottawa."

Charles Harry Fox, whose appointment as Division Engineer, C.P.R., Regina, Sask., was announced in a recent issue, was born at Winnipeg, Apr. 2, 1885, and entered C.P.R. service in May 1902, since when he has been, to July 1903, chief clerk, Construction Department, Winnipeg; July 1903 to Sept. 1904, rodman, at various points, Western Lines; 1904 to 1910, attending McGill University, graduating B.Sc. civil engineering in 1909, and M.Sc., reinforced concrete, in 1910, and, during the summers, acting as instrument man, C.P.R., at various points; 1910 to 1912, Resident Engineer, Watrous, Alta, and Fort William, Ont.; 1912 to 1915, Assistant Engineer, Manitoba District, Winnipeg; May 1918 to Jan. 1919, military service with Canadian Engineers.

A. E. Fraser, Chief Engineer, Western Lines, Canadian National Rys., and several section hands, were killed by a snow slide on the Canadian Northern Ry. in the Rocky Mountains, Mar. 30.

Major General Sir Percy Girouard, K.C.M.G., D.S.O., Director, Sir W. G. Armstrong Whitworth and Co., of England, and President, Armstrong Whitworth of Canada Ltd., is in Canada on a business trip. He was at one time in C.P.R. service as an engineer, and has spent several years in the British Army, being chiefly concerned with military railways in Egypt, South Africa and India. He was in France in a similar connection during the earlier stages of the war, until the War Office decided that his services could be of greater benefit in England. He was also, for some time Governor of Nigeria, where he carried out a large railway scheme.

Leonard Chester Groom, whose appointment as Auditor, Land Department, Canadian Northern Ry., Toronto, was announced in our last issue, was born at Guelph, Ont., Nov. 8, 1884, and entered Canadian Northern Ry. service, Aug. 1, 1908, since when he has been, to Jan. 1, 1909, clerk, Land Department, Jan. 1,

1909 to Jan. 1, 1919, chief clerk, same department, Toronto.

D. B. Hanna, President, Canadian National Rys., and **M. H. MacLeod**, Vice President, in charge of operation, etc., left Toronto, Mar. 26 on an official trip to the Pacific coast, expecting to be away about three weeks.

Reginald William Douglas Harris, heretofore Trainmaster, C.P.R., Minnedosa, Man., has resigned to take up farming at Tappen, B.C., where he has acquired a fruit, poultry and cattle ranch. He was born at Victoria, B.C., and is the elder son of Dennis R. Harris, civil engineer, his mother being the youngest daughter of the late Sir James Douglas, K.C.B., who was Governor of Vancouver Island and British Columbia when they were Crown colonies and before they were united, and who founded and named the city of Victoria. He was from 1897 to 1904, with the Bank of British North America in Victoria and Vancouver, and from 1904 to June 1905 was engaged in civil engineering as assistant to F. J. Ritchie, D.L.S., in British Columbia. He entered C.P.R. service in June 1906, since when he has been, to June 1906, winer, Field, B.C.; June 1906 to June 1911, fireman, Revelstoke, B.C.; Apr. 1914 to May 1916, Trainmaster, Wilkie, Sask.; May 1916 to Feb. 2, 1917, Trainmaster, Moose Jaw, Sask.; Feb. 2, 1917 to Jan. 1, 1919, Trainmaster, Minnedosa, Man.

Lewis R. Hart, whose appointment as General Agent, Passenger Department, C.P.R., Boston, Mass., was announced in our last issue, was born at Fairport, N.Y., June 3, 1877, and entered railway service, June 22, 1899, since when he has been, to Feb. 1900, telegraph operator and ticket agent, New York, New Haven and Hartford Rd., West Quincy, Mass.; Feb. to Sept. 1900, assistant ticket agent, same road, Quincy Mass.; Sept. 1900 to Dec. 1905, assistant ticket agent, same road, Fall River, Mass.; Dec. 1905 to July 1913, chief clerk, Passenger Department, C.P.R., Boston, Mass.; July 1913 to Jan. 1916, chief clerk, Passenger Department, C.P.R., New York; Jan. 1916 to Mar. 1919, General Agent, Passenger Department, C.P.R., Buffalo, N.Y.

C. A. Hayes, Vice President, Traffic, Canadian National Rys., left Toronto, Mar. 14, for an official trip to the Pacific coast, expecting to be away about three weeks.

G. Hiam, who has been appointed District Freight Agent, C.P.R., Cleveland, Ohio, entered transportation service in June 1904, since when he has been, to Jan. 1914, clerk with C.P.R., Canadian Northern Ry., and Cuba Rys.; Jan. to July 1914, Travelling Freight Agent, C.P.R., Toronto; July 1914 to June 1915, District Freight Agent, C.P.R., Fort William, Ont.; and from June 1915, when he enlisted for active service, with the Canadian Expeditionary Force, to serving in Canada, England and France, until Mar. 1918.

Lady Holt, wife of Sir Herbert Holt, one of the C.P.R. directors, is expected to return to Montreal in April, after having spent over three years in England to be near her sons.

James Jackson Horn, who has been appointed Superintendent, Vancouver Division, British Columbia District, C.P.R., Vancouver, was born at Carleton Jct., Ont., Nov. 26, 1873, and entered C.P.R. service, Jan. 12, 1892, since when he has

been, to 1895, agent and operator, Lake Superior and Manitoba Divisions; 1895 to 1911, dispatcher, Fort William, and patcher, Kenora, Ont.; 1912 to 1913, In-Kenora, Ont.; 1911 to 1912, Chief Dispatcher of Transportation, Winnipeg; 1913 to 1915, Chief Dispatcher, Kenora, Ont.; 1915, Trainmaster, Ignace, Ont.; 1916 to Feb. 16, 1919, Chief Dispatcher, Kenora, Ont.

C. R. Hosmer, one of the C.P.R. directors, has been elected a director of the United States Financial Corporation Ltd., a consolidation of C. Meredith and Co. Ltd., Montreal, and the New Guaranty Trust Co. of New York, to handle Canadian business.

Mrs. S. J. Hungerford, wife of the Assistant Vice President, Canadian National Rys., and Miss Alice Hungerford, left Toronto towards the end of March, to



W. J. Uren, Superintendent, Farnham Division, Quebec District, Canadian Pacific Ry.

spend a few weeks in Winnipeg and Minneapolis.

F. L. Hutchinson, Manager in Chief, C.P.R. Hotels, etc., and **Mrs. Hutchinson**, have been on a trip to the Pacific Coast.

Walter James Hyman, who has been appointed chief draftsman, Car Department, G.T.R., Montreal, was born in England, Aug. 9, 1882, and entered G.T.R. service in 1904, since when he has been, to 1914, draftsman; 1914 to Nov., 1918, assistant chief draftsman, Montreal.

F. W. G. Johnson, who died at Montreal, Jan. 3, from pneumonia, aged 58, was formerly in G.T.R. service there, and later in Great Northern Ry. service at St. Paul, Minn., and returned to Montreal some time ago as manager of a Molson's Bank branch.

H. G. Kelley, President, G.T.R., and Grand Trunk Pacific Ry., returned to Canada, Mar. 20, after a business trip to England. He has been appointed a member of the American Railroad Association's temporary general transportation committee.

R. E. Larmour, who has been appointed General Freight Agent, Eastern Lines, C.P.R., Montreal, was born at Brantford, Ont., Sept. 26, 1868, and entered railway service Aug. 1884, at Stratford, Ont., as office boy in the office of his father, who was then Division Superintendent, G.T.R., remaining there until 1886; since when his record has been: 1886 to 1888, clerk in the office of General Manager, Great Eastern Fast Freight Line, Detroit, Mich.; 1888 to 1890, Accountant to General Superintendent, Chicago and Grand Trunk Rd., Detroit, Mich.; 1890 to 1892, Local Freight Department, G.T.R., Detroit, Mich.; 1892 to 1898, Transfer Clerk, Through Freight from Wabash Rd. to G.T.R., at Windsor, Ont. He entered C.P.R. service in 1898, and has been, to Nov. 1899, chief clerk Freight Department, Fort William, Ont.; Nov., 1899 to May 1900, acting agent, Fort William; May, 1900 to Aug. 1900, chief clerk, Superintendent's Office, Fort William; Aug., 1900 to Feb. 1903, agent, Port Arthur, Ont.; Feb., 1903 to Feb. 1905, Freight Claims Agent, Pacific Division, Vancouver, B.C.; Feb., 1905 to Feb. 1906, Freight Claims Agent, Central and Western Divisions, Winnipeg; Feb. to Aug. 1906, City Freight Agent, Winnipeg; Aug., 1906 to June 1908, Freight Agent, Fort William, Ont.; June to July, 1908, General Agent, Fort William, Ont.; July, 1908 to June 1909, General Freight Agent, Kootenay and Boundary District, Nelson, B.C.; June, 1909 to Apr. 1911, General Freight Agent, Central Division, Winnipeg; Apr. to June 1911, Division Freight Agent, Manitoba Division, Winnipeg; June, 1911 to July 1914, Division Freight Agent, British Columbia Division, Vancouver; July, 1914 to Sept. 30 1915, Assistant General Freight Agent, Vancouver, B.C.; Sept. 30, 1915 to Mar. 15 1919, General Agent, Freight Department, New York, N.Y.

Howard M. MacCallum, whose appointment as General Freight Agent, Canadian Pacific Ocean Services, Ltd., Toronto, was announced in our last issue, was born at Huntingdon, Que., Dec. 3, 1882, and entered transportation service in Sept. 1899, since when he has been, to May 1904, general freight and passenger work, Allan Line, Montreal, and Portland, Me.; May 1904 to Aug. 1907, chief clerk to General Passenger Agent, Steamship Lines, C.P.R., Montreal; Aug. 1907 to Aug. 1908, Travelling Passenger Agent, Steamship Lines, C.P.R., Winnipeg; Aug. 1908 to Dec. 1909, General Agent, Steamship Lines, C.P.R., Winnipeg; Jan. 1910 to Feb. 1919, General Agent, Canadian Pacific Ocean Services Ltd., Chicago, Ill.

A. D. MacTier, Vice President, Operation, etc., Eastern Lines, C.P.R., has been appointed a member of the American Railroad Association's temporary general operating committee.

Sir Donald Mann visited Winnipeg in March.

Andrew McCulloch, whose appointment as Chief Engineer and General Superintendent, Kettle Valley Ry., Penticton, B.C., was mentioned in our last issue, was, prior to his appointment as Chief Engineer, K.V.R., June 1, 1910, engaged for several years, in engineering work on Eastern and Western Lines, C.P.R. From June 1, 1910, he had charge of the location and construction of the K.V.R., and later had charge of both engineering and maintenance work. On the resignation of J. W. Mulhern as General Superintendent, Dec. 16, 1918,

he was also appointed acting General Superintendent, and confirmed in that position, Feb. 20.

Walter Taylor Moodie, who has been appointed Superintendent, Division 3, Central District, Canadian National Rys., Port Arthur, Ont., was born at Glasgow, Scotland, Mar. 10, 1882. From Oct. 1897 to Oct. 1902, he served his apprenticeship with a firm of civil engineers there, from Oct. 1902 to Mar. 1903, was assistant engineer, with the same firm, and from Mar. 1903 to Feb. 1905, assistant engineer, Caledonian Ry., Glasgow, Scotland; Mar. 1905 to Mar. 1908, assistant engineer, Central South African Rys., Transvaal; Apr. 1908 to Sept. 1911, assistant engineer, Canadian Northern Ry., Winnipeg, Man.; Oct. 1911 to Sept. 1915, Engineer, Maintenance of Way, same road, Winnipeg; Oct. 1915 to Dec. 1918, District Engineer, same road, Winnipeg.

Thomas Fletcher Oakes, former President of the Northern Pacific Rd., died in Seattle, Wash., Mar. 14, aged 76. In 1863 he entered the service of the Kansas Pacific Ry., from which he resigned as Vice President in 1879 to become General Superintendent of the Kansas City, Fort Scott & Gulf Rd. He later served as Vice President and General Manager of the Oregon Ry. & Navigation Co. In 1881 he became Vice President Northern Pacific, and served as President from 1888 to 1893, when he was appointed receiver for two years.

Sir Edmund Osler, of Toronto, one of the C.P.R. directors, has been staying at Hot Springs, Virginia.

F. W. Peters, General Superintendent, British Columbia District, C.P.R., accompanied by Mrs. Peters and Miss Dorothy Langford, left Vancouver, Mar. 15, in the official car, British Columbia, to attend the C.P.R. officials' conference and dinner in Montreal, Mar. 21 and 22.

T. P. Phelan, President, Canada Railway News Co., was sufficiently recovered from the operation he underwent in January to be able to leave Baltimore about the middle of March to complete his convalescence at Atlantic City. He is expected to return to Toronto towards the end of April or early in May.

Miss Doris M. Piper, daughter of Hiram L. Piper, of the Hiram L. Piper Co., railway and steamship supplies, Montreal, was married Mar. 13, to E. C. Crutchley, of Jersey City, N.J.

Sydney John Lyle Potter, who has been appointed Paymaster, Canadian Northern Ry., Toronto, was born in Devonshire, England, Apr. 5, 1887, and entered railway service in England with the Great Northern Ry., being, from May 5, 1905 to Oct. 1, 1907, clerk at King's Cross, London. He came to Canada in 1907, and entered Canadian Northern Ry. service, Oct. 28, 1907, since when he has been, to Oct. 1, 1915, clerk, Toronto; Oct. 1, 1915 to Dec. 31, 1918, Assistant Paymaster, Toronto.

Alfred Price, General Manager, Eastern Lines, C.P.R., when in Toronto recently, paid a visit with the mayor to the new Elizabeth St. school, and addressed the pupils. As a boy he attended the old Elizabeth St. school.

Henry Thomas Rawlings, whose appointment as Lake Forwarding Agent and Fuel Inspector, Canadian National Rys., Cleveland, Ohio, was announced in our last issue, was born in London, Eng., Sept. 27, 1883, and entered railway service June 1, 1908, since when he has been, to Apr., 1914, in the Accounting

Department, Canadian Northern Ry., Toronto; Apr. 1914 to Sept. 1918, chief clerk, Vice President's office, same road; Sept. 1918 to Mar. 31, 1919, chief clerk, President's office, Canadian National Rys., Toronto.

Senator H. W. Richardson, who died at Kingston, Ont., some months ago, left an estate valued at about \$2,000,000.

W. D. Robb, Vice President, Transportation and Maintenance, G.T.R., and Mrs. Robb, have been spending a short time at Atlantic City N.J.

H. R. Safford, formerly Chief Engineer, Grand Trunk Ry., now Engineering Assistant, Central Western Region, U.S. Railroad Administration, has been appointed a member of the American Railroad Association's temporary general engineering committee.

Lady Schreiber, widow of Sir Collingwood Schreiber, K.C.M.G., C.E., formerly

Aug. 1916, City Passenger Agent, Chicago and North Western Ry., Winnipeg; Sept. 1916 to Dec. 31, 1918, City Freight Agent, Canadian Northern Ry., Winnipeg.

E. F. L. Sturdee, whose appointment as General Agent, Passenger Department, C.P.R., Seattle, Wash., was announced in our last issue, was born at St. John, N.B., Mar. 29, 1876, and entered C.P.R. service in Dec. 1893, since when he has been, to July 1894, clerk, Colonization Department, Moncton, N.B.; July 1894 to Aug. 1897, clerk, Passenger Department, St. John, N.B.; Aug. 1897 to June 1902, clerk, Passenger Department, Toronto; June 1902 to Mar. 1911, excursion clerk, Montreal; Mar. 1911 to Dec. 1913, chief clerk, Montreal; Dec. 1913 to Apr. 1915, Assistant District Passenger Agent, Toronto; Apr. 1915 to Mar. 1919, General Agent, Passenger Department, Boston, Mass.

William Taylor, General Agent, White Pass and Yukon Route, St. Michaels, Alaska, died at Seattle, Wash., Mar. 12. He had been with the company since 1900, and was, at one time, General Agent at Dawson, Yukon, and later, Superintendent of the Upper Yukon River District.

Lorne Cameron Thompson, whose appointment as General Storekeeper, Eastern Lines, Canadian National Rys., Toronto, was announced in a previous issue, was born at Kingston, Ont., Nov. 25, 1882, and entered railway service, in Mar. 1897, since when he has been, to June 1898, requisition clerk, Stores Department, Delorimier Ave. Shops, C.P.R., Montreal; June 1898 to Apr. 1889, billing clerk, Stores Department, C.P.R., Hochelega, Montreal; Apr. 1899 to June 1900, timekeeper, car shops, C.P.R., Hochelega, Montreal; June 1900 to Mar. 1901, Storekeeper, C.P.R., Quebec, Que.; Mar. 1901 to June 1902, Storekeeper, C.P.R., Brownville Jct., Me.; June 1902 to Nov. 1903, Division Storekeeper, C.P.R., McAdam Jct., N.B.; Nov. 1903 to June 1904, relieving storekeeper, Eastern Lines, C.P.R.; June 1904 to Oct. 1905, Storekeeper, section A, Angus shops, C.P.R., Montreal; Oct. 1905 to Mar. 1907, chief clerk, General Storekeeper, Angus shops, C.P.R., Montreal; Mar. 1907 to July 1909, Storekeeper, Ontario Lines, Canadian Northern Ry., Parry Sound, Ont.; July 1909 to Nov. 1912, Division Storekeeper, Ontario and Quebec Lines, Canadian Northern Ry., Toronto; Nov. 1912 to Feb. 20, 1916, General Storekeeper, Eastern Lines, Canadian Northern Ry., Toronto; Feb. 20, 1916 to Jan. 14, 1919, Superintendent Transportation, Imperial Munitions Board, Ottawa, Ont.

William J. Uren, whose appointment as Superintendent, Farnham Division, Quebec District, C.P.R., Farnham, Que., was announced in a recent issue, was born at St. Marys, Ont., Jan. 23, 1872, and entered railway service Sept. 6, 1888, since when he has been, to June 1890, telegraph operator, C.P.R., Hawk Lake, Rat Portage, Ont., and various other points; June 1890 to Nov. 1892, agent and operator, C.P.R., Barclay and Dexter, Ont.; Nov. 1892 to Nov. 1898, Terminal Agent and Yardmaster, C.P.R., Ignace, Ont.; Nov. 1898 to June 1903, dispatcher, C.P.R., Fort William, and Rat Portage, Ont.; June 1903 to Apr. 1904, Chief Dispatcher, C.P.R., Rat Portage, now Kenora, Ont.; Apr. to June 1904, Night Chief Dispatcher, C.P.R., Winnipeg; June 1904 to May 1905, Chief Dispatcher, C.P.R., Moose Jaw, Sask.; May 1905 to Nov. 1908, Chief Dispatcher, and



R. E. Perry.
Assistant General Freight Agent, Eastern Lines,
Canadian National Railways.

General Consulting Engineer, Dominion Government, who has been a patient in the Ottawa General Hospital for about a month, was able to return home Mar. 14.

Lord Shaughnessy, Chairman, C.P.R., returned to Canada Mar. 17, after a trip to Europe.

G. E. Smart, General Master Car Builder, Canadian National Rys., Toronto, who was laid up with influenza and pneumonia, for some weeks, was able to get out again at the end of March.

D. A. Story, formerly Freight Traffic Manager, C.G. Rys., Moncton, N.B., who retired on the superannuation list recently, left Moncton, N.B., Feb. 27, for Los Angeles, Cal., expecting to remain on the Pacific coast until June, and then to return to Halifax, N.S.

Harry A. Stuart, who has been appointed Division Freight Agent, Canadian National Rys., was born at Portland, Me., Aug. 16, 1891, and entered Railway service in May 1912, since when he has been, to Oct. 1913, City Freight and Passenger Agent, Chicago Great Western Ry., Winnipeg; Oct. 1913 to

Relieving Trainmaster, C.P.R., Winnipeg; Nov. 1908 to Nov. 1909, Superintendent, C.P.R., Brandon, Man.; Nov. 1909 to June 1910, Superintendent, C.P.R., Moose Jaw, Sask.; June 1910 to Sept. 1912, Superintendent, C.P.R., Cranbrook, B.C.; Sept. 1912 to Nov. 1913, Superintendent, C.P.R., Calgary, Alta.; Nov. 1913 to Nov. 1918, Superintendent, and relieving General Superintendent, C.P.R., Toronto.

L. A. Vallee, Chief Engineer and Director of Railways in connection with the Quebec Public Works and Labor Department, and Engineer of the Quebec Public Utilities Commission, died at Quebec, Mar. 10. He was born at Beauport, Que., Nov. 30, 1851, and entered the Sherbrooke and Eastern Townships Ry's. service as an apprentice engineer in 1869, and from 1870 to 1876 acted as rodman, leveller and transit man, North Shore Ry. From 1876 to 1882 he was Assistant Engineer and Division Engineer in charge of construction and maintenance of way, Quebec, Montreal, Ottawa and Occidental Ry., now part of the C.P.R. In 1882 he was appointed Government Engineer, and in 1895, Director of Railways for the Province of Quebec, and in 1909, also Engineer, Quebec Public Utilities Commission.

Sir William Van Horne's estate of \$6,371,374.73 included 2,000 shares of British Columbia Sugar Refineries Co's. stock valued at \$300,000. The B.C. Government assessed the estate \$14,242.10 for succession duties, but the executors contended that the basis upon which this figure had been arrived at was wrong, and that on a correct basis the succession duties would be \$8,523. Chief Justice Hunter, on Mar. 13, held that the province could not assess succession duties on property outside its own borders. It is reported that the case will be appealed by the Government.

Adrian P. Villain, who has been appointed City Ticket Agent, C.P.R., San Francisco, Cal., was born there, Feb. 6, 1891, and entered transportation service in Aug. 1908, since when he has been, to Apr. 1911, car register clerk, Pullman Co.; Apr. 1911 to Mar. 1913, ticket clerk, Southern Pacific Co.; Mar. 1913 to Dec. 1915, City Passenger Agent, C.P.R.; Dec. 1915 to Feb. 1919, Travelling Passenger Agent, C.P.R.; all at San Francisco.

Ewart Buchan Walker, whose appointment as Electrical Engineer, Canadian National Rys., Toronto, was announced in our last issue, was born there, Dec. 15, 1879. He entered Canadian General Electric Co's. service at Peterborough, Ont., in 1901, and was engaged in factory work until 1903, when he was appointed Manager, Storage Battery Department, remaining in that capacity until 1909, when he became a partner in Chapman and Walker Ltd. electrical engineers and contractors, and from 1915 has been engaged as an electrical engineer, Eastern Lines, Canadian Northern Ry.

John Wardrop, who has been appointed General Agent, Industrial and Resources Department, Canadian National Rys., Winnipeg, will have jurisdiction extending over the Western Lines, from Port Arthur, Ont., to the Pacific coast. He has had considerable experience in immigration work, as Assistant Industrial Commissioner in charge of European and U.S. immigration.

R. J. S. Weatherston, Division Freight Agent, G.T.R., Ottawa, Ont., was pre-

sented with a purse of money, by a number of local business men, and a gold watch, with a silver tea service for Mrs. Weatherston by the local G.T.R. staff, at Stratford, Ont., Mar. 1, on leaving that city, where he had been Division Freight Agent, G.T.R., for over seven years.

Rowland Hill Webster, whose appointment as Commercial Agent, G.T.R., Moncton, N.B., was announced in our last issue, was born at Pictou, N.S., July 2, 1885, and entered railway service Dec. 1, 1900, since when he has been, to Nov. 1909, clerk in freight office, Intercolonial Ry., Pictou, N.S., and relieving agent, freight work, and ticket agent, at various points, Sydney and Truro Districts, Canadian Government Rys.; Nov. 1909 to Apr. 1910, chief clerk to Assistant General Passenger Agent, C.G.R., Halifax, N.S.; Apr. 1910 to Feb. 1912, Steamship Ticket Agent, C.G.R., Quebec, Que., and Halifax, N.S.; Feb. 1912 to Feb. 1919, Travelling Freight Agent, G.T.R., Moncton, N.B.

W. H. Winterrowd, Chief Mechanical Engineer, C.P.R., has been appointed a member of the American Railroad Association's temporary general mechanical committee. He returned to Montreal towards the end of March, having spent a few weeks in the south, recuperating after a very severe cold.

American Railroad Association's Mechanical Convention at Atlantic City.

The first session of the Mechanical Section (formerly the Master Car Builders' Association and the American Railway Master Mechanics' Association) will be held at Atlantic City N.J., June 18 to 25.

The convention will be under the management of the mechanical section's general committee, composed of three representatives of the United States Railroad Administration, two representatives of each of the operating regions into which the U.S. has been divided, and two representatives of Canadian railways. The names of the committees are given on pg. 172 of this issue. The Canadian representatives on the committee are, Jas. Coleman, Superintendent Car Department, G.T.R.; and W. H. Winterrowd, Chief Mechanical Engineer, C.P.R. Following is the programme:

June 18 to 20. Report from committees to be received and considered as follows:—

Arbitration, J. J. Hennessey, chairman.
Standards and recommended practice (M.C.B.), T. H. Goodnow, chairman.

Train brake and signal equipment, T. L. Burton, chairman.

Brake shoe and brake beam equipment, B. B. Milner, chairman.

Couplers, R. L. Kleine, chairman.
Loading rules, J. J. Burch, chairman.
Car wheels, W. C. A. Henry, chairman.
Safety appliances, C. E. Chambers, chairman.

Car construction, W. F. Keisel, chairman.

Specifications and tests for materials (M.C.B.), T. M. Waring, chairman.

Car Trucks, J. T. Wallis, chairman.

Prices for labor and material, P. F. Smith, Jr., chairman.

Train lighting and equipment, J. R. Sloane, chairman.

Nominations, F. W. Brazier, chairman.

Tank cars, A. W. Gibbs, chairman.
Draft gears, R. L. Kleine, chairman.
Welding truck side frames, bolsters and arch bars, W. O. Thompson, chairman.

Standard blocking for cradles of car dumping machines, J. McMullen, chairman.

Revision of passenger car rules of interchange, H. H. Harvey, chairman.

Depreciation for freight cars, M. K. Barnum, chairman.

June 21.—Election of officers.

June 23 to 25.—Reports from committees to be received and considered as follows:—

Standards and recommended practice (A.R.M.M.), W. E. Dunham, chairman.

Mechanical stokers, A. Kearney, chairman.

Powdered fuel, C. H. Hogan, chairman.

Specifications and tests for materials (A.R.M.M.), F. M. Waring, chairman.

Design and maintenance of locomotive boilers, C. E. Fuller, chairman.

Locomotive headlights, H. T. Bentley, chairman.

Superheater locomotives, W. J. Toller-ton, chairman.

Design, maintenance and operation of electric rolling stock, C. H. Quereau, chairman.

Train resistance and tonnage rating, O. P. Reese, chairman.

Subjects, M. K. Barnum, chairman.

Intercolonial Ry. Property Not Insured.

—The Minister of Railways, in answering a question in the House of Commons recently, stated that the Intercolonial Ry. locomotives, material, buildings, stations, car sheds, locomotives, trucks, workshops and elevators, were not insured against fire.

Railway Supplies for Mexico.—A cablegram from the United States Consul-General in Mexico announces that a presidential decree in effect from Feb. 20 permits the importation of the following railway supplies into Mexico free of duty for six months: Switch points, iron and steel ties, turntables, iron and steel rails, frogs, and tie plates. The duties thereby remitted amount to 0.03 peso per kilo gross weight, or \$0.68 per 100 lbs.

Canadian Northern Ry's. St. Boniface Taxes.—The St. Boniface, Man., City Council, has come to a settlement with the Canadian Northern Ry. in respect to overdue taxes, which were reported to amount to nearly \$250,000 since 1911, on account of which the city sold at a tax sale in Oct. 1918, a part of the 85 acres of land held by the company. The settlement reached is reported to be \$25,000 cash, and \$125,000 to be covered by interest bearing notes to be paid within a year.

Board of Conciliation, Grand Trunk Pacific Ry.—The following are members of a board of conciliation appointed to arbitrate between the Grand Trunk Pacific Ry. and certain of its employees, who are members of the Canadian Brotherhood of Railway Employees:—A. J. Andrews, K.C., chairman; E. C. Dafoe, representing the company, and T. J. Murray, representing the men. All the three members live in Winnipeg.

The United States Railroad Administration Railways entering Montreal, viz, the New York Central, Central Vermont Ry., Rutland Rd., and Delaware and Hudson, will from Apr. 1, use as a downtown ticket office, the premises at 238 St. James St., hitherto used by the Delaware and Hudson Rd. for that purpose.

Railway Rolling Stock Orders and Deliveries.

The C.P.R., to Mar. 19, received the following additions to rolling stock: 16 steel underframe box cars, 75 flat cars, and 2 decapod locomotives, from its Angus shops, Montreal, and 2 vans from its Winnipeg shops.

The Canadian National Rys. baggage cars, 20 of which are on order with Canadian Car and Foundry Co., as mentioned in a previous issue, will have the same general equipment as is being supplied with the colonist cars, except that the air brake cylinder will be 16in. diar., instead of 18 in.

Following are dimensions and general details of the 300 stock cars, which Canadian National Rys. has ordered from National Steel Car Co.:

Capacity	30 tons
Length inside	36 ft.
Width inside	8½ ft.
Height inside	8 ft.
Draft gear	Tandem
Journal boxes	4¼ x 8 in.
Trucks	Simplex
Brake beams	M.C.B. 2
Springs	M.C.B. class G

With reference to the 150 refrigerator cars, 500 stock cars, and 250 ballast cars, which Canadian National Rys. has or-

and no gas to be used for auxiliary purposes, Vapor Car Heating Co's. latest vapor heating system, emergency stove for auxiliary heating in addition to regular colonist cooking range, Du Pont fabrikoid seat covering, pantasote curtains, composition flooring, interior finish, wood, exterior, steel, gravity water system supplied from overhead tanks with special filling device from side of car, 3 wash basins at men's end of car, and one at the women's end, smoke room in 4 sections.

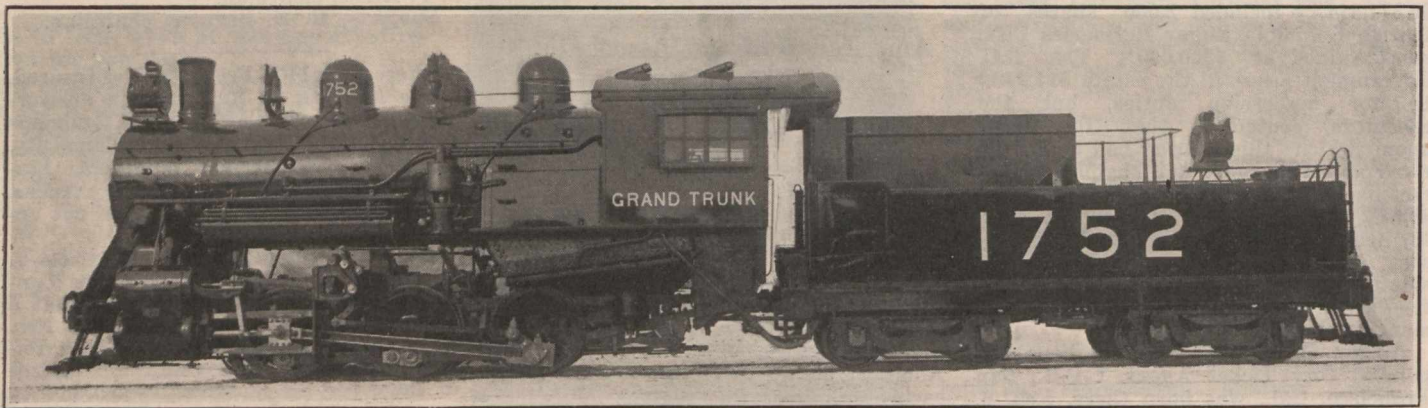
The G.T.R., during January, received 3 six-wheel switching locomotives from its Montreal shops, and has a further 22 of the same type under construction. Following are the chief details:

Cylinders, diam. and stroke.....	21 x 26 in.
Driving wheels.....	51 in.
Boiler, diam.....	68 in.
Boiler pressure.....	180 lb.
Firebox.....	95-15/16 x 4¼ in.
Tubes, no. and diam.....	158-2 in., 21-5½ in.
Tubes, length.....	12 ft. 5 in.
Heating surface, firebox.....	132 sq. ft.
Heating surface, tubes.....	1,391 sq. ft.
Heating surface, total.....	1,523 sq. ft.
Grate area.....	27.5 sq. ft.
Wheel base, driving.....	12 ft.
Wheel base, engine.....	12 ft.
Weight on drivers.....	154,400 lb.

Truck centers	13 ft.
Wheel base of truck	5 ft. 6 in.
Wheel base of car	18 ft. 6 in.
Doors on each side	4
Width of door opening	2 ft. 2 in.
Length of door opening, intermediate 5 ft. 7 in.	
Length of door opening, end	4 ft.

Following are the chief details of the Mikado, Pacific and Santa Fe locomotives, which the C.P.R. is building at its Angus shops, numbers of which are given elsewhere on this page:

Mikado.	
Boiler pressure	200 lbs.
Cylinders	25 x 32 in.
Driving wheels, diar.	63 in.
Tractive effort	54,000 lb.
Firebox, inside	120½ x 84¾ in.
Flues, no. and diar.	40-5½ in.
Tubes, no. and diar.	211-2¼ in.
Length over tube sheets	18 ft. 6 in.
Firebox heating surface	274 sq. ft.
Arch tube heating surface	37.5 sq. ft.
Tube and flue heating surface	3,347.78 sq. ft.
Superheating surface, approx.	845 sq. ft.
Total equivalent heating surface	4,926.78 sq. ft.
Grate area	70.3 sq. ft.
Factor of adhesion	4.18
Weight on drivers	226,000 lb.
Weight on engine truck	25,000 lb.
Weight on trailing truck	49,000 lb.
Total weight, engine	300,000 lb.
Total weight, tender loaded	180,000 lb.
Coal capacity, tons	12
Water capacity, imp. galls.....	8,000



Grand Trunk Railway Six Wheeled Switching Locomotive.

dered from Canadian Car and Foundry Co., and details of which were given in our last issue, we are advised that the refrigerator and stock cars will be built at the company's Amherst, N.S., works, and the ballast cars at its Fort William, Ont., works.

The C.P.R. has ordered the following rolling stock, for delivery during this year by its own shops: 20 steel baggage and express cars, 106 steel refrigerator cars, 260 steel flat cars, 440 steel underframe flat cars, 1 all steel grain car, 70 tons capacity, 4 decapod locomotives, 10 mikado locomotives, 16 Pacific locomotives, 15 Santa Fe locomotives, at its Angus shops; and 6 vans at its Winnipeg shops.

The Canadian National Rys. colonist cars, 100 of which are on order with Canadian Car and Foundry Co., and 50 with the Pullman Co., as mentioned in a previous issue, will have the following equipment and specialties: 6 wheel trucks with 5 x 9 in. axles, McCord journal boxes, rolled steel wheels, equipped with latest type of clasp air brakes, Westinghouse L.N. equipment with 18 in. brake cylinder, Safety Car Heating and Lighting Co's. electric lighting system, 30 volts, 300 ampere hour battery, with lights so arranged inside of car as to provide half light on night circuit, 4 separate circuits arranged for lighting,

Weight, total	154,000 lb.
Tractive power	34,400 lb.
Factor of adhesion.....	4.49
Tank capacity	4,560 gall.
Coal capacity	6 tons
Valve motion	Walschaert
Driving wheel centers.....	Cast iron
Tender wheels.....	Tires and retaining rings
Safety valves	2-3 in.
Grate shakers	Hand
Steam heat.....	Gold or Vapor
Driving box shoes and wedges.....	Brass
Reverse gear	Casey-Cavin
Headlights	Pyle National

The C.P.R. ordered recently 140 Hart-Otis general service cars from the Hart-Otis Car Co., mention of which was made in a previous issue. They are being built in Canada. The floor of the car is composed of 8 drop doors, 4 on each side hinged to the center sill, and operated in sections of 2 doors to a section. The operating gear is the Hart-Otis Car Co's. latest improved rolling shaft type, the operating shaft being 2½ in. open hearth mild steel. The cars have an apex 14½ in. high at the center, by 2 ft. 4 in. wide at the floor line, and built up of steel plates and angles, entirely covering the center sills.

Following are the chief dimensions.—

Length inside coupler knuckles	27 ft. 3¼ in.
Length over end sills	24 ft. 4½ in.
Length inside	22 ft. 5 in.
Width overall	9 ft. 11 ¼ in.
Width inside	9 ft. 6 in.
Height inside	5 ft.
Height from rail	9 ft. 4 13-16 in.
Height from rail to floor	4 ft. 4 13-16 in.

Pacific.	
Boiler pressure.....	200 lb.
Cylinders	24 x 30 in.
Driving wheels, diar.	70 in.
Tractive effort	42,000 lb.
Firebox, inside	114¼ x 84¾ in.
Flues, no. and diar.	38-5½ in.
Tubes, no. and diar.	202-2¼ in.
Length over tube sheets	18 ft. 4½ in.
Firebox heating surface	264.5 sq. ft.
Arch tube heating surface	32.5 sq. ft.
Tube and flue heating surface	3,197 sq. ft.
Superheating surface, approx.	803 sq. ft.
Total equivalent heating surface	4,698.5 sq. ft.
Grate area	60.87 sq. ft.
Factor of adhesion	4.25
Weight on drivers	175,000 lb.
Weight on engine truck	50,000 lb.
Weight on trailing truck	50,000 lb.
Total weight, engine	275,000 lb.
Total weight, tender loaded	180,000 lb.
Coal capacity, tons	12
Water capacity, imp. galls.....	8,000

Santa Fe.	
Boiler pressure	200 lb.
Cylinders	26½ x 32 in.
Driving wheels, diar.	53 in.
Tractive effort	65,870 lb.
Firebox, inside	120½ x 88¾ in.
Flues, no. and diar.	45-5½ in.
Tubes, no. and diar.	230-2¼ in.
Length over tube sheets	21 ft.
Firebox heating surface	332.5 sq. ft.
Arch tube heating surface	37.5 sq. ft.
Tube and flue heating surface	4,200 sq. ft.
Superheating surface, approx.	1,085 sq. ft.
Total equivalent heating surface	6,197 sq. ft.
Grate area	74.2 sq. ft.
Factor of adhesion	4.16
Weight on drivers	275,600 lb.
Weight on engine truck	24,000 lb.
Weight on trailing truck	55,000 lb.
Total weight, engine	254,600 lb.
Total weight, tender loaded	180,000 lb.
Coal capacity, tons	12
Water capacity, imp. galls.....	8,000

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Marine World**
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Canadian Pacific Railway Construction, Betterments, Etc.

New Brunswick District.—The programme of betterments on this district, according to a press report, will, in addition to the usual repair work to bridges, culverts and buildings, include the replacement of 45 miles of rails between St. John, N.B., and Megantic, Que., on the main line, and 50 miles of ballasting, mostly in Maine; tree planting at various points along the line for snow protection purposes; the replacing of the trestle bridge at Newburg Jct., north of Woodstock, by a 12 ft. concrete arch; the replacement of the turntable at McAdam by a larger and heavier one; the building of three standard type dwellings for divisional officers, and 10 standard type dwellings for other employes at Brownville Jct.

New Brunswick Coal and Ry. Co.—A press report states that several trestles will be removed, and will be replaced by concrete culverts next year. The line extends from Norton to Minto, N.B., and is operated in connection with the Fredricton and Grand Lake Coal and Ry. Co., by the C.P.R. under lease.

Quebec District.—A press report stated recently that the company had made an appropriation of \$236,000 for improvements to the freight yard at Three Rivers, Que. We are advised that while improvements will probably be required at this point before long, plans have not been prepared, and nothing has been decided as to what will be done.

The Interprovincial and James Bay Ry. Co., incorporated by the Dominion Parliament, and controlled by the C.P.R., has power to build a line from Lumsden's Mills, Que., at the terminus of the branch from Mattawa, to Des Quinze River, for the building of which five years extension of time was granted in 1917. The Abitibi Chamber of Commerce on Mar. 6, passed a resolution asking the Dominion Government not to renew the charter unless the company starts construction of the line, with the intention of carrying it through from the Des Quinze River into the Abitibi country. The Quebec Legislature has voted 4,000 acres of land a mile in aid of the construction of a line from Timiskaming, on Lake Timiskaming, the terminus of the C.P.R. branch line from Mattawa, or from the proposed terminus of a branch of that line, via Ville Marie, on the Quebec shore of Lake Temiskaming, to the Riviere des Quinze. (Sept., 1917, pg. 359).

Ontario District.—A. press. report states that the company contemplates building a second track on its line between Guelph and London. As a matter of fact Guelph is on the company's branch line from Guelph Jct to Goderich, 15 miles from the main line to London. The company has a double track line from Toronto to Guelph Jct., and surveys for continuing the second track as far as Woodstock were completed in 1913, at the time when the second track was completed to Guelph Jct. Several of the contractors left their plants on the work, expecting to go ahead, but subsequently removed them.

Saskatchewan District.—A deputation waited on D. C. Coleman, Vice President Western Lines, Mar. 13, asking that the company build a line from Lanigan, to Humboldt and thence northwesterly to-

ward Prince Albert, Sask. This is, in part, one of the lines for which the company is asking the Dominion Parliament to authorize it to build (Feb., pg. 75), the particular line in the company's application being from Lanigan, on the Pheasant Hill branch, generally north-easterly to a point between the Carrot and Saskatchewan Rivers, and then on to a point near Cumberland House, Sask. Mr. Coleman is reported to have advised the deputation that pending the result of the application to parliament the company was investigating the traffic possibilities of the district and was endeavoring to lay out a line to serve it.

Surveys are being made for a line from Swift Current easterly. C. H. Larson, J. B. Paget and J. K. Foster have been appointed location engineers.

Alberta District.—When the Board of Railway Commissioners was in Regina, Sask., Mar. 2, representations were made in favor of the immediate completion of the Weyburn-Lethbridge line. The vacant link is between Manyberries and Altaway at the Alberta-Saskatchewan boundary, about 37 miles. D. C. Coleman, Vice President Western Lines, pointed out that the greater portion of the land through which the line would pass was let out on grazing leases, and the company should not be asked to build lines in unprofitable territory. (Mar., pg. 130).

Nakusp and Slocan Ry.—The British Columbia Legislature is being asked to confirm an agreement made between the British Columbia Government and the C.P.R., respecting the Nakusp and Slocan Ry. bonds. The bond issue was for £137,960, guaranteed as to principal and interest by the B.C. Government, and became due July 1, 1918. The agreement provides that the B.C. Government shall acquire the bonds, and sell the same to the C.P.R. at a price not exceeding their face value, and upon certain other conditions following upon the purchase. The C.P.R. agrees to continue to operate the railway until the termination of its lease, June 30, 1920, and to pay taxes on the same on the basis set forth in clause 25 of the indenture of Aug. 9, 1913, the province to repay to the C.P.R. any taxes collected in excess of that basis.

Upon the second reading of this bill, Mar. 1, it was explained that the agreement was entered into July 1, 1918. The guarantee was authorized by the legislature 25 years ago, the interest rate being 4%. The arrangement that the C.P.R. should retire the bonds and take possession of the railway relieved the province of its obligation in connection with the bonds and the road. Under the old agreement the company was obliged to pay to the province 40% of the gross receipts which had failed to meet interest payments by some \$29,000 a year, a debit to the province of \$326,408 in all. In the event of the province renewing the bonds and holding the company to the original arrangement, not only would the interest rate on the bonds have advanced, but there would have been the continual drain on the treasury to the extent of over \$30,000. The Finance Minister said the agreement was a good bargain for the province.

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

Alaska Rys.—The United States Congress appropriated \$4,002,380 recently for the continuance of construction on this line from Seward to Fairbanks, Alaska, but the Senate failed to ratify it. The line is 471 miles long including a branch. The report of the Alaska Engineering Commission, which has charge of the work, showed that at the end of 1918 the work was about two-thirds completed. It has been done entirely by small contractors, and by day labor, under the supervision of the commissions' engineering staff. The branch line to the Matanuska coal fields, 38 miles, is completed. The first 71 miles of the main line consists of the old Alaska Northern Ry., in which the shareholders of the former Sovereign Bank of Canada were interested, and the last 7 miles into Fairbanks consist of that mileage of the old Tanana Valley Ry., a line 44.5 miles long, which were acquired by the commission. The 393 miles to be built to connect these two pieces of line, were located through a waste country. There has been built 206 miles of main track, and the 38 miles of branch line referred to above; in connection with which there has been built 30 miles of yard tracks, sidings and spurs. Of the 187 miles of main track yet to be built, clearing and grading, or clearing has been completed on 78 miles of the right of way. The amount expended to Dec. 31, 1918, was \$29,876,277, of which \$1,157,839 was on the purchase of the old Alaska Northern Ry., and \$2,404,564 on rehabilitation of the same; \$300,000 was paid for the Tanana Ry., and \$46,407 was expended on restoring the 7 miles included in the mileage of the new line. Two termini have been laid out, at Anchorage on the coast, and at Neana on the Tanana River. The line was built from Seward north and from Anchorage south, so that since the autumn of 1918 there has been through traffic from Seward to Anchorage, Matanuska and the Susitna Valley. There is an unconstructed section across Broad Pass to connect the Susitna Valley with the road coming down from Nenana, and another stretch of a few miles on the north of the Tanana River before connection is made with the Tanana Valley Ry. outside Fairbanks. (Mar., pg. 134).

Athabasca and Grande Prairie Ry.—The Dominion Parliament is being asked to change the route of this projected railway as set out in an original application for incorporation by the following: From the junction of the Athabasca and Solomon Rivers, northerly to the junction of the Smoky and Muskeg Rivers, thence through the Grande Prairie district northerly to Peace River Landing, and thence to Fort Vermilion. Barnard and McKeown, Montreal, are solicitors for applicants. (Mar., pg. 134).

Bell River Valley.—The Abitibi Chamber of Commerce, meeting at Amos, Que., Mar. 19, gave consideration to the railway construction necessary for the opening up of the district. In addition to the projected line from the terminus of the C.P.R. branch from Mattawa, to Des Quinze River, and branch, referred to in this department under "Interprovincial and James Bay Ry.," the members suggested the building of branches of the National Transcontinental Ry. from Amos, mileage 887 from Moncton to James Bay on the one side, and to a con-

nection with lines running into Montreal on the other.

The Quebec Legislature has voted a subsidy of 2,000 acres of land a mile in aid of the construction of a colonization railway from the Kiask Falls of the Bell River, southeasterly through the Laas, Hurault, Castaquier or Lamorandiere, Duvernay, Dalquier, and Fiquery Tps. to Amos, and thence through the Villemontel or Lamotte and Pressac or La Passe Tps. to Lake Kawagama, a total distance of between 80 and 100 miles. Such a line would be the beginning of the line advocated by the Abitibi Chamber of Commerce. The North Ry. has a charter for building into this territory from Montreal.

The Brunner, Mond Co., Canada, Ltd., is asking the Ontario Legislature for power to build a private tramway from the Indian stone quarry reserve to the Detroit River, crossing the second concession road of Anderton Tp., and to confirm a bylaw of that township granting permission to cross the road. We are officially advised that the proposed tramway would run between the stone quarries on the 2nd concession of Anderton to the Detroit River, about 0.75 of a mile, but that it will not be built if running permission can be obtained over the Michigan Central Rd. The line would connect with the 5 miles of track on the company's premises, on which standard gauge cars are hauled by steam locomotives. The present equipment consists of the company's own freight cars, while regular railway cars for inbound and outbound freight, are also run over it. G. Kimber is the company's engineer. (Feb., pg. 79.)

Canada and Gulf Terminal Ry.—The Quebec Legislature has voted a land subsidy of 2,000 acres a mile in aid of the extension of this railway from its present terminus at Matane to Gaspé Basin, 190 miles. An extension of line for the building of this line has also been granted by the Quebec Legislature. At present it extends from Mont Joli, on the International Ry., to Matane, 59 miles. The proposed extension is through the center of the Gaspé peninsula. Surveys for the extension have been made but the final location has not been settled. (Feb., pg. 79.)

Esquimalt and Nanaimo Ry.—A press report states that plans are being prepared for an extension of the line from Bambridge, mileage 127, on the line to Alberni, northerly to Ucluelet and Clayoquot, and from Bainbridge easterly to Comox Lake.

Grand Trunk Ry.—We are officially advised in connection with a press report from Portland, Me., that the company had started work on a third grain elevator of 3,000,000 tons capacity there, that no such work has been started and that it is not the company's intention to build another elevator there.

The movement for a station at Mount Dennis, between West Toronto and Weston has been revived, and a press report states that the company is looking for a site. It is stated that a site on Roy Ave. was under consideration prior to the war.

The London, Ont., Chamber of Commerce has started a movement for the reconsideration of the plans for a new station and for the elevation of the company's tracks in the city. The matter

was fully discussed several years ago, but has been in abeyance for some time. (Mar., pg. 134).

Greater Winnipeg Water District Ry.—The commissioners of this railway decided recently to expend \$3,000 on ties for the railway and also decided that notwithstanding the completion of the laying of the pipe line for Winnipeg water supply, the line should be kept in good order. (Mar., pg. 134).

Hamilton, Ont.—The Ontario Legislature was asked at this session of the City of Hamilton for an act authorizing the city council to provide \$15,000 for filling in Sherman Inlet between the Toronto, Hamilton and Buffalo Ry. and the G.T.R.; to build a railway from the T., H. and B. R. in lot 29, con. 4, Saltfleet Tp., northerly to the G.T.R.'s Northern and Northwestern Division in lot 29, or lot 30, broken front concession of Saltfleet Tp.; to build a railway from near the Red Hill to Burlington Jct., and from near the junction of the last mentioned line with the G.T.R. main line east of Hamilton to Hamilton cemetery, and to build any other lines within a radius of 15 miles from the center of the city; to form a terminal company and construct and operate terminals within the city, and to enter into agreements with railway companies for the use of the same. The city also desires authority to raise money for carrying out these projects, by debentures, to be issued from time to time as required, subject to the ratepayers.

It was stated by the city's representatives at the hearing before the private bills committee, Mar. 17, that the situation had been entirely changed by the passing of the Hydro-Electric Radial Ry. bylaw, Mar. 15. A conference with Sir Adam Beck, it is said, resulted in an agreement being reached under which the power to construct terminals, etc., was withdrawn, and the only piece of railway which the city may build is the Red Hill cut off, which it is stated, will ultimately form part of the Hydro-electric radial line.

Hudson Bay Ry.—Deputations representing various sections of the prairie provinces waited on the Dominion Government recently, to urge the immediate completion of this railway from Pas to Port Nelson, on which there are 92 miles of track to be laid between the second crossing of the Nelson River and Port Nelson. The Manitoba Legislature on Mar. 5 unanimously passed a resolution calling for the completion of the line during this year. An Ottawa press dispatch of Mar. 21, states that the government has decided at once to call for tenders for 250,000 ties for the completion of tracklaying on the grading already done.

Lacombe and Blindman Valley Electric Ry.—The Alberta Legislature has under consideration a bill to amend this act incorporating the Lacombe and Blindman Valley Electric Ry., in such a way as is necessary owing to the Alberta Government having taken it over. The offices are transferred from Lacombe to Edmonton; the name is to be changed to the Lacombe and North Western Ry.; authority is asked to issue \$25,000 of bonds a mile, which sum is to include bonds heretofore issued and the government asks power to lend the company money on the security of a mortgage; to acquire the capital stock, and to have

the same registered in the name of the Minister of Railways or his nominees; the line to be completed by Dec. 31, 1921. The Alberta Government took over the company's property recently under a mortgage, and has been operating it for some time. (Mar., pg. 134.)

Medicine Hat Central Ry.—The Alberta Legislature has incorporated a company with this title to build a railway from Coutts, on the International Boundary, northeasterly, crossing the C.P.R. Lethbridge-Weyburn line near Foremost, and the C.P.R.'s Crowsnest line at Whittala or Winnifred, thence to Ajax on the South Saskatchewan River, and on to Medicine Hat, and thence northeasterly to the Alberta-Saskatchewan boundary, approximately due east of Hilda post office, Alta., the total length of the line being approximately 200 miles. The company is authorized to acquire and take over from Jos. B. Swan, Medicine Hat, his right and title to an agreement made with the City of Medicine Hat, respecting a spur line of railway, and to issue stock of the company in payment for the same. The company is authorized to enter into agreements with the City of Medicine Hat respecting running rights, the building of spur lines, etc. It may use steam, electricity, or any other motive power for the operation of its lines. The provisional directors are: L. N. Laidlaw, C. S. Blanchard, and H. O. Knowles, Medicine Hat, Alta. (Mar., pg. 135.)

Michigan Central Rd.—A press report states that the company is planning to spend \$1,000,000 or more upon improvements in the vicinity of Niagara Falls, Ont., the work to include the raising of the line across the cantilever bridge, and the building of a new station between the present northend station and the Victoria Park station. (Oct., 1918, pg. 488.)

Montreal Central Terminal Co.—The Dominion Parliament is being asked to extend the time within which the company may begin and complete its projected railways, bridges, tunnel and terminal.

The question of the construction of a tunnel under the St. Lawrence River at Montreal was discussed by the Chamber of Commerce, Mar. 12. C. N. Armstrong, President the M.C.T. Co., explained the company's plans and argued that a terminal under the river and having its outlet at Longueuil, on the south shore, would greatly facilitate the settlement of local transportation problems. The project was referred to the transportation committee for consideration and report.

Montreal Harbor Railways Electrification.—We are officially advised that if the commissions' present plans are carried out a start will be made with the electrification of the harbor railways, etc., during the summer.

Pacific Great Eastern Ry.—The Minister of Finance in the course of his budget speech in the British Columbia Legislature, Mar. 12, stated that the liability for the company's bonds is \$20,160,000 and, in addition, provision has to be made for the continuance of its construction northward. The province is the possessor of a line of railway serving a valuable section of B.C., the development of which is very important. There will need to be a good deal of financing in connection with the line, and the government will have to float a loan to provide for further construction. It is expected

that the work of extending the line will afford work for many returned soldiers.

A return presented to the British Columbia Legislature Mar. 14, shows the cost of the line to that date as follows: Railway, \$18,001,669; equipment, \$1,153,204; lands and townsites, \$1,608,222; rails, \$1,150,000; cash, buildings and shops, etc., \$459,000; sundries, \$50,000; Peace River extension, \$34,458; total, \$22,456,553.

Quebec Central Ry.—The Quebec Legislature has granted 2,000 acres of land a mile for the company's projected branch from Scotts, mileage 110, on the Sherbrooke-Lewis line, to a junction with the National Transcontinental Ry., near St. Jean Chrysostome, 70 miles. We are officially advised that the question of the branch is under consideration, but nothing definite has yet been arranged.

Quebec Rapid Transit Ry.—The Dominion Parliament is being asked to extend the time within which this projected railway may be built. The company was incorporated in 1913, with authorized capital of \$1,000,000, and of fire at Quebec, and the undertaking was declared to be a work for the general advantage of Canada. The authorized railway extends from Quebec City towards and through Charlesbourg, Jeune Lorette, Ancienne Lorette, Ste. Foye, Cap Rouge, Sillery, and Montcalmville, and also from Charlesbourg, through Riviere Jeune, Notre Dame des Laurentides, and Lake St. Charles to Jeune Lorette, and around the Island of Orleans, and across the island by the most feasible route. The company is also authorized to build a bridge from the north shore of the St. Lawrence to the Island of Orleans. The company may also operate steamers and other vessels, and may operate its railway by steam, electricity or other motive power. The provisional directors are, E. Taschereau, L. Savard, E. Parent, Quebec; F. X. Latulippe Beaufort, Que.; C. Renaud, Jeune Lorette, Que.; A. Lortie, St. Gregoire, Que. (Aug., 1913, pg. 395.)

St. Francis Valley Ry.—The Quebec Legislature has voted a land grant of 2,000 acres a mile in aid of the building of a line from Stanstead to St. Frances du Lac, 95 miles, and for a line from near St. Bonaventure on the St. Francis River, to Sorel, 25 miles.

The St. F.V. Ry. was originally incorporated by the Quebec Legislature under the title of the L'Avenir and Melbourne Ry., with power to build a line from the International Boundary, near Stanskid, near Magog, Melbourne and Drummondville, to Sorel, with a branch from Cherry Valley to Granby. Surveys were reported to have been made in 1914 for the section of the line from Drummondville to Melbourne, 30 miles. C. B. Hibbert was Vice President. (Apr., 1916, pg. 139.)

The Shefford, Bagot and Missisquoi Ry. Co. was incorporated by the Quebec Legislature in 1914, to build a line St. George, on the Intercolonial Boundary between Quebec and Vermont, to a junction with the Intercolonial Ry. between Bagot and St. Eugene. A. R. MacMaster, Montreal; W. H. Robinson, Granby, Que., and J. E. Runnells, Worcester, Mass., were among the provisional directors. An extension of time to Nov., 1922, for the starting of construction, and to Nov., 1927, for the completion of the line, has now been granted by the Quebec Legislature, which has also voted 2,000 acres of land a mile in aid of the construction

of the railway from the International boundary between Quebec and Vermont, in the parish of Clarenceville, Missisquoi County, to a junction with the Intercolonial Ry., between Bagot and St. Eugene, 75 miles. (Apr., 1914, pg. 166.)

Timiskaming and Northern Ontario Ry.—We are officially advised that the T. & N.O. Commission expects to employ during the coming construction season about 250 additional men on betterments on the line. This will include, in addition to the ordinary work, the relaying of new 85 lb. rails, of which the Dominion Government has allotted the commission 3,000 tons; the reballasting of 25 miles of track, and, according to a press report, the fencing of 50 miles of line.

In connection with the deputation which waited on the Ontario Government recently urging the extension of the line from Cochrane to James Bay, on Hudson Bay, we are officially advised that the commission's plans for this survey have not been completed. It is impracticable to start surveys at present, as it will be about May 1 before the rivers are open, when canoes can be used. A press report states that this survey will be in charge of A. Cole.

Tenders for the whole work, other than steel bridges, necessary to the complete construction of the roadbed, ready for the ties and rails, also track laying, ballasting and fencing, for a branch from Swastika to Kirkland Lake, 6 miles, and from Timmins to the Mattagami River, 2 miles, will be received at the commission's office, Toronto, up to Apr. 15, at noon. The work on both these lines is comparatively light, and there are no engineering features of any interest. Swastika is at mileage 165 on the main line, and the branch is to be built to promote the development of the Kirkland Lake gold mining area. Timmins is the present terminus of the 35 miles branch from Porquois Jct. The proposed extension will carry it to the navigable waters of the Mattagami River, there, a press report states, wharves and docks will be built. The Mattagami, is the second westerly tributary of the Moose River, the Abitibi being the other. (Mar., 1918, pg. 541.)

Vancouver Union Terminals.—A. P. Gillies, a United States engineer, who has for some years past visited Toronto, and Montreal, advocating the laying out of central terminal stations for steam and electric railways had an interview with the British Columbia Premier, Mar. 12, with reference to plans for such a terminal in Vancouver. The plan outlined provides for the utilization of the Hastings Mill site and the erection thereon of a large terminal building with hotel, stores and theatres, etc., into which all the railways serving Vancouver would be brought. The plans also provide for wharfage and other facilities for handling steamship traffic. The estimated cost of the work is \$50,000,000. Government support of the plan was asked by way of an assurance that the Pacific Great Eastern Ry. would use the terminal when completed. The Premier is reported to have stated the government would look favorably upon the project, if it were shown to be economically feasible, and provided there would be no obligation involving any liability on the government. As the Canadian National, Canadian Pacific, Great Northern and Northern Pacific already have their own and comparatively now terminals in Vancouver, the scheme is hardly likely to become a reality.

Canadian National Railways Construction, Betterments, Etc.

Construction plans for the year.—A large number of deputations from various parts of Western Canada, waited upon D. B. Harris, President, Canadian National Rys., Mar. 5, to urge the building of lines through the territories in which they are variously interested. The ideas of the deputations, as to what lines should be built and where they should pass existing lines, and the reasons why they should be built were given at length. We understand that due consideration was given to the suggestions, and that while, necessarily, some of them cannot be acted on, others will be. Other deputations have urged the construction of new lines, etc., in Eastern Canada.

Prince Edward Island Ry.—Superintendent Grady is reported to have said Mar. 13, that as soon as weather conditions permit the work of laying a third rail on the line will be proceeded with, and that it is hoped to have the work completed by the end of July. The work at Emerald includes the building of a new station, and a platform for the transfer of passengers and baggage, and the reorganization of the yard and trackage.

Intercolonial Ry.—A Moncton, N.B., press report states that plans are being prepared for enlarged freight sheds there.

Surveys are being made on the old Canada Eastern Ry. from McGivney Jct., where the line crosses the National Transcontinental Ry., to Fredericton, to which would be required to be done to make that section of the line part of a direct route of the National Transcontinental Ry. to St. John, N.B. From Fredericton the route would be over the St. John and Quebec Ry., which is nearing completion, to a junction with the C.P.R. at Westfield, and thence over that company's line. Tests are being made at Fredericton for foundations for a new bridge across the St. John River.

The Levis, Que., Board of Trade has passed a resolution protesting against a proposal to repair the present station buildings there, and asking that a new building to suit the importance of the place be erected at once to replace the one destroyed by fire several years ago.

Canadian Northern Ry.—In reference to a press report stating that plans were being prepared for a line from Montreal to La Tuque, Que., we are officially advised that the company already has a line between these points, and does not require a second one.

Tenders were received recently for the following works:—

For the construction of 8 abutments and one culvert between Sydenham and Ottawa on the Rideau subdivision, and for the construction of 2 concrete culverts and 2 concrete abutments at mileage 17.1 and 17.5 on the Pembroke subdivision, Ottawa-Port Arthur line.

Tenders will be received to April 3, for the construction of 2 concrete abutments and concrete culverts between Oshawa and Cobourg, on the Trenton Subdivision; and for track filling and concrete work on the Muskoka Subdivision between mileage 130 and 149, Parry Sound; the construction of concrete piers at the Seguin River crossing on the industrial spur, Parry Sound, and train fitting and

concrete work on the Sudbury Subdivision between Parry Sound and mileage 30. Also for the construction of 6 abutments and 2 culverts between Gormley and Mount Albert, on the Muskoka Subdivision.

In connection with the prospective line from Toronto to Hamilton and on to the Niagara frontier, A. G. Garden, President Hamilton Board of Trade, sent the following telegram to President D. B. Hanna, Mar. 5: "What prospect is there for the extension of the Canadian National System through Hamilton to the frontier?" Mr. Hanna replied from Ottawa, Mar. 7 as follows: "Canadian Northern Ry. acquired right of way to and through Hamilton for the construction of line from Toronto through Hamilton to Niagara frontier, and absolutely requires the whole width of right of way which we own through your city for our purposes. Board of directors of Canadian National Rys. are on record as approving of the early construction of this line, and arrangements are now under way to carry this out."

A deputation representing the Flin Flon Mining Syndicate waited on President Hanna recently to urge the building of a line from the Hudson Bay Ry., north of Pas, Man., to a large mining area about 70 miles out. The Flin Flon property is a copper mine, and it is said that the syndicate was advised that if it would undertake to erect a smelter of adequate capacity and guarantee to keep it in operation for a number of years, the Canadian National Rys. would probably build the line asked for. We are officially advised.

The Canadian Northern Ry. has in operation as branch from Luxton, on its Maryfield-Bengough branch, to Bienfait, and Estevan, Sask., it is proposed to connect this with the northern lines so as to give access to the northern coal fields.

It is probable that some gradings will be done on a line to connect the Thunderhill branch at Sturgis, Sask., with Hudson Bay Jct., that a reconnaissance survey for the line has been made, and that it would be 74 miles long from mileage 8 on the Hudson Bay Ry., to the Flin Flon mining area, within a few miles of the Manitoba-Saskatchewan boundary line. The Mandy mining properties are in the same area as the Flin Flon mine.

On the Thunderhill branch now terminating at Preeceville, Sask., grading will be done during the summer northwesterly for 25 or 30 miles.

Grading has been completed on a line from Humboldt, Sask., mileage 1,734, on the Canadian Northern transcontinental line, northerly to St. Brieux, the present terminus of a 21 mile branch southerly from Melfort. Track will be laid on this grading this year.

A survey for a line from Melfort, Sask., northeasterly to the Carrot River district was made several years ago, and it is possible that some grading will be done although this has not been decided.

Rails are to be laid for about 25 miles on a branch which has been graded from Vonda, Sask., northeasterly. This line runs about midway between the Humboldt-St. Brieux-Melfort line, and the present Saskatoon-Prince Albert line. The question of the extension of this line

to Melfort on the north, and from Vonda on the south, to Saskatoon, is being looked into.

It is probable that the Canadian Northern prairie territory, track will be laid on some 200 miles already graded and that about 150 miles of new line will be built, making about 350 miles of new branches will be taken from the main line, making a total of about 740 miles of track to be laid altogether.

We are officially advised that the tunnels proposed to be built in the Rosebud Valley, Alta., are situated between mileage 191.9 and 193.8 on the Calgary-Vegreville line and will form part of the revision of location for that distance. The object of the revision is to eliminate 6 crossings of the Rosebud River, the line being carried at present on temporary timber structures. The revision will also eliminate some bad curvature, and will effect a saving of about 0.4 of a mile of track. Outside of the tunnel work, there will be about 125,000 cu. yd. of excavation necessary. The work to be done has no unusual engineering features.

Railway Finance, Meetings, Etc.

Canadian Northern Ry.—The British Columbia Finance Minister in explaining the financial position of the province to the Legislature, Mar. 12, stated that the taking over of the Canadian Northern Ry. by the Dominion Government meant that the government had assumed all responsibilities. The province is still the guarantor for the principal and interest of the Canadian Northern Pacific Ry. bonds for \$47,975,000 due 30 years hence, but, of course, as the Dominion Government will not default the province is relieved of anxiety regarding this obligation and something like \$1,750,000 annual interest on the principal.

The C.P.R. Co's. annual meeting will be held at Montreal, May 7.

Essex Terminal Ry.—Application is being made to the Dominion Parliament for authority to increase the capital stock from \$400,000 to \$1,500,000.

North Shore Ry.—In connection with the recently advertised sale of the right of way of this railway, which was built as the Beersville Coal and Ry. Co., extending from McAdam Jct. on the Intercolonial Ry., to the Beersville coal fields, a new Brunswick newspaper says the line was sold recently for \$12,000, ostensibly to satisfy the stockholders; that the purchaser immediately disposed of the property to another person for \$30,000; and that then the rails were sold off at the present high price of steel. The New Brunswick Government, the paper adds, put at least \$16,000 into the line, and is carrying that amount of bonded indebtedness at present.

Sir Sandford Fleming.—Rev. Bruce Taylor, D.D., Principal of Queen's College, Kingston, Ont., read a paper on the life of the late Sir Sandford Fleming, at a recent meeting of the Royal Canadian Institute, Toronto, of which Sir Sandford was one of the founders. The paper referred to Sir Sandford's many years connection with the Intercolonial Ry.; his advocacy of standard time, and of the Pacific cable, and mentioned many instances of his life, which brought out his passion for honor, his loyalty to friends, his tenacity of purpose, his vision and his daring.

Canadian Pacific Railway Officers' and Employees' Conference and Dinner in Montreal.

The third conference and dinner of C.P.R. officers, officials and employees, from all over the system, which were intended to be held annually, but which were interrupted by the war, were held at Montreal Mar. 21 and 22. The meeting on Mar. 21 at the Ritz Carlton Hotel, which was attended by about 300, was presided over by C.E.E. Ussher, Passenger Traffic Manager, who was the chairman at the last previous meeting at Winnipeg. The following papers were read and discussed.

"Relations between company's officers and employes, organized and unorganized," by J. McMillan, Manager, C.P.R. Co's. Telegraphs.

"Employes' Magazine", a short talk, by J. M. Gibbon, General Publicity Agent.

"The company's popularity an asset in securing traffic", by F. W. Peters, General Superintendent, British Columbia District.

"Claims", by G. C. Jackson, Auditor of Claims.

"Personal Injury", by F. R. Haney, Claims Adjuster, Eastern Lines.

"Fire Prevention", by E. Moore, Insurance Commissioner

On Mar 22, a large number of those in attendance at the previous day's meeting, left Windsor St. station, Montreal, at 10.05 a.m., by special train, and spent the balance of the morning inspecting the Montreal terminals. In the evening, there was a dinner at the Ritz Carlton, attended by over 500, which is dealt with fully further on in this article.

On Mar. 23, a large number of the officials, etc., left Windsor St. station, Montreal, at 1 p.m., for Quebec, arriving there at 6.30 p.m., and dining at the Chateau Frontenac. On Mar. 24, after visiting Ste. Anne de Beaupre, and points of interest in Quebec, they left at 1.30 by special train, making a detour to the Quebec bridge. They dined on the train and arrived back in Montreal at 9 p.m.

The Dinner and Speeches.

The dinner in the Ritz Carlton ball room, on the evening of Mar. 22, was a magnificent function, attended by over 500. Just prior to it, President Beatty, accompanied by several members of the committee, received the officers and others attending in an ante-room. When the chairman of the evening, F. L. Wanklyn, General Executive Assistant, entered the ballroom, accompanied by Lord Shaughnessy, President Beatty, and other chief officers, there was a most enthusiastic demonstration of welcome. Mr. Wanklyn had Lord Shaughnessy seated on his right, and President Beatty on his left, the others at the head table being Grant Hall, Vice President of the company; W. R. MacInnes, Vice President, Traffic; D. C. Coleman, Vice President, Western Lines; E. Alexander, Secretary; J. Leslie, Comptroller; W. N. Tilley, K.C., Consulting Counsel; A. Price, General Manager, Eastern Lines; F. W. Peters, General Superintendent, British Columbia District; G. H. Ham, headquarters staff; Dr. H. A. Beatty, Chief Medical Officer; T. E. McDonnell, Vice President, Dominion Express Co.; J. J. Warren, President and General Manager, Kettle River Valley Ry.; J. H. Walsh, General Manager, Quebec Central Ry.; and F. E. Meredith, K.C., director, C. P. Ocean Services Ltd.

F. L. Wanklyn's Speech.

The chairman, in proposing the toast of "The Company," said: "I feel it immeasurably beyond my powers to do even scant justice to such an important subject. I will not attempt to 'paint the lily,' nor 'to guild refined gold.' It is not possible for me to begin to materially enlighten such a critical audience as I have before me, regarding anything that you do not already know about the great corporation that we have the honor to serve. The Canadian Pacific Railway Co. is, indeed, a wonderful organization. In a comparatively short time it has

thousand things essential to the success of this gigantic undertaking had to be devised and executed on a sound commercial basis. A nation had to be built, and it was, and the Canada of today—the brightest jewel in the British crown—is largely due to the construction of the C.P.R.

"We are indeed fortunate to have with us tonight the Chairman of our company, Lord Shaughnessy, the great executive chief who has done so much to make the company what it is today. For 20 years he has been at the helm, and has piloted our good ship through many



Lord Shaughnessy, Chairman of the Board, C.P.R.; and E. W. Beatty, K.C., President, C.P.R.; about to board a train.

earned for itself a world wide reputation for energy and efficiency, and success. It has accomplished things that were at one time considered practically impossible. It has succeeded beyond the wildest dreams of the illustrious and far sighted men who conceived and built the railway from ocean to ocean, across our great Dominion, through vast and almost uninhabited territories, hitherto but little known, bridging mighty rivers, grid-ironing boundless prairies, tunnelling lofty mountains, winding through virgin forests, overcoming physical and climatic difficulties of all kinds and under all conditions. The actual work of construction was not, by any means, the only difficulty to be overcome, but, when constructed and in operation, traffic had to be created, vacant lands had to be peopled, industries had to be established, a

tempests and difficult passages, always safely and wisely, into the smooth waters of success and efficiency, and even now, after handing over his charge to another capable steersman, we rejoice to find that he is with us, with an eye on chart and compass, ready and willing, with advice and experience, to assist in overcoming any difficulties that the turbulent future may have in store.

"The wonderful story of the Canadian Pacific related by our much esteemed ex President, Lord Shaughnessy, in his address to the shareholders, reads like a fairy tale. Begun and carried to a most successful issue within the lifetime of some of the original projectors, a remarkable group, shrewd men of indomitable courage and persistent perseverance, who can truly be called "empire builders", their names are forever link-

ed with the unparalleled progress and prosperity of the Dominion. The company has ever been fortunate in the selection of its executive chiefs, Mount Stephen, Van Horne, Shaughnessy, Beatty, men possessing incomparable talents, untiring energy, and devotion to the company's interest and welfare. They are the galaxy of great men who carried on. They worked out its problems and achieved the wonderful results. They builded better than they knew. To serve such chiefs is a distinct honor, and the wonderful result is the echo from those under them, to whom various details and complexities of the organization are entrusted. As it was in the past, so it is today, and ever will be, as long as we have the good fortune to look up to men like E. W. Beatty, our first Canadian born president. That square jaw and look of determination inspire universal confidence, and with such a leader we need not fear the future. We are justly proud of him. Let us hope and pray that for many years to come he will be spared to preside over the destinies of our great company.

"The C.P.R. is a cardinal factor in the life of our empire, linking up, as it does, the motherland with the dominions across the seas and beyond, bringing closely together the eastern and western hemispheres. Just think for a moment what this meant during the late war, as an imperial lesson to all observers, the carrying of nearly 100,000 Mongolian laborers from far off Manchuria to work in old France, swiftly, silently, safely, thereby releasing much needed fighting men whose places in non combatant positions they were able to fill. Remember also what the C.P.R. men have done. In the dark and anxious days, when the very existence of our great empire was in peril, and the outcome of the fierce and bloody struggle was a matter of conjecture, C.P.R. employes gallantly did their bit; they volunteered in thousands, in answer to the call, leaving comfortable homes and all that was nearest and dearest, prepared and ready to make the supreme sacrifice for King and country. Ten thousand went to the front; 867 never will return; many have already returned, 1,870 maimed and broken: but all proudly conscious of having played their part like men, able to rejoice in the fact that they helped to bring about the glorious victory which crowned their efforts. All honor to our returned heroes; we thank them for what they did, as C.P.R. men, for freedom's cause. Is there anything calculated to impress the other nations of the world more vividly, as to the power of that empire and the extent of its resources than this; all made possible and efficiently carried out by the great C.P.R. Co. Not only Canada, but the British Empire, owes an everlasting debt of gratitude to the bold and daring men who had the vision and the genius to provide British North America with a peerless transportation system, which reached out across both oceans, and which, in the dark hour of the sore trial, did so much to save the empire and the civilization of the world.

"The saying is that nothing succeeds like success. Nothing is more satisfying to the individual than to work for and to be associated with a successful concern. It is a progressive, cumulative quality; it can only be sustained by continued effort; slacking off and slowing down court failure; it is the product of properly co-ordinated individual effort

of the highest quality. It is aptly illustrated in the deep and mysterious natural phenomenon of crystalization, in which the molecules assume a regular arrangement conducive to the best results. The brilliant strategist and brave soldier, essential to each other, can only attain success by properly co-ordinated effort.

"C.P.R. ideals have been established and recognized the world over, they must be maintained, and it is up to you and to me to "Carry On"! Gentlemen, loyalty must ever be our watchword; loyalty to the great institution we have the honor to serve; loyalty to our President, by carrying out the duties entrusted to us, cheerfully and to the best of our ability; loyalty to the country we all love so well. Imbued with this all inspiring spirit, the future will be as grand as the past and all is well. I ask you, therefore, gentlemen, friends and colleagues, to drink to the continued prosperity of the company, and to the health of our well beloved Chairman, Lord Shaughnessy, and our President, E. W. Beatty, pledging to both our unswerving loyalty and our affectionate devotion."

Lord Shaughnessy's Speech.

"I appreciate very much, the piece of music that has just been so beautifully rendered. Killarney was the birthplace of my mother, and I hold her memory in dearest recollection, and it was appropriate, therefore, that I should have called three successive cars Killarney, in which I spent so many hours, weeks and months travelling over the system, and devoting myself to that great corporation to which we are connected, a corporation that holds for me, and I am sure for you, the very foremost place in our affections.

"I entered railway service nearly 50 years ago, just after leaving school. During that 50 years I have been associated with two companies, one for 14 years, and with the C.P.R. for 36 years. I would not have time to tell you of the many interesting events connected with my association with the C.P.R., its officers, its directors and its affairs, but I can say most truthfully that one could not lead a more interesting life, though it was not always smooth sailing. Frequently there were difficulties, and difficulties of a serious character, to surmount, but in the main our success during the past 20 and 25 years, was without interruption, and when the time came when the future welfare of the company demanded a younger and more active man should be charged with the duties of chief executive, it was a most fortunate circumstance that the directors had in hand a man of such paramount ability, and such unquestioned integrity and such great vision as possessed by our new President, my successor, Mr. Beatty.

"He takes the property over in a splendid condition, physically and financially. He takes it over with something that may be of even greater value than either of these, with what I conceive to be the best organization in the world, an organization founded upon discipline without fear; discipline that had for its substance and was based upon fair dealing and justice; discipline that had as one of its main ingredients the loyalty of the men who were under discipline; discipline that knew and declared to the men that every man was safe in his position if he were safe himself. That was the foundation of the splendid organization

of which you here, are the outstanding representatives, and Mr. Beatty may feel gratified that in starting upon his career as President of this great corporation he is to have the assistance, the loyal and unquestioned and energetic assistance, of such men as I see around me. It is very gratifying after all these years to see so many here who started in small posts and who have obtained positions of marked prominence. I see here, W. R. McInnes, E. Alexander, J. Leslie, A. Price, Geo. Ham and others who I recollect as young boys, and who are now, I was going to say, grey-haired men, but I will say who have grey hair, probably due to the earnestness with which they performed their duties, but which earnestness in the end brought them to the posts they now occupy in the company's affairs. I do not wish to take too much of your time tonight, because I know that there are others to follow, but there are some few things I would like to refer to.

"We are now entering upon rather a new era in industrial affairs. Those of you who have to do with labor matters, face problems of a character somewhat different to any you have faced heretofore. I think I can say for the C.P.R. that during my period of office the relations between the labor employed by the company and the officers were of a most harmonious character. We had little of the difficulties that others had to contend with. I hope that those conditions will continue in the future, but in dealing with labor questions and in dealing with other subjects, we must be to the forefront and in the front rank, and must not be behind or lag to the rear. I have just returned from England. There the situation of labor is a cause of anxiety. Nominally the problem between labor and employers is a question of hours and rates of pay. To my mind, and it will be so here, there is something beyond that now. It is not only a question of hours and rates of pay, but of the actual status of men who are performing such a large portion of work of building up industries, and making themselves as strong an influence as the capitalists and employers. It is a question of what their social status is to be in the future. We may take it for granted beyond question that the working man of the future, the working man of today, must be permitted and enabled and assisted, he and his wife and children, to lead quite a different existence to that of the past. They must not be confined to the narrow, sordid lives that have been theirs hitherto. They must have the opportunity to enjoy the good things of life that those in higher positions have enjoyed. I am sure that every officer of the C.P.R. who has to do with social and industrial questions of this kind will, as I suggested before, be in the front rank in meeting the situation and in dealing with it judiciously and thoughtfully.

"Now, my good friends, one word more. By reason of your positions, and I am speaking more particularly to those who are located in our own country, by reason of your positions you have great opportunity of promoting a national sentiment in Canada that will be productive of the greatest possible benefit to the country. In your own localities, by reason of your posts, you have a broad acquaintance. You can conduct a propaganda of national idealism, of national thought, that will be a safeguard to the welfare of our beloved country. I do not mean by aggressive interference in

political campaigns. That is to be avoided, but by intelligence of thought in utilizing the superior information that you have, because of your connection with the bigger and broader questions of the country, by utilizing that information, by impression upon your neighborhood, by having a campaign of good feeling between the east and the west, and north and south, between every race and every class of citizen who constitute our citizenship in this country. I have no doubt that you will do that, and will be willing to do it.

"Now, I have become a bit of a supernumerary. We worked along together for a good many years. I cannot tell you, I would not attempt to tell you, how highly I appreciate the devotion and the loyalty that I have met with throughout all the years of my administration, nor would I attempt to thank you, nor tell you how large a part that loyalty and devotion played in the success that attended my efforts. I feel sure that I bespeak for my successor, Mr. Beatty, that same spirit and co-operation. Great as is our corporation, vast as are our interests, varied as its activities, I have in my mind's eye a C.P.R. infinitely more great, more successful, and more progressive than at any time, and with the wisdom and tact and ability of your President, combined with the loyal and devoted efforts of yourselves, that end can be attained. I will not take time to say more tonight. I am afraid that I have kept you too long as it is. I can only express my great gratitude that I have had the opportunity to be here. I know of no gathering that is as homelike as a C.P.R. gathering, and there is no other atmosphere that so inspires and exhilarates as a C.P.R. atmosphere. I hope and earnestly trust that while for a time there may be difficulties resulting from, and brought about by the war, the forward movement of the company will continue without interruption, and I will close, my dear friends, by assuring you that you have the thanks and blessing of your old chief."

President Beatty's Speech.

E. W. Beatty, K.C., said: "I trust that you will permit me to put my own interpretation on the generosity and warmth of your greeting, and to assume, as I am perhaps warranted in assuming, that you are expressing, through me, your appreciation of the company. In fact, if it were not for the innate modesty which characterizes all officers of the company, I would say that you are taking advantage of the occasion to indulge in a little audible appreciation of yourselves. This, I think, is the third dinner held by the officers and employes of the company, the last one being held in Dec., 1912. By reason of the outbreak of hostilities in 1914, these gatherings, which were intended to be annual, have not been resumed since. This was inevitable, but I sincerely trust that nothing in the future will prevent a function which has in it so much of pleasure to the participants, and, in a different degree, perhaps some profit. It was my privilege in 1912 to attend the second annual banquet, in my capacity, at that time, of General Solicitor of the company, and it is only fitting that I should recall to those of you who were present then, the fact that several of the most honored and respected officers of the company who were there, are not here now. They have passed out of the service, and, in many cases, out of this life, but they have left a place in our recol-

lections and our affections which cannot be effaced. We cannot pay too much respect to those men—and some of them are here tonight—who have given the best of their life's service in the company's interests, who have reached the age of retirement, and who are now spending the declining years of their lives in comparative freedom from business affairs, but whose affections for, and interest in, the company and everything pertaining to it, still exist. They are worthy of the appreciation which all of you more active are, I know, so willing to accord them.

"The last six years have made somewhat violent changes in the personnel of the company's organization, and I was struck particularly, when considering the proceedings at that dinner—and especially the remarks made by the President, then Sir Thos. Shaughnessy, with the effect of the company's traditions upon those engaged in directing its enterprise. It is well enough for us to give our time and thought to the problems of today and the possibilities of tomorrow, but it would never be wise in our case to disregard the lessons of the past, or the standards of efficiency and integrity set us by the distinguished men who have heretofore headed this company's activities. It has always struck me as a fact of peculiar significance that each stage of the company's development from 1881 to 1918, when Lord Shaughnessy retired from the Presidency, was marked by the incumbency in the office of the President of a man who, by nature, disposition and talents, was peculiarly fitted to direct the administration of the company's affairs during the particular period of his tenure of office. You may say that that was our good fortune, and it certainly was, but it was not an accident that Lord Mount Stephen, Sir Wm. Van Horne and Lord Shaughnessy presided over the destinies of this company at those particular periods. It was, in fact, one of those results which come from the development of men in responsible positions over a period of years, which enable them, when the testing time comes, to fill the gap necessary to be filled if the company is to progress and prosper. It is, perhaps, not fitting that I should indulge in encomiums on the work of these men, who, in different ways, and for different reasons, appealed so strongly to the imagination and the confidence of the Canadian people, and the results of whose work is shown in the outstanding position which the company holds in the many and widespread phases of its activity. Their work meant much to Canada, to the Canadian Pacific Railway and to its shareholders, and that result is easily appreciated and will be given its due measure of recognition in the history of this country. There is another gentleman whose quiet and retiring disposition is apt to make us forget that he is, with one exception, the sole member living of the original syndicate which was incorporated as the C.P.R. Co. I refer to R. B. Angus who, from the beginning, has been the guide, counsellor and friend of each of the company's successive executives, and has never, in the past 38 years, failed to serve and guide the company's interests in a way that has earned the admiration and appreciation of his associates on the board and the company's shareholders. To us, however, who succeed in later years to the positions occupied by them and others, their personal qualities must be a con-

tinual and, I hope, effective inspiration. All of them were men of unswerving integrity, loyalty and true vision, which inspired the confidence of the people without, and a spirit of loyalty in the employes within. If it were seemly to do so in his presence, I would cheerfully devote much time to a personal tribute to the qualities of heart and mind which have made Lord Shaughnessy such a distinguished and unique personality in Canada, and have made his period of office, for the past 19 years, one of uninterrupted prosperity. From him I have learned much, and from the high quality of his ideals I have received a practical inspiration, which I know is shared by you all, to do what is best, but always creditably, in the company's interests. Lord Shaughnessy's devotion to the company, and to its interests, the affection in which he is held by the officers, and, in the last analysis, his judicial attitude, in spite of the handicap of racial temperament, have been to me the three outstanding phases of his character and career. If you add to this, a rigorous sense of discipline, and an unswerving integrity, and unimpeachable official and private life, you will have some appreciation of why it is that this extraordinary measure of respect and confidence is accorded him by the people of this country.

"As I have said, the last dinner of the officers, etc., was held in Dec., 1912. At that time Lord Shaughnessy gave to you some interesting figures indicative of the company's progress in the previous 10 years and, in order that you may have some conception of the steady progress which was maintained since that time, I am impelled to give you a few further figures just made public in our annual report: In 1912 the company had 1,820 locomotives; in 1918 it had 2,225. In 1912 it had 1,841 passenger cars; in 1918 it had 2,179. In 1912 it had 369 sleeping and dining cars, and in 1918 it had 480. The transportation development is probably most vividly evidenced by the increase in the number of freight cars, the company, in 1912, owned 61,144, and in 1918, owned 89,513. In 1912 the company's gross earnings from transportation were, \$123,000,000, and in 1918, \$157,000,000. The pay roll has now reached the enormous sum of \$7,500,000 a month. Unfortunately, owing to the increased cost of operating, the ratio of net earnings has not been maintained, but as this is a condition due to exceptional causes, and is common to all railway and industrial enterprises in recent years, it is not one which indicates any lack of advancement. The variety of the company's interests is just as numerous as outlined to you on previous occasions and the extent of its activity in all of them has shown the same progression as in its purely transportation enterprises. In the strenuousness of the times in which you live, and the exacting nature of the services which you are called upon to render, it is conceivable that time for a study of the company's history and of the character of the work, in transportation and other ways, which it has done and is doing, may not be accorded to you. I would commend to each of you an earnest and careful consideration of the speech of the then President, delivered at the last annual meeting of shareholders. It is a concise and illuminating historical exposition of the development of the C.P.R. I do not wish you to live in the past, but an adequate appreciation of the develop-

ment of the company, since its inception, is necessary to a proper realization of the character and importance of the work, individually and collectively, you are all attempting to do now.

"The problems of today, transportationally speaking, are not at all akin to the problems of the past, and the problems of the future have still more of the unknown in them than the problems of today. The C.P.R. is what is termed a public service corporation, which means that, in its primal functions, it makes its way by serving the public. While it has always been a public service corporation, the view of what constitutes effective public service, has, in later years, been modified and enlarged. It is said that the public is an exacting and jealous mistress. It is also true that the public is a generous friend, and the attitude of the public toward a corporation is necessarily and properly influenced by the attitude of that corporation and its officers toward the public. Nothing is so readily recognized and appreciated as willingness to serve, and efficiency in service. In these times, when the people's minds are directed to possible changes in the theory of administration of transportation companies, it is more important than ever that the officers and men of this company should appreciate to the full the character of their obligations to the public. I am not unmindful of the fact that unreasonable demands are periodically made of railway companies, but I cannot avoid the conclusion that upon the extent to which the people of this country believe in the C.P.R., as an institution which is honestly and efficiently managed, and upon the extent to which they believe in the integrity and fair dealing of the company's officers, will, in a large measure, depend their attitude toward the company, in connection with projects for government ownership, nationalization, or whatever other term the excursions of governments into private enterprises are designated by.

"The C.P.R. is not in business for its health, but health is very necessary to it, and that health depends upon the prosperity and goodwill of the Canadian people. Canada's prosperity is our prosperity and what is good for Canada is good for the C.P.R. Canada's interests are our interests. Many of you have grown up in the company's service. You have been faced with competition from other companies performing public service. You know the extent of that competition, and the healthy conditions which evolve from it. It is said that self interest is the guiding influence in men's lives, and that is true, and nothing spurs men to effort toward greater efficiency more than the healthy competition of a rival engaged in the same business. The competition which you have to meet at present is in a measure different from this. It has all the elements of the natural struggle for business which pertains to all industries, but it has this aspect of abnormality, in that the principal competing forces, being the government, possesses in itself powers which make the competition unequal. In many cases the government is in the position of judge and jury; of the man who is umpire, who owns the ball field and has an interest in one of the teams. Improperly used, such competition is unfair. I do not say necessarily so, but the strong and human tendency is to exercise strength where one knows he possesses strength and to exercise power

where that power is accorded. I have great confidence in the sense of fair play which prevails in this country. I believe a judge, known to be unfair, would, without hesitation, be removed, and I believe that no country which has invited the investor of foreign countries to stake his money on the future of Canadian enterprises would permit those enterprises to be jeopardized in the slightest degree by the acts even of the government itself. I am only mentioning these facts lest someone might assume that we did not know the difference between these forms of competition, and so that you may be even more assiduous, conscientious and loyal to the interests you represent, and keenly alive to the obligations you owe the public, by whom in the last analysis we shall all be judged.

"No one could be prouder than I am of the company's position and prestige in Canada, and throughout the empire, and my pride is tinged with humility, in that I appreciate my own share in its extraordinary development has been small. I have, however, acquired from my predecessors, and especially from my immediate predecessor, an appreciation of those standards and ideals which have made this company a somewhat different corporation, and one to whose activities one may swear fealty, only less in degree to that which you naturally give to your country. Its fortunes and development have heretofore been linked up so intimately with those of the country itself that the C.P.R. can rightly be termed a national enterprise, and its development a national development. It was purely Canadian in its conception, largely Canadian in its development, and if its activities have been so extensive as to be imperial in character, it has redounded not only to the benefit of the corporation itself, but to Canada and its people also.

"In closing, I wish to say a word to you in appreciation of the loyalty which has always characterized the company's officers and men. For years, as you know, I was a member of the Law Department, and therefore in the position of the man in the grand stand watching the game; and often the man in the grand stand sees more of a game than the players. If there is one thing more than another that during these years convinced me that the C.P.R. must progress and prosper, it was the fact of the strong spirit of loyalty which permeated every department and was shown by every man in it. It is perhaps true that loyalty to a corporation is, in some form or other, bound up in the human equation, and has some relation to a man's respect and loyalty to his immediate superior, but loyalty cannot exist from the bottom up unless it prevails from the top down. The loyalty which every officer owes to those above him is exactly measured by the loyalty which they owe to him. Superior officers are expected to give consideration and support to the efforts of those whom they direct, and those who are taking direction are required to carry out the wishes of their superiors, and the duties of their offices, with that complete and absolute loyalty which their treatment by those superiors has warranted.

"They used to tell every American boy:—'Some day you may be President of the United States', and that was said only as indicating the equality of opportunity which existed in that country. Some few years ago I was returning

from Quebec, with two friends in whose composition a sense of humor had taken the place of respect, and, when we reached Three Rivers, they disappeared from the car, and, on their return, presented me, with due ceremony, with a picture postcard, on which was printed, 'No mother ever said to her son, 'some day you will be Vice President.' I am not repeating this for the purpose of discouraging those of you who are vice presidents in embryo, but as an appropriate example of the general feeling that the highest position is open and is the one which should be aimed at. So far as fairness of opportunity goes, the C.P.R. offers opportunity for every boy; a fair field, no favorites, and no handicaps on natural endowment. The company is looking, day by day, for boys and men who are disciplined, reliable and brainy, and in no corporation in Canada are there so many first, second and other prizes offered for the capable and efficient man. I hope you will remember this and advise your wives and heirs accordingly. The value of the individual to a corporation cannot be over estimated if he appreciates what he can do with his own personality. None of us, I presume, has a full conception of the influence of the personal equation in human affairs. It, however, influences every situation and every individual action. If you capitalize your personal qualities for the benefit of the road, it is that much more potent factor in its success. I commend to you a personal and studious interest in the affairs of this country, with which your own fortunes are inextricably bound up. I commend to you an increasing interest in the affairs of your local communities, both for your own sake and for ours, and I particularly commend to you an intimate knowledge of the company and its affairs, a desire to give, and to accept unhesitatingly, suggestions for the benefit of the service, no matter from what quarter received, a jealous regard for your own standing in the community and the first and prime duty of efficient service to those with whom the company has dealings."

The Vice Presidents' Speeches.

Grant Hall, Vice President of the company, said: "After hearing Lord Shaughnessy, and the President and the chairman, it seems that we have nothing to do, but I would like to express, at least, my pleasure in seeing so many old friends here, and so many others who are here from all parts of the system. The idea of this dinner originated with Mr. Beatty, and I may say that from the close association that I had with him that I do not think there has been any mistake in having put the mantle where it has fallen. Lord Shaughnessy has made some very pertinent suggestions, and some very important statements in connection with what I may call the personal element. One has only to think of what has transpired in Russia where, if I understand the matter aright, the Bolsheviks have attempted to eradicate the personal element, and have just about destroyed that country. We on the C.P.R. have been fortunate, we officers, in having had as President for a great many years a man of extremely broad vision, courage, with abundant faith in this country, who gave us an equipment and roadbed and terminals not to take care of business, as it existed at that time, but to take care of a business that we may be fortunate enough to get, and he had the vision to be-

lieve we would get. I think it is for us to say to Lord Shaughnessy that we will take care of the property, and tell him that it will be kept in as good a condition as when he turned it over to our President, Mr. Beatty. Unfortunately on a railway it often happens or has happened, but never on the C.P.R., that we have so-called departments, that jealously guard and take care of what they call their rights. Let me ask every officer here to co-operate. Let me ask every officer to give the Vice President who succeeds me in the west, and the one in the east, that support that was given me when I was in the west. We will have problems facing us from now on that are most serious. We had the war. Now that the war is over, the settlement problems are as serious in a way as were the war problems. Meet it together, co-operate and consult and show that you are all of one accord.

"Lord Shaughnessy, it was with a great deal of pleasure that we all heard that you would be present this evening. It was with some regrets that the announcement was received last autumn that in order to obtain a rest from your arduous labors you had decided to retire from the presidency of the company, but it was with feelings of satisfaction that it was learned that you were to remain as chairman of the board. Let me assure you, sir, that you have the respect and affection of the employes from the highest to the lowest to a marked degree. I would ask you, sir, to take this small token of our respect to Lady Shaughnessy, and we wish Lady Shaughnessy, your family and yourself many years of happiness." Mr. Hall then handed Lord Shaughnessy a magnificent sheaf of roses.

W. R. MacInnes, Vice President, Traffic, said: "I would like, first of all, to thank our leading counsel for his pleasant words about vice presidents, I imagine that in speaking about traffic some of you may expect that I will tell you how tariff sheets are constructed, and how revenues are collected. I must disappoint you, and I think it will be more interesting and give a more human touch to treat of comparisons between the traffic managers of olden days, and those of modern times."

Mr. MacInnes told some amusing stories of the old days when traffic managers worked on systems all of their own, of "gentlemen's agreements," which was a misnomer as far as the word "gentlemen" was concerned, for no traffic manager was expected to keep his word. He told of a brother official who then was in St. Louis. A miller wanted to make him a present of a barrel of flour, and the traffic man said: "All right, send it up to my house."

"Oh, no, that would cost more than to ship it to Liverpool," said the miller. Then had followed the days of Teddy Roosevelt and the coming into action of the inter-state commission and the prosecution and persecution of the railways. He urged the importance of looking after local business, not only for selfish reasons, but because it was well to have a well satisfied local community.

D. C. Coleman, Vice President, Western Lines, said in part: "I wish to add my thanks to those of Vice Presidents Hall and MacInnes for the gracious acceptance of this toast. I regard it as a great honor to be invited to the general conference and dinner with a delegation of the officers representing the interests of the company on the outer marches

of the great west. In the west we serve what some people are inclined to regard as a difficult constituency. It is true that the western people are outspoken and free in criticism. If you fail to meet their views as to services they sometimes voice their feelings with a pungency and a directness which is a little disconcerting but, on the other hand, they are generous almost to the point of extravagance, in appreciation for good services, and no people could possibly respond more warmly or more heartily to courteous treatment and reasonable argument. When confidence is once given, it not lightly taken away. These people have a very high opinion of the C.P.R. They have great esteem and regard for the officers who control its policy, and I think that we can also say that they also have confidence in the officers who are in charge of carrying out the policy into practice. If we continue to make timely aid for the railway provisions of that country, and if the officers out there maintain our present standing of keenness and efficiency, no competitor can successfully assail our relative position west of the Great Lakes. The President can feel confident that his policy will be carried forward into actual practice to the full extent of our powers, because not only is it our duty to him and the company to give him that service, but the policy that he has proclaimed makes a convincing appeal to our reason and imagination."

W. D. Tilley, K.C., of Toronto, the company's Consulting Counsel, proposed the health of the vice presidents and expressed regret at the absence of I. G. Ogden, Vice President, Finance, and A. D. MacTier, Vice President, Eastern Lines.

F. W. Peters, General Superintendent British Columbia Division, proposed the toast of the Canadian Pacific Ocean Services Ltd., which in the absence of the Chairman, G. M. Bosworth, was responded to by one of the other directors, F. E. Meredith, K.C.

Geo. H. Ham, of the headquarters' staff, in a characteristically witty speech, proposed "Our allied interests," which was responded to by J. J. Warren, President of the Kettle Valley Ry.

A capital programme of vocal and instrumental music, with many original features, was interspersed between the speeches, and a short time was devoted to the showing, on a screen, of a splendid collection of photographs of general officers, and chief operating officials, and of views along the C.P.R. from Nova Scotia to British Columbia.

Rhymes of The Rear End Man.

The following verses, which are attributed to Arthur S. Piers, Manager Real Estate Department, C.P.R., accompanied the souvenir menus distributed at the officers' and employes' dinner in Montreal, Mar. 22.

Said the Woodman, to the Coleman,
As they drove to Morse, and back,
"Wonder why the Pyne Burns,
"With a Curle of Smoke so Black!"

Said the birdman, in his Curtis,
As he chased the peaceful dove,
"I wonder if the trumpets Blair,
"In Paradis above?"

Said the Tinker, to the Taylor,
As they chanced to meet, one Day,
"For a suit I'm going to Spencer,
"A Price that I can pay."

Said Lee, to General Jackson,
As they fought on Bosworth field,

"If you'll leave the terms to Balfour
"At Fort McKenzie, I will yield."

Said Howard, meeting Oswald,
With his Hatton, in the Hall,
"I think I Seymour of Reynolds,
"In that painting on the Wall?"

Said the Cook, at Conway Castle,
Putting a Gascoigne in the stove,
"A Crabbe and Ham, I'll Freiser."
Was he not a curious cove?

"This Fairbairn I will Foster,
"If a Goodchild he will be,"
Said Kirkpatrick, to McPherson,
And a Goodman brave, was he.

If Harry Lauder lost his Hart,
To Pretty Alice Lloyd,
Do you think that Gertie Millar
Would be very much annoyed?

A Sturdee Savage had a wish,
To occupy the Throne,
But Reeder—do not be alarmed,
He's in jail now—at Malone.

Humphrey and Hodge went to Hamilton,
To see Jack Johnson fight.
Such a Motley crowd had gathered,
They had to Camp out for the night.

Annable rode on the Atcheson,
Many Miles of the Main line, to see.
As the train was so late, a Cherry, he ate,
"With no diner—it's awkward" said he.

Purvis was trying to catch Pickrell,
On the banks of the Fraser, I'm told.
Though he tried to keep warm on a Collins,
What he caught was a terrible cold.

Brown bought a ticket to Leslie,
And Snell bought one to Grant.
But WHY should they go to Ontario?
Can you answer the question? I can't.

Wilson asked Admiral Perry,
How to Moore his ships to the Piers.
"With the Rudder, and room for Shearing,
"We've done it," said David, "for years."

Two pitchers were having an argument,
Alexander and Bender, by name.
Had Fulton, or Benjamin Franklin,
Any Wright in the Temple of fame?

If Nelson, or Admiral Hawkins
Had blocked the Zeebrugge Moule,
Would it not have solved the Riddell,
For Bernier to have reached the Pole?

With Laura Secord—Sis Hopkins,
Was feeling as sore as a Boyle,
For the names that Laura Calder,
Were not according to Hoyle.

When Jeffries was fighting Corbett,
And Britt sat with Bombardier Wells,
Sullivan said to the Usher,
"They think they're a couple of swells."

Grand Trunk Pacific Telegraph Officers Convention.—The third annual conference of Grand Trunk Pacific Telegraph Co. officials was held at the Macdonald Hotel, Edmonton, Alta., recently, H. Hulatt, Manager of Telegraphs, G.T.R. and G.T.P.R., Montreal, presiding. Important matters tending to increase the efficiency of the service were discussed. Among those present were, Superintendents W. J. Rooney, Western Division; W. E. Bell, Central Division; electrical engineers, S. Robertson, E. H. Hiscock; general foremen, G. Nicolson, D. S. Adamson, G. Spratt, A. Dougall; chief operators, J. A. C. Kelman, C. A. Radford, J. Stevens; city managers, J. E. Grace, Winnipeg, G. A. Jackson, Regina, A. Vogel, Saskatoon, G. B. Brien, Calgary, J. O. Pilon, Edmonton, J. E. Lalonde, Prince George. Mr. Hulatt entertained all those attending the conference at dinner the first evening, Superintendent N. B. Walton, Division Freight Agent L. V. Bruce, and City Passenger and Ticket Agent J. F. Philp also being present.

The Northern Construction Co. Ltd., has been granted supplementary letters patent under the Dominion Companies Act, converting it from a public company into a private company.

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 Can-

PERSONAL NOTES.

Capt. F. D. Burpee, Superintendent, Ottawa Electric Ry., Ottawa, Ont., re-



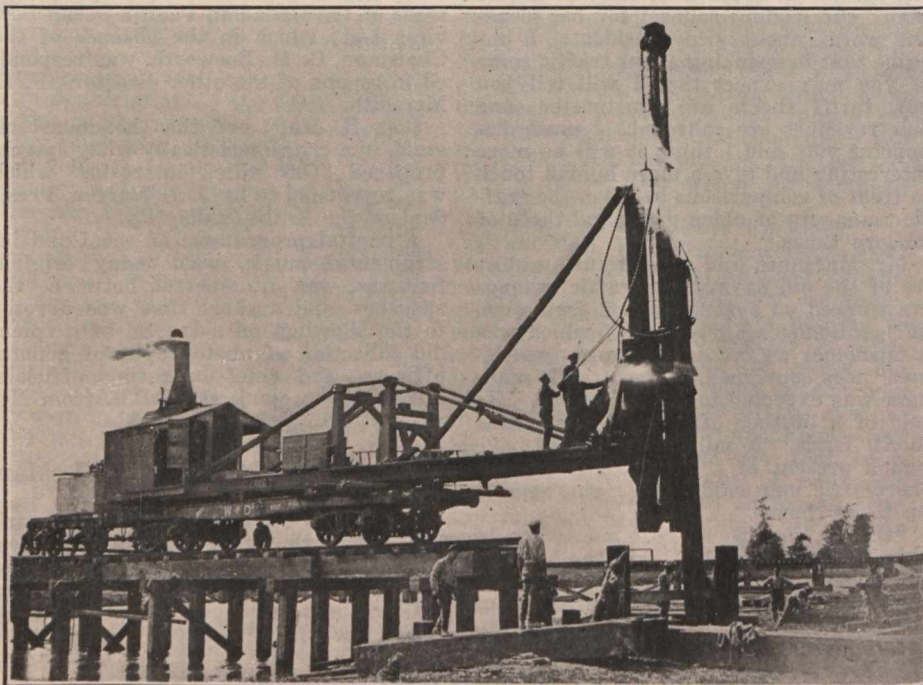
A Canadian on his way back to his billet, on the British Western Front, crossing a badly shelled area. Canadian Official Photograph. Copyright reserved.

adian 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 should be glad to be favored in this respect.

Army Transportation Intelligence.—The sale of army mules at Tattersall's recalls an incident which sent a ripple of sheer joy through our forces in France when the war was still young. It was a routine order from G.H.Q. as to the transport of machine guns, then being greatly increased in numbers. The gun on ammunition limber was to be drawn by "a mule, or if not available, by an intelligent N.C.O. and five men." The army had not ceased chuckling over this gem of red tapedom when there appeared in orders the notice: "Reference G.R.O.—of such a date—line 7; delete the word 'intelligent.'"—London Chronicle.

The Grand Trunk Employes' Patriotic Association, consisting of officials and employes located at Toronto, held its final meeting Mar. 8, to receive reports and for winding up its affairs. The report showed that since the organization of the association in Aug. 1914, \$39,800.81 had been received and \$39,677.43 expended. The balance was handed to a special committee to dispose of as conditions may warrant. The expenditures were divided as follows: Toronto and York County Patriotic Fund and Canadian Red Cross Society \$23,093.20; British Red Cross Society \$4,250; Christmas boxes for enlisted employes \$3,595.05; Overseas Club Tobacco Fund \$2,200; Y.M.C.A. \$2,000; Navy League of Canada \$1,500; British Sailors Relief Fund \$1,000; Prisoners of war \$830; Catholic Army Huts Fund \$500; Relief Committee \$457.50; Honor Roll and flags \$114.30; Daughters of the Empire, Mimico, \$100; current expenses \$37.38. J. A. Murphy, Secretary of the Association, was presented with a gold watch in recognition of his services.

sumed his duties early in March, after an absence of three years, on military service. In 1894 he enlisted in the Ottawa and Carleton Rifles, and afterwards was in the O.A.A.C. Co. of the 43rd Regiment, which he rejoined in 1915. He enlisted in the 207th Battalion,



Royal Engineers completing a bridge over a river in France. Official photograph, taken on British Western Front. Crown copyright reserved.

C.E.F., in Ottawa, in Feb. 1916, and assisted in recruiting the battalion. He left for England as second in command in May 1917, and was quartered at Seaford, Sussex, where, after a few days, the battalion was broken up. He then transferred to the Canadian Railway Troops, reverting to the rank of lieutenant, and went to France July 7, re-

porting to the 5th Battalion, C.R.T., at Arras. This battalion, like all other railway construction units, was employed all over the British front, seldom remaining longer than four or five weeks on one job, and being constantly employed on repair and construction of narrow and standard gauge railways. The 5th Battalion worked in front of Ypres in Oct. 1917, when fighting was practically continuous, and immediately after the capture of Zonnebeke was ordered to construct a narrow gauge line to that point. Later in the year this battalion followed the Third Army in the unsuccessful attempt on Cambrai, and worked in the vicinity of Hermes and Havrincourt for about six weeks. The last work the battalion was engaged in, prior to its return to England, was the reconstruction of the main line between Lille, France, and Brussels, Belgium. This line had been destroyed by the enemy on retirement, the demolition being very thoroughly done. About 2 lb. of perditite was exploded at every second joint, and a mine, consisting of 4 or 5 shells of a special type for railway destruction, was exploded in the grade at intervals. In other places the destruction was carried out by means of a track destroyer, consisting of a heavy rail bent into a hoop and slipped under the rail joint and attached to a number of locomotives by a steel cable. This, while it did not destroy the rail, twisted the track sideways, split all the ties and tore up the grade. One line was rebuilt with salvaged material, the second track being laid with new material brought up by train.

Capt. Norman J. D'Arcy, M.C., eldest son of W. H. D'Arcy, General Claims Agent, C.P.R., Winnipeg, has returned from overseas service.

Col. J. S. Dennis, C.M.G., liaison officer and Red Cross Commissioner, Siberian Expeditionary Force, Chairman of the Canadian Economic Commission in Siberia, and Assistant to the President,

C.P.R., was reported to have left Vladivostock for Canada, Mar. 19.

Lieut. A. C. Doucet, Royal Air Force, killed in an aeroplane accident in England recently, was son of Lt.-Col. A. E. Doucet, of Quebec, Que., formerly District Engineer, National Transcontinental Ry.

Brigadier General C. L. Hervey, D.S.O. of Montreal, who returned to Canada, Mar. 24, went overseas as Major of a unit of the Canadian Railway Troops, and shortly after arriving in France, was promoted to Lieut.-Colonel and given command of the 4th C.R.T. In June 1918, he was promoted to Brigadier-General, and placed on special service in England. Before taking up military service, he was a director of the Courtenay Bay Construction Co., and was supervising the construction of the breakwater. He had also been in charge of considerable contracting work on the C.P.R. in New Brunswick.

Lt.-Col. W. B. Kingsmill, D.S.O., of Saunders, Torrance and Kingsmill, Canadian Solicitors for the Michigan Central Rd., has returned to Toronto and has resumed his practice. Prior to the war he was in command of the 10th Royal Grenadiers, and later organized and commanded the 123rd Battalion C.E.F., which proceeded to France as the pioneer battalion of the 3rd Division. It fought at Vimy Ridge, Avion, Passchendaele and Hill 70. On the disbandment of all pioneer battalions, the 7th Battalion Canadian Engineers was organized, with Lt.-Col. Kingsmill in command. He returned from France in Aug. 1918, and has since been acting as Judge Advocate General at Ottawa. He was twice mentioned in dispatches, and was awarded the D.S.O. for service in France.

Lieut. M. P. MacLeod, of the R.A.F., son of M. H. MacLeod, Vice President, Operation, etc., Canadian National Rys., who went overseas in Feb. 1917, arrived back in Toronto late in March.

Major R. C. Manning, D.S.O., whose death in France, Nov. 6, was reported recently, was, before enlisting, in the Bridge and Building Department, Canadian Government Railways, Moncton, N.B. He enlisted on the outbreak of war, as a private, and went to France as a lance corporal, being granted a commission for bravery on the field. He was awarded the Military Cross in Sept. 1915, the Distinguished Service Order in 1917, and the French Cross of the Legion of Honor in Jan. 1918.

Col. C. W. P. Ramsey, C.M.G., formerly Engineer of Construction, Eastern Lines, C.P.R., and Mrs. Ramsey, arrived in Montreal, from England, early in March. Col. Ramsey was born at Bury, Que., Jan. 15, 1883, and entered C.P.R. service as an apprentice in the Mechanical Department at the Delorimier Ave. shops, in 1898, and served in various minor capacities until Sept. 19, 1903, when he was transferred to the Construction Department at Montreal, passing through the various grades of draftsman, transit man, Assistant Engineer and Division Engineer. On Mar. 15, 1912, he was appointed Engineer of Construction, Eastern Lines, and held that position until Feb. 25, 1915, when he was granted extended leave of absence on his appointment as Lt.-Colonel in command of the Canadian Overseas Railway Construction Corps. During 1918, he was promoted to Colonel, made a Companion of the Order of St. Mich-

ael and St. George, and seconded for service at the War Office.

Capt. Hon. W. J. Shaughnessy, son of the Chairman of the C.P.R., returned to Canada, Mar. 17, after about 30 months service overseas, chiefly on Lieut.-Gen. Sir Arthur Currie's staff. He went overseas with the 199th Irish Rangers, and was, for some time attached to the British Headquarters staff, later being transferred as A.D.C. to Gen. Currie. He is returning to his law practice.

Major-General J. W. Stewart, C.B., of Foley, Welch and Stewart, railway contractors, who has, since 1916, been in railway work on the western front in France and Flanders, and who latterly acted as Director General of Transportation there, returned to Canada Mar. 6. In an interview at Montreal, he stated that the Canadians rendered great service to the British transport service and became as famous behind the lines as at the front. During the first two years of the war, the British built a little over 100 miles of railway, but from 1916 to the end of the war, more than 3,000 miles of standard gauge, and 6,000 miles of narrow gauge lines were built, enabling 250,000 tons of munitions to be moved monthly.

Liability for Injuries on Joint Railway Lines.—Mrs. P. Beauchemin has been awarded \$12,025 and costs by a Quebec court against the G.T.R. as compensation for the death of her husband, a section foreman, who was struck by a train. He was in the G.T.R. employ and at the time of the accident was mending a broken rail near St. Basil, Que., on a section of the line over which the Intercolonial Ry. has running rights, and was struck by an Intercolonial locomotive. Justice Greenshields, held that the plaintiff could not be held bound by any agreement as to joint control; he was in the G.T.R. employ and doing that company's work, and whatever remedy the G.T.R. had was as against the Intercolonial Ry. The company alleged that the accident was due to inexcusable fault, but the facts showed that the fault lay with the driver of the Intercolonial train failing to obey a stop signal at St. Basil. The moment the train entered the section of the line at Montreal or St. Lambert, he was under the orders of the train dispatcher who was an exclusive employe of the G.T.R. As between the section foreman and the G.T.R. the responsibility lies with the company. It was further alleged that there was contributory negligence on the part of the section foreman, but he failed to find any, and on the other hand considered it a case of inexcusable fault on the part of the company.

United States Railways Financial Situation.—The U.S. Congress adjourned without making appropriations amounting to \$750,000,000 asked by the Railroad Administration. This left that body with practically empty coffers, about \$381,000,000 of debts and no funds to finance the programme of improvements planned for this year as a measure to take up the slack in the materials and labor markets. It was arranged Mar. 5 by the government to retain control of the railways and to have the industrial companies do their own financing for the next few months on the open market or through advances by the War Finance Corporation which is reported to have about \$337,000,000 of resources available.

Questions About Canadian National Railways Officials.

In answer to a question, by A. B. Copp, M.P. for Westmoreland, N.B., in the House of Commons recently, the Minister of Railways stated that the following officials, attached formerly to the Canadian Government Rys. head office at Moncton, N.B., had been transferred for service on the Canadian National Rys.

C. A. Hayes, formerly General Manager, Eastern Lines, C.G.R., Moncton, promoted to Vice President, in charge of traffic, all lines, Canadian National Rys., Toronto.

H. H. Melanson, formerly Passenger Traffic Manager, C.G.R., Moncton, promoted to Passenger Traffic Manager, all lines, Canadian National Rys., Toronto.

R. F. McLeod, formerly Assistant General Passenger Agent, C.G.R., Moncton, promoted to Assistant to Passenger Traffic Manager, in charge of Tariff Bureau, Canadian National Rys., Montreal.

W. L. Crighton, formerly Advertising Agent, C.G.R., Moncton, promoted to General Advertising Agent, all lines, Canadian National Rys., Toronto.

—add questions about C.N.R. officials—
G. E. Smart, formerly Master Car Builder, C.G.R., Moncton, promoted to General Master Car Builder, all lines, Canadian National Rys., Toronto.

H. F. Alward, formerly General Claims Agent and Solicitor, C.G.R., Moncton, promoted to General Solicitor, Canadian National Rys., Montreal.

In answer to another question by Mr. Copp, the minister stated that F. P. Brady and A. E. Warren, are general managers of the Canadian National Rys. Mr. Brady's jurisdiction extends over all Canadian Northern lines east of Port Arthur, and National Transcontinental lines east of O'Brien, Que., and over the former Canadian Government Rys. His salary is \$12,000 a year and his office is at Montreal. Mr. Warren's jurisdiction extends from O'Brien west, on the National Transcontinental Ry., and on all Canadian Northern lines west of Port Arthur. His salary is \$10,000 a year and his office is at Winnipeg.

C. A. Hayes, formerly General Manager, Eastern Lines, Canadian Government Rys., with a salary of \$12,000 a year, is now Vice President, in charge of traffic, Canadian National Rys., at the same salary.

In answer to a question by J. H. Sinclair, M.P. for Antigonish and Guysborough, N.S., the Minister of Railways stated that no employes formerly in the Canadian Northern Ry. service had been appointed since Jan. 1 to positions on the Canadian Government Rys. east of Montreal, but W. A. Kingsland, formerly General Superintendent, Canadian Northern Ry., Montreal, had been appointed Assistant General Manager, Eastern Lines, Canadian National Rys., and his jurisdiction had been extended to cover Canadian Government Rys., east of O'Brien. Guy Toombs, formerly Assistant Freight Traffic Manager, Eastern Lines, Canadian Northern Rys., had had his jurisdiction extended to include Canadian Government Ry. lines west of Matapedia, Que. and Edmundston, N.B., and east of Armstrong.

Railway Subsidies.—The Dominion Public Accounts for the year ended Mar. 31, 1917, show that railway subsidies of \$959,583.88 were paid during the year.

Orders By Board of Railway Commissioners for Canada.

- Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.
- General order 259. Jan. 13.—Approving specifications for mail cars dated Ottawa, May 22, 1918, submitted by Canadian Railway Mail Services Department for use by railway companies operating in Canada.
28052. Jan. 22.—Dismissing Toronto, Hamilton & Buffalo Ry. application for a rehearing by way of appeal from order 27951, Dec. 24, 1918, rescinding clause 2 of order 25570, Oct. 27, 1916, providing for interswitching at Brantford, Ont.
28053. Jan. 21.—Ordering Kitchener & Waterloo St. Ry. to move north derail at the diamond crossing with G.T.R. at King St., 100 ft., and south derail, 75 ft. from the nearest G.T.R. rail, and to place cluster lights with red light center over derails.
28054. Jan. 23.—Ordering that crossing of Bruce St., Galt, Ont., by G.T.R. and Lake Erie & Northern Ry. be protected by watchman between 7 a.m. and 7 p.m.
28055. Jan. 22.—Authorizing C.P.R. to remove its regular agent at Kinorth, Sask.; caretaker to be appointed to see that station is kept clean, heated and lighted for passengers.
28056. Jan. 23.—Relieving Canadian National Rys. from providing further protection at Wallace or White Lake crossing, Sheffield Tp., Ont.
28057. Jan. 23.—Amending order 27826, Nov. 18, 1918, re Lautz Bros. siding, Beachburg, Ont.
28058. Jan. 23.—Extending to June 1, time within which the Edmonton, Dunvegan & British Columbia Ry. shall fence its right of way through east half of Sec. 31, Tp. 72, Range 5, west 5th meridian, Alta., and install farm crossing for S. Wraight.
28059. Jan. 25.—Amending order 27770, Oct. 9, 1918, re G.T.R. level crossings in Brantford, Ont.
28060. Jan. 25.—Approving Great Northern Ry. timetable showing service between Guichen and Sumas, via Colebrook, and to Vancouver, B.C.
28061. Jan. 27.—Extending to Mar. 27 time within which C.P.R. shall install electric alarm bell at crossing of King St. West, Ingersoll, Ont.
28062. Jan. 25.—Authorizing C.P.R. to build spur for Three Rivers Shipyards, Ltd., Three Rivers, Que.
28063. Jan. 27.—Amending order 14606, Aug. 21, 1911, re Canadian Northern Ry. interswitching at Brandon, Man.
28064. Jan. 27.—Ordering New York Central Rd. to stop all its trains, both incoming and outgoing, on flag at Westmount station, Que.
28065. Jan. 27.—Relieving Canadian National Rys. from providing further protection at crossing near Vegreville station, Alta.
28066. Jan. 27.—Authorizing C.P.R. to remove its station agent at Naughton station, Ont.; caretaker to be appointed to see station is kept clean, heated and lighted for passengers.
28067. Jan. 28.—Amending order 28039, Jan. 16, re C.P.R. level crossing at Grant St., Quebec.
28068. Jan. 24.—Approving agreement, July 27, 1917, between Bell Telephone Co. and Wakefield & Masham Telephone Co., Ottawa and Pontiac Counties, Que.
28069. Jan. 22.—Dismissing application of City of Niagara Falls, Ont., for order directing Niagara, St. Catharines & Toronto Ry. to lay its tracks down center of Queen St. and to construct a new crossing.
28070. Jan. 31.—Approving G.T.R. clearance at siding for Canadian General Electric Co., Toronto.
28071. Jan. 31.—Authorizing Toronto Terminals Ry. to lay conduits containing pressure steam lines across Bay, Yonge, and Scott Sts., and upon and along Esplanade St., between Yonge and Scott Sts., Toronto.
28072. Jan. 31.—Authorizing Pere Marquette Ry. to erect bridge over spur serving Gray Dort Motors Ltd., Chatham, Ont., with 16 ft. clearance.
28073. Feb. 5.—Suspending, pending hearing by Board, G.T.R. supplement to tariff C.R.C. no. 4024 and cancellation of item 195 in C.P.R. supplement 14 to tariff E 3551 showing increase in rates on agricultural lime or stone dust from Kirkland, Ont.
28074. Feb. 5.—Authorizing Essex Terminal Ry. to build extension of spur for Swedish Crucible Steel Co. of Canada, Ltd., Windsor, Ont.
28075. Feb. 4.—Authorizing British Columbia Government to build crossing over C.P.R. at Notch Hill.
28076. Feb. 4.—Authorizing Canadian Northern Ontario Ry. to build spur for Eastern Land Department, Canadian National Rys., at Shawmere.
28077. Feb. 5.—Relieving G.T.R. from providing further protection at crossing near Corbyville, Ont.
28078. Feb. 6.—Approving Esquimalt and Nanaimo Ry. plan of timber loading rig for Straits Lumber Co., Nanoose Bay, B.C.
- 28079 to 28081. Feb. 4.—Authorizing Canadian Northern Ontario Ry. to build spur for Anglo Canadian Construction Co., Wigle Tp., Sudbury District, Ont.
28082. Jan. 21.—Rescinding order 27497, July 24, 1918, and ordering work to be done in connection with the Foster St. drain and the natural water courses in connection with drainage at crossing of C.N.R. and C.P.R. tracks, Belleville, Ont.
28083. Feb. 7.—Authorizing British Columbia Electric Ry. to build extension of Graham Co's spur for Barrett Co., Point Grey, B.C.
28084. Feb. 5.—Extending to May 15, time within which Grand Trunk Pacific Ry. shall build stock yard at Ardrossan, Sask.
28085. Feb. 5.—Authorizing Department of Justice to build coal conveyor over Grand Trunk Pacific Ry. for Alberta penitentiary.
28086. Jan. 27.—Ordering G.T.R. to provide shelter at Brussy station, Que., and substitute the name of Brussy for Ile Perrot.
28087. Feb. 10.—Authorizing Kettle Valley Ry. to open for traffic its line from mileage 13.6 at Princeton, B.C., to mileage 8.
28088. Feb. 13.—Suspending, pending public hearing by Board, supplement 3 to C.P.R. tariff E-3883, supplement 5 to G.T.R. tariff E-3411 and supplement 1 to C.N.R. tariff E-1121, cancelling commodity rates on cheese to Montreal.
28089. Feb. 10.—Approving Canadian National Ry. bylaw authorizing R. E. Perry, A.G.F.A. and W. Hatley, A.G.F.A.; H. H. Melanson, T.M.; R. F. MacLeod, A.P.T.M.; R. L. Fairbairn, G.P. A., and R. Creelman, A.P.T.M., to prepare and issue freight and passenger tariffs respectively.
28090. Feb. 11.—Dismissing application of J. H. Warrington, Cornwall, Ont., and others for reduction in class rates and carload minimum weight on shipments of live poultry.
28091. Feb. 8.—Ordering that cost of installing transfer track between the G.T.R. and Niagara St. Catharines and Toronto Ry., at Thorold, Ont., be paid equally by G.T.R. and Canadian National Rys.
28092. Feb. 8.—Authorizing G.T.R. and C.P.R. to operate over crossing at Komoka, Ont., without first stopping.
28093. Feb. 10.—Recommending to Governor in council for sanction, Maine Central Rd. rules for operating department effective from Jan. 1.
28094. Feb. 10.—Authorizing G.T.R. and Michigan Central Rd. to operate over crossing at Canfield, Ont., without first stopping.
28095. Feb. 10.—Amending order 28064, Jan. 27, re stopping of New York Central Rd. trains at Westmount, Que.
28096. Feb. 11.—Authorizing Saskatchewan Government to build highway crossing over C.P.R. on road north of Sec. 26, Tp. 17, Range 16 west 3rd meridian.
28097. Feb. 12.—Approving British Columbia Government's plan of overhead bridge on Columbia and Northwestern Ry., near Castlegar, B.C.
28098. Feb. 11.—Authorizing C.P.R. to build spur for S. Ouellette, Campbell Tp., Que.
28099. Feb. 11.—Ordering the use of 9 temporary railway crossings between Dosquet and Lyster, Que., for certain property owners pending hearing of question of location and construction of permanent crossings to be heard by the board in Montreal.
28100. Feb. 10.—Authorizing C.P.R. to build spur for J. C. Wright, Proton Tp., Ont.
28101. Feb. 8.—Ordering Canadian National Rys. to stop train no. 8 on flag at Richmond, Ont., on Monday mornings to accommodate the weekend passenger traffic for Ottawa.
28102. Feb. 13.—Relieving Grand Trunk Pacific Ry. from providing further protection at crossing between Unity and Vera, Sask.
28103. Feb. 11.—Approving agreement, Jan. 21, between Bell Telephone Co. and Stroud Telephone Co., Simcoe County, Ont., and rescinding order 23352, Feb. 23, 1915.
28104. Feb. 12.—Ordering C.P.R. to maintain day and night watchmen at crossings of Waterloo and Adelaide Sts., London, Ont.
28105. Feb. 13.—Authorizing G.T.R. to build spur for Imperial Oil Ltd., Toronto.
28106. Feb. 13.—Authorizing City of Toronto to carry a 10 in. water main across overhead bridge at Strachan Ave., over railway tracks.
- 28107, 28108. Feb. 18.—Approving Bell Telephone agreements with St. Marys Telephone system Ltd., Shefford County, Que., Jan. 3; and Lambeth Telephone Co., Middlesex County, Ont., Feb. 4.
28109. Feb. 17.—Approving Bonaventure and Gaspé Telephone Co. bylaw authorizing E. A. Bouillon, Managing Director, and M. C. Harris, General Manager, to issue triaffs for board's approval.
28110. Feb. 17.—Authorizing Saskatchewan Government to build highway crossing over Canadian National Rys. in n.e. ¼ Sec. 20, Tp. 39, range 4 west 3rd meridian, at Osler townsite.
28111. Feb. 18.—Dismissing complaint of St. Lawrence Pulp and Lumber Corporation against rate of \$23.07 a gross ton on secondhand rails from Matapedia, Que., and requesting reparation to basis of \$14.79 a gross ton from Montreal to Vancouver with addition of arbitrary of \$1.12 a gross ton from Matapedia to Montreal.
28112. Feb. 21.—Dismissing application of Mme. Napoleon Bessete of Roxton Falls, Que., for order directing C.P.R. to remove stock pen from near her dwelling.
28113. Feb. 20.—Approving agreement, Feb. 11, between Bell Telephone and Burgessville Telephone Co., Oxford and Brant Counties, Ont.
28114. Feb. 20.—Ordering G.T.R. to provide a one pen stock yard and loading chute at Jamesons siding, Ont.
28115. —Feb. 19.—Authorizing Canadian National Rys. to build spur for J. Bachler Boulter Tp., Ont.
28116. Feb. 25.—Authorizing G.T.R. to build 2 additional tracks at grade across William St., Brockville, Ont.
28117. Feb. 24.—Approving plan of interlocking plant to be installed by C.P.R. at Kempton, Ont.
28118. Feb. 26.—Authorizing Canadian National Rys. to build branch for Standard Chemical Iron and Lumber Co. of Canada Ltd., Ferguson Tp., Ont.
28119. Feb. 25.—Ordering C.P.R. within 60 days to install improved type of automatic bell near Farrelton, Que.
28120. Feb. 25.—Disallowing Ottawa Electric Ry. tariff C.R.C. 5 which was filed to become effective Nov. 18, 1918, and which was suspended pending hearing.
28121. Feb. 24.—Ordering that transfer track between Niagara St. Catharines and Toronto Ry. and G.T.R. at Thorold, Ont., be maintained by N. St. C. and T. Ry.
28122. Feb. 21.—Amending order 28982, Jan. 21, re extension of walls of culvert opposite Marsh Engineering Works, Belleville, Ont.
28123. Feb. 27.—Approving Lake Erie and Northern Ry. standard freight mileage tariff C. R.C. 162.
28124. Feb. 27.—Approving London and Port Stanley Ry. standard mileage freight tariff C.R. C. 224.
28125. Feb. 26.—Relieving C.P.R. from providing further protection at crossing between sec. 25, Tp. 16, Range 25, and sec. 30, Tp. 16, Range 24, west 2nd meridian.
28126. Feb. 26.—Ordering Canadian National Rys. to erect a one-car stock pen at Mair, Sask.; by Sept. 30.
28127. Feb. 26.—Authorizing C.P.R. to build spur for Harris Abattoir Co., Toronto.
28128. Feb. 27.—Authorizing Toronto, Hamilton and Buffalo Ry. to build 2 branch lines for Ker and Goodwin Machine Co., Brantford, Ont.
28129. Feb. 28.—Ordering C.P.R. to install improved type of automatic bell at crossing of Bull St., Woodstock, N.B.
28130. Feb. 28.—Approving Pere Marquette Ry. plan of timber trestle to be built at Muirkirk, Ont., in lieu of culvert directed by order 27821, Dec. 11, 1918.
28131. Feb. 27.—Authorizing C.P.R. to build 2 spurs for Wayagamack Pulp and Paper Co., Belle River Island, Que.
28132. Feb. 28.—Authorizing C.P.R. to build spur for Excelsior Coal Co. in s.w. ¼ sec. 30, Tp. 1, Range 5, west 2nd meridian, Sask.
28133. Mar. 4.—Authorizing Drury, Dennison and Graham Tps., Ont., to build highway crossing over Algoma Eastern Ry., near O'Donnell, Ont.
28134. Mar. 4.—Approving agreement, Feb. 10, between Bell Telephone Co. and Shakespeare Telephone Co., Sudbury District, Ont.
28135. Feb. 28.—Relieving C.P.R. from providing further protection at Kingston Crossing, near Verona station, Ont.
28136. Feb. 27.—Amending order 28154, Jan. 23, re crossing of Bruce St., Galt, Ont., by G.T.R. and Lake Erie and Northern Ry.
28137. Mar. 4.—Approving location of Canadian Northern Ry., Jackfish Lake Branch, from mileage 60.45 to 93.91, Sask.

A Railway Coal Freight Case.—Judgment was given Mar. 20, by Chief Justice Falconbridge, at Hamilton, Ont., in the case of Niblock vs. G.T. Ry. The action was to recover \$24,053.51 for coal sold, but the New York Central Rd. intervened with a claim for freight over its lines. The judge said: "I do not think that the New York Central Rd. claim against the defendants is mere camouflage on the part of these defendants. Let defendants pay into court \$19,283.17, with interest from Aug. 15, 1913, less their costs, as of an interpleader application, which I fix at \$60. Plaintiff may apply to the court on notice to the New York Central Rd., for payment out."

Railway Land Taxation.—The Greater Winnipeg Water District is asked by the Manitoba Legislature recently for power to tax railway lands in the district in regard to the water levy, but the clause was struck out by the bill.

Electric Railway Department

Increases in Electric Railway Freight and Passenger Rates.

British Columbia Electric Ry.—Vancouver City Council passed the following resolutions Feb. 7: "That the city exercise its rights to cancel and abrogate the agreement of July 8, 1918, granting permission to the B.C. Electric Ry. Co. to collect 6c fares on its street cars within the City of Vancouver, and that the cancellation thereof do take effect immediately at the expiry of the nine months from the date of the last mentioned agreement, and that the notice of such intention to cancel the same forthwith be formally given to the company.

The mover of the resolution, Ald. McRae said that it was not an attempt to break the 6c fare bylaw, but simply a preliminary move to place the city in a safe position in connection with the legislation coming before the legislature to appoint a public utilities commission. He pointed out that a clause in the draft bill for the proposed public utilities commission provides that fare schedules stand as they are until such time as the board deals with them.

Representatives of the Victoria City Council and the company have met on several occasions with a view to arriving at a satisfactory settlement of the proposed 6c fare question, but no material progress has been made.

In view of the fact that the company is asking the city to eliminate the jitney from routes in direct competition with the company and, should this be granted, will expect the city to enforce the regulation (one of the concessions asked of the city in return for a 6c fare), the jitney men have circulated a petition, asking that jitneys be allowed to operate freely in competition with the company, as heretofore, and have obtained a considerable number of signatures. The petition and signatures was presented to the city council as an argument in favor of retaining the jitney in its present unrestricted condition, a number of local garages presented a similar petition to the city council. The legislature's private bills committee refused to consider the city's application for a bill to eliminate the jitney on traffic lines competing with the company, but on Mar. 14 the council, by a vote of 5 to 3, decided that the section should be retained in the bill.

Cape Breton Electric Co.—The Nova Scotia Public Utilities Commission gave judgment, Mar. 4, on the application of the Cape Breton Electric Co., and the Sydney and Glace Bay Ry., for an increase of fares on their lines, which were heard in July and August, 1918. The S. and G.B. Ry. is leased by the C.B.E. Co., the two lines being operated as a unit. The C.B.E. Co. operates its lines in Sydney and Glace Bay, which are connected by the company's ferry service, while the S. and G.B. Ry. is an interurban line, serving the mining district between the two termini. The fares in Sydney and Glace Bay were 5c, while on the interurban line there are 5 zones on each of which a 5c fare was charged, making a 25c fare from Sydney to Glace Bay. The company asked authority to increase the fares by 1c in Sydney and Glace Bay, and by 1c in each zone on the interurban line, and to charge 1c for each

transfer. The municipalities through which the line passes, opposed the application and desired to have limited tickets at for workers, and for school children.

The commissioners dealt with the matter as the application of the C.B.E. Co., the two lines being treated as one. In an elaborate judgment they authorized the increase of fares, except the request to charge 1c each for transfers which was not pressed very thoroughly by the company and was finally dropped. The new fare is therefore 6c each in the city of Sydney, and the town of North Sydney, and Sydney Mines respectively, while the through fare from within the City of Sydney to Glace Bay, covering 5c zones, is advanced from 25c to 30c, with no limited or reduced rate likely except to school children. Although the commissioners stated that they felt sure they had no power to require that tickets should be sold to school children at a reduced rate, the company intimated that it was not averse to doing this, and finally offered to sell tickets to children under 16 years of age in attendance at public schools, on schooldays, between 8 a.m. and 5 p.m., at 10 for 30c. This rate does not go into operation until Apr. 1. In the course of the judgment the commissioners said that the value of the company's property used and useful in connection with the furnishing of tramway service plus the usual overhead charge for engineering, etc., was \$764,918, this valuation being based upon figures submitted by C. M. O'Dell, an engineer, who was engaged upon the construction of the line, and who was a witness for the municipalities. The company's expert engineer, L. R. Nash, of Boston, Mass., placed the value of the property at \$1,600,000. Under the terms of the Public Utilities Act, the company is entitled to earn a return of not less than 8% on the value of the property used and useful in connection with the service which it is rendering. The company is therefore entitled to a return of \$61,193.44 in addition to taxes and depreciation. From the returns of earnings and operating expenses submitted it appeared that for 1918, there was available after meeting operating expenses, \$46,963; whereas in 1917 there had been \$99,777.15. The company based its application for relief upon the ground of increased costs of operation in all lines, especially emphasizing the increases in coal and labor. The total operating expenses increased from \$133,472.92 in 1914, to \$243,522.00 in 1918, while the revenue increased from \$202,327.11 to \$290,490 in the same period. The taxes increased from \$8,537.25 in 1914 to \$18,967 in 1918. The operating costs, while high as compared with pre war conditions, were not extravagant in view of the greatly increased cost of labor and materials. One item in particular which was claimed to be extravagant was a payment to Stone and Webster of 2.9% of the gross annual earnings in return for which the services of the legal, engineering, accounting and managerial staffs of the firm are at the company's disposal and perform for it functions which it would otherwise have to main-

tain a staff of its own to fulfil. While occasionally the company might possibly escape with a slightly lower expenditure, the commissioners found that "on the whole the arrangement cannot be said to be excessive." Transportation is the only thing the company has to sell, and if it is apparent that it could not economize in expenses by curtailing the service, on the other hand there are demands by the municipalities for increased service, and the commissioners were satisfied that any impairment or reduction in the service now being provided would fail to meet the needs of the communities served. The only alternative was an increase of fares. After an examination of the effect of the increased fares elsewhere, the judgment proceeds to set out that, while putting the rate asked for into effect, it must be reached as a temporary schedule which might be modified should the results of its operation, when known, call for such modification. With this end in view the company is directed to furnish quarterly statements showing the results of the increased schedule.

During the hearing of evidence a statement was made with reference to an agreement with Glace Bay, but after examining the whole matter the commissioners were of the opinion that there was nothing in the matter to preclude them from exercising the general control over rates conferred upon them by the Public Utilities Act.

Lake Erie and Northern Ry.—The Board of Railway Commissioners taxed order 28, 125, Feb. 27, approving this company's standard freight mileage tariff C.R.C., 165, the rates named in which are on the same basis as apply on steam railways in Eastern Canada.

London & Port Stanley Ry.—The Board of Railway Commissioners passed order 28, 124, Feb. 27, approving this company's standard mileage freight tariff C.B.C., 224.

London St. Ry.—We have been advised, in reference to the company's application to the London, Ont., City Council, for power to increase fares that the no. 1 committee recommended that the mayor be authorized to employ an expert accountant to report on the accounts, state and physical condition of the company, and that the city solicitor be asked to advise as to the power of the council to amend bylaw 916, the franchise agreement. The committee has been advised that any amendment of the bylaw would have to be approved by the Ontario Legislature. These recommendations were approved by the city council, Mar. 3. No appointment of an auditor had been made at the time of writing, Mar. 22. The London Chamber of Commerce decided Mar. 14, that it would secure an independent report on the company's affairs.

The no. 1 committee had a special meeting Mar. 21, in connection with street railway matters. The mayor is reported to have said that the city was not at present contemplating the purchasing of the railway.

A bill has been introduced in the House of Commons to ratify an agreement made between the company and

the City of London, Jan. 20, 1919, which nullifies an agreement of Nov. 28, 1917, and provides for an advance in semi weekly excursion rates from London to Port Stanley and return from May 24 to Sept. 10 in each year. The new return rates are not to exceed 50c to persons over 12 years of age, and 25c for persons under 12, except children under 5, accompanied by a parent, or other person, in charge, who are to be carried free. The old fare was 30c for the round trip, so that the advance is 20c. There were no children free with the old arrangement.

The Nipissing Central Ry., which is owned by the Ontario Government and operated by the Timiskaming and Northern Ontario Ry. Commission, has filed a local passenger tariff with the Board of Railway Commissioners which advances fares practically 25%, effective Apr. 1. The new fares are as follows:—

Within town limits of Cobalt, Haileybury and New Liskeard, 7c, or 4 tickets for 25c. Between North Cobalt and Haileybury or Cobalt, 10c, or 12 tickets for \$10. Between Cobalt and Haileybury, between Cobalt and Kerr Lake and intermediate points, and between New Liskeard and Haileybury, 15c, or 8 tickets for \$1. Between New Liskeard and Cobalt, 30c, or 4 tickets for \$1.

Scholars tickets, good for 10 rides, between Cobalt, Haileybury and intermediate points; between New Liskeard, Haileybury and intermediate points, and between Cobalt, Kerr Lake and intermediate points are sold at 30c. These tickets are good only on days on which school is in session, going to and from school, and will not be honored at any other time of day, or on Saturdays, Sundays, or holidays. They will be sold to scholars only on presentation of certificate bearing the personal signature of the principal of the school, certifying that the applicant is a regular attendant of his school under 18 years of age and properly entitled to use these tickets.

Workmen's tickets, good for 21 rides, between 5 and 7.30 a.m., and 4.45 and 7 p.m., daily, except Sunday, are sold as follows:—Between Cobalt, Kerr Lake and intermediate points, \$1.25; between Cobalt, Haileybury and intermediate points, \$1.25; between New Liskeard, Haileybury and intermediate points, \$1.25; between New Liskeard, Cobalt and intermediate points, \$2.50. On car leaving Cobalt at 6.45 p.m., also on car leaving New Liskeard 6.45 p.m., workmen's tickets will be accepted as far as Haileybury only.

As before stated, the increases are practically 25%, except between Cobalt and Haileybury, Cobalt and Kerr Lake, and Haileybury and New Liskeard. An advance of 25% on the old 10c rate would have made a very cumbersome fare, so it was advanced to 15c cash, or 8 tickets for \$1. As residents of the district will, in nearly all cases, buy tickets, they will really only pay an increase of about 25%.

Women Conductors at Kingston.—The Kingston, Portsmouth and Catarqui Electric Ry., Kingston, Ont., issued notice recently that no more women would be engaged as conductors. We are advised that the company has found women most satisfactory as conductors, that it is not discharging any of them, and that when their services are dispensed with entirely it will be due to the fact that there is an abundance of male help labor.

Answers to Questions on Electric Railway Topics.

Answers have been sent to questions through the American Electric Railway Association's question box, by Canadian electric railway officials, as follows:—

Snow Removal Agreements.—In entering into an arrangement with a municipality for the removal of snow and ice from streets occupied by tracks, is it better for the company to agree actually to perform the work, or to contribute to its cost?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry.—It is better for the company to do the work, as it usually has better facilities, and the equipment necessary can in many cases be combined with that required to clear the tracks. After the railway has swept its right of way and pushed the snow back to provide room for vehicular traffic without encroaching upon the car tracks, the municipality should be asked to bear the cost of transporting the snow entirely from the streets.

W. F. Graves, Chief Engineer, Montreal Tramways Co.—Our experience in Montreal, where we have a most unusual snow fall, in the average over 10 ft., is that it is more economical to contract the moving of snow from streets occupied by tracks, either with the municipality or a private contractor. In the first place, by arranging with either, the company relieves itself of many complaints as to dumping of snow and the condition in which the street is left. It also eliminates many long hauls of loaded snow, as municipalities or contractors are able to utilize vacant property in the immediate vicinity at a very small cost, or in instances no charge at all, while the company would, of necessity, have to dispose of the snow at some distant snow dump. In instances we have saved as much as 50% by entering into private contract.

Destroying Weeds by Electricity.—Does any reader know of any method of destroying vegetation or eradicating weeds on railway roadbeds by the use of electricity?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry.—I do not know of any electrical method of removing weeds. We have used a spray of coal-gas tar with good results, applying it in the spring. After three annual treatments the line will be free from weeds for about three years. The tar kills not only the weeds, but a large extent the seeds and roots as well.

Returned Soldiers as Trainmen.—In engaging discharged soldiers and sailors as trainmen, do you consider it necessary to subject them to a physical examination, or would you take the certificate of discharge as evidence of their good physical condition?

F. L. Hubbard, Assistant to General Manager, Toronto Ry., Toronto.—We think they should undergo physical examination, both for the protection of the public, and also on account of the Workmen's Compensation Act, for the protection of the company.

Dust Shields and Guards.—What has been your experience with dust shields and dust guards on modern railway motors; do they materially increase the life of bearings?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry.—Dust guards are almost a necessity, as they not only increase life of bearings, but also protect the gears. We have two types of motors using interchangeable axles and

gears, and the ones with dust guards have not only less bearing trouble, but run with less noise.

Paper as a Lining for Pinions.—Is a liner of paper better than a lining of metal when used to make loose pinions tight on armature shafts?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry.—I would not favor the use of any kind of liner on pinions. We build up worn shaft with electric welder and turn a new bearing for the pinion.

Pressed Steel Gear Pans.—Please state your experience with the new style pressed steel gear pans. We have had a number of breakages and are inclined to prefer the malleable iron pans.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry.—We have had but slight experience with pressed gear cases, but from this are inclined to prefer the malleable, which we can easily repair by electric welding. With some 240 four-motor equipments in service we have taken from stores only one new gear case in the last year.

Running Pinions Without Keys.—What results have been obtained by running pinions on railway motors without keys?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry.—Would be afraid to try pinions without keys, as there is not sufficient bearing to guarantee that they will not slip with the high torque required in modern rapid acceleration.

Handling Passengers Carried Free.—When city employes are carried free under the terms of a franchise, is it better to provide them with tickets or to carry them on their uniforms or badges, and

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry.—This depends largely on the method of fare collection in use. We do not register our fares, and our arrangement is as follows: Policemen and firemen in uniform carried free. Plain clothes men and other civic employes show passes. Letter carriers, when in uniform, are carried on passes.

Advertising on Outside of Car.—Do any companies derive any revenue from the sale of advertising space on the outside of their cars; what are the objections to such a practice?

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry.—I would not favor allowing advertising on the outside of cars, for appearance sake. Then these signs would have to be removable for painting and washing cars, etc. We allow banners to be hung on the fenders, this privilege being controlled by the advertising company which places cards inside the cars.

Reporting Reckless Drivers.—What is the experience of companies in reporting reckless drivers to the police; what forms are supplied to the trainmen, and what results have been obtained?

F. L. Hubbard, Assistant to the General Manager, Toronto Ry., Toronto.—Our trainmen are instructed to report cases of reckless driving, blocking of car tracks, or damage to cars by wagons, automobiles, etc. These are handled by the operating department, an inspector collects damages where the company is not at fault and looks after the reporting of such cases to the police and prosecutions in the police court. Trainmen report the occurrences on the forms used for reporting accidents.

Proposed Hydro Electric Radial Railways in the Niagara Peninsula.

The hydro electric radial railways proposed to be built between Port Credit and St. Catharines, and between Welland and Bridgeburg, Ont., by the Hydro Electric Power Commission of Ontario, on behalf of the municipalities concerned, were voted on by those municipalities, Jan. 1, 1917. The aggregate vote for the first named line was 7,236 for, and 5,545 against; and for the second line, 2,097 for, and 392 against. In the latter case there were majorities for the railways in the case of each municipality, so that so far as that line is concerned, the matter was considered settled. In the former case, majorities were recorded against the proposal in Hamilton, Nelson Tp., and Saltfleet Tp., the figures in each case being, Hamilton, 3,192 for, 3,626 against; Nelson Tp., 90 for, 101 against; Saltfleet Tp., 104 for, 241 against.

Owing to the existence of the war, and the consequent restrictions on bond issues, and general financing, the matter was allowed to rest, but with the declaration of the armistice, interest was again aroused, and the councils of the three municipalities in which the bylaws were defeated in 1917 decided to re-submit them. They were voted on Mar. 15 being carried in two municipalities and defeated in one as follows: Hamilton, 6,172 for, 3,435 against; Nelson Tp., 67 majority for; Saltfleet Tp., 26 for, 87 against.

The Port Credit-St. Catharines line is intended to connect with the proposed hydro radial line between Toronto and London, previously authorized, at Port Credit, and the municipalities interested are,—Toronto, Trafalgar, Nelson, East Flamboro, West Flamboro, Barton Saltfleet, North Grimsby, Clinton, Louth and Grantham townships; Grimsby and Beamsville villages; Oakville and Burlington towns, and Hamilton and St. Catharines cities. The total mileage from Port Credit to St. Catharines is 59.57. The route proposed is as follows:

Port Credit-Hamilton section: From a point approximately one mile west of Port Credit on the projected Toronto-London line it is proposed to parallel the Grand Trunk Railway to near Clarkson, thence southwesterly across the Toronto-Hamilton highway to Con. 3, thence through same to Oakville, where Oakville Creek will be crossed near Sheddon Ave. From Oakville the line will strike straight for the Hamilton Radial Ry. crossing of Bronte Creek, from which it is proposed to parallel the Hamilton Radial Ry. to Burlington. Through Burlington the line will cross the town in the neighborhood of Wellington Ave., and thence direct to a crossing of the old Desjardins Canal at Valley Inn;

Hamilton City section: Through Hamilton it is proposed to parallel the G.T.R. main line on the west side between the railway and the highway. Through Harvey Park and Dundurn Park the line will be south of and as close to the G.T.R. as possible, and will continue easterly, crossing Barton St. near Greig St., and keeping on the south side of Barton St. to the corner of Tiffany St., where it will cross Barton St. and continue northeasterly across Bay, Park, Murray and McNab Sts. and James St. between Murray and Stuart Sts., thence in the same general direction across Hughson, Mary, Catharine, Ferguson and Wellington Sts.,

at which latter point it will turn and follow south of Ferrie St., across Victoria and Emerald Sts. to a point just north of the T.H. & B.R. spur, which it will parallel on the north side to Sherman Ave., thence it bears northeasterly to the south side of the Hamilton and Northwestern Ry., which it will parallel to the city limits;

Hamilton-St. Catharines section: From Kenilworth Ave., Hamilton, just south of the Hamilton and Northwestern Ry., the line will turn and bear southeasterly to midway between the G.T.R. Stoney Creek station and the village, thence to about ¼ mile north of Fruitland, and at about the same distance north of the Hamilton stone road as far as Winona, from which it will parallel the G.T.R. on the south side through Grimsby and as far east as the Grimsby and Clinton township line, from which it will bear southeasterly to Beamsville, just north of the Hamilton stone road, and thence parallel the same to Jordan. From Jordan to the town line between Louth and Grantham it is proposed to follow in the neighborhood of the road allowance between concessions 6 and 7 of Grantham Tp. to where it crosses the G.T.R., thence southeasterly to near Victoria and Permilla Sts. and along Permilla St. to the west end of the new bridge over the old Welland Canal.

Following is an estimate of the cost of construction, equipment and operation, with estimated operating revenue:

Capital Cost:	
Right-of-way, track construction, and buildings.....	\$8,935,368
Sub-station, car shops, and rolling stock.....	2,425,500
	\$11,360,868
Annual Operating Revenue:	
Passenger revenue.....	\$760,000
Freight revenue.....	545,000
Miscellaneous revenue.....	57,000
	\$1,362,000
Annual Charges:	
Operating expenses.....	\$570,289
Maintenance expenses.....	152,198
	\$722,487
Total operating and maintenance expenses.....	\$722,487
Interest charges.....	568,018
	\$1,290,505

The class of construction covered by the estimates is based upon a single track line of 80 lb. rails on private right of way for practically the entire distance. The line will be double tracked through Hamilton, with practically no level highway crossings, thus allowing high speed right through the city. By connecting with the Toronto-London line at Port Credit it will be possible to utilize the high speed entrance of that line to the large radial terminal to be provided in the center of Toronto. The Toronto entrance will have no level highway crossings between the centre of the city and New Toronto, and will utilize a steel viaduct along the harbor front, a tunnel under the exhibition grounds, an open cut through South Parkdale, and an elevated embankment from Sunnyside to the Humber River. Ample allowance is said to have been made to cover a very high class of construction, and 80 lb. steel rails, concrete culverts, steel bridges and other similar structures are designed to carry, in an economical manner, the heaviest types of freight cars now in use on steam railways. Proper station facilities, freight sheds and team tracks have been provided for in the various municipalities, and especially in Hamilton, where provision is made for a passenger terminal of suf-

ficient size to accommodate the other lines which are proposed for that district.

The 1,500 volt direct current system of power has been estimated upon, with 4 substations located at various points between Port Credit and St. Catharines. This voltage and substation spacing will ensure ample power supply to heavy freight trains. The following equipment has been estimated upon:

30 3-compartment, all steel, passenger motor cars.
6 suburban passenger motor cars.
15 passenger trailer cars.
4 express motor cars.
2 motor work cars.
10 60-ton steel locomotives.
350 freight cars.

The furnishings of the passenger cars will be of a high standard, and approximately 500 h.p. in motor capacity on each car will allow high speed even when a trailer is hauled.

It is anticipated to give practically hourly service between Toronto and St. Catharines, with a suburban service for a few miles both east and north of Hamilton. Limited cars, making few stops between termini, will be run at certain hours to take care of through business, and these cars should, it is claimed, make practically the same running time between Toronto and St. Catharines as is now in effect on the G.T.R. Local cars will, of course, be run in addition to the limited trains, and these will stop at approximately one mile intervals. The 10 locomotives provided for in the estimates will be used to haul heavy freight trains, and it is anticipated that from 3 to 6 round trips a day will be required to handle the freight business which has been estimated. In addition to this, express cars will also be used to handle light package, milk and freight business. These cars can make frequent stops along the line and collect milk cans, farm produce, etc., at points convenient to the residents of the different sections.

It is announced that the adverse vote given in Saltfleet Tp., will not affect the construction of the line as planned, though whether any stops will be made at any points in the township, or not, remains to be considered.

The voting on the bylaw aroused considerable interest in the general railway situation in Hamilton and in the matter of a common entrance for all lines to the city. Sir Adam Beck, on behalf of the commission, stated that it would assist and support the city in an application to the Board of Railway Commissioners to authorize a common entrance for all railways, and a common right of way on the G.T.R. location, presuming that the government took over the G.T.R., which is at present under consideration.

The amount covered by the original bylaw submitted to the Hamilton rate-payers was \$5,869,286, but in the course of the recent campaign for the second vote, Sir Adam Beck announced that owing to numerous causes, including a possible relocation and reduction in certain costs, it was likely that the share for which Hamilton would be responsible, would possibly be decreased by about \$2,000,000.

It is expected that the government restrictions on the financing of this railway construction will be removed at an early date, and that the preliminary work of the construction will be commenced during this year.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and subsidiary companies.—

	7 mos. to 7 mos. to		7 mos. to 7 mos. to	
	Jan. 31, 1919	Jan. 31, 1918	Jan. 31, 1919	Jan. 31, 1918
Gross.....	\$677,489	\$559,569	\$4,095,584	\$3,483,229
Expenses.....	457,388	388,407	3,101,566	2,712,720
Net.....	220,101	171,162	994,018	770,959

Cape Breton Electric Co.—

	Jan. 1919	Jan. 1918
Gross.....	\$52,190.24	\$41,428.23
Expenses.....	36,957.50	33,256.65
Net.....	15,232.74	8,171.58

Niagara, St. Catharines and Toronto Ry.—The Niagara Falls, Ont., City Council notified the company Mar. 18, that when its franchise for its lines in the city expires, the city will take over the railway and operate it. The franchise of the Niagara Falls, Wesley Park and Clifton Tramway Co., which expires in Mar. and Apr., 1920, covers 4.56 miles of lines. The ratepayers at the January elections voted in favor of acquiring these franchises.

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

	Jan. 1919	Jan. 1918
Gross earnings.....	\$1,106,840	\$1,068,319
Expenses.....	635,293	590,657
Net.....	471,547	477,662

Winnipeg Electric Ry. and subsidiary companies.—

	Jan. 1919	Jan. 1918
Gross earnings.....	\$390,539	\$334,642
Expenses.....	291,016	255,850
Net.....	99,523	78,792

Electric Railway Notes.

The Lewis County Ry. is reported to be building a single truck steel one-man car.

The Edmonton Radial Ry. is adopting a new type of lamp for lighting the cars, and has improved the bell connection so that a passenger can notify the motor-man when he wants to get off.

The Quebec Ry. Light and Power Co's new stop system on the city lines, put in force recently, is reported to have resulted in a speeding up of cars and the giving of a better service. There will be a theater stop after 2 p.m. on week days. The company will add to the stop points as experience shows them to be necessary.

Winnipeg City Council has been asked by property owners and residents on River Ave., to have the Winnipeg Electric Ry. tracks thereon taken up and a bus line established. The company is reported to have informed the council that if the residents desire it and, the council approves, the company is willing to make the change. The petitioning residents and owners were asked to submit details in writing when they would be fully considered.

The St. Thomas, Ont., City Council, is considering the question of operating one-man cars on the municipal railway and rerouting several lines in order to economize. It is estimated that about \$12,000 a year would be saved thereby. The line is at present controlled by the city council, and it is proposed to obtain power to elect at the regular municipal elections in January of each year, two commissioners, who, with the mayor, will be a commission to manage the railway.

The American Electric Railway Association will hold a convention with exhibits, in the autumn.

Electric Locomotives for Hydro Electric Power Commission of Ontario.

As stated previously in Canadian Railway and Marine World, the Hydro Electric Power Commission of Ontario is having 6 additional electric locomotives built, for use on its Niagara power development construction railway. The general dimensions, etc., are as follows:

Length overall.....	41 ft. 0 in.
Length of truck centers.....	25 ft 0 in.
Length of main cab.....	16 ft. 0 in.
Length of auxiliary cab.....	9 ft. 6 in.
Width over side sills of locomotive....	9 ft. 0 in.
Width over main cab.....	9 ft. 0 in.
Width over auxiliary cab.....	6 ft. 6 in.
Height of rail to bottom of side sills..	3 ft. 4 in.
Height of rail to center of coupler knuckle.....	2 ft. 10½ in.
Height of rail to top of roof.....	12 ft. 8½ in.
Truck wheel base.....	7 ft. 0 in.
Track gauge.....	4 ft. 8½ ft.

The locomotives are designed for double end operation, for either switching or road service. Both ends are symmetrical about the center line across the body, the total weight, including equipment, being 100,000 lbs.

The trucks are of the arch bar type, with M.C.B. class C springs. The wheels are 36 in. chilled grey iron M.C.B. 1912 profile; axles M.C.B. 5½ ft. x 10 in.; journals with center between hubs of wheels of 50 in. to take motor bearings and cast steel gears, which are pressed on the axle. The under frame has six 12 in. I beams at 40 lb. sills, the full length of the locomotive, with 8 in. I beams at 25 lb.; cross sills rivetted to longitudinal sills; end buffers 15 in. channel at 33 lb., rivetted to sides of longitudinal sills; bolster 1 in. x 14 in. x 9 ft. longitudinal sills.

The main cab is of box type, with 2 side doors; 2 end doors, 4 ft. side windows, 4 end windows and removable doors between the main cab and hoods. Two hoods are parallel, one at each end of main cab, with 2 removable doors on one side of each hood. Carlines, and posts in hoods and main cab, are standard structural shapes, with inside finish in main cab only. Additional ballast is added in flooring by placing solid cast iron slabs 2¾ in. thick by 18 in. by 9 ft. long in the floor under the hoods at each end only. This ballast weighs altogether 24,080 lb., and brings the weight of body truck equipment, etc., up to the required 100,000 lb. total necessary for proper tractive effort.

The electrical equipment consists of 4 G.E. 66 B motors 125 h.p. each, mounted on each truck; type M multiple unit control consisting of 2 sets of D.B. 31 contactors, each set consisting of 13 contactors. 2 D.B. 20 reversers, 10 frames of rheostats, 2 C 6 controllers, 2 B T 335 junction boxes, necessary kicking coils, lightning arrester, main switch, motor cut-out switches, fuse boxes, choke coil control switch, lighting headlight and heater switches, trolleys, etc.

Each pair of two motors is wired up in such a way as to give 2 sets of equipment, separate and distinct from each other, which are paralleled together in each controller, one of which is at each operating end. Located in front of each operating position, where they can be readily seen, and used in operation, and under the hood, is one set of contactors, one reverser, air gauges whistle valve, sander valve, dump line valves, ammeter and all control switches. All control leads are special standard 19-25 wire, and run in conduit without colors, each indi-

vidual wire being tested out before connection. All main leads are special standard extra flexible wire, and are run singly, each one in a separate conduit, with bellmouths and gaskets in each end, for weather proofing, and to prevent wearing of insulation on wires in operation.

Air brake equipment is Westinghouse 14 E.L. locomotive air brake, as used by present steam roads with two 50 cu. ft. motor driven air compressors, both located in main cab. Extra features are the dump line operating couplers and valves, used for operating 20 cu. yd. dump cars on the Niagara power development. All compressors and control are equipped with multiple unit features, so that it is possible for one operator to operate 2 or more locomotives from the one controller.

Four trolley bases are used, due to the double end operation, and side trolley wire construction, used. The trolley wire on which these locomotives will operate is located 7 ft. from the center of the track and 24 ft. from the rail, requiring the use of 4 trolley bases with poles bent out to reach this wire.

The interior finish of cab is painted dark green; floors, doors, and sash, medium gray; outside body and truck, black; lettering and stripping in yellow; numbers E 13 to E 18 inclusive lettered Hydro-Electric Power Commission.

These 6 locomotives will supplement 12 other similar ones, numbered E 1 to E12, at present in operation at Niagara Falls.

Toronto's Acquisition of Portion of Toronto and York Radial Railway.

Canadian Railway and Marine World for March contained a summary of the agreement under which the City of Toronto proposed to take over the portion of the Toronto and York Radial Ry's. Metropolitan Division property on Yonge St., within the city limits. Certain clauses in the agreement were considered to be not quite so clear as was desirable, and it was handed over to W. N. Tilley, K.C., for correction, so that the points relative to the carriage of freight over the city lines, etc., may be perfectly plain. His report came before the board of control, Mar. 25, and it was decided the agreement, with Mr. Tilley's suggested amendments be submitted to the Hydro Electric Power Commission of Ontario, for approval, or otherwise. In common with other cities, towns, townships and villages, Toronto made an agreement with the Hydro Electric Power Commission of Ontario, in connection with the proposed building of a hydro radial railway between Toronto and London. One of the clauses in this agreement provides that municipalities entering into such agreement with the commission, are debarred from making any agreement with, or bonussing any other railway or transportation company without the commission's consent

Mount Royal Incline Ry.—A Quebec court recently, authorized the Mount Royal Incline Ry. to appeal against Justice Bruneau's order directing the sale of the company's line and other assets by public auction recently.

The Service at Cost Campaign in Ontario.

E. P. Fredericks, Secretary, Association of Holders of Public Utility securities, had the following letter in the Toronto Globe, March 10:—"In your editorial in today's paper under the heading 'Hamilton and the Radial', you refer to the bylaw which is now before the people of Hamilton and say 'the scheme has nothing of an exploiting nature in it. The service will be rendered at cost.'

"It is gratifying to note that the Globe, in common with a great many other thinking minds throughout the province, is beginning to realize that service at cost as applied to public utilities is 'obviously in the interest of the city.'

"This association is endeavoring to let the people in Ontario know more about this modern and businesslike method of operation, and what applies to Hamilton will apply with equal force to any community where public utilities are in need of readjustment."

Toronto Works Commissioner Replies.

R. C. Harris, Toronto's Works Commissioner, and a member of the city's transportation commission, which is making preparations for taking over the Toronto Ry. in 1921, when its franchise will expire, issued the following statement the same day:—"E. P. Fredericks, Secretary of an association of holders of public utilities, an organization composed of stockholders in street railway and like concerns operating in the Dominion, publishes in this morning's Globe a communication relative to the service at cost upon which the proposed hydro-radial project is founded. Mr. Fredericks states that thinking minds throughout the province are beginning to realize that service at cost, as applied to public utilities, is obviously in the interests of the city.

"Mr. Fredericks represents a financial group, who have invested in public utilities, such as the Toronto Ry., which, while earning large returns upon over-capitalization, refused to furnish adequate service to the citizens of Toronto, flouted their protests, and condemned them to a condition during rush-hour periods from which the law protects cattle in transit. When operating expenses increased, and dividends of necessity declined, these interests merge identity in an association advocating service at cost, not the service at cost of the hydro, where the dividends are returned to the consumer by means of decreased power rates.

"The service at cost, which Mr. Fredericks and his principals advocate, is on a basis of charging, in the case of the street railway, such a fare as will guarantee the capitalist 6 per cent annual return on the money invested after paying all operating and other expenses. In other words, the capitalist is guaranteed his annual return, and if other expenses increase, then the fare to the passenger is increased in order that the investor may secure undiminished 6 per cent. annual return. In a word, the investor takes no risk whatever, the user of public utilities being condemned to make good all variation of cost in order that the capitalist may be protected.

"This is the inset of a campaign to secure a renewal of the Toronto Ry. franchise, but the people of Toronto, who have so long endured the abominable service provided by this public utility corporation, will not be misled by a

specious application of the service at cost principle. By the hydro system, every consumer shares in benefits derived and an annual unimpaired return is not guaranteed to capitalists, who control like corporations privately owned."

The Toronto Railway Replies.

The Toronto Ry. on Mar. 15 commenced issuing "Public Service Topics," a 4 pg., 6 x 9 in. leaflet which is distributed on its cars. The first number contained the following:

Works Commissioner R. C. Harris has issued a statement concerning a recent discussion of the service at cost plan of street railway operation, in which he says: "This is the insert of a campaign to secure a renewal of the Toronto Ry. franchise, but the people of Toronto, who have so long endured the abominable service provided by this public utility corporation, will not be misled by a specious application of the service at cost principle."

Commissioner Harris takes rather too much for granted. This company is not seeking to secure a renewal of the franchise with the city by using the service at cost plan as a pretext. In common with all other public utilities this company has been watching with interest the success of the service at cost plan, because it is being generally recognized as the modern and logical method of conducting the affairs of such concerns. It did not remain for Toronto to add its stamp of approval to the plan to secure for it the endorsement of the leading transportation men on this side of the Atlantic. The service at cost principle had ample vindication before it ever reached Ontario, so it requires no defence at this time.

Service at cost, in its broadest application, simply means that a public utility shall pay its own way. There isn't a business man anywhere in the country who will deny that this is a rational method of conducting any kind of an enterprise. A business that is conducted on a less than cost basis is doomed to only one end, and if anyone in Toronto thinks that the street railway system here can be run at a loss indefinitely they must certainly be blind to the simplest rudiments of business.

Service at cost demands that a utility be conducted so that it gives the maximum service at the minimum charge. It gives public control and enables the city to take over the road whenever it wishes to. It is the fairest, squarest and most business like method of conducting the affairs of a public utility that has thus far been devised. When cities like Montreal, Chicago, Philadelphia, St. Louis, Cincinnati, Des Moines, Toledo, Dallas, Youngstown, Kansas City, and other important centers adopt the service at cost plan in preference to all others there must be some reason for it. Not all of these cities can be wrong. It is only last week that the Provincial Commission of New Brunswick recommended service at cost for St. John after months of investigation into various methods of operation.

It is only fair to say in reply to Mr. Harris that service at cost does not contemplate a return of 6% on anything but the actual gold value of the property—a value that is not set by the company, but by a board of arbitration or other disinterested parties. Other phases of the

service at cost plan brought out in Mr. Harris' statement will be discussed in subsequent issues of this bulletin. So far as the service in Toronto is concerned we shall have considerable to say about this also later on.

This company is not seeking to block municipal ownership, but is endeavoring to secure such co-operation as will enable it to give to Toronto, during the next two years, such service as the public demands.

Meeting at Windsor.

E. P. Fredericks addressed the Windsor Chamber of Commerce, Mar. 17, and reviewed the entire public utility situation, with special reference to the problems of the street railways. He the service at cost plan and the member seemed very much impressed with its possibilities as applied to their particular situation. The Windsor Chamber of Commerce is made up of members from a number of the nearby towns and is really representative of about six communities where street railway problems have been engaging a great deal of attention for the past few years. The opinion seems to prevail that some application of the service at cost plan would come nearer solving the problem than anything that has thus far been presented. At an early meeting of the chamber of commerce the matter of endorsing the plan will be taken up for final action.

Following an address recently to the Kingston Board of Trade by E. P. Fredericks, secretary of the Holders of Public Utility Securities, the board passed the following resolution: "Resolved that Kingston Board of Trade endorses the principles of the service at cost plan by which good street railway service, under close public supervision, shall be furnished without profit and for rates of fare just sufficient to pay the actual cost as designated under the service of cost plan."

Buffalo, Lockport and Rochester Ry. Reorganization.—This electric railway was sold by auction at Rochester, N.Y., Mar. 12, to W. A. Mahon and W. W. Foster of Rochester, representing the bondholders. The property includes 55 miles of track between Rochester and Lockport, the right to terminals in both cities, traffic agreements with the Rochester city lines and the International Ry. for the operation of cars in Lockport and over the line into Buffalo, together with power stations and rolling stock. The company was understood to be interested in a project for building a bridge over the Niagara River, to make a connection with the electric lines in the Niagara Peninsula of Ontario. The sale was in accordance with a reorganization plan prepared by the bondholders protective committee, R. Home Smith, D. B. Hanna, and Senator F. Nicholls, Toronto.

The Port Arthur, Ont., Trades and Labor Council asked the City Public Utilities Commission, Mar. 13, to reduce fares on the Port Arthur Ry. The deputation was advised that nothing could be done this year as the fares are the subject of an agreement with the Fort William City Council. It was stated that the deficit on the P.A.C. Ry. for 1918 was approximately \$29,000, and that it was proposed to provide for meeting part of the same by a levy of one mill on the general taxation.

American Electric Railway Association on Electric Railway Financial Conditions.

At the American Electric Railway Association's mid-year meeting in New York, N.Y., Mar. 14, the committee on readjustments presented the following report: Your committee believes that the question submitted to it must properly be divided into two phases: (1) those dealing with urban street railways; (2) those dealing with interurban street railways; and that while the condition of both systems are in the main, the same, and while the causes of the condition are practically identical, the remedy often differs. Our committee now has under consideration plans which, it believes, will assist in meeting the situation confronting the industry. These will be reported to you from time to time in detail. In its opinion, there are certain fundamentals which must control the readjustment of the relations between the companies and the communities they serve, and it presents for your consideration the following summary of these fundamentals:

That the electric railways of the country are breaking down under present conditions of operations. As a result, the public is being deprived of service and is facing certain financial losses through the depreciation of electric railway securities which are largely held by savings banks, life insurance and trust companies and other similar institutions in which its savings are invested. That this condition is primarily due to the economic error of establishing an inflexible fare regardless of the cost of the service rendered or the distance hauled. That to correct this difficulty, flexible fares must be established which will be automatically adjusted to the cost of the service demanded by and furnished to, the community.

That a necessary element of the cost of service is such a return on the fund employed as will attract capital to the public service. To provide incentive to enterprise and initiative, there must be an additional reward for economic management.

That in the interest of the car rider, who must ultimately pay the cost of local transportation, every special impost and tax which cannot be justified upon the ground that it is payment for benefits received should be abolished.

That to secure satisfactory service and keep fares as low as possible, the public must act on the principle of the "greatest good to the greatest number" and must co-operate with the operating companies in making effective economies by the use of "skip-stops," one-man cars, etc.; the speeding up of schedules by reduction of vehicular interference.

That electric railway transportation is a community problem to be solved by the community and the company acting together and animated by a spirit of civic interest and devotion to the public service and having as its objective the establishment of such regulations as will give the public the greatest efficiency, economy and enterprise in the operation of their transportation utilities.

That the committee proposes to carry out as rapidly and as effectively as possible, the following programme. To furnish to members of the association at as early a date as possible, information concerning franchise settlements and agreements along service at cost and

other lines: To analyze these various agreements and present for the information of the companies such a summary of their provisions as will provide a guide in the drafting of new ordinances or agreements to directly assist communities in which the readjustment of franchise relations are under way; to furnish at the instance of the railway company to civic organizations and similar bodies, information as to, and studies of public utility questions.

In conclusion your committee recommends that the scope of the association's activities be so enlarged as to provide machinery for carrying out the purposes set forth herein.

Proposed Purchase of Detroit United Railway By The City.

After a lengthened period of negotiations the Detroit, Mich., City Council, on Mar. 17, approved an agreement with the Detroit United Ry. for the purchase of its city lines. The company agrees to sell what is known as the city property for \$31,500,000 of which \$15,000,000 is to be paid on the city taking over the property, and the balance at the end of 1931 with 6% interest a year on the deferred payment. The sale does not include quite all the trackage owned by the company in the city, as some terminals of other lines, the stock of which is held by the D.U.R. are situated within the city. Such tracks, however, may be used by the city upon varying terms. Neither does the sale include all the company's property, as freight and passenger terminals and property unused for railway purposes will remain with the D.U.R. The city also agrees to pay the market value of all supplies and materials at hand. The estimated value of the property and supplies to be taken over, plus the value of the property not taken over, is put at \$37,000,000. In addition the purchase carries with it the unhampered right of continued operation of the company's freight and passenger cars into and through the city of Detroit. The gross income of the company from freight and express business is in excess of \$1,250,000. The question of the approval of the agreement will be submitted by a vote of ratepayers Apr. 7.

Montreal Tramways Co.—The Minister of Labor has authorized the appointment of a board of conciliation to investigate the differences between the company and its employes in regard to wages and working conditions. The company has nominated Hon. J. L. Perron, K.C., as its arbitrator and the men named J. T. Foster. On Mar. 20 protested against an appointment of Mr. Perron on the ground that he is financially interested in the company.

Toronto Civic Ry.—The commissioners of the city works, street, property and parks departments, have reported to the city council that they approve of the principle of an 8 hour day. The report says, in part: "In so far as the civic car lines are concerned, the estimated increased cost approximates \$26,755. These employes, by reason of the fact that they operate on schedule, could not render additional service in the shorter day."

The Toronto Railway Co. Stops Paying Dividends.

The Toronto Ry. Co. issued the following circular to its shareholders at the end of March: "In view of the heavy obligations facing the company, your directors have decided not to pay the regular quarterly dividend on the company's capital stock. It is with regret and only after mature consideration that this decision has been arrived at. For some years past, as you are probably aware, the street railway companies of Canada and the United States have been operating under very unfavorable conditions (due mainly to the excessive costs of materials and labor), which have necessitated the cutting down of many dividends and the elimination of many others. Only companies able to meet increasing costs out of advanced rates of fares, have been able to sustain dividends.

"Your directors deem it imperative that the company's property be efficiently maintained; and, with this end in view, are compelled to provide very large disbursements for the rebuilding and overhauling of the company's rolling stock, new cars and trackage renewals. A large portion of the expenditure so required is beyond the control of the directors, since it is made under order of the Ontario Railway and Municipal Board. Further, there is an additional disbursement of \$150,000 required for increase in wages, pursuant to a recent decision of a board of conciliation. The latter expenditure is the more regrettable because at the time of this decision there was in existence a contract between the company and its employes, which, it will be remembered, was made by order of a previous board of conciliation, effective June 15, 1917, the term of which, under the contract, did not expire until June 15, 1919, and which in itself provided for an increase of wages about \$700,000 annually. But it is useless to complain of these conditions and decisions, much as we may regret them. They are mentioned only as factors which have made necessary the elimination of dividends."

Sherbrooke Railway & Power Co.—The Toronto Globe stated recently that W. C. Hawkins, Vice President and Managing Director, Dominion Power & Transmission Co., had said that its subsidiary, the Southern Canada Power Co., was having no trouble and that it had scrapped its interurban railway. The Southern Canada Power Co. is not a subsidiary of the Dominion Power & Transmission Co., nor has it any connection with the latter, although Mr. Hawkins is its President. The Southern Canada Power Co. owns and operates the Sherbrooke Ry. & Power Co., which company shut down its electric railway for two days some little time ago, until the question of fares was arranged satisfactorily with the Sherbrooke City Council, but the line has not been scrapped and is still running.

The Montreal City Commissioners on Mar. 13, passed a resolution authorizing the City Solicitor to ask the Quebec Public Utilities Commission to direct the proceeding with the work of placing all electric wires in the city in underground conduits. This work was in progress in districts 4 and 6 of the city, but about a year ago, the Quebec Public Utilities Commission, owing to the abnormal price of material authorized the postponement of the work.

Mainly About Electric Railway People.

Thos. Ahearn, President, Ottawa Electric Ry., left Ottawa, Mar. 5, with Alex. Johnston, Deputy Minister of Marine, to spend some weeks at Coronada Beach, Cal.

Capt. F. D. Burpee, has resumed his duties as Superintendent, Ottawa Electric Ry. on returning from three years overseas service, reference to which is made under "Canadian Transportation Men, Engineers, etc., in the War," on another page of this issue. He was born at Ottawa, Ont., Apr. 25, 1876, and commenced railway work in 1891, under H. B. Spencer, Superintendent, District 4, Eastern Division, C.P.R., Ottawa, and transferred to electric railway service in 1893. Since when he has been, to 1896, stenographer, 1896 to 1898, cashier and paymaster, 1898 to Aug. 1912, accountant, during which time he also acted as assistant to the Secretary-Treasurer, and to the Superintendent, Ottawa Electric Ry. In Aug. 1912, on the resignation of J. E. Hutcheson, to become General Manager Montreal Tramways Co.'s service, he was appointed Superintendent.

A. J. Clarke, who was appointed acting Superintendent, Grand River Ry., and Lake Erie & Northern Ry., Galt, Ont., during the absence of M. M. Todd, Vice President, continues to act as Superintendent, since the latter's return. Prior to occupying that position, he was engaged on the L.E. & N.R., piloting trains over the G.T.R. at Port Dover, Ont. He commenced his transportation service in May, 1901, in Dominion Power & Transmission Co.'s service, at Hamilton, Ont., and was engaged in the train service with that company for 13 years, in train operation between Hamilton and Burlington, relieving agent, and dispatcher, chief dispatcher of the Hamilton, Grimsby & Beamsville Ry., acting Superintendent, same line, and latterly Superintendent of Interurban Lines.

H. E. Crawford, President Windsor, Essex and Lake Shore Rapid Ry., died at Chatham, Ont., Mar. 9, aged 59. He had been in poor health for some time and suffered a stroke on Mar. 7, after which he did not recover consciousness. Before removing to Chatham in 1915 he was in the store business in Tilbury for many years, was mayor of that town for several years.

J. A. Ellis, formerly of Ottawa, who is a member of the Ontario Railway and Municipal Board with a salary of \$4,000, has also been appointed in charge of the Ontario Bureau of Municipal affairs with an additional salary of \$1,000.

H. G. Foreman, Assistant Treasurer, Canadian Northern Ry. System, has also been appointed Assistant Treasurer, Toronto Suburban Ry.

Arthur Hilliard Foster, B.A. Sc., who has been appointed Manager, Brantford Municipal Ry., Brantford, Ont., was born at Guelph, Ont., Dec. 24, 1888, and from 1905 to 1908 took a course in civil engineering at the University of Toronto Faculty of Applied Science, and during vacations was employed as rodman, Guelph and Goderich Division, C.P.R., prospecting in Larder Lake and Megantic District, land surveying in Northern Ontario, and town engineering; from May to Dec. 1909, Assistant Resident Engineer, National Transcontinental Ry., Mattagami, Ont.; Dec. 1909 to Mar. 1910, Resident Engineer, N.T.R., Lost

River; May 1910 to Aug. 1911, in service of City of Toronto; Aug. 1911 to Mar. 1919, Manager and Engineer, Guelph Radial Ry., and Guelph Water Department, Guelph, Ont.



F. D. Burpee,
Superintendent, Ottawa Electric Ry.



A. H. Foster,
Manager, Brantford Municipal Railway.

G. Gordon Gale, Vice President and General Manager, Hull Electric Co., was one of the masqueraders at a skating party given by the Governor General in Ottawa, March 1, appearing as a Chinaman.

D. B. Hanna, President, Canadian National Rys., has also been elected President, Toronto Suburban Ry., vice Sir Wm. Mackenzie, resigned.

The Hon. D. O. L'Esperance has been elected Vice President, Quebec Ry., Light, Heat and Power Co., succeeding Lorne C. Webster, elected President.

G. W. Lang, who has been acting Superintendent, Ottawa Electric Ry., during the absence on overseas service of Capt. F. D. Burpee, has resumed his former position as Claims Agent, Capt. Burpee having returned to his duties as Superintendent.

Sir Wm. Mackenzie, President Toronto Ry., and Monterrey Ry., Light and Power Co., left Toronto, Mar. 22, for Monterrey, Mexico, in his private car Natalia, accompanied by F. H. Phippen, K.C., and expecting to return early in April.

T. Marriott has been appointed Chief Dispatcher Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont., vice R. W. Robertson deceased.

D. J. McIntosh, heretofore accountant, Niagara, St. Catharines and Toronto Ry., has left the company's service.

A. J. Mitchell, Vice President, Canadian National Rys., has been also elected Vice President, Toronto Suburban Ry., succeeding the late Allan H. Royce.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., spent a few weeks at Santa Barbara, Cal., during February and March.

R. P. Ormsby, Secretary, Canadian National Rys., has also been appointed Secretary, Toronto Suburban Ry., G. C. Royce, heretofore Secretary-Treasurer and General Manager, who is still acting as General Manager.

Major Jas. A. Roosevelt, second cousin of the late Theodore Roosevelt, and formerly British Columbia Electric Ry. official, died on a transport recently on his way home from France.

George Lee Snelling, whose appointment as acting Secretary-Treasurer, Ottawa Electric Ry., Ottawa, Ont., was announced in our last issue, was born there, Mar. 2, 1880, and entered the company's service, Aug. 1, 1898, since when he has been, to Feb. 1902, junior clerk; Feb. 1902 to Aug. 1, 1912, timekeeper, stenographer and storekeeper; Aug. 1, 1912, to Dec. 23, 1918, accountant, and from Mar. 2, 1914, during various absences of the late Secretary-Treasurer, acting Secretary-Treasurer.

Lorne C. Webster, President, Webster Steamship Co., and Agent, Nova Scotia Steel & Coal Co., Montreal, heretofore, Vice President, Quebec Ry., Light & Power Co., has been elected President, succeeding the late Sir Rodolphe Forget, Mr. and Mrs. Webster, left Montreal, early in March, for Old Point Comfort, Va.

St. Thomas Municipal Ry.—The report of the St. Thomas, Ont., city auditor, for 1918, shows that there was a deficit of \$11,171.75 on the operation of the city's electric railway for the year.

The Ottawa Electric Ry. has decided to appeal to the Supreme Court against the Board of Railway Commissioners decision given Feb. 10, and published in Canadian Railway and Marine World, for March, declining to grant an increase of fares on its suburban lines.

Electric Railway Projects, Construction, Betterments, Etc.

Berlin and Northern Ry. Co.—The Ontario Legislature is being asked to change the name of this company to the Waterloo-Wellington Ry. Co., and to extend the time for the construction of the projected extension. The company was incorporated under the Ontario Companies Act, Dec. 7, 1901, with the title of the Berlin and Bridgeport Electric St. Ry., and its title was changed to the Berlin and Northern Ry. in 1912. The company has power to build a electric railway from Bridgeport, the terminal of its original line, to Elora and Fergus. (Feb., pg. 88.)

Hamilton St. Ry.—The City Engineer asked the Hamilton board of control recently for authority to spend \$16,000 on repairs to the roadbed on King, Hirkimer, Wentworth and Margaret Streets, on the ground that the improvement of the street railway service depended upon this work being done. The board decided Mar. 20, to report to the city council that it had no funds at its disposal for this work.

London and Port Stanley Ry.—Plans for the erection of station buildings at St. Thomas and Port Stanley, Ont., at an estimated cost of \$12,000 each, have been approved by the commissioners. The chairman of the commission is reported to have said that the buildings will be paid for out of surplus revenue, and that the work will be put in hand at once.

Montreal Tramways Co.—A press report states that the Tramways Commission has directed the opening of a line passing through Kelly St., and Poincare Ave., and that the property owners along the projected line have consented to pay their proportion of the cost of street paving.

Pemberton, B.C.—In connection with the proposed power developments of the West Kootenay Light and Power Co., a press report says: "What is perhaps more important to the company in aiding to arrive at a decision about the secondary extensions will be the amount of electricity which the government will require for irrigation pumping in connection with the development of the southern Okanagan lands. If considerable pumping is done and if the government goes ahead with an electric tram line from Petrolia, there is no doubt the power company will prepare immediately for the establishment of a north and south pole line."

Peterborough Radial Ry.—The business of the Electric Power Co. Ltd., which owned the stock of the Peterborough Radial Ry., was taken over as from Mar. 1, 1916, by the Hydro Electric Power Commission of Ontario, under the provisions of an order in council, of the Ontario Government, dated May 5, and the Ontario Legislature in 1917 authorized the Peterborough City Council to take over the line, and its utilities commission to operate it under powers to be set out in a bylaw.

A recent press report refers to a proposed extension of the line on Park St., from Albert St. to Lansdowne St., and to a project for an extension from Peterborough to the summer resorts on the Kawartha Lakes. Both these matters are said to be under consideration. (May, 1917, pg. 203).

Saskatoon Municipal Ry.—We were officially advised recently in respect to the proposed extension to the line at a cost of \$46,000, that the city council had not reached any definite decision as to what will be done. (March, pg. 143.)

St. Thomas Municipal Ry.—A citizen's committee after examining into the condition of this railway has recommended that the line should not be scrapped, as had been suggested, but that it be operated with one man cars and that about \$8,000 be expended on putting the tracks and the overhead system in order. The matter is under consideration, together with the committee's suggestions as to the operation of the line.

Sudbury-Copper Cliff Suburban Electric Ry.—The Ontario Legislature is being asked to authorize the company to increase its capital stock from \$250,000 to \$500,000, and to sell the unissued ordinary shares at a discount, a price to be fixed by law. The company has built 7.9 miles of line and requires further capital for equipment and extensions.

Electric Railway Employes' Wages, Working Conditions, Etc.

Calgary Municipal Ry.—The Calgary, Alta., City Council is considering demands of its employes who are members of the street railway union for increased wages and better terms. The men ask for an 8 hour day, an increase to 65c an hour, or \$1.35 over their former wage of \$4.50 a day. For holidays double time is asked, and the request made that all men who were on the service before Jan., 1919, be placed on the maximum of 65c. Another clause demands that all men operating work cars of all kinds shall become members of the union within 60 days of joining the department.

London and Port Stanley Ry.—At a meeting of the London Railway Commission, Mar. 12, it was decided to grant the employes an 8 hour day, and an increase of wages to go into effect May 1. The increases of pay will give the following schedule: To trainmen, 40c an hour for the first year of service, and 43c an hour for the second year; motormen and conductors will receive 43c an hour for the first year, 44c an hour for the second year, and 45c an hour for the third year; an additional 10c an hour will be paid for all work done over 10 hours a wages paid to motormen and conductors was 23c an hour, and the present rates of wages are 30c, 33c and 35c an hour for first, second and third year men respectively.

Transportation of Postal Mail.—At the opening of the hearing by the Board of Railway Commissioners at Ottawa, on Mar. 18, of the steam railways companies' application for increased compensation for carrying mail, which was referred to the board by the Dominion Government, Acton Burrows, Honorary Secretary-Treasurer, Canadian Electric Railway Association, who appeared on behalf of 11 electric railway companies carrying mails, said that they had no desire to interject themselves into that hearing, but he asked that any of the companies he represented might, on making application to the board, have their cases considered, and have hearings, if such should be considered necessary. This request was acquiesced in, and steps are being taken to represent the electric railway companies' cases to the board at an early date.

London Street Railway's Sunday Operation Outside City.

Sir Adam Beck has introduced in the Ontario Legislature a bill to amend The Ontario Railway Act as follows:

"1. Subsec. 2 of sec. 234 of The Ontario Railway Act, as amended by sec. 40 of The Statute Law Amendment Act, 1914, and by sec. 31 of The Statute Law Amendment Act, 1917, is amended by adding at the end thereof the following: 'Or, subject to subsec. 2a, to the London St. Ry. Co., in the operation of that part of its existing line lying in the Township of Westminster, west of the west limit of the City of London.'

"2. The said sec. 234 is amended by adding thereto the following subsection: '2a. Nothing in subsec. 2 of this section shall entitle the London St. Ry. Co. to run any of their cars on any Sunday in the Township of Westminster, unless and until the said company has received permission from the Council of the Corporation of the City of London and from the Public Utilities Commission of the City of London by bylaws to run their cars on Sunday, and then only and subject to such terms and conditions as may be contained in such bylaws, and unless and until the said company has also entered into an agreement or agreements with the said corporation, and the said the Public Utilities Commission of the City of London, to observe the terms and conditions of the bylaws.'"

When the question of running street cars in London on Sundays was first considered some years ago very strong objection was made by a number of people to the cars being operated to Springbank, so the latter service was not included in the provision permitting the operation of cars in the city on Sundays. The desire for Sunday cars to Springbank, has, however, been growing to such an extent that it was taken up with the London City Council last year, by Sir Adam Beck, with a view to having such a service provided in connection with the Byron Sanatorium, which is across the river from Springbank Park, and the bill above quoted is apparently the next step in the process.

The British Columbia Electric Railway and its Victoria Franchise.

In connection with the negotiations between the B.C.E. Ry. and the Victoria, City Council for a new franchise, one of the questions arising has been that of the jitney traffic. The company desires to have inserted as one of the conditions that the city shall prohibit the operations of a jitney on routes directly in competition with the company's cars. A section in a city bill now before the Legislature giving the council power to prohibit jitney traffic was refused consideration by the private bills committee of the legislature, but, on Mar. 14, the council, after considerable discussion decided by a vote of five to three to retain the section in the bill.

The franchise regulations, which cover the granting of a 6c fare, fixing the charge for electric light, and other matters, were still pending, Mar. 20.

An Auto Bus Line to be operated on the Toronto-Hamilton highway, has been authorized by Toronto Police Commissioners.

Public Utilities Commission for British Columbia.

The bill providing for the formation of a public utilities commission for British Columbia has been drafted, but is meeting with considerable opposition in various quarters. While it would give the commission power over rates, whether under franchises or not, the public utility companies are objecting to it on the ground that much wider powers have been given, but on the contrary, no safeguard provided for the companies.

A deputation from the chief utilities in the province waited upon the B.C. Government at Victoria in January and endeavored to have a clause inserted, providing that a reasonable return on the investment should be allowed. While no reply had been given to the date of writing, it is reported that the phrase "that rates shall not be unjust or unreasonable," is to be defined, and that just rates shall not be either insufficient or excessive.

The companies endeavored to have the commission reduced in membership from three to one, and lodged a protest against the veto power of the governor in council. The clause as drafted provided that only appeals on questions of law should go to the appeal court, and appeals on evidence of fact should go to the lieutenant-governor in council, which, in addition, had power to carry or rescind any decision of the commission.

Clause 90 of the bill is as follows: "If the lieutenant-governor in council considers it advisable in the public interest, he may, from time to time, of his own motion, and without any application or petition, vary or rescind any decision, order, rule or regulation made by the commission, whether the decision, order, rule or regulation is general or limited in its scope and application, or is made inter partes or otherwise. Every order made by the lieutenant-governor in council, pursuant to this section, shall be binding on the commission and on all parties and shall for all purposes be deemed to be an order duly made by the commission under this act."

Vancouver newspapers have protested vigorously against this part of the measure, evidently deeming that it would place too much power in the hands of one party. "Why cannot the utilities commission be made as independent of political control and interference with its decisions as the Board of Railway Commissioners of Canada?" said the Daily Province.

The preliminary draft of the bill was issued Mar. 6, but up to Mar. 17th had not been introduced in the legislature.

Among the bills introduced in the B.C. Legislature, Mar. 20, was one providing for the franchise of a public utilities commission. A press dispatch states that the clause giving the Lieut.-Governor in council power to vary, reverse or annul any decision of the commission has been modified from that in the original draft, and that other clauses of which there was some criticism have also been varied.

Calgary Municipality Ry.—Referring to the reported deficit of \$34,000 in the operation of this line for 1918, we are advised that there are several adjustments to be made which will reduce this and which, as reported, included \$16,000 spent on Bowness Park; \$2,000 on reconstruction of cars and amounts chargeable to depreciation as well as other items.

Proposed Purchase of Ottawa Electric Railway.

The terms of the city of Ottawa's bill, before the Ontario Legislature respecting the proposed purchase of the Ottawa Electric Ry., were approved by the city council Mar. 17. The bill gives the city power to enter into an agreement with the company for the purchase of its electric railway, subject to the approval of the ratepayers. The lines, if taken over, are to be put under the management of the city's hydro electric commission, the members of which are to be paid salaries to be fixed by the council. The value of the line and the property to be taken over is to be fixed by arbitration, and the money to pay for the same is to be raised by a loan. The line is to be taken over upon the expiry of the franchise in 1923.

The city is also applying to the Dominion Parliament for authority to acquire the company's lines, franchises, etc., and authorizing it to "construct, maintain and equip an electric street railway in Ottawa, and by way of the Interprovincial Bridge to Main St., Hull, Que.

The company offers to sell the railway and all its holdings for \$6,500,000. The city has appointed the following to report on the respective values: Financial, T. Bradshaw, Finance Commissioner, Toronto; overhead wires, J. E. Browne, General Manager, Ottawa Hydro Electric Commission; water lots, power houses, generators, rolling stock, etc., R. S. Kelsch, C. E., Montreal; tracks, A. F. Macallum, City Works Commissioner, Ottawa.

T. Bradshaw, Finance Commissioner of Toronto, has written the Mayor of Ottawa expressing grave doubts as to the wisdom of the city giving further consideration to the present offer. He says that if the citizens desire to acquire the enterprise their best interest will be served by waiting until 1923, when the franchise expires, and then acting in the terms of the existing agreement between the city and the company. One of the main reasons for this suggested delay is that the raising of a large loan would be necessary and as interest rates are falling the longer the city can delay the floating of a loan the less onerous the interest and other debt charges will be.

Montreal Tramways & Power Co's Bond Issue.

An issue of \$7,300,000 of 6½% 5-year secured gold bonds of the Montreal Tramways & Power Co. was placed on the market recently by a syndicate of underwriters at par and accrued interest. The first interest coupon is for two months and matures May 1. Thereafter the interest coupons will mature half-yearly on Nov. 1 and May 1, but the last coupon will be for four months interest, from Nov. 1, 1923, to Mar. 1, 1924, when the principal will become due. The bonds will be issued in denominations of \$100, \$500 and \$1,000.

The M. T. & P. Co., which controls by stock ownership the Montreal Tramways Co., has pledged to the trustee the following as security for the new issue:—\$7,000,000 fully paid 5% debenture stock of Montreal Tramways Co., and \$2,500,000 5-year 6% gold bonds of Montreal Tramways & Power Co., which latter bonds are secured by a trust deed pledging \$2,100,000 fully paid ordinary stock of Montreal Tramways Co. This places the control of the Montreal Tramways Co. in the hands of the trustee (the Montreal Trust

Co.) as security for the holders of these bonds, and a clause in the trust deed provides that in the case of the M. T. Co.'s capital being increased, sufficient of the additional stock shall be pledged with the trustee to maintain absolute control of the company in its hands.

Under the Montreal Tramways Co.'s contract with the City of Montreal, as ratified by the Quebec Legislature in 1918, there is appropriated an annual return to the company of \$2,177,177.10, being 6% on \$36,286,285, which is the capital value of its assets as determined by the contract. The annual sum of \$2,177,177.10 is more than sufficient to pay all the Montreal Tramways Co.'s fixed charges on its outstanding bonds and debenture stock, and a dividend of 10% on its common stock.

The issue sold rapidly and is reported to have been oversubscribed.

The Lambeth Motor Transport Co. has been incorporated under the Ontario Companies Act, with authorized capital of \$10,000, and offices at Lambeth, Ont., to operate motor busses and trucks for carrying passengers, freight, etc., and generally to act as a common carrier. The company may not however "operate or control any public utility or municipal franchise within the meaning of part 12 of the Ontario Companies Act until authorized to do so by supplementary letters patent. The provisional directors are:—R. Piper, T. H. Hamlyn, Rev. J. Holmes, F. N. Soper, and W. K. Coldicott, Lambeth, Ont. The company was expected to have started operations Mar. 8, arrangements having, according to a press report, been made for five round trips a day, and if the business warranted, a couple of trips at night. The bus has a seating capacity of 34. An application has been made to London City Council for a grant of \$500 towards the project, and an agitation has been instituted in Lambeth to ask the Ontario Government to pace the highway from Lambeth to London, 6 miles, in the event of that piece of road not forming part of the projected provincial highway to Windsor. F. N. Soper, is the prime mover in the company.

Car Line Routing in Toronto.—An application was made to the Ontario Railway and Municipal Board recently, to order the Toronto Ry. to restore the car service on McCaul St., between Queen and College Sts., to the same as it was before the necessary rerouting of cars over the Bloos St. viaduct. The board therefore requested the company to divert its Harbord St. cars, on Sundays, until further notice, east on College St., south on McCaul St., east on Queen St., south on York St., east on Front St., north on Bay St., west on Queen St., west on Queen St., north on McCaul St., and west on College St., to Spadina Ave., then to assume the regular route north and west, it being the opinion that the Harbord cars would serve more people on Sundays going to the station, and to the foot of Bay St. by this diversion, and at the same time would accommodate those desiring to attend the churches on McCaul St. The board announced that it could not see its way clear to order any additional service on McCaul St. during week days, as the locality seems to be very well served.

"Conductor," ventured the stranger in New York. "Well, sir?" "Does this car pass anywhere near the corner of 42d Street and Broadway?" "Frequently, sir. We ran right over that corner about sixty blocks back."

Marine Department

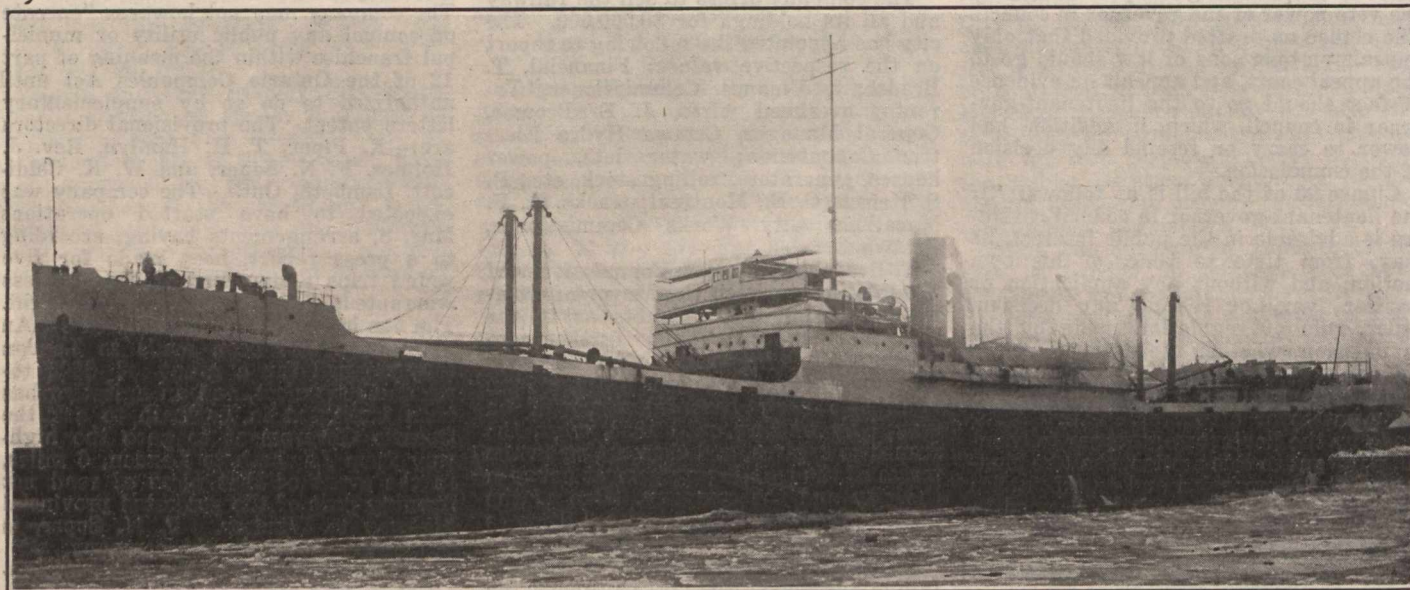
8,100 ton d.w. Steel Cargo Steamships for Canadian Government Merchant Marine, Ltd.

Of the 45 steel cargo steamships which the Marine Department has ordered, to be operated by Canadian Government Merchant Marine Ltd., 16 are to be of 8,100 tons d.w. each, representing a total dead weight carrying capacity of nearly 130,000 gross tons. These orders have been placed as follows: Canadian Vickers Ltd., Montreal, 6; J. Coughlan & Sons, Vancouver, 4; Halifax Shipyards Ltd., Halifax, N.S., 2; Prince Rupert Drydock & Engineering Co., Prince Rupert, B.C., 2; Victoria Machinery Depot Ltd., Victoria, B.C., 2; Canadian Vickers Ltd. launched the first of these steamships, Canadian Pioneer, at Montreal, Dec. 3, 1918. She left there Dec. 6, in tow, for Quebec, where she has been completed, and is ready for opera-

ed for expeditiously handling cargoes and are of the following dimensions:— No. 1, 32 ft., 6 in. x 26 ft.; no. 2, 34 ft., 8 in. x 26 ft.; no. 4, 34 ft., 8 in. x 26 ft.; no. 5, 30 ft., 4 in. x 26 ft.; hatch on bridge deck, 18 ft. x 10 ft. Widely spaced pillars in cargo holds have been adopted to reduce to the minimum obstruction in handling cargoes. For the working of the hatches, 4 derrick posts are provided; 2 between the forward pair and 2 between the after pair of hatches, with 2 derricks to each post. The cross bunker hatch, on bridge back, is operated by 2 derrick posts, having ventilator tops and derrick to each post. All the derricks have a 5 ton lifting capacity. Ten cargo winches are fitted on board, 2 each to the 4 main cargo hatches, 1 on

cylinder, vertical, enclosed type, with cylinder 8 in. diameter by 6 in. stroke. The dynamo, which is coupled directly to the engine shaft, is of the 4 pole type, compound wound. The wiring is on the double system throughout, being lead covered, in the accommodation, and lead covered and armored, in the machinery and cargo spaces. The lights are grouped under the following circuits: 1 navigation light; 2 wireless telegraphy; 3 machinery spaces; 4 accommodation and store rooms; 5 cargo spaces.

In accordance with the requirements of the Canadian Board of Steamship Inspection, the following life saving applications are provided: 2 lifeboats 28 ft. x 8½ ft. x 3½ ft.; 2 dinghys 18 ft. x 5½ x 2½ ft.; 4 life rafts; with life belts and



Canadian Government Merchant Marine Ltd. s.s. Canadian Pioneer, 8,100 tons d.w., in Quebec Harbor.

tion on the opening of navigation. Canadian Vickers Ltd. laid keels for three more on Nov. 30 and Dec. 2, 1918, respectively. Halifax Shipyards Ltd., laid the keel for one, Feb. 24. The principal dimensions of these vessels are as follows:

Length between perpendiculars.....	400 ft. 0 in.
Breadth moulded	52 ft. 0 in.
Depth moulded	31 ft. 0 in.
Draft loaded.....	25 ft. 1 in.
Deadweight carrying capacity, about	8,100 tons.
Speed on trial	12 knots
Complement officers and men	45

The vessels are of the two deck type, with poop, bridge and forecastle, straight stem, elliptical stern and 6 watertight bulkheads. A double bottom, 43 in. deep, with solid floors on every third frame, extends from end to end of vessel with the usual facilities for filling and emptying. The vessels are framed on the transverse system, with a 26 in. frame spacing, bulb angle being used for both frames and beams. To facilitate stowage of cargo, side stringers have been dispensed with, and the outside plating correspondingly increased. All the decks are plated with steel. On the poop and in way of accommodation, the decks are sheathed with British Columbia fir.

The cargo hatches have been arrang-

ed for expeditiously handling cargoes and are of the following dimensions:— No. 1, 32 ft., 6 in. x 26 ft.; no. 2, 34 ft., 8 in. x 26 ft.; no. 4, 34 ft., 8 in. x 26 ft.; no. 5, 30 ft., 4 in. x 26 ft.; hatch on bridge deck, 18 ft. x 10 ft. Widely spaced pillars in cargo holds have been adopted to reduce to the minimum obstruction in handling cargoes. For the working of the hatches, 4 derrick posts are provided; 2 between the forward pair and 2 between the after pair of hatches, with 2 derricks to each post. The cross bunker hatch, on bridge back, is operated by 2 derrick posts, having ventilator tops and derrick to each post. All the derricks have a 5 ton lifting capacity. Ten cargo winches are fitted on board, 2 each to the 4 main cargo hatches, 1 on

bridge and 1 on poop deck. These are of Clark-Chapman type as manufactured by the builders, having cylinders 7 in. diameter by 12 in. stroke. The vessel has one steel lower mast, with B.C. fir lowering top mast, to suit the Manchester Canal bridges, fitted about amidships, carrying the wireless aerials and lifting leads for derrick posts.

The anchor equipment is as required by Lloyds', viz.; 2 bower anchors, 60 cwt. stockless; 1 bower anchor, 50½ cwt. stockless; 1 stream anchor, 16¼ cwt. ex-stock; 1 kedge anchor, 7 cwt., ex-stock; 210 fathoms 2 3-16 in. stud link chain cable, together with stream chain, manilla hawsers and warps, all as required by Lloyds'.

The steering gear is located aft, under the poop. The gear is controlled from the wheel house on flying bridge, by telemotor, and is of the steam and hand patent guided segment type, with cylinders 9 in. diameter by 12 in. stroke as manufactured by the builders.

The vessel is lighted throughout by electric light, the dynamo having a capacity of 10 k.w. The engine will run at 350 revolutions a minute, with steam at 100 lbs. pressure, and is of the single

life buoys as required by the board.

The seamen's and firemen's accommodation is situated aft under the poop, in compartments fitted out for 2 men. Separate mess rooms and lavatories have been provided, and all requirements, such as lighting, ventilation and sanitation are in conformity with the British Board of Trade regulations, governing the survey of masters' and crew spaces. The hospital is placed under the forecastle, together with carpenters shop, paint room and lamproom. The officers' and engineers' accommodation is at the fore end of bridge deck, and includes one cabin for each officer, dining saloon, pantry, baths, w.c.'s and stores. The petty officers' cabins, etc., and mess room, are at the after end of the officers' accommodation on bridge deck. The captain's cabin is on the upper bridge, with office adjoining, the latter having internal communication with the chart room forward, and with the wireless office and cabin aft, all on upper bridge. An internal stairway communicates with the officers' accommodation below. The cold storage chambers and plant are on the upper deck, below the after end of bridge deck. Two fresh water tanks, each of about 2,500 gals. capacity are provid-

ed. They are connected to a distiller capable of distilling 1,000 gals. in 24 hours.

Engines, Boilers, etc.—The vessel is propelled by one set of triple expansion, surface condensing engines, with cylinders 27 x 44 x 73 x 48 in. stroke. The air pump with a diameter of 24 x 24 in. stroke; the two feed pumps 4 in. diam. by 24 in. stroke, and the 2 bilge pumps 4 in. diameter by 4 in. stroke, are all worked from the main engines. The main circulating pump is of the centrifugal type, and is driven by an engine having a 6½ in. diam. cylinder by 6 in. stroke. The reversing engine is made reversible, the gear being of the all

round type and arranged for steam and hand power. The general donkey and feed donkey pumps are of the vertical double acting type, having steam cylinder 9½ in. diameter, water cylinder 7 in. diameter and a stroke of 18 in. The ballast donkey pump is also of the vertical double acting type, having steam cylinder 10½ in. diameter, water cylinder 14 in. diameter and a stroke of 24 in.

An evaporator is provided capable of supplying 25 tons of fresh water per 24 hours. The vessel is provided with filter, feed water heater, winch condenser, telegraphs, etc. The contraflo system of condensing and feed heating is being fitted to all vessels of this class. Steam is

supplied by 3 single ended Scotch boilers, working under Howden's system of forced draft, with diameters of 15½ ft. x 11½ ft. long and having a working pressure of 180 lbs. a square inch. Air is supplied by a fan, driven by 1 single cylinder open type engine, 7½ in. diameter by 5 in. stroke.

The machinery on completion will be subjected to a 4 hour trial in dock, after which an official 6 hour full speed trial, with the vessel fully loaded, will be run. The vessels are being built to meet the requirements of Lloyd's 100 A1 class, special survey, and also under the direction of the Marine Department constructors.

Protection Asked by Auxiliary Marine Equipment Manufacturers.

The following memorial has been sent to the Ministers of Finance and Marine at Ottawa by some 30 manufacturers:—

The Canadian manufacturers of auxiliary marine equipment humbly submit:— That the order in council of Oct. 31, 1916, which grants a drawback, not exceeding 99%, on all material used in the construction of ships, is unjust and unfair to them and detrimental in its consequences to the country at large. Your petitioners do not ask for a modification of the Customs Tariff in force since 1907, but simply for the repeal of the above mentioned order in council, or at least for its modification to such an extent as to grant them an adequate protection to which they are entitled, and this without injuring in any way the shipbuilding industry.

By the Customs Tariff, 1907, item 470, schedule A, all material entering into the construction of ships, of a class or kind made in Canada, are subject to duty. The effect of the above order in council is to remove such duty and the Canadian manufacturers of marine equipment are left without protection. The government seems to have recognized this injustice and unfairness caused to your petitioners, for in Mar., 1918, another order in council was passed, extending to them the privilege of a drawback on imported raw material. However, this last order in council has proved to be unpractical and inoperative in the great majority of cases, and this has been admitted by the officers of the Department of Customs. Moreover, it places the manufacturer at the mercy of the shipbuilder in the matter concerning the drawback, stating that this can be obtained only "with the consent of the shipbuilder". Instances have occurred where the shipbuilder has demanded that the drawback on the manufacturer's raw material be paid to him and not allowed to the manufacturer.

Your petitioners beg to lay before you the following considerations as to the injustice and unfairness resulting from such order in council:—

With possibly one or two exceptions, all the manufacturers interested in this matter established their business before 1916, with the firm belief that the general protective policy of the Canadian Government, as laid down by both Conservative and Liberal administrations, was fixed. With hardly any exception, every interested manufacturer, in anticipation of an increased demand for marine equipment, has incurred expenditures for better facilities, the aggregate extra investment representing a large amount. Whereas previous to 1915 some specialities may have been made abroad that were superior to those manufactured in Canada, under a protective tariff this kind

of industry has made such progress in Canada, that now there is not a single item that is not being produced in some Canadian factory, of a design, quality and efficiency in every respect equal to the best produced anywhere in the world.

American capital and American influence is strong in many shipyards in Canada, and preference is given to American products even where the identical material of equal quality is made in Canada. The cost of manufacturing machinery in Canada is from 15% to 20% in excess of the cost of making the same article in the United States, and this excess is due to the cost of raw material. Comparative cost sheets have already been submitted to the Minister of Finance by one of the firms interested. The raw material cannot be free in spite of the drawback offered. For instance, pig iron for foundry purposes is produced in Canada under tariff protection, and owing to the shortage of foreign supply, must be used. This applies to other forms of iron and steel.

While marine engine and boiler builders have been busy, this has been largely due to the fact that these items have been on the list of prohibited exports promulgated by the United States, and also by Great Britain. The same does not apply to pumps and other auxiliary marine equipment, and when peace conditions obtain, every branch of marine equipment will be affected equally.

Under the operation of the existing regulations, and because the Customs Department is not actually interested in checking the foreign prices, the dumping clause is virtually of no effect, as without this help of the department, it is practically impossible to check prices, which are frequently below those quoted by American makers to American shipyards.

Under existing conditions, the manufacture of marine equipment is unprofitable. Many firms now prepared to supply the Canadian demand must retire from the marine field. Every single manufacturer has contributed to the Victory Loans, with the understanding that the proceeds would be spent in Canada. Would it be fair to them to use their subscription in the purchase of auxiliary marine equipment from their foreign competitors when the same can be bought in Canada? There appears to be no special reason why the manufacturers of marine equipment should be specially singled out from all the industries of Canada, and deprived of the benefits which every other trade enjoys.

The detrimental effect and its consequences to the country at large can easily be seen. The same adequate protection must be given to manufacturers of marine equipment, as is given to any other class

of manufacturers. Otherwise they will be forced to abandon this field of business, and the unavoidable consequence will be the closing of their factories and the dismissal of a great many persons who will be without employment, at a time when the labor question has become a problem of so great importance to our country. Instead of helping to solve this problem by giving employment to many it will increase its difficulties of adjustment. Your petitioners are tax payers to the country. If their industry is ruined, the revenues of Canada will evidently suffer by it.

Not only the manufacturers, but also the great majority of their employes, have contributed their full share to the Victory Loans. It has been represented to all these men (in the aggregate thousands) that the proceeds of recent loans would be spent in Canada. What explanation shall your petitioners give them on the part of the government if their factories are closed and they are left without employment, after all the advertisement announcing to the public the increased shipbuilding in Canada?

An adequate protection granted to the manufacturer of marine equipment will not increase the cost of shipbuilding to the government, and it will not affect materially nor unjustly the profits made by the shipbuilder. Some purely Canadian shipbuilding firms try to place all business in Canada. Why should not every one of them do the same? It is a fact that several of the largest, most successful yards purchase all material in Canada that can be made here. Their contract prices have not been affected by this.

If the duty is restored on such marine equipment as is already being made in Canada there would be no increase in the price per ton to the government on ships being built. It has been the experience of a number of Canadian manufacturers that they are asked for prices before tenders are made to the Marine Department, and that contracts have been arranged on the basis of these prices. Subsequently the orders for the raw material in question have been placed in the United States. The Canadian Government does not benefit by any saving effected by the shipbuilder.

Your petitioners humbly submit that by passing the order in council of Oct. 31, 1917, there was no intention to destroy the Canadian marine equipment industry, that in view of the above considerations, the government should see the injustice done to the undersigned manufacturers, and also to a great many people vitally interested in this kind of industry, and should also see the detrimental conse-

quences of the maintenance of such order in council, and they pray for the repeal of same, or at least for its amendment and change to such an extent as to give

an adequate protection to the Canadian marine manufacturers, which, they humbly submit, would in no way injure the shipbuilding industry in Canada.

Marine Engineers Wage Scale Classification for Great Lakes District.

The National Association of Marine Engineers of Canada have sent to owners of steamboats operating in the Great Lakes district printed copies of a minimum wages scale and classification for steamboats operating in that district which is as follows:—

Adopted by the Great Lakes Executive Committee representing Port Arthur, Sault Ste. Marie, Collingwood, Owen Sound, Midland, Toronto, Kingston, Sarnia and St. Catharines councils, Jan. 10, 1919, and approved by the National Executive Committee. This card to be effective during the season of 1919, or until revised or amended by the Great Lakes Executive Committee.

Conditions of Employment.—All engineers shall be furnished 1st class transportation, including berth and meals, from the lake ports nearest their homes to the steamboats on which they are to be employed, when going to fit out, and after the steamboats go out of commission, 1st class transportation, including berth and meals, shall be furnished to the lake port nearest the homes of the engineers.

In all references to tonnage to be construed as gross tons. In all reference to monthly conditions, 30 days to constitute a month.

All ratings in all classes to include board and accommodation, excepting passenger ferry steamboats.

Overtime at the rate of 75c an hour for all time over 12 hours shall be paid engineers on boats carrying only one engineer.

Any special conditions of employment not covered by the provisions of this wage scale to be submitted to the Great Lakes Executive Committee through the Business Manager for adjustment.

Passenger Steamboats.

Class 1—All passenger steamboats of 3,000 tons or over: chief engineer, \$2,400 a season; second engineer, \$180 a month.

Class 2A—All passenger steamboats of 1,250 tons, and under 3,000 tons, running 6 months or over: chief engineer, \$2,100 a season; second engineer, \$150 a month.

Class 2B—All passenger steamboats of 1,250 tons, and under 3,000 tons, running less than 6 months: chief engineer, \$1,900 a season; second engineer, \$150 a month.

Class 3—All lake passenger steamboats under 1,250 tons and all passenger steamboats confined to river service requiring second class engineer: chief engineer, \$1,650 a season; second engineer, \$125 a month.

Class 4—All passenger steamboats from 45 n.h.p. to 25 n.h.p.: chief engineer, \$150 a month; second engineer, \$110 a month.

Class 5—All passenger steamboats under 25 n.h.p.: chief engineer, \$125 a month.

Freight Steamboats.

Class 1—All freight steamboats of 5,000 tons or over: chief engineer, \$2,400 a season; second engineer, \$180 a month.

Class 2—All freight steamboats of 3,000 tons, and under 5,000 tons: chief engineer, \$2,100 a season; second engineer, \$150 a month.

Class 3—All water bottom freight steamboats under 3,000 tons, requiring second class engineer: chief engineer, \$1,900 a season; second engineer, \$130 a month.

Class 4—All freight steamboats not included in classes 1, 2 and 3 and requiring second class engineer: chief engineer, \$1,800 a season; second engineer, \$120 a month.

Class 5—All freight steamboats not otherwise classified and requiring third class engineer: chief engineer, \$155 a month; second engineer, \$110 a month.

Tug Steamboats.

Class 1—All tug steamboats requiring second class engineer: chief engineer, \$165 a month; second engineer, \$130 a month.

Class 2—All tug steamboats from 75 n.h.p. to 50 n.h.p.: chief engineer, \$150 a month; second engineer, \$125 a month.

Class 3—All tug steamboats from 50 n.h.p. to 25 n.h.p., and all h.p. tugs over 15 n.h.p.: chief engineer, \$145 a month; second engineer, \$115 a month.

Class 4—All tug steamboats under 25 n.h.p. and not embraced in class 3: chief engineer, \$130 a month; second engineer, \$105 a month.

Tugs operating exclusively in Welland Canal (dredge tug excepted): engineer, \$140 a month. Overtime clause not to apply to this class.

In addition to the foregoing, all engineers of tug steamboats operating from the harbors of Port Arthur, Fort William and Sault Ste. Marie shall be paid 10% over the rates in the above four classes.

Ferry Steamboats.

All passenger ferry steamboats operating from Sault Ste. Marie, Ont., and requiring second class engineer: chief engineer, \$170 a month; second engineer, \$160 a month. For season of not less than 10 months.

All other passenger ferry steamboats requiring second class engineer: chief engineer, \$160 a month. Minimum for season not to be less than \$900.

All passenger ferry steamboats requiring third class engineer: chief engineer, \$135 a month.

Canadian Vessels' Fate in Russia.

There is considerable speculation as to what has become of Canadian steamships sent to Archangel in the early stages of the war. The Earl Grey is reported sunk. The Minto and the J. D. Hazen were both sold to the Russian Government, but whether they were paid for is another question. It is stated the Bruce will return to go on her old route in the Newfoundland-Sydney service. It is said she was sent to Glasgow for repairs previous to the Russian debacle, and thus escaped falling into the hands of the revolutionists.

Bishop Navigation Co., Ltd., has been incorporated under the Dominion Companies Act, with \$1,500,000 authorized capital and office at Montreal, to own and operate steam and other vessels and other navigation facilities, and to carry on a general navigation and transportation business.

Cost of Vessels to Be Built By United States Government.

Washington, D.C., from dispatch, Mar. 24.—Readjustment of shipbuilding costs to peace time production is expected by experts of the U.S. Shipping Board to establish a basic price in the neighborhood of \$150 a ton for future contracts let to U.S. yards. Recent conferences here between General Manager Piez of the Emergency Fleet Corporation and representatives of Pacific coast builders are said to have developed virtual unanimity of opinion that high cost methods of production, which prevailed at a time when the national emergency demanded speed in production above everything else, should be eliminated as quickly as possible to obtain a return to sound business practice. Prospects of keen competition in world trade, the western men were told, made it necessary to hold construction costs to a figure which would permit payment of dividends from competitive rates which would have to be established to get business.

Cancelled contracts will be replaced with new orders when the ways are empty, but the prices are expected to be considerably below those prevailing during the war, which sometimes ran as high as \$450 a ton. Government assumption of labor and material hazards also will be abandoned. During hostilities, the Shipping Board adopted a policy of absorbing increased costs. Increases in wages and overtime pay alone amounted operators will assume the risk of a rise in the price of material or of demands for more pay, the government withdrawing its supervision over such questions.

Readjustment of production costs is expected to be facilitated by new prices for steel, though the reduction scarcely will affect that part of the shipbuilding programme now under construction. Most of the steel ships now being built were contracted for at a lump sum, but the Emergency Fleet Corporation is expected to benefit in the remaining contracts based on the cost plus system. It was said the Shipping Board regarded the cut in prices as likely to encourage more shipbuilding.

Government Vessel Insurance.—A Washington, D.C., press dispatch states that plans for the establishment of a Government agency in the U.S. for the writing of marine insurance, on the same lines as during the war, are being formulated by U.S. Shipping Board officials, it being stated that private companies' rates are too high. It has been suggested that the Dominion Government should adopt a similar course, with the view of meeting the excessive rate charged by insurance companies to cover navigation risks on the St. Lawrence.

The Shipmasters' Association, Halifax. N.S., is, we are advised, in good working order and about 45 new members have been admitted recently. It is the association's intention to be ready to furnish masters, mates and coast pilots at any time when requested. The association has a number of men who are good pilots in Canadian and New foundland waters and on the United States sea coast. Capt. Neil Hall, Port Warden, at Halifax, is Secretary.

"I'd like to know one thing, pop." "What is that, son?" "Do they pay the submarine crews from the sinking fund?" —Baltimore American.

Farrar Transportation Co's Claim for Insurance on s.s. Meaford.

The Farrar Transportation Co., Ltd., Toronto, issued the following circular to its shareholders recently:—There may be some of our shareholders who are not thoroughly conversant with the existing conditions relative to the apparently abnormal delay in the collection of the insurance money on the s.s. Meaford, the winding up of our company and the final cash distribution to the shareholders, and your executive committee beg to place the following information before you.

The Meaford went overseas in the fall of 1916 to be engaged in trading between the United Kingdom and Mediterranean ports, as permitted by the British Admiralty. In a circular that was mailed to the shareholders July 2, 1918, we advised you that on or about March 27, 1918, the Meaford was lost while on voyage from Gibraltar to Belfast, Ireland. The circumstances under which the Meaford disappeared, leaving no directly ascertainable cause of the disaster, have resulted in an extended delay in collecting the insurance. The chief difficulty has been that, owing to the existing conditions in Europe, business of this kind has been somewhat paralyzed and by reason of the Meaford being protected by two entirely different sets of insurance underwriters, one set covering the ocean marine insurance and the other set covering the war risk insurance, you can readily understand the number of parties who have to be conferred with and consulted to finally determine which set of insurance underwriters will pay us for the Meaford's loss. As the interests involved are large, it is a question for the two groups of underwriters to settle among themselves and this decision has been finally left to a board of arbitrators. This is in accordance with the custom which has been established in English insurance circles. The arbitrators usually decide the proportionate probabilities of the vessel being lost by marine or war risk and the respective underwriters agree to pay their proportion in accordance with the arbitrators' decision, say, 50% would be recoverable under marine policies and the other 50% under war risk policies, or it might be 25% and 75%, according to the view which the arbitrators take the facts of the case.

There has been considerable delay in the correspondence between the numerous interested parties in getting an acceptable arbitration agreement drawn up and procedure to be adopted agreed upon by all parties concerned. The form of agreement upon which the arbitration will take place has been prepared by our London legal advisers and has already been accepted by the solicitors on behalf of the marine risk underwriters and is now in the hands of the solicitors acting for the war risk group.

It is a source of regret to your directors that the circumstances of the Meaford's disappearance were such that we have not been able to obtain the customary settlement from the underwriters, which would have given no difficulty had we possessed a clear proof of loss by war risk. We need hardly add that this all important matter of securing a satisfactory settlement is receiving our unremitting attention, and everything possible has been and is being done to hurry the final adjustment of the insurance that will be the most advantageous to our shareholders.

Referring to the ultimate insurance settlement, we would ask you not to feel at all uneasy. The worst that can happen is that we may not have the use of the funds for some time yet. We would draw to your notice that while the Meaford was lost the last of March, 1918, she was not posted missing by Lloyd's, her principal underwriters, until June 18, and officially acknowledged lost by Lloyd's one month later. We also wish to draw your attention to the fact that no formal action regarding insurance claim could be taken by us until the steamer was posted missing, and no action was taken by the underwriters until July, when the vessel was officially acknowledged lost, hence our claim for the insurance has only had the underwriters' consideration for approximately six months.

Bill to Place Coast and Inland Water Vessels Under Board of Railway Commissioners.

J. E. Armstrong, M.P., of East Lambton, Ont., introduced in the House of Commons recently, a similar bill to those he has introduced in previous years and which were not passed, in part as follows:—

1.—Subsection 1 of section 30 of the Railway Act, Revised Statutes of Canada, 1906, chapt. 37, is amended by inserting the following paragraphs immediately after paragraph (g):—

"(ga) With respect to any privilege or concession given by any company or express company or by any person owning or controlling any such steamboat or vessel as is in the next paragraph mentioned, and where any privilege or concession is given by any such person or by any company or express company to any person or class of business or in any part of Canada, the board may order that such privilege or concession be discontinued or modified or granted to any other person or class of business, or in any other part of Canada, either the same or in a modified form.

"(gb) With respect to the traffic accommodation, classification of freight, traffic agreements, tolls and tariffs to be furnished, made, entered into and charged in connection with and by steamboats, and other vessels engaged on a regular route carrying passengers or freight or both from one port or place outside of Canada and with respect to the places along the line of route where such steamboats and vessels shall call for traffic, the time of call and duration of stay."

2.—All tariffs of tolls, tariffs, agreements, and classifications of freight charged, entered into or adopted in connection with any steamboat or vessel mentioned in paragraph (gb) of this act shall be submitted to the board.

In introducing the bill Mr. Armstrong said:—

This bill is for the purpose of compelling the boats on our inland waters and coastwise trade to come under the control of the Board of Railway Commissioners. At present the only boats that are under the control of that commission are those that are connected with the large railway corporations in our country. They are compelled to file their rates, tolls, tariff grievances, with

the board, while the other 4,500 boats—because there are 4,500 on the Canadian Register—are allowed to charge whatever rates they please, call or not at any dock or port as they please, and are a law unto themselves. When we take into consideration the fact that the people of Canada have spent nearly \$350,000,000 in deepening our waterways, buoying and lighting our harbors and rivers, building our docks, piers and canals throughout the country, and then find themselves without any control so far as government control is concerned, we cannot help realizing that we are placed in a somewhat humiliating position. This is, however, practically the only public utility in Canada that is not under some form of government control, and Canada is practically the only country in the world that has not absolute control over her shipping on inland waters and coastal trade. I hope, when this matter comes before the house, members will give it every consideration and that it will become law at the earliest possible date. I understand that a bill for the consolidation of the Railway Act has already been introduced into the Senate, and I hope it will come before the house in the near future. If it does, I trust I shall be allowed the privilege of placing an amendment in that bill containing the principles contained in this bill which I have now laid before the house.

Naval Service Vessels Sold.

The Naval Service Department has sold to the Anderson Co., of New York and Montreal, 60 steam trawlers, and some 80 wooden steam drifters, which were built in Canada during the war, for the British Government. The Anderson Co. is proceeding to dispose of these.

Amongst other vessels which the Department has disposed of, are seven of the type, which were known, during the war, by the designation P.V. followed by a number, from 1 to 7 inclusive. These have been sold to Hayes and Anderton, 50 Broad St., New York, who intend to use them in connection with their fishing operations, in addition to their present fishing fleet, which is said to be the largest on the Atlantic coast engaged in the Menhaden fishing industry. These vessels will bring their fish into the factories at various points from Wilmington, N.C., to Montauk. The seven vessels which they have now acquired, are claimed to be the largest, fastest and most modern of any vessels used in the industry. The Naval Service Department invited tenders for the purchase of these vessels, but all of the tenders received were rejected, as they were considered too low. The Department then opened negotiations with Hayes and Anderton, one of the original tenderers, and sold 6 of the vessels for \$40,000 each, and 1 for \$30,000, a total of \$270,000. The original cost of these vessels to the government was \$704,955.51, after which, \$134,917.22 was spent on alterations to fit them for service conditions, and \$64,359.60 for repairs.

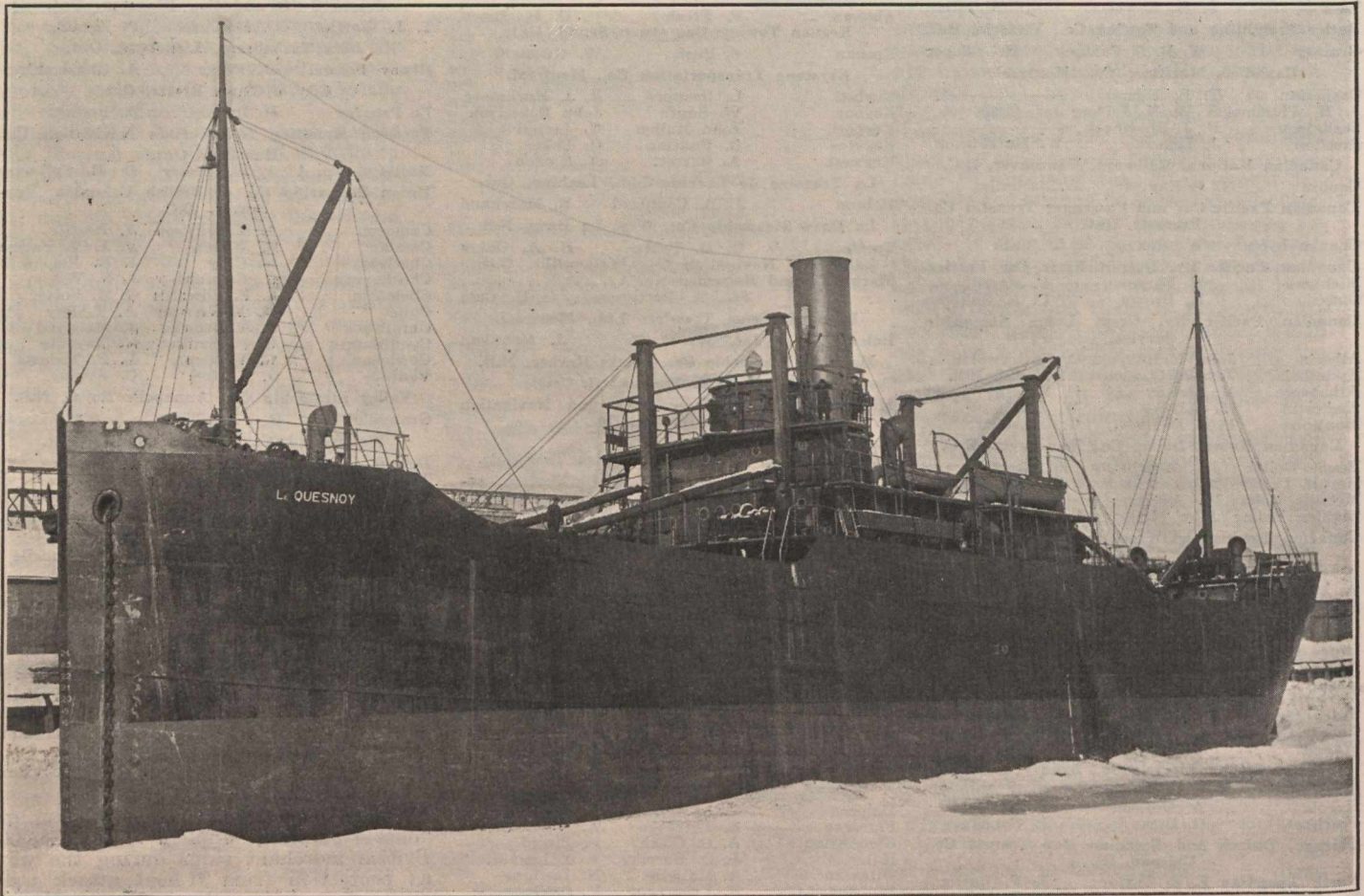
The Cunard Steamship Co., is reported to be capitalizing about £1,500,000 of its reserve fund, and is distributing the issue amongst its shareholders, as a 100% bonus. The dividend for 1918 was 20%. It is stated that the company is planning a large expansion of its business, which may involve other shipping companies.

General Shipbuilding Matters Throughout Canada.

Canadian Allis-Chalmers Ltd.—The report of the Canadian General Electric Co. for 1918 referred to operation of its railway, Canadian Allis-Chalmers Ltd., as follows: "Early in 1918 your directors formed the impression that the end of the war could not be long delayed and, therefore, the policy was adopted of casting about for new lines of manufacture that would keep our facilities employed after orders for munitions should cease, and fill the gap during the time intervening between the cessation of war orders and the reconstruction of trade channels through which we would again commence to receive orders in ad-

ture of marine engines, in sizes ranging from 200 h.p. up to 4,000 h.p., and of Scotch marine boilers of the largest size required for ships up to 10,000 tons capacity, as well as practically all other ship auxiliaries, important contracts were secured during the year for machinery and equipment for installation in ships building both in Canada and the U.S. Including the machinery required for the four 3,500 ton steel cargo steamships building at our Niagara shipyard, but not including the ships, the orders for marine engines, towing engines, Scotch boilers, condensers, ships' winches, shafting, propellers, and other ship

first two of the 3,000 ton wooden steamships which this company is building for the French Government, were to be launched towards the end of March. The Ogden Point assembling plant, which was used by the Imperial Munitions Board for the equipment of wooden vessels built on the B.C. coast, for the British Government, has been taken over by the Foundation Co., on payment of \$60,000, and will be used for equipping the 20 wooden steamships being built by the company for the French Government. It was expected that additional machinery would be ready for installing during March, when the first of the 20 vessels



Steel cargo steamship Le Quesnoy, 4,300 tons, built by Dominion Shipbuilding Co., Toronto, wintering in Louise Basin, Quebec, Que.

equate volume for our normal output under prewar conditions. Having in mind that the mercantile marine of the allied countries had been steadily depleted and that many orders for cargo ships were being placed in Canada and the United States, we devoted our energies to securing orders for marine engines, boilers, and other auxiliaries. The great activity in the shipbuilding industry had resulted in the opening up of many new yards in both Canada and the United States, and while the old established plants were equipped to build the ship machinery required for their own requirements, the majority of the newly organized yards, and many of the older ones, were compelled to enlist the cooperation of other machinery builders to enable them to meet the unusual demands and attain maximum production. As our plants in Toronto were well equipped for undertaking the manufac-

auxiliaries, at the end of the year amounted to \$5,490,707.00, the contracts in question being received either directly from or for account of the following:—Imperial Munitions Board, Marine Departments, and Naval Service Department, \$1,602,412; French Government, \$853,487; U.S. Shipping Board, Emergency Fleet Corporation, U.S. Navy and U.S. Army Embarkation Service, \$3,034,806. Total, \$5,490,707, of that amount approximately \$4,000,000 is carried forward into 1919.

Dominion Shipbuilding Co., Toronto.—The steel cargo steamship Le Quesnoy, 4,800 tons d.w., which was launched at Toronto, Nov. 23, 1918, had her final dock trial on Mar. 10, and is ready for sea on the opening of navigation. She is wintering at shed 20, Louise basin, Quebec, Que., as shown in the accompanying illustration.

Foundation Co., Victoria, B.C.—The

would be ready for outfitting. It was anticipated that the first vessel will be ready for sea about the end of April, or early in May, and the other vessels at the rate of one every two weeks.

Halifax Shipyards Ltd., Halifax, N.S., started erecting the steel framework on its power plant building, Mar. 17, and the erection of the steel work of the plate shop was started a few days later. The excavation for the air compressor and stores building was completed towards the end of March, when the erection of the building was started.

J. E. Pettis, Spencers Island, N.S., launched the tern schooner Minas Prince, Mar. 4. She is of 457 tons register and is classed for 12 years with Bureau Veritas. The equipment includes hoisting power and all latest improvements. She is owned in Parrsboro, N.S., and is loading for the West Indies.

Polson Iron Works, Ltd., Toronto.

Early in March it was announced that J. B. Miller would continue as President of the company, but would relinquish the general managership, and that M. E. Forbes, formerly Vice President and General Manager, Dayton, Ohio, Production Co., and R. J. Cluff, of Cluff Bros., iron pipe and plumbers supplies, Toronto, had been appointed joint general managers, A. H. Jeffrey remaining with the company as Secretary. A report that there had been a change of ownership was denied. On Mar. 17 the company applied for a winding up order, which was granted, G. T. Clarkson, being appointed liquidator. The Toronto General Trust Co. applied for a declaration that as trustee under a debenture mortgage, and as holder of a debenture for \$600,000, it was entitled to a charge on all the company's property and asked for the appointment of a receiver and manager. It is stated that the company's business will be carried on without interruption.

C. T. White and Sons, Alma, N.B., are building 2 schooners with auxiliary power. They will be sister vessels, 150 ft. long, 600 tons gross, 900 tons displacement, and they will be equipped with gas power, and the most modern cargo facilities.

Yarrows Limited, Victoria, B.C.—In reference to the report, mentioned in Canadian Railway and Marine World for March, that Yarrow & Co. Ltd., Scotstown, Glasgow, intended diminishing the output at its shipbuilding plant there and to increasing the production of its Vancouver, B.C., plant, we are advised by Yarrow & Co. Ltd., Scotstown, that it is under the impression that the Pacific Coast will advance rapidly, and that it wishes, as far as it can, to develop its Victoria works, with a view to having two strings to its bow.

Atlantic and Pacific Ocean Marine.

The Panama Canal was used in December by 166 ocean going ships; \$537,057 being collected in tolls.

The French General Trans-Atlantic Co., it is announced, will re-establish its steamship service with Canada, as soon as circumstances permit, so that the direct service between France and Canada, as given before the war, will be continued.

Furness Withy and Co's. s.s. Appenine ran aground at Witless Point, near St. John's, Nfld., Mar. 4, presumably being driven in by ice, which was packing on the coast. She sailed from Liverpool, Eng., Feb. 19 for St. John's and Halifax, and was overdue at the first named port.

Quebec, Que., press dispatch Mar. 25:—The Canadian Pacific Ocean Services Ltd. will renew its St. Lawrence passenger and freight business this spring with its two largest and finest ships, the Empress of Britain and the Empress of France, which was formerly named the Alsatian, which will make Quebec the chief summer Atlantic terminus. This regular ocean mail service will possibly be increased during the season.

Canadian Pacific Ocean Services, Ltd., has bought the steamships War Beryl and War Peridot in Great Britain. They are steel cargo steamships of 10,800 estimated d.w. tons each, and of the following dimensions: length 41 ft. 6 in., beam 55 ft. 2 in., depth 29 ft. The s.s. War Peridot left Liverpool, Eng., Mar. 15, for St. John, N.B., where she was ex-

pected to arrive Mar. 28. The s.s. War Beryl was expected to be delivered to the company about Mar. 28, and to sail for St. John a few days later.

The rumor has again been revived that the C.P.R., on behalf of Canadian Pacific Ocean Services Ltd., may shortly purchase the whole fleet of an important English steamship company, which controls a large proportion of the trade between Great Britain and the east, and that the company will make Quebec its main summer port for Canada. As we have before pointed out, the whole trans-oceanic businesses of the empire are in a state of flux, and for some time past, there have been amalgamations, absorptions, working agreements, etc., by, and between, the various steamship companies, and it is not conceivable that the C.P.R., with its world wide system, will be behind other companies in carrying out whatever extensions may be necessary and politic. The C.P.R., as a transportation company, is unique, and it will doubtless retain that position.

Maritime Provinces and Newfoundland.

The Boston and Yarmouth Steamship Co. resumed service between Yarmouth, N.S., and Boston, Mass., Mar. 6, with the s.s. Northland. The service was suspended during the war.

The House of Commons passed a resolution Mar. 19, authorizing the government to establish a government controlled steamship service between Pictou, N.S., and Magdalen Islands. The present service is given by a privately owned vessel, under a government subsidy, and it is stated to be unsatisfactory.

The s.s. Julienne was sold under a court order, at Halifax, N.S., recently to Farquhar and Co., Halifax, for \$43,500. She was owned by Anderson and Co., New York, and was sold as the result of actions by the owners of cargo, for \$320,000 for nonfulfillment of charter, and by the captain for \$11,000 for wages and disbursements.

The Prince Edward Island Public Works Department is receiving tenders to Apr. 14, for the operation of a steamship of about 200 tons register, and certified for not less than 200 passengers, and maintaining a speed of not less than 10 knots an hour, from Charlottetown to Crapaud, to Orwell, to East River and to West River, once a week, for five years from the opening of navigation.

The Marine Department's s.s. Lansdowne, lying at the marine pier at Dartmouth, N.S., is reported to have been condemned. She was built at Maccan, N.S., in 1884, and is screw driven by engine of 80 n.h.p., Her dimensions are, length 188.6 ft., breadth 32.1 ft., depth 15.8 ft.; tonnage, 680 gross, 463 register. She served the Marine Department at the various maritime ports, and during the war was stationed at Sydney, N.S.

The Troja Steamship Co's. s.s. Troja, with a cargo of coal for St. John, N.B., ran ashore on the Old Proprietor, Grand Manan, N.B., Mar. 18, and is believed to be a total loss. The crew were all taken off by the s.s. Aberdeen and taken to St. John. The Troja was built in 1918 by the Dominion Shipbuilding Co., Toronto, and was classed 100 A1 at Lloyd's for trans-Atlantic service. Her dimensions were, length over all 261 ft., breadth moulded 43½ ft., depth moulded 28 ft. 2 in.; deadweight tonnage, 4,300. She

was equipped with triple expansion engines. The loss is stated to be covered by insurance, partly placed in Canada and partly in Europe. It is reported that as the result of a work commissioners enquiry the blame for the loss has been placed on the master of the vessel, Capt. Caine.

Province of Quebec Marine.

The Montreal, Valleyfield and Soulanges Navigation Co. Ltd., which operated the s.s. Hebron between the points named, has gone out of business, the vessel now being operated by La Traverse de Lachine Ltd., Lachine, Que.

Ontario and the Great Lakes.

The name of the steam tug D. J. Burke, owned by Canadian Stewart Co., Toronto, has been changed to Mary Stewart.

The Algoma Eastern Ry. s.s. Valcartier, which was, last year, operated by the Algoma Steel Corporation, will this year, be under the Algoma Central Steamship Line's control.

The Toronto, Hamilton and Buffalo Navigation Co.'s. car ferry Maitland No. 1 was laid up recently for repairs and overhaul, after having been on the route between Port Maitland, Ont., and Ashtabula, Ohio, for a year, making a return trip every 15 hours, except when held up owing to freight shortage.

Judgment has been given against the Northern Navigation Co., as owner of the s.s. Majestic, for \$500 and costs, in favor of F. McGibbon and Sons, Sarnia, for the loss of the old wooden steamship Cataract, when the Majestic took fire and drifted against the Cataract at Sarnia, Dec. 15, 1915. The Cataract has been practically a derelict since 1910.

The Detroit and Windsor Ferry Co. raised its rates for passengers recently from 10 tickets for 25c, to 8 tickets for 25c, on the ground that the increases in operating expenses made it necessary. Windsor City Council protested against this, and desired to send auditors to examine the company's books, but the company declined to allow this to be done.

The Central Canada Coal Co., Brockville, has sold its s.s. Samuel Marshall to Eliasoph and Co., Montreal, and during the forthcoming season will only operate the barge F. A. Georger. The s.s. Samuel Marshall was built at Grand Haven, Mich., in 1888, and is screw driven by engine of 72 n.h.p. Her dimensions are, length 198 ft., breadth 33.4 ft., depth 14.6 ft.; tonnage, 772 gross, 540 register.

The United States Lake Survey reports the levels of the Great Lakes in feet above mean sea level for February, as follows: Superior, 602.08; Michigan and Huron, 580.66; St. Clair, 575.02; Erie, 572.20; Ontario, 245.91. Compared with the average February levels for the past ten years, Superior was 0.33 ft. above; Michigan and Huron 0.79 ft. above; Erie 0.67 ft. above, and Ontario 0.50 ft. above.

British Columbia and Pacific Coast

The Union Steamship Co. of British Columbia's s.s. Cheakamus, after being thoroughly overhauled at Esquimalt, has resumed her service.

The C.P.R. s.s. Princess Beatrice was

taken off the Gulf route, Mar. 12, for her annual overhaul, her place being taken by the s.s. Princess Patricia.

The Prince Rupert Board of Trade has petitioned the Dominion Government for a mail subsidy for a purely local steamship service between Prince Rupert and coastal points within approximately 100 miles.

The Union Steamship Co. of British Columbia is operating the s.s. Chelohsin on the Rivers Inlet-Bella Coola route; the s.s. Camosun on the Prince Rupert-Anyox route, and the s.s. Venture on the Surf Inlet, Prince Rupert and Naas route; all out of Vancouver.

The Grand Trunk Pacific Coast Steamship Co. is operating the s.s. Prince John on a fortnightly schedule on the Prince Rupert-Queen Charlotte Islands route,

calling at Prince Rupert on the return from Massett before going to the South Islands. The s.s. Prince Albert is being operated in the general freight service, without schedule.

The C.P.R. has bought the steam tug Dola from MacDonald and Marpole, Vancouver, for its British Columbia Coast Service. The Dola was owned formerly by the Vancouver Tug and Barge Co. Ltd., and was built at Vancouver in 1907, her dimensions being, length 96.3 ft., breadth 21.8 ft., depth 10.9 ft.; tonnage, 176 gross, 120 register. She is screw driven by engine of 39 n.h.p.

The name of the s.s. Nellie G. Thurston, owned by the Vancouver Machinery Depot, Ltd., Vancouver, has been changed to Esdud. She was originally a sailing vessel, and was built at Gloucester,

Mass., in 1883. She is driven by a screw, with engine of 19 n.h.p. Her dimensions are, length 79 ft., breadth 22.6 ft., depth 8.5 ft.; tonnage, 100 gross, 60 register. She was, at one time, owned by the British Columbia Transport Co. Ltd., London, Eng.

Judgment was delivered in favor of the C.P.R. Mar. 15, restraining the B.C. Workmen's Compensation Board from paying out further compensation to dependents of the company's employes who lost their lives in the sinking of the s.s. Princess Sophia in the Lynn Canal, Alaska, last year. The contention, on which the judgment was based, is that the Compensation Act does not extend to the scene of a wreck in foreign waters. It is stated that the judgment is being appealed against.

Cargo Steamship Building in Canada for British Government.

Steamships Under Construction.—Of the 43 steel steamships and 46 wooden steamships ordered in Canada by the Imperial Munitions Board on behalf of the British Government, 32 steel and 45 wooden ships have been launched. The ones still under construction are as follows:—British American Shipbuilding Co., Welland, Ont., War Racoon, 3,500 tons d.w.; Canadian Allis-Chalmers Ltd., Bridgeburg, Ont., War Vixen, War Walaby, War Wombat, 3,500 tons each; J. Coughlan & Sons, Vancouver, B.C., War Chariot, War Column, War Company, 8,800 tons each; Midland Shipbuilding Co., Ont, War Fury, War Magic, 3,400 tons each; Polson Iron Works Ltd., Toronto, War Algoma, War Halton, 3,500 tons each; a total of 11 steamships aggregating 54,200 tons. The one wooden steamship remaining is on order with Grant and Horne, St. John, N.B., and will be named War Moncton. It is the same type as adopted as standard for all the wooden steamships built in Canada for the British Government, and will be approximately 3,080 tons d.w.

Steamship Deliveries.—With the sailing of the steamships War Squash and War Tanoo, towards the end of March, the last of the wooden steamships to be built on the Pacific Coast, for the British Government, under orders from the Imperial Munitions Board, left for Great Britain, where, after discharge of cargo, they will be handed over to John Hardie & Co., Glasgow, Scotland, to whom they have been assigned as managing owner by the British Ministry of Shipping. The first of these vessels to be launched on the Pacific Coast was the War Songhee, by the Foundation Co., Victoria, Dec. 28, 1917, and the first to be fully equipped and dispatched to Great Britain, was the War Yukon, by Cameron-Genoa Mills Shipbuilders Ltd., Victoria, which was launched Jan. 24, 1918.

Steamships Launched.—Following are particulars of cargo steamships ordered by the Imperial Munitions Board for the British Government, and which had been officially reported as launched up to Mar. 20, giving in each case the date of the launching, the name of the steamship, the name and address of the building company and the deadweight tonnage:—

May 18, 1917—War Dog, Wallace Shipyards North Vancouver, B.C..... 4,500
 July 9, 1917—War Wasp, Nova Scotia Steel & Coal Co., New Glasgow, N.S..... 1,800
 Aug. 19, 1917—War Fish, Port Arthur Shipbuilding Co., Port Arthur,

Nov. 3, 1917	War Dance, Port Arthur Shipbuilding Co., Port Arthur, Ont.....	4,300
Mar. 16, 1918	War Camp, J. Coughlan & Sons, Vancouver, B.C.....	8,800
Mar. 23, 1918	War Power, Wallace Shipyards, North Vancouver, B.C.....	4,600
Apr. 3, 1918	War Isis, Port Arthur Shipbuilding Co., Port Arthur, Ont.....	3,400
May 8, 1918	War Wizard, Collingwood Shipbuilding Co., Collingwood, Ont.....	2,900
May 21, 1918	War Bee, Nova Scotia Steel & Coal Co., New Glasgow, N.S.....	2,400
May 27, 1918	War Osiris, Port Arthur Shipbuilding Co., Port Arthur, Ont.....	3,400
June 8, 1918	War Earl, Canadian Vickers Ltd., Montreal.....	7,000
June 29, 1918	War Duchess, Canadian Vickers Ltd., Montreal.....	7,000
July 20, 1918	War Hathor, Port Arthur Shipbuilding Co., Port Arthur, Ont.....	3,400
July 29, 1918	War Charger, J. Coughlan & Sons, Vancouver, B.C.....	8,800
Aug. 19, 1918	War Chief, J. Coughlan and Sons, Vancouver, B.C.....	8,800
Aug. 21, 1918	War Weasel, British-American Shipbuilding Co., Welland, Ont.....	3,500
Sept. 6, 1918	War Witch, Collingwood Shipbuilding Co., Collingwood, Ont.....	2,900
Sept. 19, 1918	War Taurus, Polson Iron Works, Ltd., Toronto.....	3,500
Sept. 28, 1918	War Faith, Canadian Vickers Ltd., Montreal.....	7,000
Sept. 28, 1918	War Noble, J. Coughlan & Sons, Vancouver, B.C.....	8,800
Sept. 28, 1918	War Storm, Wallace Shipyards, Ltd., Vancouver, B.C.....	4,600
Oct. 5, 1918	War Horus, Port Arthur Shipbuilding Co., Port Arthur, Ont.....	3,400
Oct. 15, 1918	War Hydra, Polson Iron Works, Ltd., Toronto.....	3,500
Oct. 24, 1918	War Fiend, Midland Shipbuilding Co., Midland, Ont.....	3,400
Oct. 26, 1918	War Karma, Port Arthur Shipbuilding Co., Port Arthur, Ont.....	3,400
Oct. 29, 1918	War Joy, Canadian Vickers Ltd., Montreal.....	7,200
Dec. 18, 1918	War Convoy, J. Coughlan & Sons, Vancouver, B.C.....	8,800
Dec. 22, 1918	War Hamilton, Polson Iron Works, Ltd., Toronto.....	3,500
Jan. 21, 1919	War Badger, British American Shipbuilding Co., Welland, Ont.....	3,500
Feb. 8, 1919	War Timiskaming, Polson Iron Works, Ltd., Toronto.....	3,500
Mar. 3, 1919	War Leveret, Canadian Allis-Chalmers Ltd., Bridgeburg, Ont.....	3,500
Mar. 15, 1919	War Cavalry, J. Coughlan and Sons, Vancouver, B.C.....	8,800
Total 32 steel steamships.....		157,100

Wooden Steamships.		
Dec. 28, 1917	War Songhee, Foundation Co., Victoria, B.C.....	3,080
Jan. 4, 1918	War Nootka, Western Canada Shipyards, Vancouver, B.C.....	3,080
Jan. 24, 1918	War Yukon, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C.....	3,080
Feb. 16, 1918	War Puget, Wm. Lyall Ship-	

Mar. 6, 1918	building Co., Vancouver, B.C.....	3,080
Mar. 6, 1918	War Selkirk, Western Canada Shipyards, Vancouver, B.C.....	3,080
Apr. 10, 1918	War Caribou, Wm. Lyall Shipbuilding Co., Vancouver, B.C.....	3,080
Apr. 11, 1918	War Comox, New Westminster Construction & Engineering Co., New Westminster, B.C.....	3,080
Apr. 11, 1918	War Masset, Foundation Co., Victoria, B.C.....	3,080
Apr. 13, 1918	War Tye, Pacific Construction Co., Coquitlam, B.C.....	3,080
Apr. 25, 1918	War Haida, Cameron-Genoa Mills, Victoria, B.C.....	3,080
Apr. 27, 1918	War Cayuse, Wm. Lyall Shipbuilding Co., Vancouver, B.C.....	3,080
May 11, 1918	War Mohawk, Quinlan & Robertson, Ltd., Quebec, Que.....	3,080
May 11, 1918	War Sioux, Port Arthur Dredging Co., Port Arthur, Ont.....	3,080
May 21, 1918	War Atlin, Wm. Lyall Shipbuilding Co., Vancouver, B.C.....	3,080
May 23, 1918	War Tatla, Western Canada Shipyards, Ltd., Vancouver, B.C.....	3,080
June 12, 1918	War Skeena, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C.....	3,080
June 13, 1918	War Seneca, Quinlan & Robertson, Quebec, Que.....	3,080
June 14, 1918	War Edensaw, New Westminster Construction & Engineering Co., B.C.....	3,080
June 15, 1918	War Babine, Foundation Co., Victoria, B.C.....	3,080
June 24, 1918	War Nicola, Wm. Lyall Shipbuilding Co., Vancouver, B.C.....	3,080
June 28, 1918	War Quebec, Quebec Shipbuilding & Repairing Co., Quebec, Que.....	3,080
June 29, 1918	War Ontario, Toronto Shipbuilding Co., Toronto.....	3,080
July 5, 1918	War Huron, Fraser, Brace & Co., Montreal.....	3,080
July 5, 1918	War Erie, Fraser, Brace & Co., Montreal.....	3,080
July 6, 1918	War Casco, Western Canada Shipyards, Ltd., Vancouver, B.C.....	3,080
July 12, 1918	War Sumas, Pacific Construction Co., Port Coquitlam, B.C.....	3,080
July 24, 1918	War Squash, Wm. Lyall Shipbuilding Co., Vancouver, B.C.....	3,080
July 27, 1918	War Gaspe, Quinlan & Robertson, Quebec, Que.....	3,080
July 27, 1918	War Ottawa, Fraser, Brace & Co., Montreal.....	3,080
Aug. 5, 1918	War Chilkat, Western Canada Shipyards, Vancouver, B.C.....	3,080
July 29, 1918	War Stikine, Cameron-Genoa Mills Shipbuilders, Victoria, B.C.....	3,080
Aug. 22, 1918	War Tanoo, Western Canada Shipyards, Vancouver, B.C.....	3,080
Aug. 24, 1918	War Fundy, Grant & Horne, St. John, N.B.....	3,080
Aug. 26, 1918	War Kitimat, New Westminster Construction & Engineering Co., New Westminster, B.C.....	3,080
Aug. 31, 1918	War Camchin, Foundation Co., Victoria, B.C.....	3,080
Sept. 7, 1918	War Sorel, Quebec Shipbuilding & Repair Co., Quebec.....	3,080
Sept. 8, 1918	War Nanoose, Foundation Co., Victoria, B.C.....	3,080
Sept. 19, 1918	War Niagara, Fraser, Brace & Co., Montreal.....	3,080
Sept. 21, 1918	War Halifax, Southern Sal-	

	vage Co., Liverpool, N.S.....	3,080
Sept. 22, 1918	—War Nipigon, Great Lakes Dredging Co., Port Arthur, Ont.....	3,080
Sept. 23, 1918	—War Matane, Quinlan & Robertson, Quebec, Que.....	3,080
Sept. 26, 1918	—War Ewen, New Westminster Construction & Engineering Co., New Westminster, B.C.....	3,080
Oct. 15, 1918	—War Mingan, Three Rivers Shipyards, Ltd., Three Rivers, Que.....	3,080
Oct. 26, 1918	—War Toronto, Toronto Shipbuilding Co., Toronto.....	3,080
Nov. 2, 1918	—War Radnor, Three Rivers Shipyards, Ltd., Three Rivers, Que.....	3,080

Total, 45 wooden steamships.....138,600
 Aggregate deadweight tonnage of 32 steel and 45 wooden steamships launched, 295,700 tons.

Canadian Allis-Chalmers Ltd., Bridgeburg, Ont.—The first of the four steel cargo steamships which this company is building for the British Government, under orders from the Imperial Munitions Board, was launched, Mar. 3, and christened War Leveret. She is of steel, with single screw, single deck, with straight stem and semielliptic stern, classed 100 A1 at Lloyd's, and according to the British Board of Trade regulations relating to freight steamships. She has a deadweight capacity of 3,500 tons, and has the following dimensions:—length between perpendiculars 251 ft., beam moulded 43½ ft., depth moulded 23 ft. The main engine is of the vertical, direct acting, triple expansion, surface condensing type, with cylinders 20 x 33 x 54 x 40 in. stroke, developing 1,400 h.p., and supplied with steam by 2 Scotch marine, single end, return tubular boilers, 14 ft. diam., by 12 ft. long, for a working pressure of 120 lbs. It is expected that the second vessel will be launched during April, and named War Vixen. Two other vessels remain to be launched to complete the order. They will be named War Wallaby and War Wombat respectively.

J. Coughlan and Sons, Vancouver, B.C., launched on Mar. 15, the sixth of the 9 steel steamships of 8,800 tons d.w., to be built for the British Government, under orders from the Imperial Munitions Board. She was named War Cavalry. Three other vessels of the same type and capacity, are still to be built by this company, and will be named War Charriot, War Column and War Company, respectively.

The s.s. War Convoy underwent her trial trips, Mar. 17, maintaining an average speed of 12.50 knots over a 6 mile course.

Prince Rupert Drydock & Engineering Co. Ltd., Prince Rupert, B.C., which is operating the Grand Trunk Pacific Ry. drydock and shipbuilding plants there, and which has contracts from the Marine Department to build 2 steel cargo steamships 8,100 tons d.w. each, advises us that it expects to lay the keel of the first ship, department's contract 42, builders' yard no. 1, about May 15, and for the second ship, department's contract 43, builders' yard no. 2, about Oct. 15, the approximate launching dates being Oct. 1, 1919 and Feb. 1, 1920 respectively. The officers of the company are: Chairman of Board, Newman Erb, New York, N.Y.; President, John L. Mulen, Pittsburg, Pa.; Vice President, F. F. Schellenberg, Prince Rupert, B.C.; Treasurer, H. M. Wadden, New York, N.Y.; Secretary, H. B. Blanchard, New York, N.Y.; Superintendent of Drydock, J. H. Pillsbury, Prince Rupert, B.C.; The Vice President and Superintendent of Drydock will be in active charge of the shipbuilding.

United States Vessels Going Out by St. Lawrence.

Quebec, Que., press dispatch Mar. 25:—Capt. E. Hough, representing the U.S. Shipping Board, who arrived in Quebec recently, to superintend the business attending the arrival of a large fleet of steamships built during the winter on the Upper Lakes for the board, that are due to arrive here within the coming month en route to U.S. ocean ports, says that the ships built average 3,500 tons register, and will stop at Montreal and Quebec for any repairs that might be needed in consequence of their trip through the canals. These ships will come here with port cargoes for Montreal and Quebec, each carrying 1,200 tons of coal, and as the canals between Lake Erie and the St. Lawrence River will be opened by April 15 or thereabouts, it is anticipated that there will be a big rush of ships down the St. Lawrence.

Protecting Devices for Canal Lock Entrances.

At the Dominion Marine Association's recent annual meeting, as reported in Canadian Railway and Marine World for March, the question of the necessity of providing protecting devices, such as spring buffers, at entrances to canal locks, was discussed. A. A. Wright, A. E. Mathews, and the association's Counsel, F. King, were appointed a committee to take the question up again with the Railways and Canals Department. As Mr. Wright has been urging action in this connection for several years, we asked him, recently, for his views on the matter, in response to which he has favored us with the following memorandum:

"As you are doubtless aware, steel steamships, using the Welland and St. Lawrence Canals, receive a great deal of damage from canalling, and suffer in addition, serious delays on account of the entrances to the locks being of stone or concrete. Many of these require practically new bows after two or three years canalling, unless they tie up every time it is blowing hard and only lock through in fine weather, and even then, on account of cross currents at some of the entrances, they receive a great deal of damage.

"I have repeatedly pointed out, in past years, that this could be avoided, if a cluster of spring piles was driven in from 75 to 100 feet from the entrance to each lock, so that a steamship would get her bow entered, and be practically stopped in there, and be held straight, so that she could go into the lock without striking the stone piers, save all damage to the ship, and also make sure that the head or foot gate would never be carried away, because the ship would be compelled to stop when she got between the piles and she would not have to proceed under full speed, as now has to be done, to be sure to make the entrance at all, when it is blowing hard across the canal.

"Where the bottom is rock, so that it would be impracticable to drive piles, cribs could be sunk, the same width apart as the entrance to the canal, and timbers, with coil springs behind them, to take up the shock, could be fixed to the timbers, to ease the blow to the ship and avoid damage, the distance of the cribs or spring piles from the entrance to the lock to be anywhere from 100 ft. down, according to local conditions.

"Engineers engaged in the construction of canals have never attempted to place anything of this kind and do not seem eager to try it, but there is absolutely no question that the lack of these protectors at the entrances to locks is serious, and causes vessel owners a very heavy bill, because the rate of insurance on canalers is very much higher than on ships not using canals, and, in addition, a great deal of the damage is not chargeable against underwriters and has to be borne by the owners. I hope I have made the matter clear, and I trust that the Railways and Canals Department will take it up and as early as possible."

Steamships for Canadian Export Trade.

London, Eng., cablegram to Montreal Gazette.—The Canadian Trade Mission is making every effort to secure shipping for Canadian exports, both by increasing the number of vessels on existing routes and creating new routes. Shipping facilities are still inadequate for the world's trade, but there is every prospect that Canada will shortly receive more attention.

For the West Indies trade there are two lines, the Quebec Steamship Co., from New York, and the Royal Mail Steam Packet Co. from Halifax. The former company had 4 steamships in pre-war days, but one, the Trinidad, was requisitioned by the British Government. The company has purchased a much larger boat to replace the Trinidad. Ninety per cent. of the trade of this company is Canadian. The Royal Mail Co. is subsidized by the Canadian Government, and also has a direct line from Great Britain to the West Indies, subsidized by the Imperial Government. The proposition has been made that a joint service from Southampton via Halifax to the West Indies be subsidized by both governments. This does not meet with the approval of Canadians, who desire their own service, and fear that complications might arise in the division of space between British and Canadian exporters.

The Elder-Dempster Co. is arranging a direct service from Montreal and Halifax to Cape Town. This is much desired by both Canadians and South Africans, and will be the subject of a joint conference as soon as General Botha and Sir Robert Borden finish their Peace Conference work.

For the Mediterranean trade expected with Serbia, Roumania, and Greece it will be possible to secure Greek tonnage for a direct line from Montreal to Greece until Canadian tonnage is available.

Australia has announced the inception of a government owned and operated steamship line from England to Australia, beginning Mar. 21.

Wireless Restrictions Removed.—All censorship regulations restricting the use of wireless telegraphy to and from ships in the west Atlantic and in the Pacific, are now completely removed. All ships are now permitted to exchange wireless messages in plain language, code or cypher, anywhere in the Pacific, and west of long. 40 deg. west in the Atlantic, such messages may also be exchanged with Canadian commercial coast stations. British naval stations no longer accept messages on ships' business free of coast charges.

Canadian Government Merchant Marine, Ltd., Shipbuilding, Operation, Etc.

Canadian Voyageur in Service.—The s.s. Canadian Voyageur, 4,300 tons d.w., the first of the steel cargo steamships built for the Marine Department, which left Quebec, Que., Jan. 21, and arrived at Halifax, N.S., Feb. 4, was transferred there by the Department to the Canadian Government Merchant Marine Ltd., and was subsequently turned over to the Royal Mail Steam Packet Co., for a voyage to Barbadoes. After loading a cargo of flour, lumber and general merchandise, she left Halifax, Mar. 2, at 5.15 p.m., arriving at Barbadoes, Mar. 11 at 7 a.m. She then proceeded to Port of Spain, Trinidad, and Georgetown, Demerara, leaving the latter place Mar. 21, for Barbadoes, intending to leave there about Mar. 28, and to arrive in New York about Apr. 5, with a cargo of sugar, etc.

Steamship Management.—Canadian Railway and Marine World for March gave the names and addresses of the managing owners of the steel and wooden steamships built in Canada for the British Government, through the Imperial Munitions Board. We are advised by the Director of Ship Management Branch, Transport Department, Ministry of Shipping, London, Eng., that the general terms of management of these steamships are that the details of managing owners are carried out by actual ship owners, under the instructions of the Ministry of Shipping as regards voyages.

Contracts Signed.—Since Canadian Railway and Marine World for March was published, the following additional contracts between the Marine Department and the Port Arthur Shipbuilding Co. were signed on Mar. 1. Department's contracts 19A and 20A, builders' yard nos. 41 and 42, two steel cargo steamships, 3,400 tons d.w. each; department's contracts 32 and 33, builders' yard nos. 43 and 44, two steel cargo steamships, 4,300 tons d.w. each.

Names of Ships.—Since Canadian Railway and Marine World for March was published, the following additional names for steel cargo steamships to be operated by Canadian Government Merchant Marine Ltd., have been decided on by the Marine Department. Canadian Aviator, Canadian Scout, Canadian Trader, Canadian Sailor, Canadian Navigator, Canadian Seigneur, Canadian Miller, Canadian Spinner, Canadian Planter, Canadian Beaver. Particulars showing the builders' name in each case, the department contract number, and the builders' yard number, are given in the full page table, "Orders for steel cargo steamships for Canadian Government Merchant Marine, Ltd.," on another page of this issue.

Prevention of Profiteering.—The acting Minister of Marine, in answering a question in the House of Commons recently, as to what steps the government had taken to prevent profiteering in the building of steel cargo steamships, and to ascertain the total cost of labor for construction, the total cost of material used, total overhead expenses, gross tonnage and net profit respectively, said: "By inspection, in order to determine if the specifications are being adhered to. All steel materials are purchased by the Marine Department. All other sub-contracts let by builders are

submitted to the department for approval, wherever possible, being confined to the Dominion. The total cost of labor for each branch and the total cost of material entering into construction is estimated by the technical officers of the department before contracts are awarded. To the above is added overhead charges of the various firms, in some cases estimated, in others known from audited returns, to which is added approximately 10% for profit. Extra allowances are made for British Columbia districts, where labor and other conditions differ from conditions in Eastern Canada."

British American Shipbuilding Co.—Welland, Ont., which has contracts from the Marine Department for 2 steel steamships of 4,350 tons d.w. each, advised us March 13 that it was waiting for steel, but expected to lay the keel for department's contract 44, builders' yard no. 4, within a fortnight. The keel for department's contract 45, builders' yard no. 5, will not be laid until the launching of builders' yard no. 3, the s.s. War Racoon, 3,500 tons d.w., which the company is building for the British Government. This launching is expected to take place about the end of April.

Halifax Shipyards Ltd., which has contracts from the Marine Department for 2 steel cargo steamships of 8,100 tons each, and for 2 of 10,500 tons each, laid the keel for contract 21, builders' yard no. 1, of 8,100 tons, Feb. 24, and for contract 22, builders' yard no. 2, of 8,100 tons, March 15, if the keel plates were received in time. The concrete foundations for the company's power plant building were being poured at the end of February, and the erection of the steel frame work was to start on March 6. The concrete foundations for the plate shop, 600 x 75 ft., were also being poured at the end of February, and it was expected to start the erection of the steel work about March 15. The erection of the air compressor and stores building was expected to be started during March. We were advised recently that it was impossible to state the launching dates for any of the vessels ordered, but that the company expected to fulfill its contracts in this regard, although some allowance may have to be made for the fact that it did not receive steel in time to lay the first keel in the middle of December, when the building berth was ready for it.

Harbor and Marine Co. Ltd.—Victoria, B.C., which is constructing a shipbuilding plant, to carry out the contract for 2 steel cargo steamships of 8,100 tons each for Canadian Government Merchant Marine Ltd., given to the Victoria Machinery Depot, Ltd., is reported to have awarded a contract to S. Cameron for the erection of a plate shop at Hospital Point. Building operations were expected to commence during March.

British Government Shipbuilding.—In reply to a question in the British House of Commons, recently, it was announced that the government, after full consideration, had decided not to retain the shipyards which it had built during war pressure as government undertakings, provided they could be disposed of on fair terms.

United States Merchant Ship-Building Statistics.

The total merchant shipping built in the U.S., including shipping for foreign nations, and officially numbered by the Commerce Department's Navigation Bureau, during 1918, was as follows:

	No.	Gross tonnage
Seagoing steel ships.....	460	1,861,321
Seagoing wooden ships.....	361	735,705
Total.....	821	2,597,026
Non-seagoing ships.....	1,061	124,255
Grand total.....	1,882	2,721,281

St. John, N.B., Harbor Work.—Satisfactory progress is reported to have been made on the excavation of the dry dock at Courtenay Bay, and also on the construction of the breakwater. During the early part of March, three steam shovels were at work, and it was expected that another would be on the job later in the month. The hydraulic dredge No. 3, and the steam hopper barge Piper, have been taken over from the North Griffiths Construction Co., the former contractors, and the former, which is a 22 in. hydraulic pipe line discharge dredge, is being repaired, with new boilers, and being thoroughly overhauled preparatory to proceeding with the dredging work. The Piper has a capacity of 500 cu. yd. The general contractor for the whole work is the St. John Dry Dock and Shipbuilding Co., and the subcontractor, the Bedford Construction Co.

The White Star Line's war record is one on which the company has every reason to be proud. More than 300 of its vessel officers were attached to the Navy throughout the war and 36 decorations have been conferred on them, while praise is due to the men of lower ratings, whose courage, fidelity and skilled work fully matched the officers', thus making possible the regular crossing of the oceans with cargoes of munitions and food. Of the fleet, 9 large steamships, totalling 146,145 tons, were sunk by the enemy. During the war, the passenger vessels were used for carrying oil, in the deep tanks, a total of 88,000 tons being so carried, for which, the company received the Admiralty's thanks.

C. G. S. Canada.—The acting Minister of Marine, in answering a question in the House of Commons recently, said that the C.G.S. Canada had been employed in the Naval Service Department's work since the outbreak of war, refit repairs having cost as follows: 1914, nil; 1915-16, \$14,435.63; 1916-17, \$13,283.12; 1917-18, \$30,572.53; 1918-19, \$6,122.12. The vessel is able to carry out long steaming periods at moderate speed, and is at present due for refit, and cannot carry out long steaming periods at maximum speed.

Purchase of H.M.C.S. Mildred McColl.—The acting Minister of Marine, in answering a question in the House of H.M.C.S. Mildred McColl was bought by the government during the war, from the Canadian Sardine Co., for \$4,000, and was used by the Naval Service Department, as a dispatch boat, in Halifax harbor. She was under repairs from Sept. 4 to Dec. 14, 1918, being delayed by waiting for new parts for the engine. The refit repairs cost in 1916-17, \$762.87, and in 1917-18, \$721.27.

Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. Where a contract date is not given the contract had not been signed at the time of our latest official advice.

The following contractions are used in the column giving the type of the vessels to be built:—s.d., single deck; 2.d., two deck; 3.d., three deck; lake, lake type; p., poop; b., bridge; f'c's'le, fore-castle.

Contract no.	Contract date	Builder	Yard no.	Tons d.w.	Price per ton d.w.	Total price	Type	Classification	Speed, knots	Approximate delivery date	Keel laid	Launched	Name
1	Mar. 4, 1918	Canadian Vickers Ltd., Montreal	66	4,300	\$207.	\$ 890,100	S.d., p., b. and f'c's'le.....	Lloyd's	11	Dec. 31, 1918	June 10, 1918	Nov. 23, 1918	Canadian Voyager
2	May 22, 1918	" "	67	3,100	180.	1,458,000	2.d., p., b. and f'c's'le.....	"	11	Jan. 31, 1918	July 17, 1918	Dec. 3, 1918	Canadian Pioneer
3	May 18, 1918	Collingwood Shipbuilding Co., Collingwood, Ont.	61	3,750	205.	768,750	Lake, s.d., p., b. and f'c's'le	Brit. Corp.	9	May 1, 1919	.....	Dec. 21, 1918	Canadian Warrior
4	Mar. 15, 1918	Wallace Shipyards Ltd., Vancouver, B.C.	100	4,300	207.	890,100	S.d., p., b. and f'c's'le.....	Lloyd's	11	Mar. 31, 1919	Oct. 1, 1918	.....	Canadian Volunteer
5	Nov. 25, 1918	" "	106	4,300	217.	933,100	S.d., p., b. and f'c's'le.....	"	11	May 31, 1919	Nov. 15, 1918	.....	Canadian Trooper
6	Nov. 25, 1918	" "	101	5,100	210.	1,071,000	S.d., p., b. and f'c's'le.....	"	11	July 31, 1919	.....	.....	.....
7	Nov. 25, 1918	" "	102	5,100	210.	1,071,000	S.d., p., b. and f'c's'le.....	"	11	Sept. 30, 1919	.....	.....	.....
10	July 5, 1918	Collingwood Shipbuilding Co., Collingwood, Ont.	62	3,750	205.	768,750	Lake, s.d., p., b. and f'c's'le	Brit. Corp.	9	May 15, 1919	June 3, 1918	.....	Canadian Recruit
11	Oct. 17, 1918	" "	63	3,750	205.	768,750	Lake, s.d., p., b. and f'c's'le	"	9	July 15, 1919	.....	.....	Canadian Signaller
12	Oct. 17, 1918	" "	64	3,750	205.	768,750	Lake, s.d., p., b. and f'c's'le	"	9	July 1, 1919	.....	.....	Canadian Gunner
13	Aug. 9, 1918	Tidewater Shipbuilders Ltd., Three Rivers, Que.	5	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	Lloyd's	11	Aug. 1, 1919	Jan. 8, 1919	.....	.....
14	Aug. 9, 1918	" "	6	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Sept. 1, 1919	Jan. 10, 1919	.....	.....
15	Jan. 24, 1919	" "	7	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Nov. 15, 1919	.....	.....	.....
16	Jan. 24, 1919	" "	8	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	May 15, 1920	.....	.....	.....
17	Sept. 4, 1918	Davie Shipbuilding & Repairing Co., Lauzon, Que.	459	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Nov. 1, 1919	.....	.....	.....
18	Sept. 4, 1918	" "	460	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Nov. 8, 1919	.....	.....	.....
19	Sept. 4, 1918	Port Arthur Shipbuilding Co., Port Arthur, Ont.	39	3,400	205.	697,000	Lake, s.d., p., b. and f'c's'le	"	9	June 1, 1919	Dec. 9, 1918	.....	.....
19a	Mar. 1, 1919	" "	41	3,400	210.	714,000	Lake, s.d., p., b. and f'c's'le	"	9	Sept. 30, 1919	.....	.....	.....
20	Sept. 4, 1918	" "	40	3,400	205.	697,000	Lake, s.d., p., b. and f'c's'le	"	9	July 1, 1919	Dec. 10, 1918	.....	.....
20a	Mar. 1, 1919	" "	42	3,400	210.	714,000	Lake, s.d., p., b. and f'c's'le	"	9	Oct. 31, 1919	.....	.....	.....
21	Sept. 13, 1918	Halifax Shipyards, Ltd., Halifax, N.S.	1	8,100	195.	1,579,500	2.d., p., b. and f'c's'le.....	"	10	Dec. 19, 1919	Feb. 24, 1919	.....	.....
22	Sept. 13, 1918	" "	2	8,100	195.	1,579,500	2.d., p., b. and f'c's'le.....	"	10	Apr. 1920	.....	.....	.....
23	Oct. 11, 1918	Canadian Vickers Ltd., Montreal	73	4,300	215.	924,500	S.d., p., b. and f'c's'le.....	"	11	May 27, 1919	.....	.....	Canadian Navigator
24	Oct. 11, 1918	" "	68	8,100	188.	1,522,800	2.d., p., b. and f'c's'le.....	"	11	May 1, 1919	Aug. 26, 1918	.....	Canadian Ranger
25	Oct. 11, 1918	" "	69	8,100	188.	1,522,800	2.d., p., b. and f'c's'le.....	"	11	June 1, 1919	Nov. 30, 1918	.....	Canadian Seigneur
26	Oct. 11, 1918	" "	70	8,100	188.	1,522,800	2.d., p., b. and f'c's'le.....	"	11	July 1, 1919	Dec. 2, 1918	.....	Canadian Miller
27	Oct. 11, 1918	" "	71	8,100	188.	1,522,800	2.d., p., b. and f'c's'le.....	"	11	Aug. 1, 1919	.....	.....	Canadian Spinner
28	Oct. 11, 1918	" "	72	8,100	188.	1,522,800	2.d., p., b. and f'c's'le.....	"	11	Sept. 1, 1919	.....	.....	Canadian Planter
29	Jan. 24, 1919	Victoria Machinery Depot, Victoria, B.C.	1	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	Jan. 31, 1920	.....	.....	.....
30	Jan. 24, 1919	" "	2	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	Nov. 30, 1920	.....	.....	.....
31	Dec. 11, 1918	Collingwood Shipbuilding Co., Kingston, Ont.	15	3,750	205.	768,750	Lake, s.d., p., b. and f'c's'le	Brit. Corp.	9	Nov. 1, 1919	.....	.....	Canadian Beaver
32	Mar. 1, 1919	Port Arthur Shipbuilding Co., Port Arthur, Ont.	43	4,300	215.	935,250	S.d., p., b. and f'c's'le.....	Lloyd's	10½	Nov. 1, 1919	.....	.....	.....
33	Mar. 1, 1919	" "	44	4,300	215.	935,250	S.d., p., b. and f'c's'le.....	"	10½	Nov. 15, 1919	.....	.....	.....
34	Nov. 22, 1918	J. Coughlan & Sons, Vancouver, B.C.	11	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	July 31, 1919	.....	.....	.....
35	Nov. 22, 1918	" "	12	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	Aug. 31, 1919	.....	.....	.....
36	Nov. 22, 1918	" "	13	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	Sept. 30, 1919	.....	.....	.....
37	Nov. 22, 1918	" "	14	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	Oct. 31, 1919	.....	.....	.....
38	Dec. 10, 1918	Halifax Shipyards Ltd., Halifax, N.S.	3	10,500	197½	2,073,750	3.d., p., b. and f'c's'le.....	"	12	Aug. 1, 1920	.....	.....	.....
39	Dec. 10, 1918	" "	4	10,500	197½	2,073,750	3.d., p., b. and f'c's'le.....	"	12	Nov. 1, 1920	.....	.....	.....
40	.....	Nova Scotia Steel & Coal Co., New Glasgow, N.S.	5	2,800	210.	588,000	S.d., p., b. and f'c's'le.....	"	8½	Oct. 1919	.....	.....	.....
41	.....	" "	6	2,800	210.	588,000	S.d., p., b. and f'c's'le.....	"	8½	Nov. 1919	.....	.....	.....
42	Feb. 21, 1919	Prince Rupert Dry Dock and Engineering Co., Prince Rupert, B.C.	1	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	Feb. 1920	.....	.....	.....
43	Feb. 21, 1919	" "	2	8,100	198.	1,603,800	2.d., p., b. and f'c's'le.....	"	11	June 1920	.....	.....	.....
44	Jan. 23, 1919	British American Shipbuilding Co., Welland, Ont.	4	4,350	215.	935,250	S.d., p., b. and f'c's'le.....	Brit. Corp.	10	Nov. 1919	.....	.....	.....
45	Jan. 23, 1919	" "	5	4,350	215.	935,250	S.d., p., b. and f'c's'le.....	"	10	June 1920	.....	.....	.....
				263,850		\$52,691,450							

Mainly About Marine People.

Capt. Andrew H. Allen, formerly General Assistant, H. & A. Allan, agents, Allan Line Steamship Co., and latterly in active service in the 245th Battalion, B.E.F., has been appointed Freight Manager for Great Britain and the European Continent, Canadian Pacific Ocean Services Ltd., London, Eng.

Capt. E. Anderson, who was, for about 35 years, in service with the old Beatty Line, on the Great Lakes, which was later incorporated with the C.P.R. Great Lakes Steamship Service, and also with the Northern Navigation Co., died at Sarnia, Ont., Mar. 15, as the result of a stroke. He retired from active service about two years ago.

Hon. C. C. Ballantyne, M.P., Minister of Marine, and of the Naval Service, was sufficiently recovered from his operation, and subsequent illness, to leave the Royal Victoria Hospital, Montreal, Feb. 22. After resting at his house in Montreal, he left there March 10 for Atlantic City, N.J., expecting to remain about three weeks and then to return to Ottawa.

G. M. Bosworth, Chairman, Canadian Pacific Ocean Services Ltd., and Mrs. Bosworth, visited Virginia Hot Springs early in March. They are expected to sail for England by the s.s. Grampian, on April 25.

Duncan Cameron, formerly in C.P.R. service and latterly with Dodwell and Co., agents (Blue Funnel Line), Vancouver, has been appointed their manager, there, vice H. B. Davenport, transferred to the company's head office at Seattle, Wash.

Jas. Carruthers, ex President, Canada Steamship Lines Ltd., returned to Montreal Mar. 3, from a trip to the Pacific Coast.

George C. Dew, who has been appointed Asiatic Freight Agent, Canadian Pacific Ocean Services Ltd., Montreal, was born at Toronto, Aug. 9, 1886, and entered transportation service in Mar., 1907, as stenographer to Assistant Freight Traffic Manager, C.P.R., Toronto, and later, on the removal of that office, at Montreal, and in Jan., 1909, he was transferred to the Traffic Vice President's office, where he was successively, secretary, clerk, and chief clerk, until 1914, when he was appointed Contracting Freight Agent, Asiatic and Australian Freight Traffic, and in Jan., 1917, he was appointed Asiatic Freight Agent, which position he held until his transfer to Canadian Pacific Ocean Services Ltd., Mar. 1.

Leonard C. Hanna, for many years active head of M. A. Hanna and Co., owners of one of the largest fleets on the Great Lakes, died recently at Cleveland, Ohio.

Alex. Johnston, Deputy Minister of Marine, left Ottawa, March 5, with Thos. Ahearn, President, Ottawa Electric Ry., to spend some weeks at Coronada Beach, Cal.

Mrs. C. Gardner Johnson, wife of Lloyd's Agent at Vancouver, B.C., expects to leave there early in April, for an extended visit to England.

Capt. H. St. George Lindsay will, according to an Ottawa press dispatch, resume his position as General Superintendent, River St. Lawrence Pilotage, at Quebec, shortly. During the early part of the war, he was acting under the Militia

Department in connection with transport matters, and as a result of the enquiry into the Halifax pilotage commission, subsequent to the disastrous explosion of Dec. 1917, he was appointed Superintendent of Pilotage at Halifax, N.S.

William Thomas Marlow, who has been appointed General Sreight Agent, Canadian Pacific Ocean Services, Ltd., Montreal, was born at Limerick, Ireland, Oct. 25, 1872, and entered transportation service in Sept., 1886, since when he has been to Apr., 1888, junior in dispatcher's office, C.P.R., Toronto; May, 1888, to Mar., 1889, junior clerk, Assistant Superintendent's office, C.P.R., Toronto; Mar., 1889, to Feb., 1896, clerk, Assistant Freight Traffic Manager's office, C.P.R., Toronto; Feb. 1896, to Mar. 1897, chief tariff clerk, C.P.R., Montreal; Mar. 1897 to Nov. 1902, clerk, General Freight Agent's office, C.P.R., Hong Kong, China; Apr. 1903 to Mar. 1904, Assistant to Foreign Freight Agent, C.P.R., Montreal; Mar. 1904 to Aug. 1914, Import Freight Agent, C.P.R., Montreal; Aug. 1914 to Sept. 1918, Assistant Director, Overseas Transport, Dominion Government, Montreal; Sept. 1918 to Mar. 1919, Deputy Director General, British Ministry of Shipping (Canada), Montreal.

Lieut.-Col. Bartlett McLennan, D.S.O., formerly President, Montreal Transportation Co., who was killed in France, Aug. 3, 1918, left an estate of \$903,593. Among his bequests was one of \$5,000 to L. L. Henderson, Managing Director, Montreal Transportation Co.

Brevet Col. G. Patterson Murphy, C.M.G., of the Canadian Army Service Corps, and President, Ottawa Transportation Co., left Ottawa, early in March, with Mrs. Murphy, to spend a few weeks at Atlantic City, N.J.

H. M. Perry, Purchasing Agent, Shipbuilding Department, Imperial Munitions Board, did not remove from Ottawa to Montreal, with the other officials of the department recently. He is now with the Imperial Munitions Board in Toronto, attending to various matters in connection with its liquidation.

S. I. Preston, Agent for Lloyd's Register, at Quebec, Que., since Nov., 1918, has been transferred to Kobe, Japan, and sailed from New York, Mar. 15, to take up his new duties. Until another appointment is made, the work is being undertaken by the Montreal Agency.

Capt. A. H. Reed, harbor master at Vancouver, B.C., who has been on active service with the Royal Navy, since about the commencement of the war, has returned to Canada. During his war service he was in charge of one of, what were known as, the Q boats, dealing with enemy submarines.

Senator H. W. Richardson, President, Great Lakes Transportation Co., who died at Kingston, Ont., some months ago, left \$100,000 for hospital buildings, or assisting hospital work for consumptives; also \$5,000 to the Kingston Orphans Home, for building purposes.

Guy D. Robinson, who has been appointed European Freight Agent, Canadian Pacific Ocean Services Ltd., Montreal, was born at St. John, N.B., Dec. 7, 1877, and entered transportation service in Nov. 1895, since when he has been, to Aug. 1907, junior clerk, Travelling Freight Agent and chief clerk to General

Freight Agent, C.P.R., St. John, N.B.; Aug. 1907 to Jan. 1909, chief clerk, General Foreign Freight Agent's office, C.P.R., Montreal; Jan. 1909 to May 1915, Assistant Export and Import Freight Agent, C.P.R., Toronto; May 1915 to May 1917, Export Freight Agent, C.P.R., Montreal; May 1917 to May 1918, in charge of grain transports, Overseas Transport Department, Dominion Government, Montreal; May to Sept. 1918, in charge of ocean steamships, Overseas Transport Department, Dominion Government, Montreal; Sept. 1918 to Mar. 1919, director, ocean steamship department, British Ministry of Shipping (Canada), Montreal.

H. B. Smith, of Owen Sound, Ont., President, Collingwood Shipbuilding Co., has been spending a short holiday in Florida.

Mrs. Steedman, wife of J. A. Steedman, one of the directors of Canada Steamship Lines, died suddenly at Hamilton, Ont., Mar. 25.

J. W. Troup, Manager, British Columbia Coast Service, C.P.R., Victoria, who suffered a breakdown in health late in February, is in California, and is expected to be away for some time. During his absence, Capt. C. D. Neroutsos is acting as Manager at Victoria, James McGowan at Vancouver, and Capt. P. J. Hickey as Marine Superintendent.

Lorne C. Webster, President, Webster Steamship Co., and Mrs. Webster, left Montreal, early in March, for Old Point Comfort, Va.

Canadian Trawlers in War Service.—

The acting Minister of Marine, in answering a question in the House of Commons recently, said that 12 Canadian trawlers were in the Naval Service Department's service during the period of the war. Of these, six, Messines, Ypres, Vimy, St. Julien, St. Eloi and Festubert, were built by Polson Iron Works, Toronto, at a cost of \$176,194.65. The cost of refits were as follows: Festubert, \$3,987.92; Messines, \$5,373.83; St. Eloi, \$3,987.70; St. Julien, \$3,960.34; Vimy, \$3,869.95; Ypres, \$5,706.58. They have not at all times been ready for patrol service. In 1918 certain repairs were necessary to them, the carrying out of which was protracted, due to the scarcity of labor prevailing at that time. The repairs were due in part to the Halifax disaster of Dec. 6, 1917. Since repairs were completed the vessels were brought forward for service. A log of each trawler can be obtained, showing the number of hours they did at sea.

Purchase of H.M.C.S. Stadacona.—The acting Minister of Marine, in answering a question in the House of Commons recently, said that the H.M.S. Stadacona was bought by the government, during the war, from J. H. Ladew, for \$70,000, and was employed in connection with naval service work. The refit repairs since her purchase by the Government were as follows: Refittings, \$39,025.14; 1915-16, \$7,529.57; 1916-17, \$11,262.57; 1917-18, \$17,844.01; 1918-19, \$7,465.67.

Chartering of s.s. Prince George.—The acting Minister of Marine, in answering a question in the House of Commons recently, said that the Naval Service Department chartered the s.s. Prince George from Aug. 8 to Sept. 23, 1914, from the Grand Trunk Pacific Ry., at \$500 a day, for use as a hospital ship on the Pacific Coast. The total cost was \$47,569.52; viz: charter, \$23,500; refit repairs, \$5,467.15; other expenses, \$18,602.37.

The Canadian Naval Service's Part in the War.

The following is taken from "Canada's Part in the Great War," a booklet issued by the Dominion Government recently:—

Cruisers.—At the outbreak of war in 1914 the Canadian Government possessed only 2 naval vessels, the Niobe, a cruiser of 11,000 tons displacement, with a main armament of sixteen 6-in. guns, stationed at Halifax, N.S., and the Rainbow, a small cruiser of 3,600 tons displacement, armed with two 6-in., six 4.7 in., and four 12-pounder guns, stationed at Esquimalt, B.C. The Rainbow, which was ready for sea, patrolled, with other ships on the Pacific station, as far south as Panama, and captured several ships carrying contraband of war. After the entry of the United States into the war, she became depot ship on the Pacific coast. The Niobe was made ready for sea in Sept. 1914, and remained in commission one year, during which she steamed 30,000 miles on patrol duty. She afterwards became depot ship at Halifax.

Smaller Vessels.—At the beginning of hostilities, various small craft were taken over by the Naval Department from the Marine and Customs Department, and were armed and manned from the R.C.N.V.R. for the performance of patrol duties off the Atlantic coast. Two submarines, which were bought just before the declaration of war, patrolled the approaches to Victoria and Vancouver, and helped in keeping Admiral von Spee's squadron away from the Pacific ports. H.M. sloop Shearwater was taken into the Canadian service, as mother ship to these submarines, and, in the summer of 1917, these three vessels went, by way of the Panama canal, to Halifax.

Trawlers and Drifters.—A patrol and mine-sweeping service has been carried on since the outbreak of war. The vessels used at first were government and private vessels, which were taken over and equipped for the purpose. Some of these were placed at the Government's disposal free of charge. Early in 1917 the Naval Service Department undertook to have 60 trawlers and 100 drifters built in Canada for the Imperial Government. They were built at various places on the St. Lawrence and the Great Lakes; many of them were in service, in Canadian and European waters in 1917, and all were in service in 1918. The area patrolled under the department stretched from the Straits of Belle Isle to the Bay of Fundy, and from Quebec to east of the Virgin Rocks. Within this area the department had control of patrols, convoys, mine-sweeping, the protection of fishing fleets, etc., Only one large vessel was lost by enemy attack in this area. At the date of the armistice the vessels in the Canadian Naval Service were as follows:—

On the Pacific.—H.M.C.S. Rainbow, depot and training ship; H.M.C.S. Shearwater, submarine depot ship, and 2 submarines; H.M.C.S. Grilse, torpedo-boat destroyer; 9 auxiliary patrol ships, 47 armed trawlers, 58 armed drifters, 11 armed mine-sweepers and tugs, and a large flotilla of motor launches.

The crews of these vessels consisted of men from all parts of Canada, principally members of the Royal Canadian Naval Volunteer Reserve. At the date of the armistice the personnel of the service was:—Officers and men of Royal Canadian Navy, 749; Officers and men

of Royal Canadian Naval Volunteer Reserve, 4,374.

Naval College.—Canada is fortunate in the possession of a small but excellent Naval College. More than 50 officers, who passed out of the college as cadets, are serving in either the Imperial or Canadian navy. Many of them have gained distinction, and four lost their lives in the battle of Coronel.

Canadians in Imperial Naval Forces.—In addition to the men serving on Canadian vessels, over 1,700 have been recruited in Canada for the Imperial Navy, and are on service in European waters; 73 surgeon probationers and a number of hydrographic survey officers have been sent from Canada and 580 Canadians were enrolled as probationary flight lieutenants in the Royal Naval Air Service, before recruiting for the Royal Air Force began in Canada. More than 500 Canadians holding commissions in the Royal Naval Volunteer Reserve are in the British Auxiliary Patrol and similar services.

The Royal Canadian Naval Air Service was established in the summer of 1918, with stations at Halifax and North Sydney. It has co-operated with the United States Naval Aviation Corps in patrolling the coast and escorting convoys through the danger zone.

The Canadian Radiotelegraph Service controls about 200 stations ashore and afloat. Several new stations have been erected or taken over by the Naval Service Department, and there is now an unbroken chain of radio communication from St. John's, Newfoundland, to Demerara. The department opened a training school for wireless operators, from which about 200 men have been sent out for service in all parts of the world.

Dockyards.—Important refitting, repairing, and supply work has been done by Canadian dockyards. Large refits of Imperial and other ships were made at Esquimalt, including H.M.S. Kent, after the battle of the Falkland Islands, and the Japanese battleship Asama, after grounding on the coast of lower California. Several large cruisers were refitted at Halifax and Montreal. Other work included the defensive armament of merchant ships, the refitting of transports for troops, horses, and special cargo, and the loading and securing on ships' decks of 600 launches, tugs, etc., of large size. The Halifax dockyard was seriously damaged by the explosion in the harbor on Dec. 6, 1917, but immediate steps were taken to enable the services of the yard to be carried on.

Stores.—The Canadian Naval Service provided supplies for the ships of the Royal Canadian Navy and for a number of Imperial and allied ships in Canadian waters, as well as many of the requirements of H.M. dockyards at Bermuda and Hong Kong. Large supplies were shipped from Halifax dockyard for provisioning the fleets in European waters. A large coaling depot was established at Sydney, N.S., for the use of patrolling vessels and of all convoys leaving the St. Lawrence.

The growth of the Naval Service since the outbreak of war is shown by the increase in the quantities of stores purchased in the last three fiscal years:—

1915-16	\$ 2,500,000
1916-17	7,500,000
1917-18	10,000,000

Overseas Transport.—By arrangement with the Admiralty and the British Ministry of Shipping, the Director of Overseas Transport appointed by the Canadian Government controlled the inland traffic, by rail or otherwise, in food supplies and munitions for transport overseas, the reception and storage at ports of shipment, the allocation of cargo and its stowage on board the ships. The average monthly export was: in 1915, 50,000 tons; in 1916, 170,000 tons; in 1917, 331,000 tons; and in 1918 (to Dec. 1), 387,000 tons. From Jan. 1, 1915, to Dec. 1, 1918, over 11,250,000 tons of freight was shipped.

Shipbuilding.—The Naval Service had the following vessels built for various governments during the war:

For Imperial Government.—Twelve submarines, 60 armed trawlers, 100 armed drifters, 550 coastal patrol motor boats, and 24 steel lighters for use in Mesopotamia, which were shipped in sections.

For French Government.—Six armed trawlers and 36 coastal patrol motor boats.

For Italian Government.—Six submarines.

For Russian Government.—One large armed icebreaker and some submarines.

German Warships Suggested for Hudson Bay Commercial Service.

M. Taylor, of Hamilton, wrote recently, as follows:—I note a news dispatch from London, concerning a suggestion for the conversion of some of the German warships into refrigerator meat carriers for the Australian meat trade. It has occurred to me that some of these vessels might be usefully adapted and employed in Canada for the grain trade in Hudson Bay with some structural alterations.

The writer, who is a civil engineer, and whose specialty is harbor work, made the trip to and from Hudson Bay by water in 1912, spending 11 days in the ice on the way up, about the end of June, and returning in November, which gave an opportunity to note navigation conditions in Hudson Bay and Strait at both ends of the open season.

I would propose removing the guns and gun turrets, and heavy deck and other unnecessary equipment, both internal and external, and also the removal of the heavy side and deck armor plate, and its replacement by say 2 in. plate on the sides. Structurally the ships are built very strongly to resist gun shock, and the bottoms are double. They have also very high engine power, and their rudders and propellers are protected, having what is known as the cruiser type of stern, which would protect them from the ice. They are oil burners, which increases the space available for cargo. The removal of the crew's quarters, ammunition space, etc., and the consequent general lightening up of the vessel by the removal of dead weight, which is unnecessary if they should be used for commercial purposes, would increase their cargo carrying capacity. A vessel of 25,000 tons should, if thus remodeled, carry a large amount of grain. Traveling at low speed they could be operated economically.

With their heavy engine power, they would be able to act as self-icebreakers and fight their way through any ice floes, and their heavy build would protect them against ice shoves. Beyond

the cost of remodeling them, the capital expenditure on them would be nothing, and this would make it economically possible to lay them up during the winter with just enough crew to care for them, and consequently there would be no overhead expense in the winter.

This is the great argument against the construction of special vessels for use in Hudson Bay, it being claimed that vessels of sufficient strength to use that route under ice conditions could not be used economically on other routes in winter, and would have to be laid up, with consequent loss of earnings to their owners.

A dozen of such converted vessels would move an enormous quantity of grain from the terminal elevator at Port Nelson in the open season in Hudson Strait. Ordinary ice breakers would be comparatively useless in Hudson Strait, as the currents carry the ice about in all directions and soon block up the small channel which such a vessel makes in order to assist other vessels through the ice.

Each vessel must be able to force its own way through the ice when necessary, especially at the beginning of the open season.

I am writing this in order to give the idea publicity and so as to invite criticism. It certainly seems a tremendous economic waste if these vessels cannot be used to advantage somewhere, and this might be a possible means of solving the embarrassing question of how to get rid of them without scrapping them or retaining them for their present use.

Electric Welding in Shipbuilding.

Electric welding in connection with the building of steel ships by the U.S. Government was discussed at some length recently by C. A. Adams, President, American Institute of Electrical Engineers. Both the processes of spot welding and arc and electric welding are applied to shipbuilding. A committee appointed by the A. I. E. E. to make an investigation concluded that the operator is the principal factor in arc-welding, the type of current regulation being of relatively small importance compared with his skill in manipulating the arc. In a test of 15 different makes of arc-welding appliances, no appreciable difference in the strength of the weld was found, all showing a strength of at least 94% of that of the plate itself.

The test showed also that the strength of the weld was increased to a certain degree as a stronger current was used and that apparently it made no difference whether the current was alternating or direct.

Another point that was deduced from the test is that it apparently makes no difference in the results whether the electrode used is of absolutely pure iron or of an iron containing small impurities, since the characteristics of the metal change in going across the arc.

Particular investigation as to the effect of vibrations in producing fatigue of the metal of the welds was made, and in one set of tests alone the committee used 20 tons of samples. The relative strength of 94% of the value of the plate as produced by arc-welding can be appreciated when compared with that of a riveted point, which ranges from 50 to 70%, depending upon whether one, two or three rows of rivets are used.

Spot-welding as compared with arc-welding has the disadvantage that very heavy machinery is required. For welding a ½-in. plate, the machine will weigh about 3 tons, and consume a large amount of electric current. It, however, requires less time and labor, and the reason for the heavy weight is the necessity for producing a pressure of approximately 25 tons when ½-in. plate is being welded. For spot-welding, the power requirements range from 400 to 700 k.w. in the commercial machines, and a machine is being used experimentally which is rated at 2000 kilowatts.

The Underwriters' Classification Committee, which passes on metals before they are insured, has approved of arc-

welding for the minor parts of ships, of which there are about 500,000 on each vessel produced in yards like that at Hog Island.

Acquirement and Disposition of the s.s. Tuna.—The acting Minister of Marine, in answering a question in the House of Commons recently, said that the s.s. Tuna was donated by J. K. L. Ross to the Dominion Government, and was taken over by the Naval Service Department, Sept. 24, 1914. The refits and repairs from the date of her commissioning to the date she was sold, were: \$44,885. She was sold to C. Brister & sons Ltd., for \$800, as a hulk, after machinery and fittings had been removed.



Sale of Surplus Military and Naval Stores

Dry Goods, Camp Supplies, Food Hardware, Scrap Metal, Junk

Cloth; new and second-hand clothing, equipment, hardware, tents, blankets, camp supplies, etc.

Flour, jam, canned evaporated milk, tea, coffee, etc.

Condemned clothing, junk, old brass, metals, leather, rubber, etc.

Sales Will Be Made By Sealed Tender

Persons desiring to tender are requested to communicate with **THE SECRETARY OF THE WAR PURCHASING COMMISSION, BOOTH BUILDING, OTTAWA**, stating the items in which they are interested, whether new or second-hand or both.

Arrangements will be made to have samples on exhibition at places throughout Canada; specifications, full details, and tender forms will be mailed when ready to those who have registered as suggested above.

IF INTERESTED PLEASE APPLY NOW

Institutions May Make Direct Purchase Without Tender

Dominion, Provincial, and Municipal departments, hospitals, charitable, philanthropic, and similar institutions which are conducted for the benefit of the public and not for profit may purchase goods without tender at prices established by the War Purchasing Commission.

All communications should be addressed to the Secretary, War Purchasing Commission, Booth Building, Ottawa, who will be glad to supply lists and further details to those interested.

Shipbuilding Discussion in the Dominion Parliament.

In moving the address in reply to the speech from the throne at the opening of the Dominion Parliament's current session, R. J. Manion, M.P. for Fort William and Rainy River, said among other things:—"In shipbuilding, including ships built to the order of the Imperial Munitions Board and other private contracts, we built 103 ships, with a dead weight carrying capacity of 367,000 tons. We built for the Imperial Government over 700 small armed trawlers and drifters of various types; for the French Government over 40 armed trawlers, and coastal patrol motor boats. Why, in my own inland port city of Fort William, 1,500 miles from the Atlantic coast, up there on the shores of Lake Superior, which were explored 200 years ago by French voyageurs and courriers des bois, we built for the native land of these Frenchmen 12 armed trawlers, which sailed down the lakes and rivers of what was originally New France, on their way to the shores of Old France. What a historical romance for the pen of a Parker!"

The Minister of Public Works, Hon. F. B. Carvell, in a subsequent debate, said: "The government is spending a large amount of money this year—I am not sure as to the exact amount, but I imagine it must be \$20,000,000 or \$25,000,000—and it expects to spend about \$30,000,000 during the next fiscal year in the construction of steel ships in Canada. I know there will be criticism of this; at least, I assume there will during the session, because criticism has already been launched in the public press, and, so far as I am concerned, I want to meet it here and to give my views very plainly. It is always a very easy matter to be wise after the event. A year ago there was nothing which the civilized world needed so much as shipping. Shipping was more vital to winning the war than were men or shells or anything else. The greatest cry of the allied armies a year ago was for ships, ships to carry United States soldiers across the ocean, and ships to carry food to the allied armies. The Canadian Government decided to undertake a shipbuilding programme which involved the construction of 52 ships varying in size from 3,500 tons d.w. to 10,000 tons d.w. One of these has already been completed and is in service. I do not deny—I do not for a moment try to conceal the fact that those ships are going to cost more than they would have, had the Government gone out into the open market after peace was declared and bought them. But buying the ships after peace was declared would not have helped furnish ships in order to carry on the war; and if the war had continued, as most people expected it would, over another winter and another summer, two-thirds or at least one-half of those ships would have been at the service of the country. Even today, while we admit that the war is over and the crying necessity for those ships has ceased to exist, the construction of them plays an important part in many portions of Canada in furnishing labor to the unemployed, a task which I look upon as the paramount duty of this government and of the government of every province and every municipality at present. So far as I am concerned—and I speak for my colleagues, so far as we are concerned collectively—in the allocation of the public moneys, we have taken into consideration practically altogether the

probable requirements to take care of unemployment in the labor world generally, rather than the advantage which a particular work or expenditure of money will be to the people in the vicinity in which the work is done or the money expended. That has been the underlying principle in the making up of the estimates. The ships are being built today at Montreal, at Toronto, at the head of the Great Lakes, at Port Arthur and Fort William, and at Vancouver and Victoria. Were those works not going on in those localities, especially on the Pacific coast, you would find a very different condition of affairs from what exists today. I, therefore, make no apology. No apology is required. I am simply pointing out that we are doing this in order to try to meet the pressing requirements of the moment and to place the country in a position to get back to a peace basis."

Mr. Carvell was evidently in error in saying that vessels for the Canadian Government Merchant Marine are being built in Toronto, as no orders have been given to Toronto builders.

J. H. Sinclair, M.P. for Guysborough, N.S., said:—"The Minister of Public Works referred to the construction of ships. He told us the government had embarked on a policy of building ships, and that a very large sum of money was to be expended. He admitted he could go into the market at present and buy ships cheaper than he could possibly build them. If that be true, why pay more than they are worth? As far as my information goes, I believe that the government is paying under these contracts about four times the normal value for the ships it is proposing to build. In normal times ships can be built for about \$50 a gross ton, but in the contracts I have seen the government is paying something like \$200 a ton. [Editor's note: This is per ton d.w.] The government will never see its money again; I fear it is an improvident proposal. It took the government four years finally to make up its mind to build ships. The time to have built ships, if they were to be of service in the war, was in 1914, when war broke out, but the government waited until the war was about over, and then embarked on a very expensive programme of building ships for which it proposes to pay four times the normal price. Such a policy is not at all likely to promote the building of ships in Canada. If the government could devise a way of promoting and assisting shipbuilding in Canada, that would be a very wise and proper move to make, but to build ships at four times the normal price is certainly not likely to stimulate the building of ships by private enterprise. I am not in favor of government ownership of tramp vessels; I do not think the policy is a wise one, and I do not think it will do much to solve the problem of providing employment which I understand the minister to say was the government's object, I can say that I know of no other industry that gives so little employment of labor for the amount of money expended as the building of steel ships. The government could easily have found some other industry where it could have employed a larger number of people with a smaller expenditure of money. Is there not something we can do in this country that would bring us in some return? Would it not

better, for instance, to buy tractors and plough up the western prairies and produce wheat?"

Michael Clark, M.P. for Red Deer, Alta.:—"We would need the ships to carry the wheat."

J. H. Sinclair:—"I am afraid if we make the rates of freight correspond with the outlay on the ships the wheat would be too expensive. Would it not be a saner policy to expend part of this money in building branch lines of railway lines in Nova Scotia? I can show him places in my own constituency where by the construction of a branch line, he would open up the country and encourage production and help at the same time to make the Intercolonial Ry. profitable. Building branch lines of railway where they are needed would be doing something for the country, and would be a far better policy than buying expensive ships for which there does not seem to be any future to justify the expenditure involved."

Canadian Merchant Service Guild Recommendations.

The Canadian Merchant Service Guild, at an executive meeting in Toronto recently, decided to make the following recommendations to the parliamentary committee:—

That the Dominion Government be asked to create a fund which will give seamen free hospital attention, when necessary, the same privilege to be extended to fishermen and lighthouse keepers.

That all bridges across Canadian rivers and canals be provided with suitable signals to inform those in charge of a vessel that such will be opened before approaching close enough to endanger life and property.

That every Canadian vessel be officered by Canadians, and that every such vessel leaving port be in charge of a certified person.

That every Canadian vessel of 500 tons or over be provided with a master, first officer and second officer, and that every Canadian vessel less than 500 tons and operating more than 12 hours a day, with the exception of vessels employed solely in fishing, shall be provided with a master and one officer, these officers to be recognized as such by the government.

That every Canadian vessel be manned as may be found necessary to the safety of public life and property afloat.

That Canadian coastwise trade be reserved solely for vessels truly and without fraud owned by the communities of Canada.

That the Canada Shipping Act be revised to conform to the necessities of our mercantile marine.

That every master, pilot and officer who considers himself not fairly dealt with by our courts of enquiry shall have the privilege of appealing to the Admiralty Court for final decision.

That a ruling be given regarding the articles supplied to our coasting vessels, as it contains the insignia of the British Empire, and at present people do not seem to understand its importance.

That the government be asked to introduce legislation which will give all seamen of Canada the use of their franchises.

That Otter Head light, on the north

shore of Lake Superior, be immediately put into commission, and a fog signal installed at that point.

That the government without further delay take up the matter of installing life-saving stations, equipped with wireless, more especially along the north shore of Lake Superior.

It was decided that the nautical school in Collingwood be put under the guild's auspices, and that similar educational institutions be inaugurated throughout the Dominion as soon as the progress of the institution will allow.

The Reid Newfoundland Co's. Steamship Services.

Reports were current recently that the s.s. Bruce, formerly owned by the Reid Newfoundland Co., and sold some time ago to the Russian Government, and which happened to be in Glasgow, Scotland for repair, at the time of the Russian revolution, was likely to return to that company's ownership, and that she would be replaced in service between Port aux Basques, Nfld., and North Sydney, N.S. We are officially advised that the s.s. Bruce is not now owned by the company, and it is therefore not interested in the matter. The company's steamship services at present in operation, are as follows:—

Port aux Basques and North Sydney, daily, steamships Kyle and Sagona, when North Sydney is a closed port, on account of ice, the vessels call at Louisburg, N.S.; Port aux Basques and Placentia, Nfld., weekly, s.s. Glencoe; Placentia Bay, Nfld., weekly to each side of the bay, s.s. Argyle; St. John's and North Sydney, s.s. Meigle, and other vessels; during the heavy traffic movement it was necessary to charter steamships for this service. On the opening of navigation in the bays, the following steamship service will be given in addition to the forgoing:—Trinity Bay, two trips weekly, s.s. Petrel; Notre Dame-Bonavista Bay, two trips weekly, steamships Clyde and Dundee; Green Bay, weekly, s.s. Home; Humbermouth-Battle Harbor, weekly, s.s. Ethie. Between June 1 and Oct. 1, a service is given between St. John's and ports of call on Labrador.

The Chats Falls Navigation Co., Ltd., has been incorporated under the Dominion Companies Act, with \$50,000 authorized capital and office at Ottawa, Ont., to own and operate steam and other vessels, wharves, docks and other navigation facilities, and to carry on a general navigation business. W. J. Graham, O. Martin, L. G. Roy, C. Emery and W. J. Carson, Ottawa, and H. Kedey, Fitzroy Harbor, Ont., are the incorporators. It is reported that a contract has been placed in Aylmer, Que., for the construction of a vessel 90 ft. long, and 22 ft. wide, for \$15,000, for a service of two trips daily between Britannia Bay and Fitzroy Harbor. The company has purchased the tug Fashion from the Public Works Department, as hauled out at the Victoria Island shipyard at Ottawa. She was built at West Bay City, Mich., in 1893, and is equipped with compound engine with cylinders 14 and 24 in. diam. by 13 in. stroke, 24 n.h.p., supplied with steam by a boiler 70 in. diam. by 105 in. long, jet condenser, duplex feed pump and 6 in. propeller. Her dimensions are: length 52 ft., beam 16 ft., draft 7½ ft.; tonnage, 43 gross, 27 register. The hull was recently condemned.

Canadian Bulk Freight Steamships On The Great Lakes.

Following is a list of Canadian bulk freight steamships trading on the Great Lakes, which were enrolled in the Dominion Marine Association for 1918. Those marked with an asterisk were not operating on the Great Lakes at the close of 1918, having been transferred to ocean service, chiefly for overseas service:—

*A. E. Ames, *A. E. McKinstry, Advance, Arabian, *Atikokan, Barge No. 41, *Beaverton, Bickerdike, Cadillac, *Canadian, City of Hamilton, City of Ottawa, E. B. Osler, Easton, Emperor, *Glenellah, Glenmount, *H. M. Pellatt, Haddington, Hamonic, Huronic, Imperial, Iocolite, Iocoma, Ionic, J. H. G. Hagarty, Joyland, *Kenora, Laketon, *Mapleton, Martian, Midland King, Midland Prince, Noronic, *Paipoonge, *Renvoyle, Riverton, *Rosedale, *Royalite, Sarnian, *Sarnolite, Seguin, W. D. Matthews, W. Grant Morden, Westmount, *Winona, Yorkton.

It will be noticed that the list shows the steamships Atikokan and Paipoonge, as not being operated on the Great Lakes at the end of 1918. During that year, both vessels were sold to foreigners, and were cut in two, to allow of the passage through the Welland Canal. After this was done, the foreign purchasers defaulted in payment, and by sale under an order of the court, the vessels returned to Canadian ownership, being bought by the Collingwood Steamship Co.

A Dream Come True.—The London, Eng., Daily Mail rhapsodizes on the enthusiasm of the Toronto populace as the troopships pull along the quaysides with their loads of returning soldiers. Toronto will, probably, be an ocean port one day, but the current season was opened by the customary steamship from Hamilton.

Public Works Department's Work.—The Minister of Public Works, Hon. F. B. Carvell, in speaking in the House of Commons recently, said: "In the department's engineering branch, we are doing repair work and maintaining the works. There were some places, particularly down in the lower St. Lawrence, where tremendous damage was done by storms last year. In such cases repairs must be made, but I may as well tell the house that we are not putting in new works of a very extensive character, simply because we believe we can expend the money on other work, such as highways, railways and canals, shipbuilding and such things as these which will produce better results and give more employment."

Compensation for British Ships Sunk.—Col. Leslie Wilson, is credited with saying that the amount paid by the British Government to shipowners in compensation for British ships sunk by the enemy while under government requisition and at direct government risk, between Aug. 4, 1914, and the armistice, was \$520,156,355. The first cost to the owners of these ships was estimated at \$255,584,030. In addition \$5,844,125 was paid in respect of 25 ships whose first cost is not known. There are also a few cases not yet settled. No taxation is levied on these sums, which represent capital, not income, and are required to replace the vessels. Building costs are now from two to three times what they were before the war.

A Little Bit of Nonsense.

"Circumstances alter not only cases but words as well."

"Explain yourself."

"When the captain of a vessel ships a cook he hires him; but when a housewife ships her cook she fires her."—Boston Transcript.

Wines are terribly scarce in Great Britain just at present, and are likely to remain so for some time owing to the reduction of tonnage. Our ships, however, are doing their best to make port as quickly as possible.

Shipping Federation of Canada, Annual Report and Meeting.

At the Shipping Federation of Canada's annual meeting, in Montreal, recently, John Torrance, who presided, referred to the death of the President, Andrew A. Allan, who was elected to the position in 1909, and filled it ably and satisfactorily. Following are extracts from the annual report:—

"The total number of sea-going vessels which arrived at Montreal during 1918 was 674, of 1,933,482 tons register, an increase of 27, compared with 1917. The past season was the busiest ever experienced at Montreal, the export shipments were the heaviest on record. A unique feature was the large number of U.S. Emergency Fleet Corporation ships which visited the port. These vessels were all built on the lakes and the greater part of them loaded cargo at Montreal for U.S. Atlantic ports and others for Europe direct.

"As regards shipping conditions during 1918, it is true the government increased the "blue book rates," in the early part of the year, but even with this increase, shipowners are not receiving what they should, in comparison with the services they have rendered to the nation. Now that the war has been victoriously won, pressure is being brought to bear on the government to demobilize shipping as soon as possible, and it is understood that the government is making arrangements to release shipping under its control after March 1. It is obvious that when owners are permitted to manage their own business and order the ships they require, then the work of reconstructing their trades and fleets can commence. It is not an easy task nor a quick one, but if shipowners are left to themselves, I am certain they can accomplish it. All shipowners recognize more or less that competition from our allies and neutrals will be keen, and the least the government can do is to give the shipping industry a free hand, by withdrawing the restrictions which are now preventing it from expanding."

"It is needless for me to say that the St. Lawrence Power Co's. application for permission to dam the St. Lawrence river at the Long Sault Rapids was strenuously opposed by the federation, acting in conjunction with other commercial bodies interested in the welfare of the St. Lawrence route. A similar scheme was brought out in 1910, but at that time we were fortunate enough to have the measure defeated. This time, however, the power company was backed by the U.S. War Department, and, in view of this, the International Joint Commission, as an interim measure, granted the petitioners permission to construct and maintain a dam for five years, or until the termination of the war, whichever shall come first. Now that the war

is over, it is to be expected that our government will immediately take steps to have a sufficient supply of water to accommodate the largest vessels which visited this port throughout the season."

A total of 190 vessels of 1,119,828 gross tons were entered with the federation during 1918, an increase of 295,433 tons over 1917.

The officers of 1918 were re-elected for 1919, John Torrance succeeding the late A. A. Allan as President, and A. E. Cooke being added to the executive council.

The Minister of Marine on Government and Other Shipbuilding.

The Minister of Marine, Hon. C. C. Ballantyne, M.P., is reported to have said in an interview at Montreal, March 6, just before leaving for Atlantic City to recuperate after his serious illness, as follows:—

"I intend to make a full statement in the House of Commons on my return to Ottawa, and therefore do not care to say much regarding this now. When I announced in the house last session the government's shipbuilding programme, I explained Canada's great need for ships at that time, more particularly to work in conjunction with the Canadian National Railways. I also stated that the government hoped that shipbuilding would be permanent. Since then many difficulties have arisen. The cost of skilled and unskilled labor has greatly increased, as well as the cost of all materials that enter into the building of ships, which will make it more difficult to maintain shipbuilding in Canada on a permanent foundation.

"However, I am in hopes that these conditions will change for the better, within the near future, and that it may be possible for Canada, at least in some of our best yards, to continue permanently to build ships. The government made no mistake in going in for shipbuilding, and I will go into all the details regarding this when I make my statement to parliament. In the meantime all the yards in Canada have government contracts to keep them fully occupied all this year, and possibly a part of next, with the exception of one or two yards which have been building ships for the British Government through the Imperial Munitions Board.

"My colleague, the Minister of Public Works, Mr. Carvell, stated in the house the other day that the government is building ships in order to give employment. Undoubtedly he had reference to the necessity of giving employment at present. This was not the reason the government entered into shipbuilding at the time it did, but, on the contrary, because, owing to the world's great shortage of tonnage, and the impossibility of ships being contracted for in any country, and England and other countries being willing to place large contracts in Canadian shipyards at greatly advanced prices over what the government was paying, it would have been an unwise policy in the interests of Canada had she not gone in for shipbuilding on her own account. Further details will, however, be given when I return to the house. I cannot say more at present as to the shipbuilding policy. As to the future of shipbuilding, it will be discussed fully by the cabinet on my return to Ottawa."

"I have nothing to say regarding Canada's naval policy at the present time," said the minister, in answer to a query,

"although I have my own views on this important subject. It would be unwise, in fact, for me to make any statement at present until after Admiral Lord Jellicoe's visit, and before the cabinet decides what its policy will be."

Shovelling and Trimming Charges at Grain Elevators.

These matters were dealt with in the Dominion Marine Association's annual report recently (Canadian Railway and Marine World for March, pg. 166). The Board of Grain Commissioners' Secretary wrote the Dominion Marine Association's Counsel on March 11 as follows:

"So far as shovelling is concerned, the board has decided that it is not policy for it to acquire any jurisdiction over this charge, as quite a percentage of the grain received at the eastern public elevators is of United States origin, over which the board has no jurisdiction. The board therefore prefers to leave the matter of the shovelling charge to be arranged between the elevators and the carriers.

"As the government has decided to place the trimming of western grain into vessels at Fort William and Port Arthur under the board's jurisdiction for the purposes of eliminating any profiteering, the board is of opinion that the best way to handle the matter would be to license the trimmers, subject to certain rules and regulations. Part of the regulations would of necessity, include the approval of the rates to be charged for this service, and as the U.S. lake carriers, along with all the other Canadian carriers, with the exception of the Canada Steamship Lines, have advised the board that they are willing for the board to make whatever rules and regulations they think proper, the board feels that it will hardly be necessary to call a session for the discussion of this matter."

Telegraph, Telephone and Cable Matters.

E. N. Hurley, President U.S. Shipping Board, predicts that New York business men soon will be taking and placing orders in South American ports by wireless telephone.

Marconi is reported to have said that wireless telephone communication between New York and London will be in effect within three months. Three minute conversation will cost \$5.

The Marconi Wireless Telegraph Co. has, according to a Montreal press dispatch, established wireless telephone communication between Newcastle, N.B., and Lyons, France, and also with Belmar, N.Y.

The Quebec Public Utilities Commission has authorized the National Telephone Co., operating in L'Islet County, to raise its rates considerably to the following figures:—Branch lines, business, \$25; house, \$20. Party lines, business, \$18; house, \$15.

The Marconi Wireless Telegraph Co. resumed wireless telegraph service across the Atlantic Mar. 10., for the general public. Until further notice the service will be for full rate traffic only. During the war, official messages only were handled.

The C.P.R. Co's. Telegraph Department is stringing a new copper wire from Halifax to Montreal, and the work

is expected to be completed very shortly. As there are 800 miles in the telegraph route and it takes 210 lb. of wire a mile, the total weight of the wire is 168,000 lb., or 84 tons. In addition, a number of other copper wires will be strung on different parts of the system this year.

The Marconi Wireless Telegraph Co. has, according to a Montreal press dispatch, completed arrangements for supplying airgrams to aviators who may attempt to cross the Atlantic. A complete series of bulletins about weather conditions over the area to be traversed will be compiled from advices of ships at sea and will be sent out from the company's Glace Bay, N.S., station, to be picked up by the aviators.

The Great North Western Telegraph Co. has opened offices at Burlington, and Pass Lake, Ont.; Eaton, and Madison, Sask.; and has closed offices at Cap Rouge station, Cartierville, Little Metis lighthouse, Neuville station, Perthuis, and Portage du Fort, Que.; Camp Mohawk, Chaffey's Locks, Melbourne, and Mitchell, Ont.; and Dropmore and Hodgson, Man. The name of its office at River Henry, Que., has been changed to Henry River.

The Pacific Cable Board is considering representations made to it by Canadian and U.S. interests, for a duplication of the cable between Canada and Australia. It is pointed out that during the war the cable facilities were greatly overtaxed, and there appears to be no diminution in the traffic. In this connection, it is reported that the Marconi Wireless Telegraph Co. has made a proposal to certain Australian newspapers for a British news service on a 10 year contract at 50c a word, which is stated to be for too long a term and at too high a rate. It is however stated that the Marconi proposal may mean the life or death of the Pacific cable, but it is considered that there is sufficient traffic for both cable and wireless.

Among the Express Companies.

G. Ford, General Superintendent, Dominion Express Co., Winnipeg, has been on a trip to California.

R. C. Mellish has been appointed lost express freight agent, Canadian Ex. Co., Toronto.

M. W. Corrigan has been appointed lost express freight agent, Canadian Ex. Co., Winnipeg.

V. J. Smith has been appointed cashier, Canadian Ex. Co., Windsor, Ont., vice J. V. Yeoman promoted.

J. T. Madigan has been appointed route agent, Canadian Ex. Co., Hamilton, Ont., a new position.

W. B. Bray has been appointed agent, Canadian Ex. Co., Sydney, N.S., vice A. C. Millar resigned.

W. J. Trenaman has been appointed agent, Canadian Northern Ex. Co., Quebec, Que., vice M. G. Donnelly deceased.

R. H. Jones, heretofore route agent, has been appointed Assistant to Superintendent, Canadian Ex. Co., Toronto.

S. H. Bullett, heretofore agent, Windsor, Ont., has been appointed route agent, Canadian Ex. Co., Toronto, vice R. H. Jones promoted.

J. V. Yeoman, heretofore cashier, has been appointed acting agent, Canadian Ex. Co., Windsor, Ont., vice S. H. Bullett, agent, promoted.

The board of conciliation appointed to deal with complaints of the Canadian Ex. Co.'s messengers, helpers, drivers, clerks, porters and other employes, filed its report with the Dominion Labor Department at Ottawa, Mar. 18. The enquiry covered the whole system, and the award favors an eight hour day, with increases in wages ranging from 10 to 15%, with time and a half for overtime and legal holidays.

The American Railway Ex. Co. reports that after a 30 days campaign for the better packing and marking of express matter, concrete results have been achieved. At a meeting of the company's local employes at Montreal, Mar. 13, it was stated that not only were packages received in better condition, but there was a noticeable falling off in consignments that were sent to the "no mark" bureau, the decrease being about 50%. The company thanked the local merchants for their co-operation. The campaign is being continued in Canada, and meetings are being held at various points, with the view of instructing both employes and the public on the advantage of greater care in packing and marking.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Independent Pneumatic Tool Co., Chicago, Ill., and 334 St. James St., Montreal, has issued circular 30, describing and illustrating Thor pneumatic tools.

Metal & Thermit Corporation, 120 Broadway, New York, and 15 Emily St., Toronto, has issued a wall calendar for 1919, which contains a map showing the new railway time zones in the United States, which went into effect Jan. 1, together with the continuation of these zones in Canada.

The Canadian Ingersoll-Rand Co. has absorbed the Jenckes Machine Co. of Sherbrooke, Que., and now has two plants, the Rand plant and the Jenckes plant. The products of the "Jenckes plant" will continue to be structural and plate work; tanks, penstocks, etc.; mining machinery and equipment, ore crushers, cars, cages, etc., and pulp and paper equipment such as barkers, grinders, water wheels, etc. The Canadian Ingersoll-Rand Co.'s headquarters are at 260 St. James St., Montreal.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Belleville Railway Men's Educational Club. Meets each Tuesday, 7.30 p.m. F. A. Pinkston, Belleville, Ont.

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 305 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

Canadian Railway War Board—W. M. Neal, Montreal.

Dominion Marine Association—F. King, Counsel. Kingston, Ont.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Engineering Institute of Canada—F. S. Keith, 176 Mansfield St., Montreal.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Quebec.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacrament Street, Montreal.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 556 Church Street, Vancouver, B.C.

NOTICE TO CONTRACTORS.

The Timiskaming and Northern Ontario Railway Commission.

Toronto, Ont., March 26th, 1919.

SEALED TENDERS for the works (other than steel bridges) necessary to the complete construction of the road-bed, ready for the ties and rails, also the tracklaying, ballasting and fencing, upon that section of the Timiskaming and Northern Ontario Commission's railway, extending from Timmins to Mattagami River, a distance of two (2) miles, will be received at the office of the Secretary Treasurer of the Commission, 56 Church Street, Toronto, until twelve o'clock (noon) on the 15th day of April, 1919.

On receipt of a request in writing, a copy of each of the following documents: Instructions to Bidders.

Form of Tender

Specifications.

Form of Contract

will be furnished to intending bidders at the office of the Secretary Treasurer of the Commission, Toronto; or at the office of the Chief Engineer of the Commission, North Bay, where plans and profiles pertaining to the work may also be seen.

The right is reserved to reject any or all bids.

(Sgd.) W. H. MAUND,

Secretary Treasurer, Timiskaming and Northern Ontario Railway Commission.

CANADIAN NATIONAL RAILWAYS.

Eastern Lines, Ontario District.

SEALED TENDERS addressed to the undersigned and endorsed "Tender for Concrete Abutments, piers and culverts, Nipigon Subdivision," will be received at

this office until twelve o'clock noon, Wednesday, April 9th, for the construction of four abutments, two piers and two culverts on the Nipigon Subdivision, between Jellicoe and McKirdy.

Drawings, specifications and form of contract may be seen and form of tender obtained at the office of the Engineer, Maintenance of Way, no. 7 Adelaide St. East, Toronto.

Tenders will not be considered unless made on the form supplied by the Railway Company and accompanied by an accepted cheque on a Chartered bank for the sum of Three Thousand Dollars (\$3,000.00), payable to the order of the Treasurer of the Canadian National Railways.

NOTE: Blue print copies of the drawings may be obtained at the office of the Engineer, Maintenance of Way, by depositing an accepted bank cheque for the sum of Ten Dollars (\$10.00) payable to the Treasurer, Canadian National Railways, the said cheque to be returned if the intending tenderer submits a regular tender.

The lowest or any tender not necessarily accepted.

A. F. STEWART,
Chief Engineer,
Eastern Lines.

Canadian National Railways,
27 Wellington St. East,
Toronto.

CANADIAN PACIFIC RAILWAY COMPANY.

NOTICE TO SHAREHOLDERS.

The Thirty-eighth Annual General Meeting of the Shareholders of this Company, for the election of Directors to take the places of the retiring Directors and for the transaction of business generally, will be held on Wednesday, the seventh day of May next, at the principal office of the Company, at Montreal, at Twelve o'clock noon.

The Common Stock Transfer Books will be closed in Montreal, New York and London at 3 p.m. on Tuesday, the fifteenth day of April. The Preference Stock Books will be closed in London at the same time.

All books will be re-opened on Thursday, the eighth day of May.

By order of the Board,
ERNEST ALEXANDER,
Secretary.

Montreal, March 19th, 1919.

FOR SALE.

Light Draught Tug.
250 Ton Tow Barge.
2 Sand Pumping Outfits on
Scows.
Marine Engine, Boiler Pro-
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