

Canadian Railway and Marine World

July, 1917.

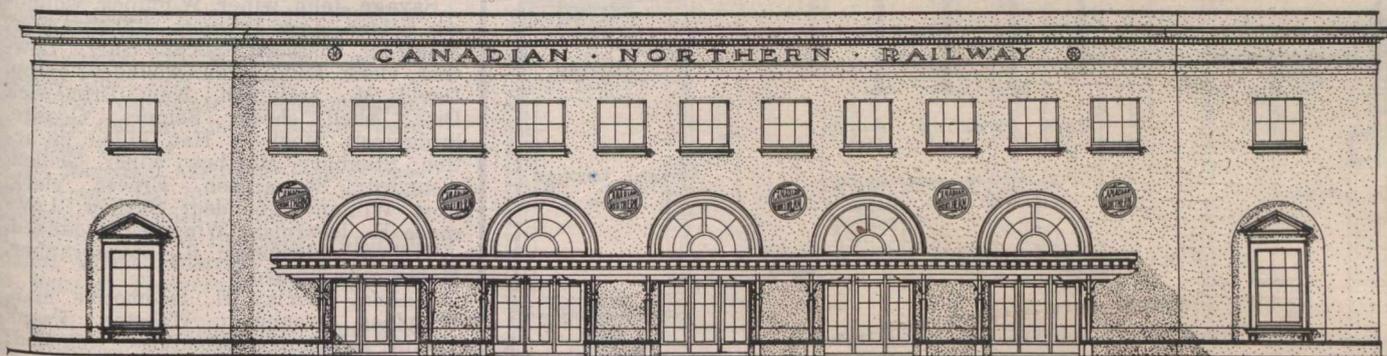
The Canadian Northern Railway's Station in Montreal.

As previously stated in Canadian Railway & Marine World, a temporary station for the Mount Royal Tunnel & Terminal Co., Ltd., a subsidiary of the Canadian Northern Ry. Co., is being built at the corner of LaGauchetiere and St. Monique Sts., Montreal. It will be a reinforced concrete structure, with two stories above grade and one below. The exterior walls will be lined with 6 in. terra cotta blocks, with an air space between the concrete outer wall and the lining. The main facade will face LaGauchetiere St. The building will be of classic design, the passenger entrances being five large arched openings, above which will be medallions containing the C.N.R. Co.'s insignia. A dignified entablature in

for telegraph office and news stand. The arrangement of the entrance vestibule has been made with the idea of saving the traveller as many unnecessary steps as possible; he may transact all his business here, check his baggage, purchase his tickets, obtain his newspaper, check parcels and proceed directly to his train without traversing the main waiting room. If he arrives well ahead of train time and wishes to sit down for a while, he may cross the entrance vestibule to the main waiting room, which will be immediately behind it, and will be 50 x 80 ft. The beamed ceiling of this latter room will be supported by two reeded columns of novel design, the beams of the ceiling radiating from the column

will be good sized compartments, with seats arranged around the walls, the radiators being concealed in recesses behind the seats. There will be drinking fountains in the main waiting room, women's waiting room and the men's smoking room, to supply iced water.

From the men's smoking room will be doors leading to the entrance vestibule and to the staircase hall. This hall, at the right hand end of the entrance vestibule, will contain broad concrete stairs, leading to the train level, and a narrower staircase to the offices on the second floor. Descending the staircase, the passenger will arrive in the lower staircase hall, which in turn will open to the concourse. The concourse will contain



Canadian Northern Railway Temporary Station, Montreal, LaGauchetiere Street Elevation.

ment will surmount the building on all facades. Over the passenger entrances on LaGauchetiere St. will be a marquise, protecting the sidewalk from rain and snow. To the right of the building will be a court, formed on its outer side by a retaining wall 18 ft. high, which will run back for 50 ft. The court will be 33 ft. wide and will be paved with brick. It will serve as a wagon approach to the incoming baggage room, which will have two wide doors opening directly on the court.

A passenger entering the building from LaGauchetiere St. will go immediately into the entrance vestibule, which will be about 30 x 80 ft. It will be the heart of the building, from which all its activities will radiate. It will also be used, in some degree, as a waiting room for those who have not the time or inclination to go back to the main waiting room, which will immediately adjoin it at the rear. Upon this entrance vestibule, on the side opposite the entrance, will open four windows of the ticket office. At its end, to the left, will be the baggage counter and parcel room. At its right will descend a broad staircase, leading directly to the trains. There will also be an entrance to the men's smoking room from the entrance vestibule and it will contain space

heads, forming a diamond pattern. Between the main waiting room and the entrance vestibule will be ticket offices, enclosed with terra cotta walls and ornamented with marble slabs and bronze grilles. In the main waiting room the seats will be of oak and of the latest model, and will be placed back to back, with a radiator between each pair. This will give an efficient heating system and at the same time all the radiators will be concealed. Along the tops of the seats will be lines of electric lights with reflectors.

At the left of the main waiting room will be the incoming baggage room, with an area of 2,100 sq. ft. As before stated, this room will have two large doors opening out on the wagon court, and at the extreme rear there will be a freight elevator, large enough to receive trucks, which will descend to the outgoing baggage room, immediately below, at the train level. There will be a staircase in the incoming baggage room, which will also lead down to the train level.

Opposite the incoming baggage room, at the right of the main waiting room, will be the men's smoking room and the women's waiting room, with lavatories between. Both of these rooms will have windows facing on St. Monique St. They

approximately 3,500 sq. ft., and will be separated from the train room by iron railings, immediately inside of which will be the baggage runway, connecting to the outgoing baggage room at the left. The outgoing baggage room will be immediately below the incoming baggage room on the first floor, and will be of the same dimensions, and as previously stated, will be connected with it by a staircase and large freight elevator.

There are five tracks contemplated in the present construction. From the baggage runway, ramps with a grade of 5% will descend to the platform level.

To the right of the baggage runway will be the machinery and storage rooms, and here are to be installed the apparatus for heating the water supply to the lavatories and cooling the drinking water. The heating plant for the building is to be installed in a separate structure behind the outgoing baggage room.

Along the LaGauchetiere St. front, on the second floor level, will be approximately 4,000 sq. ft. of office space, which is to be subdivided later when its uses are determined. On this floor will be lavatories and other facilities required for the offices.

Additional illustrations are given on pages 258 and 259.

The Canadian Pacific Railway's Honor Roll.

List 23, issued June 21, brings the number of the company's officials and employes on active service shown in the casualty lists up to 1,210, of whom 370 have been killed and 840 wounded. As particulars of army reservists are not available, the lists of those who have given up their lives for their country or been wounded in action are necessarily incomplete and do not indicate fully the extent to which the company's officials and employes are participating in the great struggle. List 23 is as follows:—

Anderson, Frank, locomotive fireman, Moose Jaw, wounded; Armstrong, James W., clerk, Toronto, wounded.

Barton, William, helper, Angus, wounded; Baulch, Sydney, laborer, North Bay, wounded; Beach, Thomas, checker, Revelstoke, killed in action; Bennett, Stanley H., assistant accountant, Winnipeg, wounded; Bissell, Lloyd A., stenographer,

Daly, Daniel David, yardman, Winnipeg, killed in action; Davis, Percy Frederick, cleaner, Ogden, wounded; Diggle, John, deckhand, British Columbia Lake Steamships, wounded; Duncan, Roderick C., clerk, Winnipeg, wounded; Dunlop, John, loader, Lethbridge, wounded.

Edmunds, William, porter, Fort William, wounded; Egerton, Herbert, painter, Montreal, wounded; English, Frederick R., yardman, Winnipeg, wounded and missing.

Forbes, John Hunter, resident engineer, Montreal, wounded; Forsythe, Louis, Loid, clerk, Toronto, shell shock.

Gate, John Millican, checker, Regina, wounded; Guest, Arthur J., wiper, Victoria, killed in action.

Hannafoord, John Henry, helper, Lambton, wounded; Harrison, William, conductor, Cranbrook, wounded; Hawkins, Thomas, assistant baggagemaster, Medi-

Maguire, Lloyd Earl, switchman, Ottawa, wounded; Marshall, Henry, car inspector, Keewatin, wounded; Maybank, H. G., switchman, Winnipeg, believed killed; Millership, Wilfred E., locomotive fireman, East Calgary, wounded; Mole, William, carpenter, Macleod, killed in action; Montgomery, James D. L., clerk, Montreal, wounded; Morton, John, porter, Calgary, died of wounds; Munro, George Hossack, watchman, British Columbia Dist., wounded.

Nelson, George Charters, constable, Montreal, killed in action; Nesbitt, Fred Allen, wiper, Coquitlam, wounded.

O'Dell, William, yardman, Calgary, wounded; Orford, Arthur, waiter, Montreal, wounded.

Parsons, Herbert, helper, Winnipeg, wounded; Peacock, Archibald C., constable, Montreal, wounded; Peckham, John Henry, carpenter, Ogden, wounded; Phelps, Thomas, specialist, Angus, killed in action; Pitt, Thomas Reginald, assistant agent, North Transcona, wounded; Platt, Edwin, clerk, Winnipeg, killed in action; Potvin, Louis Victor, clerk, Outremont, presumed dead; Price, William, car foreman, Swift Current, wounded.

Raddish, Fred William, clerk, Victoria, wounded; Reid, Robert, locomotive man, British Columbia Dist., wounded; Robertson, Duncan D., clerk, Regina, killed in action; Rollo, Andrew, fitter, Angus, killed in action; Roy, Robert William, locomotive fireman, Medicine Hat, presumed dead.

Savage, John, wiper, Winnipeg, wounded; Seldon, Jack Prescott, stenographer, Montreal, wounded; Silcox, Harry Lowther, clerk, Paddington, wounded; Slipp, David M., trainman, New Brunswick Dist., shell shock; Somers, George, bridgeman, Medicine Hat, killed in action; Stanbury, Matthew, wiper, Golden, wounded; Stewardson, Ernest, clerk, Fort William, wounded; Surtees, Lawrence R., leverman, Winnipeg, wounded.

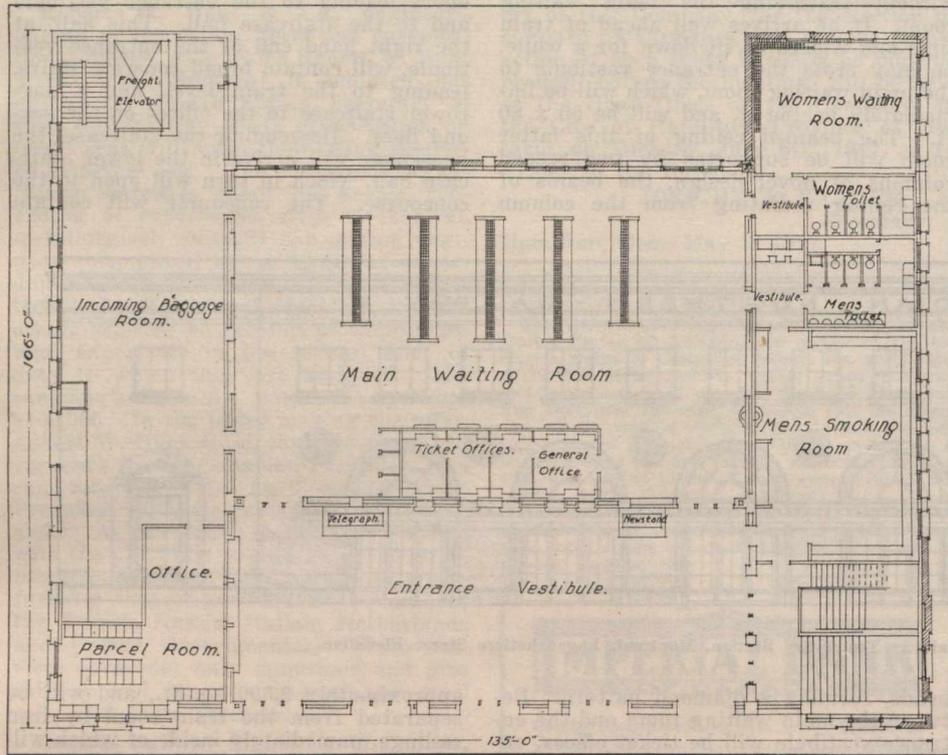
Treloar, Alexander R., stenographer, Montreal, wounded.

Walton, Barclay E., locomotive man, Winnipeg, wounded; Webster, Frank Trevor, switchman, Broadview, wounded; Webster, Robert, cleaner, Winnipeg, shell shock; Whitehead, John, cleaner, Moose Jaw, wounded; Willett, John, furnace operator, Angus, shell shock; Wilson, Robert Francis, yardman, Winnipeg, wounded; Wilson, William, porter, Calgary, wounded; Wooll, Henry Arthur, clerk, Montreal, believed killed; Wright, Alexander, clerk, Calgary, wounded.

Another list will be found on a later page in this issue.

Workmen's Compensation on Timiskaming and Northern Ontario Ry.—For the four months ended Apr. 30, 21 claims were registered, all for minor accidents. Of these, 8 were passed and paid, 9 were disallowed, and 4 were kept in abeyance. The total of claims paid was \$473.08, and the insurance cost, for the period based on premium paid in 1915, would have been \$5,995.52, or an average premium of \$749.44, to protect an average award of \$59.12.

A C.P.R. employment agent at Edmonton, Alta., made a contract with a number of foreigners to work on the line 40 miles from Wetaskiwin for five months. After working for some time the men left the job, but were arrested subsequently charged with a breach of the Masters and Servants Ordinance. The case was dismissed on the ground that the nature of the contract had not been definitely explained to the men.



Canadian Northern Railway Station, Waiting Room Floor, (See page 257).

Montreal, wounded; Blackwell, Henry, helper, Fort William, wounded; Bolton, Charles, waiter, Calgary, wounded; Bouvette, Wilfred S., messenger, Kelowna, wounded; Bradley, Reuben, clerk, Tillsonburg, wounded; Brindle, William Ernest, wiper, Souris, died of wounds; Bryant, Albert Quant, clerk, Calgary, died of wounds; Buckley, Frederick, checker, Moose Jaw, wounded; Burgess, Harold T., stenographer, Kettle Valley Ry., killed in action; Burton, Valentine F. B., ticket clerk, Regina, wounded.

Cameron, James, clerk, Calgary, wounded; Campbell, George W., conductor, Macleod, wounded; Campbell, Richard, machinist, Vancouver, killed in action; Campbell, William, operator, Shaunavon, wounded; Chandler, Richard, section foreman, Basswood, wounded; Childe, Percy K. G., clerk, Ogden, wounded; Clarke, Ernest George, cook, Toronto, wounded; Cohl, Robert, stripper, Ogden, wounded; Craig, Robert, wiper, Sutherland, killed in action; Currie, Thomas, tuber, Toronto, wounded.

cine Hat, wounded; Hewson, Charles Ernest, helper, Lambton, killed in action; Horton, Joseph F., clerk, Angus, wounded; Hunter, Thomas, locomotive fireman, Brandon, wounded.

Inglis, Alexander, coal passer, Medicine Hat, killed in action.

Jerome, Victor, apprentice, Angus, wounded; Jones, Arthur Wyn, wiper, Moose Jaw, wounded.

Kidd, Alexander, constable, Montreal, wounded; Kirk, James, wiper, Medicine Hat, wounded.

Larsen, John, machine runner, Lethbridge, killed in action; Luck, Cecil George J., rodman, Weyburn, wounded; Lynch, John, electrician, Angus, killed in action.

McDonald, James A., wiper, West Calgary, shell shock; MacDougall, John, baggagemaster, Swift Current, killed in action; McKay, Christopher, locomotive fireman, Winnipeg, wounded; McKenzie, Roderick, wiper, Fort William, wounded; McNeil, James Milford, locomotive man, British Columbia Dist., killed in action.

Birthdays of Transportation Men in July.

Many happy returns of the day to:

A. A. Allen, Vice President, The Holden Co., Ltd., Montreal, formerly Master Mechanic, Timiskaming & Northern Ontario Ry., born at Grafton, Ont., July 7, 1870.

J. H. Black, ex-Superintendent, Timiskaming & Northern Ontario Ry., now at Toronto, born near Smiths Falls, Ont., July 8, 1874.

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., born at St. Thomas de Montmagny, Que., July 25, 1877.

D'Alton C. Coleman, Assistant General Manager, Western Lines, C.P.R., Winnipeg, born at Carleton Place, Ont., July 9, 1879.

G. C. Conn, Freight Traffic Manager, Pere Marquette Ry., Detroit, Mich., born at Woburn, Mass., July 1, 1867.

D. D'E. Cooper, Canadian Freight Agent, Lehigh Valley Rd., Toronto, born at Buffalo, N.Y., July 8, 1862.

John Corbett, ex-General Foreign Freight Agent, C.P.R., Montreal, born in Lanarkshire, Scotland, July 19, 1863.

H. Darling, Locomotive Foreman, G.T. Pacific Ry., Smithers, B.C., born in Northumberland, Eng., July 27, 1873.

S. E. Dewey, General Eastern Freight Agent, G.T.R., New York, born at Beckenham, Kent, Eng., July 4, 1879.

A. H. Eager, Assistant Superintendent of Rolling Stock, Western Lines, Canadian Northern Ry., Winnipeg, born at Waterloo, Que., July 15, 1868.

F. C. Foy, Canadian Passenger Agent, New York Central Lines, Toronto, born there, July 5, 1881.

C. W. Johnston, Assistant General Passenger Agent, G.T.R., Montreal, born at Actonvale, Que., July 27, 1879.

M. Kelly, Resident Engineer, Farnham Division, Quebec District, C.P.R., Farnham, born at Thamesville, Ont., July 6, 1874.

A. E. Lock, Superintendent Car Service, Toronto. Hamilton & Buffalo Ry., Hamilton, Ont., born at Albany, N.Y., July 14, 1879.

G. A. McNicholl, Assistant General Freight and Passenger Agent, Grand Trunk Pacific Ry., Prince Rupert, B.C., born at Montreal, July 31, 1876.

H. D. Mackenzie, Master Mechanic, Canadian Government Railways, Edmundston, N.B., born at Churchville, N.S., July 22, 1864.

J. M. Macrae, District Freight Agent, Canadian Northern Ry., Saskatoon, Sask., born at Stornoway, Scotland, July 31, 1884.

T. J. Maguire, Accountant, Quebec Central Ry., Sherbrooke, Que., born at Quebec, July 31, 1860.

W. G. Manders, General Freight Agent, Western Lines, Canadian Northern Ry., Winnipeg, born at Owen Sound, Ont., July 24, 1876.

J. E. Morazain, Superintendent, District 1, Intercolonial Division, Canadian Government Railways, Levis, Que., born at Wheatland, Que., July 31, 1875.

R. E. Perry, Assistant General Freight Agent, Canadian Government Railways, Moncton, N.B., born at Drayton, Ont., July 5, 1876.

R. Preston, Assistant Superintendent of Motive Power, Western Lines, C.P.R., Winnipeg, born at Toronto, July 28, 1863.

J. E. Quick, General Baggage Agent, G.T.R., Toronto, born at Richmond, Ontario Co., N.Y., July 10, 1851.

G. G. Ruel, Chief Solicitor, Canadian Northern Ry., Toronto, born at St. John, N.B., July 5, 1866.

George Stephen, Freight Traffic Manager, Western Lines, Canadian Northern Ry., Winnipeg, born at Montreal, July 5, 1876.

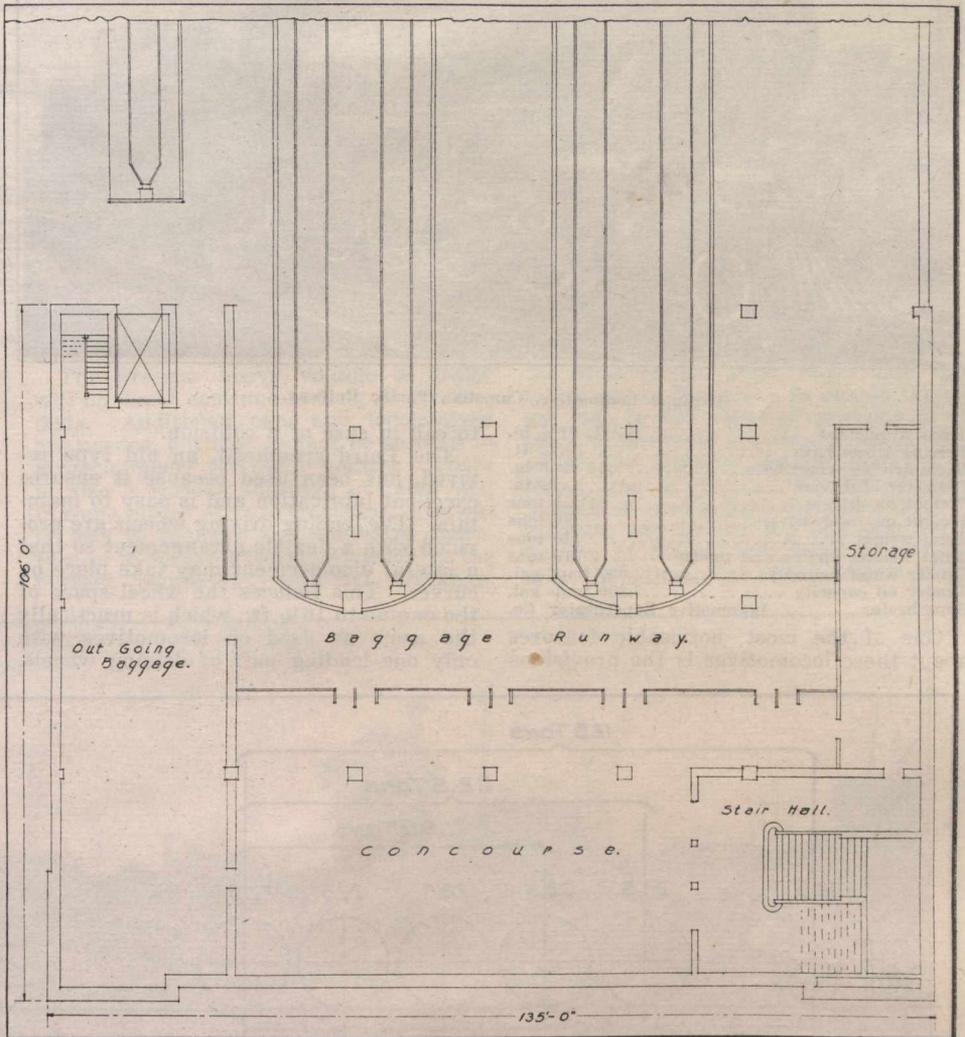
Sir Thos. Tait, President, Fredericton & Grand Lake Ry. & Coal Co., Montreal, born at Melbourne, Que., July 24, 1864.

G. A. Walton, General Passenger Agent, Western Lines, C.P.R., Winnipeg, born at Montreal, July 17, 1881.

The Joliette and Lake Manuan Colonization Ry. Co's Difficulties.

The Board of Railway Commissioners, under authority of secs. 26 and 27 of the Exchequer Court Act, made an order

of aid from the Dominion Parliament and the Quebec Legislature, and in 1912, A. M. Laredo obtained control of the J. and L. M. C. Ry. The first 30 miles of the line from Joliette was located in June, 1912, and a contract was let to R. J. Craig, Cornwall, Ont., for the grading, the general work of construction being financed by the British Canadian Construction Co. No very large amount of work appears to have been done, and the project for construction seems to have fallen through, after the Dominion Government in 1914 purchased the rights of the North Ry. to build from Montreal to the N. T. Ry. via the Bell River Valley. The company evidently is in financial difficulties, the Merchants Bank having obtained judgment against it for \$9,925.-81 with costs of \$182.90. Failing to secure a settlement of this judgment the



Canadian Northern Railway Station, Montreal, Train Floor (See page 257).

April 4, directing the sale of this railway's rolling stock, equipment and other accessories. The company was incorporated by the Dominion Parliament in 1903, power being given to build a railway from Joliette to Lake Manuan. Extensions of time for construction were granted from time to time, and in 1911 the company was authorized to extend its line southerly from Joliette into Montreal and northerly from Lake Manuan to a junction with the National Transcontinental Ry. During 1911 and 1912 there was considerable rivalry between the promoters of this company and those interested in the North Ry. as to which had the most favorable route for securing in connection between Montreal and the N. T. R. Both companies secured promises

bank applied for the order for the sale of the property.

Canadian Northern Ry. Employees in a largely signed petition to Premier Borden, have protested in the strongest terms possible against the putting into effect of the majority report of the royal commission, which investigated the Canadian railway situation recently. The report recommended among other things the nationalization of the C. N. R.

The Toronto Terminal Warehouse Co., Ltd., has been incorporated under the Ontario Companies Act, with \$150,000 capital and office at Toronto, to carry on the business of general warehousemen and forwarders in all its branches.

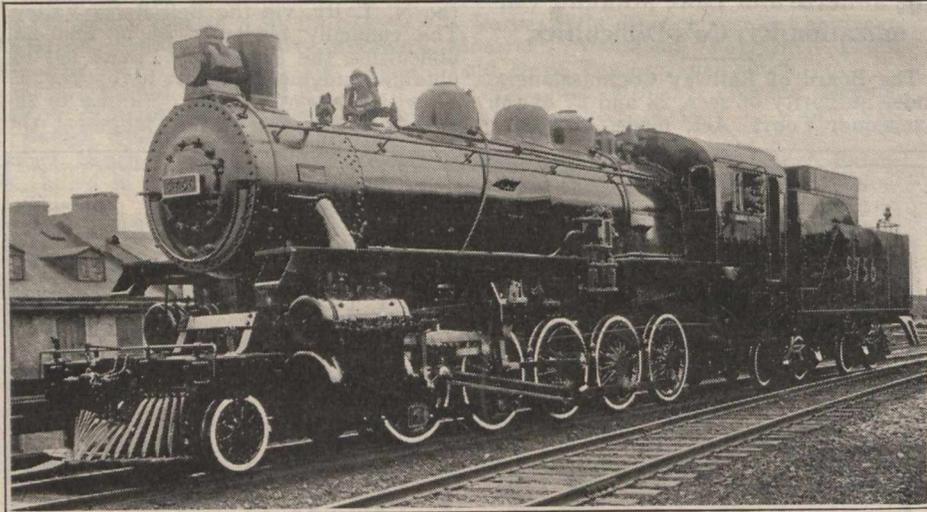
Decapod Locomotives for Canadian Pacific Railway.

Increases in the Cost of Railway Supplies.

The C.P.R., as previously announced in Canadian Railway and Marine World, is building 25 decapod locomotives at its Angus shops, Montreal, for mountain service. The principal general dimensions are as follows:

Capacity	275%
Boiler pressure	200 lb.
Cylinders	24 x 32 in.
Pulling face, rear tender coupler over pilot	76 ft. 10 3/8 in.

pegs for the surplus clothing. The windows are double sashed and a wind deflector is provided for the locomotive man while the fireman's eyes are protected by a deflector on the firedoor which eliminates the glare. A deflector is also located on the cab roof, which stops the back dust draught and keeps the cab free from dust. A safety clamp is carried to prevent the tender from sliding forward on



Decapod Locomotive, Canadian Pacific Railway.

E. J. Chamberlin, President G.T.R. and Grand Trunk Pacific Ry., has issued the following circular to officers and employees.—On April 15, 1916, I issued a circular to officers and employees, calling attention to the abnormal increase in the cost of the principal materials and supplies used by these railways as compared with the prices ruling in 1914 before the outbreak of war. I have now had this statement revised showing the prices prevailing in April, 1917, from which it will be noted that practically all of the items shown have still further increased in cost, with no indication as yet that they have reached their maximum. The matter is again brought to your attention, so that you may be informed as to the constantly increasing expense to which the company is put, and further, that you may keep your requisitions for materials and supplies down to the lowest point possible during the present abnormal market conditions. The prices that prevail necessitate partial repairs to structures and facilities rather than general renewals, and in so far as possible, the deferring of new or improvement work until conditions are again normal. This, of course, does not apply to repairs or renewals which are absolutely necessary for the safety of the public and the employees."

The following table shows the increases in cost of material in April, 1917, over July, 1914:

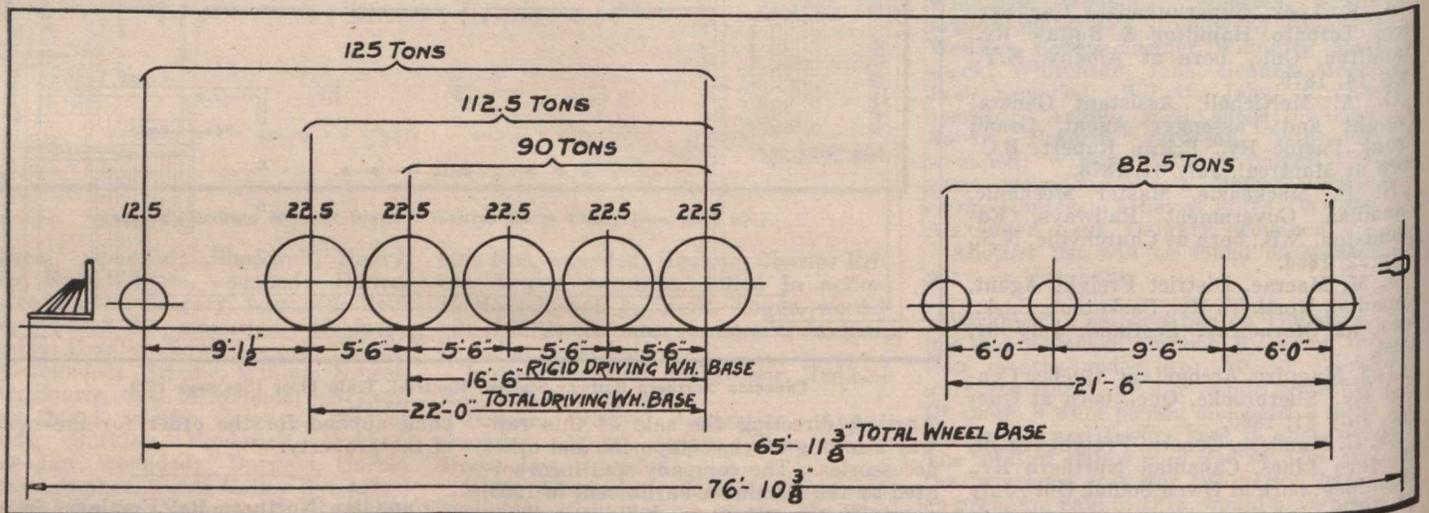
	United States %	Canada %
Acids	—	73
Antimony	386	290
Batteries and renewals	20	27 1/2
Bolts, machine and carriage	150	123
Bolts, track	149	—
Brake beams	86	120
Brass, rod	210	217 1/2
Brass, sheet	221	228 1/2
Brushes	10	17 1/2
Castings, brass	115	124
Castings, malleable	142	223
Castings, steel	149	119
Cement	36	40

Total wheel base	65 ft. 11 3/8 in.
Driving wheel base	22 ft.
Rigid driving wheel base	16 ft. 6 in.
Diameter of drivers	58 in.
Weight on drivers	112.5 tons
Weight on rigid drivers . . . . .	.90 tons
Total weight	120 tons
Total weight, engine and tender	210 tons
Tender water capacity	7,000 imp. gal.
Tender oil capacity	3,200 imp. gal.
Superheater	Locomotive Superheater Co.

One of the most noticeable features about these locomotives is the provisions

to cab in case of a collision.

The Laird crosshead, an old type revived, has been used because it ensures excellent lubrication and is easy to maintain. The leading driving wheels are provided with a flexible arrangement so that a lateral displacement may take place on curves. This reduces the wheel space of the engine to 16 1/2 ft., which is practically the same as used on locomotives with only one leading pair of driving wheels.



Decapod Locomotive, Canadian Pacific Railway.

which are made in the cab for the comfort and safety of the locomotive man and fireman. This is especially required on a mountain division on account of the severe climatic conditions which sometimes prevail. The cab is roomy and well ventilated and is heated in winter by having part of the insulation which covers the boiler in the cab made in sections which can be easily removed. The seats are exceptionally well cushioned and a coat cupboard is provided with swinging

To accomplish this the leading side rods are articulated by means of a ball joint. A power reverse gear operated by air is also an improvement. The main object achieved in the construction of these locomotives, is maximum power for minimum weight.

The Colchester Coal and Ry. Co. has leased its Debert coal areas to another Nova Scotia concern for three years, on a royalty basis.

Chain	83	122
Copper, rod	147	154 1/2
Copper, sheet	147	154 1/2
Copper, ingot	107	114 1/2
Couplers, car and locomotive	126	134
Draft gear	55	55
Drills, carbon	80	59
Drills, high speed	160	167 1/2
Duck cotton	71	52
Fence wire	80	117
Ferrules, copper	107	80
Files	80	96 1/2
Frogs and switches	89	137
Fusees	140	58
Gasoline	—	90
Glass	50	—

Hose	29	21
Iron, common bar	146	103
Iron, black sheet	337	344½
Iron, galvanized	255	262½
Joints, rail	65	72½
Knuckles, car and locomotive	67	67
Lead, pig	150	157½
Leather, belting	110	66
Lumber, oak, car, engine	30	30
Lumber, yellow pine	30	30
Metal babbitt	45	100
Nails, wire	110	156
Netting, locomotive stack	62	140
Nuts, hexagon	119	287
Nuts, square	90	270
Paint, white lead in oil	55	79
Pipe, black	118	180
Pipe, cast iron	144	97
Pipe, galvanized	44	115
Potash, prussiate	600	862
Rings, packing and piston	54	53
Rivets, boiler	171	114
Roofs, car metal	50	57½
Roofs, plastic	50	57½
Rope, Manilla	111	97

Reduce Car Shortage by Filling Cars.

Following up the bulletin published in Canadian Railway and Marine World for May the management of the Eastern Lines, C.P.R., has issued the following bulletin, under the above heading:

The object in issuing these bulletins is not to start a controversy with the public, not to shift responsibility to the public but to secure the co-operation of the public. Bulletin 1 contained the following information for the period from 1907 to 1915:

The freight carried on Canadian railways increased	51%
The number of cars increased	91%
The total car capacity increased	131%
The average capacity of cars increased	5.8 tons
The average weight of contents increased	3.0 tons

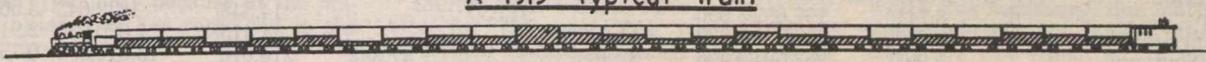
tons of dead car tare hauled one mile.

By increasing now the average load by 5 tons per car the public would improve the efficiency of the equipment, facilities, and man power of the railways to an extent equal to: 54,800 additional freight cars, 482 additional freight and yard locomotives, 415 additional miles of yard trackage and 13.5% increase in man power employed in train and yard service. A car saved is a car gained.

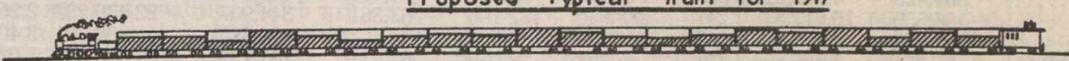
Periscopes in C. P. R. Interlocking Towers.

The C.P.R. has had periscopes installed in its interlocking signal towers at Mile End, Montreal, and at Iberville Jct., on

A 1915 Typical Train



Proposed Typical Train for 1917

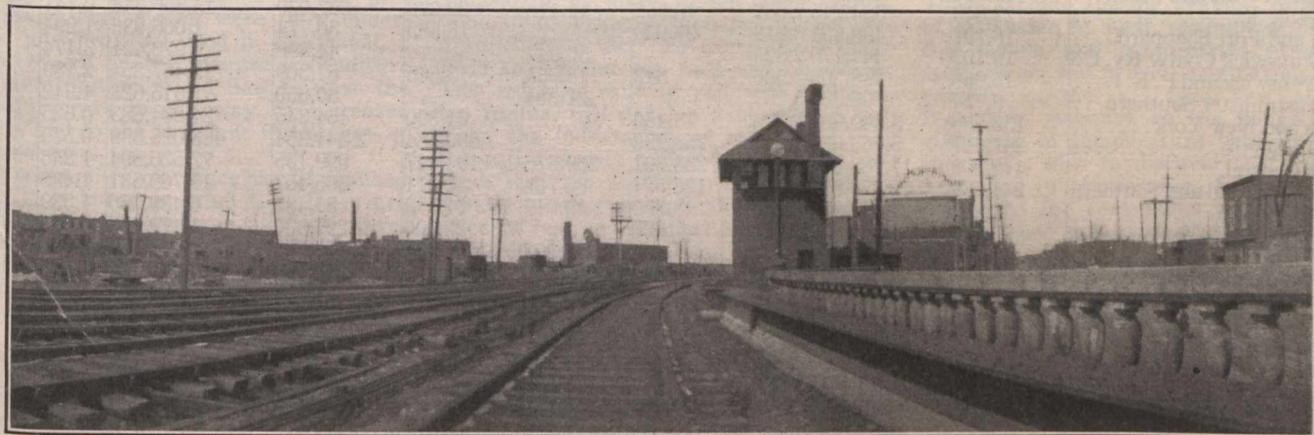


Comparison	Cars	Average load	Weight of Train	Weight of Contents	Result
Typical Train 1915	23	18.4 Tons	860 Tons	423 Tons	45 more tons carried in 3 less Cars
Proposed	20	23.4 Tons	848 Tons	468 Tons	

Screws, brass wood	308	260
Screws, iron	121	157
Scoops, shovels	29	61
Spikes, track	155	—
Springs, car and locomotive	183	177
Stationery	88	100
Stationery, printed matter	25	25
Steel bars	200	147
Steel billets	317	324½
Steel firebox plates	285	202½
Steel plates, angles, etc.	300	307½
Steel tool, high speed	400	407½
Tie plates	110	117½

The present heavy volume of traffic will no doubt continue so long as the war lasts. Additional cars and locomotives are needed, but they cannot be secured in large numbers for many months. There is also a serious shortage of labor and in some places of yard trackage. The only way to improve the conditions therefore is to secure greater efficiency in the present equipment, terminal trackage,

the Montreal-St. John, N.B., line, 30.6 miles east of Montreal, to enable the signal men to get views of portions of the track adjacent to the interlocking limits, which are obscured by buildings in the direct line of vision. The periscope is located at a window opening, and the mirrors, one at the top and one at the bottom of the upright tube, are adjustable, the adjustment of the bottom mirror



Periscope on Signal Tower, C.P.R., Mile End, Montreal.

Tin	54	61½
Tires	170	295
Tubes, boiler	147	154½
Tubes, superheater	119	126½
Tubing, copper	135	142½
Valves	94	67
Vitriol, bluestone	—	120
Washers, wrought	60	95
Waste, cotton and wool	44	51
Wheels	77	84½
Zincs, battery	—	131
Stationery Items.		
Blotting papers	100	100
Copying pencils	140	160
Inks	80	80
Paper fasteners	100	200

and man power. The railways alone cannot develop the maximum efficiency; the railways and the public co-operating can. Consignees can help by ordering full car loads instead of minima authorized in the tariffs and classifications, and consignors can help by loading cars to their full authorized cubical or carrying capacity.

A comparison—	The average train	
	1915	Proposed for 1917
Average weight of contents of cars	18.4 tons	23.4 tons
Total weight of cars	503 "	448 "
Total weight of contents	344 "	399 "
Total weight of train	847 "	847 "

Had the average load per car in 1915 been 23.4 tons, instead of 18.4, the same traffic would have been handled with: 6,947,588 less trains hauled one mile, 1,568,765 less car trips, 29,806,535 less

being convenient to enable signalmen, when either sitting or standing, to obtain the view. The apparatus was built and installed at each place by the company's own forces. The accompanying illustration shows the periscope installed on the interlocking signal tower controlling the various main line tracks and sidings at Mile End, Montreal, by means of which the signalmen are enabled to see trains coming up the grade long before they could do so without it.

Vancouver Transportation Club.—J. A. Cunningham, in addressing the club on June 1, urged the development of the natural resources of the province as being necessary to make the railways pay.

The Canadian Northern Ry. carried 706,414 tons of coal from Alberta coal mines for the year ended April 30, against 476,718 for the year ended April 30, 1916.

Steam Railway Statistics for Year Ended June 30, 1916.

Name of Railway	Passengers carried	Passengers carried one mile	Revenue per passenger per mile, cents.	Mileage of revenue passenger trains	Mileage of revenue mixed trains	Mileage revenue freight	Tons of freight carried	Tons carried one mile	Revenue per ton per mile, cents.	Mileage of non revenue trains
Algoma Central & Hudson Bay	27,081	1,500,367	3.382	29,077	50,431	167,466	736,658	54,681,535	0.812	54,144
Algoma Eastern	88,658	1,915,774	2.664	56,297		88,800	1,629,114	22,635,256	1.785	2,210
Atlantic, Quebec and Western	36,025	1,090,029	2.945	43,976	20,165	40,909	115,818	5,963,928	1.160	2,821
Brandon Sask. & Hudson Bay	24,053	830,574	2.598	37,557		19,235	49,080	2,059,883	0.955	11,812
British Yukon	7,841	523,147	7.967	1,427	38,248	6,190	37,234	3,165,401	6.947	1,565
Canada and Gulf Terminal	25,187	513,670	3.242	432	22,844	52	32,563	933,678	3.115	216
Canada Southern	1,409,877	122,204,928	2.386	1,833,017	149,272	1,659,125	8,024,485	1,210,431,611	0.644	41,855
Canadian Government Railway										
Intercolonial	4,305,441	240,023,633	1.667	3,050,173	359,912	5,016,440	6,182,949	1,800,688,658	0.559	151,210
Prince Edward Island	424,467	1,070,387	1.747	151,581	214,499		116,856	4,706,798	3.849	848
National Transcontinental	547,613	37,066,514	1.673	462,290	476,706	1,951,797	2,644,043	1,030,056,961	0.485	59,526
Canadian Northern	9,384,056	254,555,428	2.142	5,589,166	2,916,870	8,517,036	13,353,380	3,851,918,945	0.679	988,979
Canadian Pacific	13,727,219	1,247,118,119	1.957	18,159,545	2,098,825	25,355,997	29,276,872	12,822,500,920	0.641	856,680
Cape Breton	8,711	197,699	3.096		91,530		14,848	232,643	3.563	
Caracquet and Gulf Shore	19,630	808,922	2.830	41,600			44,413	1,820,933	2.910	
Crows Nest Southern	9,997	262,694	3.496	32,199		47,892	216,016	13,310,395	0.753	6,428
Cumberland Ry. and Coal Co.	52,546	576,531	2.551		29,421	11,506	364,609	3,327,709	2.037	
Central Vermont	364,423	4,943,013	2.397	147,436	29,734	71,691	480,140	18,816,323	1.038	3,624
Dominion Atlantic	466,550	16,617,848	2.247	288,940	182,196	63,361	344,907	22,439,238	2.262	20,387
Eastern British Columbia	2,875	24,856	5.569	120	7,604		99,585	836,791	3.402	1,344
Edmonton, Dunvegan and B.C.	35,751	3,966,695	3.841	55,898	28,050	61,511	167,130	24,389,971	1.028	
Elgin and Havelock	10,112	90,041	3.210		16,200		15,860			
Essex Terminal					24,000		264,442	1,332,210	5.155	
Esquimalt and Nanaimo	253,535	6,018,989	2.858	149,329	3,900	90,687	362,478	11,138,672	2.771	8,073
Fredericton and Grand Lake	9,757	241,202	2.813		25,041		109,663	3,559,877	1.729	
Grand Trunk	11,967,745	572,058,443	1.794	8,279,329	791,169	11,158,448	19,060,802	3,768,625,542	0.660	393,239
Grand Trunk Pacific	369,495	49,610,894	2.084	994,074	52,188	1,736,045	1,972,054	714,572,028	0.698	295,069
Hereford	30,550	576,012	2.936	33,608	33,231	1,422	109,781	2,637,789	2.884	1,198
International Ry. of N. B.	35,420	1,363,260	2.871	596	69,902	980	95,079	3,945,543	1.884	4,446
Kettle Valley	21,556	1,336,028	3.339	673	100,070	84,759	207,110	15,225,702	1.778	9,820
Lotbiniere and Megantic	14,092	196,274	2.870		18,840	1,000	57,860	811,197	3.520	800
Maine Central	88,383	450,753	2.360	3,940	6,255	3,600	239,994	450,753	0.538	75
Manitoba Great Northern	9,617	214,788	2.702	10,020	23,485	7,227	106,761	5,225,192	0.592	1,418
Maritime Coal Ry. & Power Co.	23,334	232,224	2.902		32,130		282,076	3,072,073	2.679	
Massawippi Valley	154,941	2,447,102	2.643	91,882	8,540	61,980	581,842	17,024,993	0.892	4,202
Midland Ry. of Manitoba	64,833	3,931,428	2.234	116,168	268	46,967	170,619	12,190,669	0.956	136
Moncton and Buctouche	280,050	605,868	2.220	2,282	17,972	5,600	21,141	448,803	4.235	640
Montreal and Atlantic	316,519	7,427,296	2.413	157,069	147,904	270,094	1,724,143	92,722,006	1.128	5,024
Morrissey Fernie and Michel	119,500	728,950	1.562		32,407		655,438	3,398,172	2.546	
Napierville Jct.	22,840	384,245	2.682	10,055	11,118	22,272	557,029	15,856,348	0.741	27
Nelson and Fort Sheppard	18,707	498,394	3.218	37,020		18,585	30,774	1,066,936	1.994	3,034
New Brunswick Coal & Ry. Co.	19,107	444,170	2.825		36,947		44,898	923,421	3.174	
New Brunswick and P. E. I.	15,966	298,205	2.596	812	18,934	13,565	61,309	1,467,254	2.189	1,527
New Westminster Southern	9,754	96,385	3.257		21,304		80,650	615,623	4.342	
Ottawa and New York	135,586	3,409,087	2.295	78,450		61,590	464,345	24,204,683	0.625	
Pere Marquette	297,627	5,764,639	2.311	268,952		890,584	2,841,354	485,025,339	0.575	17,921
Quebec Central	412,808	17,768,648	2.129	233,391	269,676	19,447	999,155	77,526,894	1.345	25,830
Quebec Montreal and Southern	244,659	5,359,898	2.569	125,524	85,722	80,211	355,457	15,769,531	1.435	233,684
Quebec Oriental	32,219	1,758,963	2.569	43,393	19,019	41,543	6,439,056	1,339	770	
Quebec Ry. Light & Power Co.	75,926	588,425	1.370	7,620		22,906	227,330	1,479,852	5.286	2,223
Red Mountain	9,271	83,270	2.632		8,302	1,922	25,685	231,753	3.790	2,343
Roberval-Saguenay	23,805	339,357	2.603	82,333	263,825		212,327	6,806,326	1.365	756
Rutland and Noyan	111,893	379,371	2.298	4,997		2,070	147,304	434,527	1.372	
St. Lawrence and Adirondack	610,427	12,254,775	1.642	171,422		93,080	1,146,281	41,539,713	1.215	
Salisbury and Albert	13,328	332,595	2.780		30,620		43,687	1,013,164	2.740	10,535
St. John and Quebec	46,892	1,251,797	2.271	648	69,878	440	44,744	1,782,109	2.266	
St. Martins	8,580	163,946	2.508		16,500		19,268	275,969	5.736	6,669
Sydney and Louisburg	160,296	2,206,128	2.329	27,132	18,850	197,034	4,922,460	76,066,854	1.016	
Temiscouata	71,963	1,979,473	2.543	73,220	70,216	3,399	159,958	6,030,007	2.641	
Timiskaming and N. Ontario	472,839	25,156,422	2.206	473,626	59,443	507,573	902,821	169,956,097	0.745	9,752
Thousand Islands	49,071	294,426	2.999		87,373		32,825	197,190	10.785	51,223
Toronto, Hamilton and Buffalo	612,447	18,001,397	2.183	304,190		144,473	2,297,240	84,256,344	1.271	
Vancouver, Victoria & Eastern	142,613	3,752,621	2.785	128,137	75,657	79,623	1,232,323	32,640,410	1.107	3,378
Victoria Terminal Ry., and Ferry Co.	47,953	47,479	2.755	2,002	21	590	16,869	16,700	5.321	16,609
Victoria and Sidney	50,987	573,540	2.850	33,339	336	9,500	20,203	246,849	4.957	
Wabash (in Canada)	565,200	31,594,156	1.193	524,118		1,101,351	2,695,891	598,596,519	0.499	4,034
York and Carleton	7,461				7,112		5,994			
Total	49,027,671	2,727,122,648		42,449,022	8,499,073	60,036,984	109,659,088	28,195,364,264		3,338,181

Notes to Steam Railway Statistics.

The table in Canadian Railway and Marine World for June showed the financial results of the operation of steam railways for the year ended June 30, 1916. It has been our practice for a number of years to follow this with a second table of operating statistics, but owing to changes in the form of tables

used by the Railways Department in its statistical report it is impossible to give our second table in the same form as it has appeared since 1910. The following columns contained in the department's report up to June 30, 1915, are omitted in the report to June 30, 1916: Ratio of operating expenses to operating revenue; proportion of total passenger train revenue to total earnings; proportion of

freight plus switching revenue to total earnings; earnings per train mile; passenger earnings per train mile; and freight earnings per train mile. In the table on another page the revenue per passenger per mile, and the revenue per ton per mile are given in place of the passenger and freight earnings per train mile respectively. The other change is that instead of the total revenue train

mileage being given in one column, three columns are given showing passenger, mixed and freight train mileage respectively. To ascertain the revenue per passenger per mile, the actual passenger re-

ceipts, as given in our June table, are divided by the total of the passenger and mixed train mileage; and to ascertain the freight revenue per ton per mile, the freight earnings, as given in our June is-

sue, are divided by the total of the mixed and freight train mileage. The non-revenue train mileage in the last column has nothing to do with calculating the revenue per mile, passenger or ton.

The Mechanics of the Chilled Iron Wheel.

"Tell me," said a business man, "why is it that steel has supplanted iron in the rail, wood in the car, and multitudinous parts of the car and track structure, and has never succeeded in making appreciable inroads on the chilled iron wheel?" The reply was that the material known as chilled iron has been found by continuous use for 67 years to be the best adapted for the service, and its superiority is not entirely because of scientific processes which have been used in making the wheel, but principally because of the material. Chilled iron has remained in the forefront ever since its introduction in 1850, and is today the main factor in America's commerce, and this is because it possesses inherent qualities which are not found in other metals and its principal characteristics are its ability to carry any load without crushing or flowing, that can be supported by the steel rail.

The mechanics of the chilled wheel have never been investigated except in a very superficial way. The fundamental properties of chilled iron, such as specific gravity, modulus of elasticity for varying tensile strengths, action under repeated stresses, relation of operating conditions to temperature stresses, etc., are not established. Dollars are spent in the investigation of steel, cents are devoted to chilled iron. In the face of this neglect, the chilled iron wheel by sheer merit survives the struggle for existence. A belated pause to consider the basis for this vitality will not be wasted. If the properties of chilled iron were fully understood and properly used in the wheel, a large return on the meagre expenditure for investigation would flow in upon the manufacturers in the way of increased profits and to the railroads in the way of reduced costs.

Its economic importance can be realized when it is borne in mind that there are 25,000,000 such wheels in service, representing 5,000,000 tons of metal, requiring an annual production of 3,000,000 wheels, or approximately 1,000,000 tons of chilled iron, to replace those worn out in service. It is not intended to dwell upon the economic phase of the subject, for this is fully established, but rather to offer a few suggestions that will ultimately lead to a more intelligent design and classification of wheels for the service which they are to perform. Since 1875, wheel loads have increased 500%, axle weights 230%, and wheel weights 75%. The 11,000 lb. wheel load, under the 30 ton car, was supposed, at the time of its introduction, to be the maximum that could be carried without breaking down the surface metal of the wheel tread and the top rail. This opinion, however, did not long impede the growth in wheel loads, for soon the 50 ton car was introduced with 20,000 lb. concentrated on one wheel. It was considered that this was the limit in car capacity and that the chilled iron wheel might not be fully satisfactory under this burden. Again this opinion is exploded, not only by the successful performance under a half million 50 ton cars, but the chilled iron wheel has passed the experimental stage under the 70 ton car, with a

wheel load of 25,000 lb. The latest increase is the experimental 85 ton car and 12,000 gal. capacity locomotive tender, requiring an axle having a $8\frac{1}{2}$ x 12 in. journal, and $8\frac{3}{8}$ in. wheel fit, designed to carry 60,000 lb., or 30,000 lb. a wheel. It is a matter of interest to note that in 1890 30 tons was considered the maximum car capacity. We now have a single axle of 30 tons capacity, or 30,000 lb. a wheel, which shows the marvellous increase in wheel burden.

Chilled iron wheels have been in service for the past five years, without structural failure, on axles having $\frac{3}{8}$ in. wheel fit, under ore cars, and in constant service on 2% grades. The question now arises—are we nearing the limit for wheel loads? If so, what is the determining factor? What margin still remains for further increases in bearing power of the metal of wheel and rail; in flange strength; in web and hub? These are the questions it is proposed to answer by considering each part of the wheel separately.

The bearing power of iron or steel is largely controlled by the carbon content, and, naturally, since the tread of the cast iron wheel contains $3\frac{1}{2}$ % of carbon, it has a much greater bearing power than the rail which contains less than 1% of carbon. A 33 in. chilled iron wheel will not perceptibly flatten under a load of 250,000 lb., which is 8 or 10 times the present maximum wheel load. Chilled iron wheels are in common use, carrying 100,000 lb. or more, under large cranes, "unloading bridges, transfer tables, hydraulic locks, etc. To carry these loads wide special flat top rails are necessary. The ordinary railway rail with a 12 in. top radius, will develop a permanent set when the indentation of the wheel into the rail amounts to 0.007 in. If we assume that the maximum load carried in rapidly moving service should not cause, when at rest, an indentation greater than half this amount, the limiting loads from the rail standpoint are readily calculated by the formula— $L = 1,500,00 \frac{d}{D}$ in which L equals load; d equals indentation into rail, and D equals diameter of wheels. In this formula the pressure per sq. in. over the area of contact between wheel and rail is taken at 100,000 lb. a sq. in. The limiting loads for various diameters on wheels are: 42 in. wheels, 34,000 lb.; 36 in. wheels, 31,300 lb.; 33 in. wheels, 30,200 lb.; 30 in. wheels, 28,800 lb. As far as the bearing power of chilled iron is concerned, there is no indication of nearing the wheel load limit.

The pressure which the flange must resist, in guiding the truck around curves, is equal to $\frac{3}{4}$ % of the wheel load, provided the track is perfect and cars in good condition. The pressure is not influenced by degree of curve, velocity, centrifugal force, or obliquity of traction, but an allowance must be made for impacts originating from irregularities in track and locked side bearings and centre plates, which, added to the curve pressure, will make the total maximum lateral pressure against the flange 1-3 times the wheel load, or 18,000 lb. for the 30 ton car and 46,500 lb. for the 85 ton car. It is un-

reasonable to suppose that a flange designed for 18,000 lb. pressure will have the same factor of safety for 46,500 lb. pressure, in fact, the thickness of flange was developed when flange pressure did not exceed 8,000 lb. It is just as necessary to increase the flange section as to increase all other sections of the wheel, when increased duty is imposed, and notwithstanding the fact that the Master Car Builders' Association, in its latest report, stated that no increased flange width was necessary, this matter is by no means settled, as far as other associations are concerned, and a movement is again started to determine whether the hundreds of thousands of flanges that are now in use, which are wider than the present M.C.B. standard flange, are not entirely in harmony with present track standards. When this question is answered, and the question of track clearance ought to have been answered long ago, we will then have an opportunity to present to the Master Car Builders' Association a flange with a factor of safety proportional to the load carried, which is not a difficult proposition, and which from an engineering standpoint is demanded.

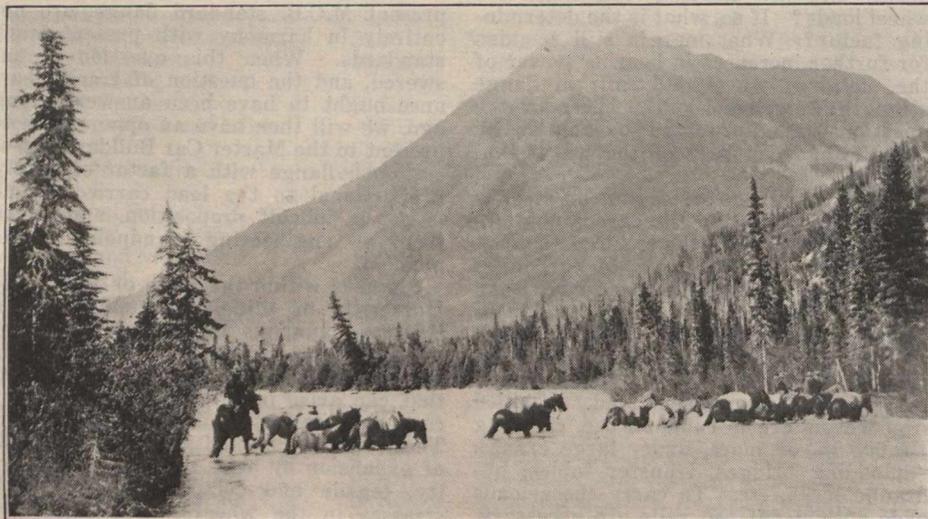
Stresses within the plate or web.—The University of Illinois has undertaken a thorough analysis of the properties of chilled iron and of the stresses within the wheel, originating from all conditions that can arise in service, as far as they can be duplicated in the laboratory. These include specific gravity, coefficient of expansion by heat, modulus of elasticity, tensile and compressive strengths, stresses in the wheel originating from pressure on the axle, from vertical load, from side pressure on the flange, from difference in temperature between tread and plate; also to discover the probable difference in temperature between tread and plate for continuous application of various shoe pressures at various velocities. An indication of the magnitude of these stresses already has been determined, as follows: From pressing on an axle having a 7 in. wheel fit at 60 tons pressure, 18,000 lb. compression per sq. in. is developed in the single plate; the greatest tensile stress is in the hub. If the machine work is fairly well done these stresses are symmetrical, but if irregularly machined the stresses will be bunched and necessarily greater than normal, at times sufficient to burst the hub. Under vertical load of 300,000 lb. the maximum compressive stress occurs on the radial line between rail and hub, amounting to about 18,000 lb in the 725 lb. M.C.B. wheel; the tensile stresses in the tangential direction are about 12,000 lb. These stresses alternate at each revolution of the wheel. The maximum stresses are in the front plate. In the back plate the load stresses are practically nil.

The stresses from vertical load within the limits of railway practice are practically negligible. The greatest stresses, and therefore the most important, are the temperature stresses; for example, a 625 lb. wheel was placed in a brake shoe testing machine and operated at various velocities under a continuous shoe pres-

sure of 1,500 lb. This corresponds to the retardation required for a 50 ton car on a 3% grade, when operated at 5 miles an hour, and on a 2% grade, when operated at 50 miles an hour. Thermo couples were placed 1/2 in. under the surface of the tread, under the rim, at the plate intersection, and in the hub. These couples were connected by brushes to a collector ring insulated from the axle, so that temperatures could be taken from any part of the wheel at any time without stopping the machine. After running the equivalent of 25 miles the maximum stresses developed near the intersection of plates was found to be at

5 miles an hour	19,000 lb. per sq. in.
10 miles an hour	18,000 lb. per sq. in.
20 miles an hour	15,000 lb. per sq. in.
30 miles an hour	18,000 lb. per sq. in.
40 miles an hour	21,000 lb. per sq. in.
50 miles an hour	24,000 lb. per sq. in.

Since the above is a greater retardation than is required for controlling 30 ton cars, it is evident that if the shoe pressure could be made uniform on all wheels of the train there would be no overheating of wheels, but there are so many opportunities of irregularities in



Mount Chamberlin, Rocky Mountains.

As stated in Canadian Railway and Marine World recently, the Geographic Board of Canada has named a splendid peak in the Rocky Mountains "Mount Chamberlin," in honor of E. J. Chamberlin, President, Grand Trunk and Grand Trunk Pacific Railways. The peak is at the southerly end of a massive mountain range in the Grand Fork amphitheatre, and is surpassed only by its near neighbor, Mount Robson.

service that at least 200% above the theoretical retardation required must be taken into consideration when designing wheels. The test also indicates the great benefit of thermal or cooling stations. When complete data are worked out for each weight of wheel and the information published in the university bulletins, this study will constitute one of the greatest engineering achievements of modern times. Making standards for the car wheel, which ought to be recognized as the most important part of the car structure, without reference to fundamental principles is absolutely unjustifiable.

The foregoing joint paper by G. W. Lyndon, President, and F. K. Vial, Consulting Engineer, Association of Manufacturers of Chilled Iron Car Wheels, was read before the Pittsburg Railway Club recently.

Dynamiter Convicted.—Werner Horn, who was arrested in Feb. 1915, for attempting to blow up the C.P.R. international bridge at Vanceboro, Me., was found guilty, June 14, by the U. S. court at Boston, Mass., of unlawfully transporting dynamite in interstate commerce. Sentence was deferred.

Delaware and Hudson Co's Annual Report.

The annual report of the D. & H. Co.'s operations for the calendar year 1916, shows a profit of \$4,158,372.18 against \$6,071,440.64 for 1915. The company's railway mileage is 909.38, of which 219.24 are in Canada.

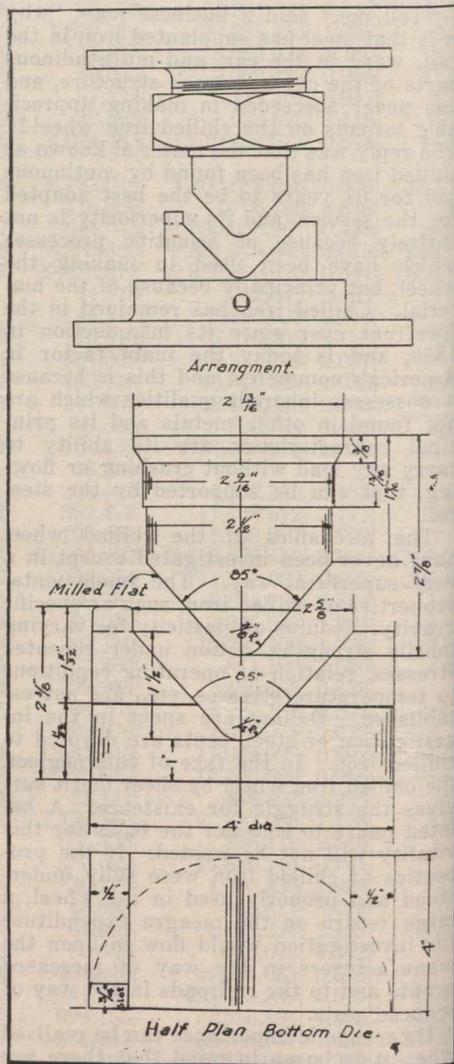
"The Quebec, Montreal & Southern Ry. had an increase in operating revenues of \$79,959; its operating expenses increased \$13,925; its income from time of equipment increased \$20,892.99, and its net income, not making any deduction for interest due the D. & H. Co. was \$190,845, an increase over 1915 of \$94,656.

The Napierville Junction Ry. had an increase in operating revenues of \$37,041, an increase in freight receipts of \$38,570, being accompanied by a decrease of \$1,401 in passenger earnings. Operating expenses increased \$24,390.82 and net income was \$50,531.56, an increase of \$8,608.54 over 1915. A dividend upon the capital stock, at the rate of 6% for the calendar year 1916, was declared.

moved on account of there being no demand for it. The total number of cars, under the different headings, held for repairs.

Die for Bending Car Grab Irons, Canadian Pacific Railway.

The accompanying illustration shows a steel die operating in a punch for bend-



Die for Bending Car Grab Iron.

Die to be made to suit machine required for

ing car grab irons, or other necessary bends or that nature. As many right angles can be made as necessary, it not being found necessary to heat the iron in using the die. We are indebted for this information and for the drawing to A. T. Shortt, Superintendent of Shops, Ogden, Alta.

In the statistical tables it is shown that the entire capital stock of the Quebec, Montreal & Southern Ry., \$1,000,000, and of the Napierville Jct. Ry., \$600,000, is owned by the D. & H. Co.

Car Supply Information for Board of Railway Commissioners.

The Board of Railway Commissioners has given notice that railway companies shall make a report to its Chief Operating Officer at Ottawa, on the 1st and 15th of each month, on the condition of the car supply on their respective lines, giving the following information: The total number of cars under load with revenue freight at stations; the different kinds of cars being shown separately, viz., box, stock, refrigerator, coal, flat, other cars. The total number of loaded cars in transit, either in trains or at stations. The total number of empty cars under the different headings. The total demand for empty cars for loading, as per the daily orders, under the different headings. The total shortage or surplus, as the case may be, to be set out. The number of idle cars, if any, under the different headings. An idle car means a car that has not been

The Board of Railway Commissioners devoted the whole of June to holding sittings mainly outside Ottawa, one section under Sir Henry Drayton, taking Western Canada, and the other, under D'Arcy Scott, taking Eastern Canada. The sittings in the West started at Victoria, June 4; subsequent sittings being held at Vancouver, June 6; Nelson, June 16; Calgary, June 18; Edmonton, June 19; Saskatoon, June 20; Regina, June 21; Winnipeg, June 22 and 23; and Fort William, June 25. The sittings in Eastern Canada included hearings at Ottawa, June 5, and Toronto, June 12. The most important matter was the hearing of statements from interested associations in various parts of the country with regard to the railway companies application for an increase in freight rates.

King's Birthday Honors for Canadian Transportation Men.

The customary list of honors in celebration of the King's birthday, June 3, contained the names of several Canadians, of whom the following are associated with transportation interests:

George Bury, Vice President and director, C.P.R., Knight Bachelor, on the recommendation of the Prime Minister of Great Britain and Ireland.

Augustus M. Nanton, director, C.P.R., and Vice President, Winnipeg Electric Ry.; Knight Bachelor.

Temporary Brigadier General A. D. Macrae, formerly one of the land commissioners, Canadian Northern Ry., Companion of the Order of the Bath.

Temporary Brigadier General F. S. Meighen, director, C. P. R., Companion of the Order of St. Michael and St. George.

G. A. Bell, Financial Comptroller, Department of Railways and Canals, Companion of the Order of St. Michael and St. George.

Lieutenant Colonel C. H. Mitchell, a civil engineer, Companion of the Order of St. Michael and St. George.

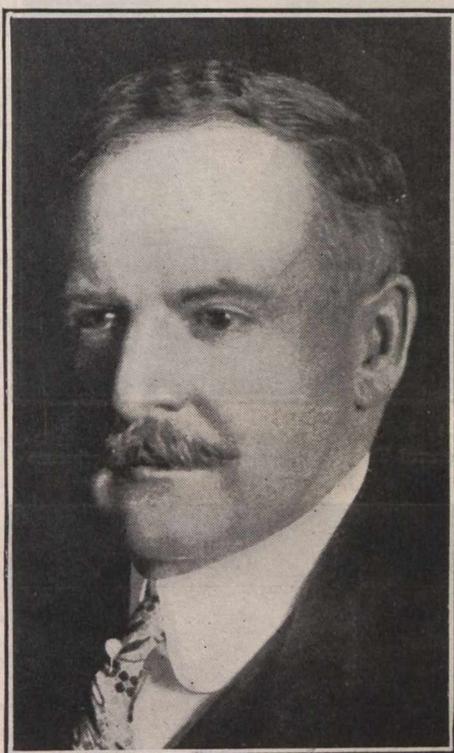
Sir George Bury was born at Montreal, Mar. 6, 1866, and entered C.P.R. service in 1883, since when he has been, to 1887, clerk in Purchasing Department, and in General Manager's office; 1887 to 1889, secretary to Vice President, and afterwards to President; 1889 to Mar. 1890, acting Superintendent, Sleeping Dining and Parlor Car Service; Mar. 1890 to Sept. 1899, successively, Assistant Superintendent, Chalk River, Ont., and Superintendent, North Bay, Ont.; Sept. 1899 to Feb. 1901, Superintendent, Fort William, Ont.; Feb. 1901 to Feb. 1902, Superintendent, Crowsnest Pass Line, Cranbrook, B.C.; Feb. to May 1902, Assistant General Superintendent, Lake Superior Division, North Bay, Ont.; 1905 to Feb. 1907, General Superintendent, Central Division, Winnipeg; Feb., 1907, to Mar. 1, 1908, Assistant General Manager, Western Lines, Winnipeg; Mar. 1, 1908 to Oct. 1911, General Manager, Western Lines, Winnipeg; Oct. 1911 to Dec. 1913, Vice President and General Manager, Western Lines, Winnipeg; Dec. 1912 to Dec. 1914, Vice President in charge of Western Lines, Winnipeg; Dec. 1914 he was appointed Vice President of the Company, Montreal, and also elected a director and member of the executive committee.

Sir Augustus M. Nanton was born at Toronto, May 7, 1860, and is a partner of Sir Edmund B. Osler, M.P., in the brokerage firm of Osler, Hammond and Nanton, Winnipeg. He is a director of the C.P.R. and Vice President and a director, Winnipeg Electric Ry., and was Managing Director of the Alberta Ry. and Irrigation Co., until it was taken over by the C.P.R. From 1894 to 1898, he was receiver for the English bondholders in the Manitoba and Northwestern Ry., and has been associated with many public organizations in Winnipeg, among them being: Board of Trade, President in 1898; Stock Exchange, President; Manitoba Cartage Co.; Dominion Bank; Great West Life Assurance Co.; Western Stockyards Co., and Toronto General Trusts Corporation. Since war broke out he has taken a very prominent part in patriotic work.

Temporary Brigadier General A. D. Macrae, C.B., was formerly a partner of

the firm of Davidson and Macrae, Toronto, who were at one time Land Commissioners, Canadian Northern Ry. He lived in Vancouver prior to the outbreak of war, being largely interested in lumber and other business. Since going to England he has performed various services for the Canadian military forces.

Temporary Brigadier General F. S. Meighen, C.M.G., was born at Montreal, Dec. 24, 1869. He is President, Lake of the Woods Milling Co., director, C.P.R., New Brunswick Land and Ry. Co., Canadian Northwest Land Co., and is associated with several industrial and charitable organizations. Prior to the war, he was Lieutenant-Colonel commanding the 5th Royal Highlanders, and volunteered



Sir George Bury

for service in the South African war. He is a son of the late Robert Meighen, a C.P.R. director, and his mother was sister of Lord Mount Stephen, first President of the C.P.R.

G. A. Bell, C.M.G., is Financial Comptroller, Department of Railways and Canals, Ottawa.

Lieutenant-Colonel C. H. Mitchell, C.M.G., is a member of the Canadian Society of Civil Engineers, the American Society of Civil Engineers, and associate member of the Institution of Civil Engineers (London), and of the American Institution of Electrical Engineers. He was for some time with the Westinghouse Electric and Manufacturing Co., and later was manager of the Ontario Power Co. Prior to the outbreak of war, he practised as a civil engineer in Toronto. He has also been decorated with the French Croix de Guerre and the Cross of the Legion of Honor.

The Canadian Northern Ex. Co. has opened offices at Hull, Que.; Camp Mohawk, Ont., and Grand Beach, Man.

Prince Edward Island Car Ferry Terminal.

The Minister of Railways made the following statement in the House of Commons recently: "At Cape Tormentine, N.B., the landing pier and the bridges for transferring cars between pier and steamship deck are completed, some adjustment of machinery in the power house, and the installation of electric light plant, being all that is required to render this terminal available for service. Additional stone is yet to be added to the breakwater, and the capping stone placed, but the structure in its present condition affords good protection to the steamer berth and turning basin. At Point Borden, P.E.I., progress during the season suffered through shortage of labor and the occurrence of violent storms. The railway connection between the ferry landing and the existing lines of the P.E.I.R. has been completed, together with the terminal yard and buildings at Point Borden. Some additional facilities for handling freight at this point will be added as business develops. About a week's dredging is required to clean up some high spots to give a workable turning basin for the steamer, although considerable dredging will be required to enlarge the basin to specifications. This, however, can be done during the summer. Taken altogether, the landing at Point Borden is now usable, except for the lack of a spring fender. The work on this is well forward, and the placing of the fender should be completed in June, and the work in all respects completed this season. The total estimated cost of the work is \$2,910,000, of which we have expended to date \$2,600,000."

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

	Acres.
Calgary and Edmonton Ry.	8,740,517
Canadian Northern Ry.	12,337,94
Canadian Pacific Ry. grants	19.35
Canadian Pacific Ry. roadbed and station grounds	6.38
Edmonton, Dunvegan and British Columbia Ry. ....	.19
Grand Trunk Pacific Ry.	27.77
Manitoba and Northwestern Ry.	10.99
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	4,771,385
Total	25,914,522

The Imperial Munitions Board, having consented to release the necessary amount of steel, the Railways Department arranged a little while ago with the Dominion Iron & Steel Co., Sydney, N.S., to roll 10,000 tons of rails, C.P.R. section, 85 lb., for main line renewals. Since then, it having been found that at least 15 more miles of track should be relaid in order to be in good shape for next year's traffic, arrangements have been made for rolling an additional 2,000 gross tons. Delivery is expected to commence in July and to be completed as soon as the finishing of the rails can be effected and car supply will admit. It is expected to get the rails laid during the latter part of the summer.

The Canadian Northern Railway Announces that up to June 1 of the present crop year, which began on Sept. 1, 1916, it handled 58,477 cars of grain originating from territory served by it in Manitoba, Saskatchewan and Alberta. This constitutes 30.4% of the total handlings of all the roads operating in Canada to date, and is an increase of 1.6% over the same period last year.

Mainly About Railway People Throughout Canada.

Lord Shaughnessy was given an honorary degree at Dartmouth College, Boston, Mass., June 20.

M. J. O'Brien, railway contractor, etc., Renfrew, Ont., has been elected a director of the Bank of Ottawa.

Hon. William Owens, President, Centray Ry. Co. of Canada, died at Westmount, Que., recently.

Wm. Keating, State Auditor of Montana, and at one time City Passenger Agent, G.T.R., Toronto, died suddenly at Helena, Mont., June 23.

W. R. Baker, C.V.O., formerly Secretary, C.P.R. Co., returned to Montreal, June 15, after a four months holiday trip to China, Korea and Japan.

George Mountain, M.Can.Soc.C.E., Chief Engineer, Board of Railway Commissioners, Ottawa, has been absent from his office for some weeks, owing to illness.

Sir Wm. D. Reid, President, Reid Newfoundland Co., and J. K. L. Ross, director, C.P.R., have been elected directors, Dominion Steel Corporation.

Sir Thomas Tait, President, Fredericton & Grand Lake Ry. & Coal Co., with Lady and Miss Tait, left Montreal, June 19, for St. Andrew's-by-the-Sea, N.B.

F. P. Gutelius was entertained to dinner by the Moncton Club, at the end of May, on leaving Moncton, N.B., to assume the duties of Vice President, Delaware & Hudson Co., Albany, N.Y.

F. E. Dewey, Operating Receiver, Gulf, Florida & Alabama Ry., Pensacola, Fla., has also assumed the duties of General Manager, that position having been abolished.

R. Hayes, chief clerk to General Superintendent, Eastern Lines, Canadian Government Railways, Moncton, N.B., was presented with a leather upholstered rocker, June 2, by the staff, on the occasion of his wedding, which took place at Halifax, N.S., June 5.

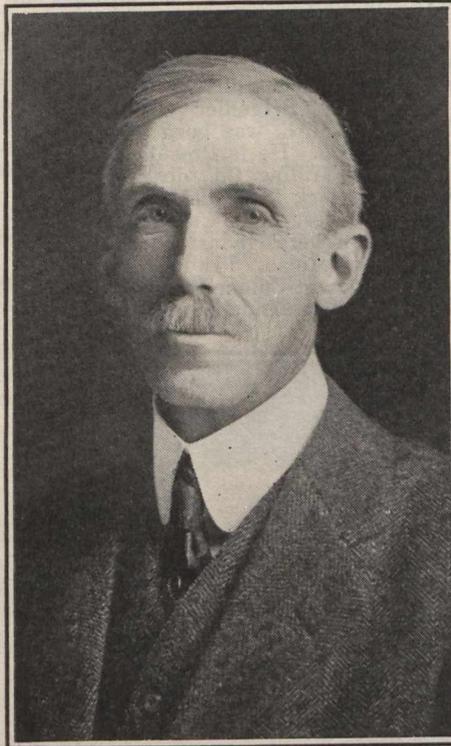
J. L. Englehart, Chairman, Timiskaming & Northern Ontario Ry. Commission, has given \$10,000 for the addition of a maternity annex to the Charlotte Eleanor Englehart Hospital, Petrolea, Ont., which he provided as a memorial to his late wife, about six years ago.

H. H. Vaughan, M.Can.Soc.C.E., formerly Assistant to Vice President, and afterwards Consulting Mechanical Engineer, C.P.R., and latterly President, Montreal Ammunition Co., has been appointed General Manager, Dominion Bridge Co., Lachine, vice G. H. Duggan, M.Can.Soc.C.E., appointed Chairman of the Board.

H. R. Charlton, General Advertising Agent, G.T.R., Montreal, has been awarded a gold medal and diploma by the Panama-Pacific Exposition international jury for his work as collaborator, in connection with the G.T.R. pavilion and exhibit, which were considered a feature at the exhibition at San Francisco last year.

Morley Donaldson, Vice President and General Manager, Grand Trunk Pacific Ry., Winnipeg, who has been ill for some time, is at the Royal Victoria Hospital, Montreal, where he is reported to be improving somewhat. When able, he will go to his home in Ottawa for a time. His official duties are being carried out by A. A. Tisdale, his assistant.

Donald Grant, who died at Faribault, Minn., June 13, was associated with railway building for many years. He was born at Glengarry, Ont., in 1837, and



D. A. Story,
General Traffic Manager, Canadian Government
Railways.



L. C. Fritch

from 1863 was actively engaged in railway building, both in Canada and the U.S. He was a contractor on the heaviest portion of the C.P.R., between Winnipeg and the Rocky Mountains, and subsequently built the extension of the St.

Paul & Manitoba Ry., from Minot, N.D., to Great Falls, Mont., 750 miles.

James Spelman, M.Can.Soc.C.E., President, John S. Metcalf Co., designers and builders of grain elevators, Montreal and elsewhere, died at Westmount, Que., May 27, aged 56. He was born at Ottawa, Ont., and educated there and at the Royal Military College, Kingston, Ont. He was engaged for some time on C.P.R. construction in the west, and subsequently allied himself with the John S. Metcalf Co., of which he had been Vice President for some years, and President since 1916. He was a member of the Engineers' Club, Montreal, and of the Western Society of Engineers.

C. O. Foss, whose appointment as Chief Engineer, St. John Valley Ry., Fredericton, N.B., was announced in our last issue, was born in New Hampshire, Mar. 20, 1852, and from 1878 to 1884, was engaged in general engineering practice at Concord, N.H. He was, from 1884 to 1904, Chief Engineer, Nova Scotia Central Ry., Bridgewater, N.S.; from 1904 to 1908, Assistant District Engineer, National Transcontinental Ry., St. John, N.B., and from 1908 to 1914, District Engineer, N.T.R., St. John, N.B.

D. B. Hanna, Third Vice President, and F. H. Phippen, K.C., General Counsel, Canadian Northern Ry., with others, were defendants recently in a case brought by the National Trust Co., as liquidators of the Great West, Iron, Wood & Chemical Works, Ltd., Prince Albert, Sask., claiming that they should contribute the par value of 999 shares to the company's assets, and also alleging that they had been guilty of wrongful conduct. The suit was dismissed with costs, all points being found in defendants' favor.

A. T. Weldon, who has been appointed General Freight Agent, Canadian Government Railways, Moncton, N.B., was born at Dorchester, N.B., Mar. 6, 1876, and entered transportation service in 1890, since when he has been, to Apr. 1900, in different capacities in the Freight Department, Intercolonial Ry.; Dec. 1901, to Aug., 1904, in Division Freight Agent's office, I.R.C., Halifax, N.S.; Aug., 1904, to May 1, 1907, Secretary, Halifax Board of Trade; May 1 to Nov. 18, 1907, General Sales Agent, Port Hood-Richmond Ry. Coal Co., Halifax, N.S.; Nov. 18, 1907, to 1909, Division Freight Agent, I.R.C., Halifax, N.S.; 1909 to Oct. 1, 1914, General Freight and Passenger Agent, Black Diamond Steamship Co., Montreal; Oct. 1, 1914, to June 9, 1917, Assistant General Freight Agent, Canadian Government Railways, Moncton, N.B.

John Earls, who died somewhat suddenly at Toronto, June 3, was born in Ireland, Oct. 30, 1838. He entered G.T.R. service in 1862, since when he was, to 1863, corresponding clerk, Toronto; 1863 to 1866, clerk, Sarnia, Ont.; 1866 to 1868, corresponding clerk, Portland, Me.; 1868 to 1871, cashier and accountant, freight and steamship department, Portland, Me.; 1871 to 1872, chief clerk, General Freight Agent's office, Toronto; 1872 to 1875, chief clerk, General Freight Agent's office, Montreal; 1875 to 1877, Assistant General Freight Agent, Eastern District; 1877 to 1884, Assistant General Freight Agent, Western District; 1884 to 1892, District General Freight Agent, Western,

and Northern and Northwestern Districts; 1892 to Mar., 1896, District General Freight Agent, and from Mar., 1896, to 1905, Secretary and Treasurer, Canadian Freight Association.

Alan H. Jones, who was appointed Assistant Engineer, Canadian Government Railways, Moncton, N.B., recently, was born at Liverpool, Eng., Feb. 16, 1884, and has been, from April, 1902, to Aug., 1904, draughtsman, Jewett Car Co., Newark, Ohio; Aug., 1904, to Jan., 1905, draughtsman, Brooklyn Rapid Transit Co., New York; Feb., 1905, to Feb., 1908, draughtsman, on grade separation work, New York Central Rd., New York; Mar. to June, 1908, Assistant Engineer, Third Avenue Ry., New York; June, 1908, to Jan., 1911, engineering, surveying and Mapping, Delaware & Hudson Co., Scranton Pa., and Montreal; Jan., 1911, to April, 1912, Assistant Engineer, Windsor St. Station, C.P.R., Montreal; April, 1912, to Jan., 1915, instrument man on construction, Campbellford, Lake Ontario & Western Ry. (C.P.R.); Jan. to Nov., 1915, draughtsman, Canadian Government Railways, Moncton, N.B.; Nov., 1915, to Jan., 1917, Resident Engineer, District 4, Intercolonial Division, Canadian Government Railways, New Glasgow, N.S.

Louis Charlton Fritch, who has been appointed General Manager in charge of operation, Seaboard Air Line Ry., Norfolk, Va., was born at Springfield, Ill., Aug. 11, 1869. He took a course in civil engineering at the University of Cincinnati, and subsequently a law course, and was admitted to the Ohio bar in 1899. He entered railway service in 1884 as supervisor's assistant, Ohio & Mississippi Ry., and was from Jan. 1, 1886, to Oct., 1892, Assistant Engineer, same road; Oct., 1892, to Nov. 1, 1893, Engineer, Maintenance of Way, same road; and was also Construction Engineer in charge of construction, Cincinnati & Bedford Ry.; Nov. 1, 1893, to Sept. 1, 1899, Division Engineer, Baltimore & Ohio Southwestern Rd., which absorbed the Ohio & Mississippi Ry.; Sept. 1, 1899, to Nov., 1902, Superintendent, Mississippi Division, same road; Feb., 1904, to Mar. 1, 1905, engaged on special work, Illinois Central Rd., Chicago, Ill.; Mar. 1, 1905, to Nov., 1906, Assistant to General Manager, same road; Nov., 1906, to Mar. 1, 1909, Assistant to President, same road; Mar. 1 to Nov. 15, 1909, Consulting Engineer, same road; Nov. 15, 1909, to Mar. 31, 1914, Chief Engineer, Chicago Great Western Rd., Chicago, Ill.; Mar. 31, 1914, to Aug., 1915, Assistant to President, Canadian Northern Ry., Toronto, and from Aug., 1915, to June 1, 1916, General Manager, Eastern Lines, same road, Toronto. He is a member of the American Society of Civil Engineers, American Institute of Electrical Engineers, American Railway Engineering Association, American Society for the Advancement of Science, Western Society of Engineers, and the Geographical Society. He was President of the American Railway Engineering Association in 1910, a director from 1905 to 1913, and a member of the rail committee in 1913; a member of the railway committee of the American Institute of Electrical Engineers from 1910 to 1913; chairman of the committee on engineering of the American Railway Association in 1913; a member of the committee on electrical working, of the American Railway Association, from 1910 to 1913, and a member of the committee on electricity, of the American Railway Engineering Association from 1910 to 1913.

A. D. MacTier on the Coal Transportation Question.

A. D. MacTier, General Manager, Eastern Lines, C.P.R., issued the following statement recently: "This country is face to face with a coal shortage of very alarming proportions, and by next winter, if conditions under which fuel may be obtained do not alter in the meantime, a great many industrial concerns and householders will be unable to supply themselves with sufficient coal to carry them through the severe weather. The present and prospective difficulties in the way of bringing coal into Eastern Canada may be attributed to a number of causes, principal amongst which are dearth of mining labor and shortage of coal carrying equipment at the mines. The situation in some of the mining territories is that, even with the labor shortage, operators are able to turn out coal at a greater rate than they can obtain cars to carry it away. It, therefore, naturally follows that more coal could be brought into Canada if the car supply was increased. Unfortunately, it is out of the question to obtain any number of new cars at this time, and the situation can be met only by obtaining more service from the present rolling stock. To do this cars must be moved promptly between the mines and destination, and must be unloaded as soon as they reach consignees.

"Railways must have coal, in order to discharge their obligations to the country, and for their own preservation, as well as for the benefit of their patrons, they are putting forth their utmost efforts to minimize delay to cars while en route to and from the mines. All efforts in this direction, however, will be of little avail without the wholehearted cooperation of the man who unloads the coal and releases the car after it gets to its destination. Some consignees, who thoroughly appreciate the situation, have almost a 100% record in the prompt unloading of coal cars, but there are others who are helping to create the prospective shortage of coal by keeping the equipment out of active service. Today there are in one town of comparatively small size 52 coal cars waiting unloading. The arrival of these cars was spread over 31 days, an average of cars received per day of 1.68. They are consigned to three organizations which have the facilities for unloading a large number of cars each day. These 52 cars have been out of service a total of 1,029 car days. Coal cars that are not held for storage purposes, as these cars are, average at least 50 miles a car a day. Had the 52 cars been unloaded promptly they would have, by this time, travelled 51,450 miles. The distance from the point where they are now located to the coal mining territory is approximately 400 miles. It follows, therefore, that had the 52 cars been in active service they would have been available to bring into the country 64 carloads, or about 3,200 tons of coal. The quantity is not very large, it is true, when the total demand is considered, but it would have kept over 300 families warm for the winter or heated the boilers in an industrial plant for some little time.

"Unfortunately, the case cited is not the only one of its kind. It is one of the worst, but there are hundreds of cars lying idle, waiting to be relieved of their loads, so that they may go back to the mines for more coal. The coal dealer and consignee can do the country an immense service by promptly releasing rolling

stock and helping to reduce car shortage at the mines. There is also the man who has always called for open top cars for the handling of his goods because the loading and unloading with that class of equipment is more economical than in using closed cars. When he insists on being supplied with cars that should be in the coal business he is helping to create a coal shortage by keeping cars away from the mines. No doubt, he is a heavy coal consumer. As a business proposition, would it not be more economical for him if he used closed cars now and enabled the railways to transport more coal into the country so that he would not be in danger of having to close down his plant altogether later on account of being unable to obtain fuel. The C.P.R., for itself, and on behalf of other railway companies, most earnestly calls upon its patrons and employes to do their utmost to fight off the impending shortage of fuel by keeping coal cars continuously in the proper service, which is the transporting of coal."

Dominion Railway Act Revision.

The special committee of the House of Commons appointed to consider the revision and consolidation of the Railway Act, completed its work, June 7, and presented its report, with the bill as amended, to the house, June 8.

Two important clauses were added by the committee. The first provides that the Canadian Government Railways should be subject to the act, except so far as the expropriation of land is concerned, and the second gives cities the right to appeal to the Board of Railway Commissioners to compel steam railways to grant commutation tickets to suburban points. The effect of the first of these clauses will be to bring the rates charged on the government railways under the Board of Railway Commissioners, and the second will be to allow an appeal against the cutting off of commutation tickets from any place to which they are now being issued, and to permit cities to make application to compel railways to grant commutation privileges to points where they are not now available.

After considerable discussion the committee refused to endorse the section sought to be added to the measure by the chairman, J. E. Armstrong, to place inland water carriers under the control of the Board of Railway Commissioners with regard to rates.

The committee recommended that the minutes of proceedings and the evidence given be printed and issued as an appendix to the journals of the house.

Dominion Government Elevators.—The Minister of Trade and Commerce stated in the House of Commons, June 7, that prior to Oct. 1, 1911, there were no government terminal and interior storage elevators in the Dominion, but that since that date five had been built, at Port Arthur, Ont.; Moose Jaw and Saskatoon, Sask.; Calgary, Alta., and Vancouver, B.C., respectively.

Station Telephone Facilities.—In connection with the Great Northern Ry. and Northern Pacific Ry. joint terminal station, Vancouver, which was opened June 1, a 50 pair telephone cable has been laid, and facilities are provided for connecting the switchboard up will all incoming trains, so that passengers can be given connection with any part of the city as soon as the trains pull up.

The National Transcontinental Railway Showed a Deficit, Not a Surplus.

The Hon. G. P. Graham asked the following questions in the House of Commons recently: "In the Quebec Chronicle, dated May 8, 1917, the following statement appears in reference to the Transcontinental Ry., viz.: 'The railway has been in operation from Moncton and Quebec to Winnipeg for over a year, and the return of its first year's operation is just appearing in the government blue book, which shows that the gross earnings amounted to the handsome sum of \$5,798,516, and that a profit has been made in the first year of \$429,455.' 1. Is this statement accurate? 2. If not, what is the accurate statement?"

The Minister of Railways replied: No. The figures quoted are taken from the Annual Report of Railway Statistics for the year ended June 30, 1916, at page 45. Page 99 of that report shows deductions, and the result for the 12 months is shown therein as a loss of \$341,615.51. To this should be added the rental of leased line from Fort William to Superior Junction for 12 months, \$600,000, making the total loss \$941,615.51. The railway was operating from Moncton through to Winnipeg as from May 1, 1915. Operating expenses, including rental of leased line from Fort William to Superior Junction, for 12 months ended April 30, 1916, were \$4,960,434.11, and net operating revenue \$4,083,603.51, a loss of \$876,830.60.

The article in the Quebec Chronicle was apparently written under a misapprehension as to what the columns in table 6, pgs. 44 and 45, of the Report on Railway Statistics for the year ended June 30, 1916, purported to give. The columns contain: 1, passenger earnings; 2, freight and switching earnings; 3, other earnings from operation; 4, total gross earnings from operation. The next column gives the operating expenses, details of which are given in table 8, while the last column gives the net operating earnings, ascertained by deducting the operating expenses from the total gross earnings from operation. So far as the National Transcontinental Ry. is concerned, the figures are: Total gross, including other earnings from operation, \$5,798,516.09; operating expenses, \$5,369,061.58; net operating earnings, \$429,454.51.

The net operating earnings are carried forward to what is called income account, pgs. 94-97, and which brings into account other sources of revenue, which, in the case of the N.T.R., amount to \$37,670.84, giving a total gross corporate income of \$467,135.35. The second part of table 8, pgs. 98-101, shows the deductions from gross corporate income, including rents from lease of other lines, other rents, interest on funded debt, other interest, sinking fund and all other deductions, which, in the case of the N.T.R., amount to \$808,750, showing a net corporate loss of \$341,615.51.

The accounts of all the railways in Canada are dealt with in the same way in the compilation of the tables in the department's statistical report. The point raised by the questions asked by Mr. Graham is, do the statistical tables convey a wrong impression to those who refer to them as to the information they contain? The figures in table 7 evidently conveyed to the writer in the Quebec Chronicle that net earnings from operations means profit, and that being the case, it is not unlikely there are others

who interpret the figures in the same way. A rearrangement of the tables, or the appending of explanatory notes, is very necessary, and should be adopted before the next report is brought out.

Hudson Bay Railway and Terminals Construction.

The Minister of Railways made the following statement in the House of Commons recently: "During the past year the rail bed on the H.B.R. was carried to mile 332, at the crossing of Nelson River, at Kettle Rapids. The work was behind schedule, partly owing to a labor shortage and partly to the destruction by fire of the contractor's tracklaying outfit, thus preventing the construction of the substructure of this bridge before the rise of water which here accompanies ice formation. The substructure of this bridge was expected to be completed on the south side of the Nelson River on May 21, 1917, and preparations for start on north side will follow immediately. The steel work of the superstructure is en route to this site. Of the 92 miles of grade between the bridge and Port Nelson, work remains to be done at isolated points to an aggregating amount of 11 miles of light grading. Some train filling remains to be done on the portion of the line now built, and much of it has only received a first lift of ballast. It is contemplated that track will be laid into Port Nelson this year and the ballasting of the line brought into fair shape to within a few miles of that terminus.

"At Port Nelson a somewhat restricted

programme has been followed, owing to the effect of war conditions upon labor, materials and ocean tonnage. The bridge structure connecting the deepwater wharves with the mainland was completed, and 1,600 lin. ft. of the cribwork of the island placed, built up and filled. The hydraulic dredge worked throughout the season in the channel. The clam shell dredges were employed in dredging stone and gravel from the river bottom for crib filling. During the present season it is hoped that a considerable portion of the island, including the site for the elevator, will be enclosed, and several sections of the deep water dock face cribs placed in position.

"The total estimated cost of this work is \$26,000,000. We have expended to date \$18,175,000, of which \$12,656,000 has been in connection with the railway, and \$5,610,000 in connection with the terminal work at Port Nelson."

The G.T.R. Apprentices at Stratford, Ont., held their annual dinner, June 17, when in addition to a number of the head office and local officials, the Chairman of the Board, A. W. Smithers, London, Eng., was present.

A Steel Car of 85 Tons, or 2,900 cu. ft. capacity, and having 5 hoppers instead of 4, has been built by the Pennsylvania Ry. The car has a length, coupled, of 50 ft. 4 in., and an extreme width of 10 ft. 2 in. The inside dimensions are 46 ft. 6 in. by 9 ft. 4 1/2 in. The height above rail is 10 1/2 ft., and the front wheelbase is 5 ft. 10 in. A heap capacity of 328 cu. ft. brings the total capacity to 3,228 cu. ft. The light weight of the car is 60,000 lb.

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

Week ending June 8, 1917.	Wheat. Bushels.	Oats. Bushels.	Barley. Bushels.	Flax. Bushels.	Totals. Bushels.
Port William—					
C.P.R.	1,994,092	1,214,130	194,134	.....	3,402,356
Consolidated Elevator Co.	298,942	283,024	24,073	85,558	691,597
Empire Elevator Co.	319,114	527,767	48,951	150,551	1,046,383
Ogilvie Flour Mills Co.	514,878	275,716	11,735	.....	802,329
Western Terminal Elevator Co.	274,446	309,364	28,672	214,543	827,026
G. T. Pacific	738,938	1,266,115	116,033	72,073	2,193,159
Grain Growers' Grain Co.	463,955	305,306	33,316	.....	802,577
Port William Elevator Co.	320,902	316,060	27,605	71,819	736,386
Eastern Terminal Elevator Co.	249,575	355,049	30,390	.....	635,014
Thunder Bay Elevator Co.	443,877	641,753	58,861	17,063	1,161,544
Port Arthur—					
Port Arthur Elevator Co.	2,184,116	1,370,640	186,295	81,640	3,822,691
D. Horn & Co.	96,344	103,274	29,142	43,902	272,662
Dominion Government Elevator	989,066	1,227,589	47,944	98,678	2,353,277
Grain afloat . . . . .	.....	.....	.....	.....	.....
Total terminal elevators	8,888,245	8,185,788	837,151	835,827	18,747,011
Saskatoon Dom. Govt. Elevator	834,874	176,739	15,062	87,824	1,114,499
Moose Jaw Dom. Govt. Elevator	1,269,163	279,907	13,875	33,353	1,595,298
Calgary Dom. Govt. Elevator	280,026	312,581	15,363	8,562	616,532
Vancouver Dom. Govt. Elevator	27,254	7,684	.....	.....	34,938
Total interior terminal elevators	2,411,317	776,911	44,300	128,739	3,361,267
Depot Harbor	385,092	.....	75,366	.....	460,458
Midland—					
Aberdeen Elevator Co. . . . .	.....	.....	.....	.....	.....
Midland Elevator Co. . . . .	.....	.....	.....	.....	.....
Tiffin, G.T.P.	382,224	759,236	.....	.....	1,141,460
Port McNicoll	221,749	948,859	61,894	.....	1,232,502
Collingwood . . . . .	.....	46,155	.....	*82	46,327
Goderich	227,231	271,817	28,271	.....	527,319
Western Canada Flour Mills Co.	56,751	7,597	.....	.....	64,348
Kingston—					
Montreal Transportation Co.	2,622	183,512	.....	.....	186,134
Commercial Elevator Co.	81,405	68,891	.....	.....	150,296
Port Colborne	252,578	594,791	.....	.....	847,369
Montreal—					
Harbor Commissioners no. 1	1,144,941	1,947,632	201,476	.....	3,294,049
Harbor Commissioners no. 2	554,774	491,757	49,625	.....	1,096,156
Montreal Warehousing Co.	512,399	909,747	26,997	.....	1,494,143
Quebec Harbor Commissioners	3,851	49,472	.....	*11,862	65,185
West St. John, N.B.	211,922	11,614	6,252	.....	229,788
Halifax, N.S.	60,290	.....	.....	.....	60,290
Total public elevators	4,097,829	6,291,080	449,881	*11,944	10,850,734
Total quantity in store	15,997,391	15,253,779	1,331,332	*11,944	32,959,012
*Corn.					

Traffic Orders by the Board of Railway Commissioners.

Rates for Canned Goods.

26168. May 31. Re complaint of Dominion Cannery Ltd., against withdrawal of joint commodity rates on canned goods from points on the Canadian Northern Ry. south of Trenton, Ont., to points in Ontario west of Ottawa, Peterborough and Whitby. Upon the Chief Traffic Officer's recommendation, it is ordered that the C.N.R. be required to publish and file its proposed joint tariff on canned goods, in carloads, from and to the said points, to become effective not later than June 15, 1917.

Rates on Grain and Grain Products.

26172. June 5.—Re complaints of Montreal Board of Trade, Montreal Corn Exchange Association, Dominion Millers' Association, and James Richardson & Sons, against proposed advanced rates on grain and grain products published and filed by railways to take effect June 5, and subsequent dates. Upon hearing the complaints at Ottawa, June 1, the Canadian Pacific, Grand Trunk and Canadian Northern Railways, the complainants, and the Lake of the Woods Milling Co., St. Lawrence Flour Mills Co., Ogilvie Flour Mills Co., Dominion Flour Mills Co., Western Canada Flour Mills, Robin Hood Flour Mills Co., Canada Cereal and Flour Mills Co., Goldie Milling Co., and Canadian Manufacturers Association being represented, it is ordered that the following tariffs be suspended until further order: Grand Trunk C.R.C., nos. E-3571, E-3575, E-3576, E-3579, E-3582, E-3585, E-3586, and E-3587; Canadian Pacific C.R.C. nos. E-3304, E-3306, E-3307, E-3308, E-3309 and supplement 2 to C.R.C. no. E-3285; Canadian Northern C.R.C. nos. E-932, E-933, E-934, E-935, E-939 and supplement 1 to C.R.C. no. E-940; Chatham, Wallaceburg & Lake Erie C.R.C. 464, 472 and 476; Essex Terminal C.R.C. 421, 422 and 423; Glen-garry & Stormont C.R.C. 65, 71 and 72; Hull Electric C.R.C. nos. F-74, F-77 and F-78; Lake Erie & Northern C.R.C. 78, 83, 84 and 86; London & Port Stanley C.R.C. 126, 130, 136, 137 and 138; Michigan Central C.R.C. 2646, 2662 and 2663; New York Central C.R.C. 1050 and 1051; Thousand Islands C.R.C. 318 and 319; Toronto, Hamilton & Buffalo C.R.C. 1158, 1163, 1164 and 1165; Pere Marquette C.R.C. 2107, 2108, 2113 and 2114; Wabash C.R.C. 1005, 1012 and 1014; Windsor, Essex & Lake Shore Rapid C.R.C. 204, 212 and 213.

Fruit Shipping Facilities at Jordan.

26181. June 5.—Re complaint of Jordan Co-operative Co., of Jordan, Ont., against facilities which Canadian Express Co. is giving at that point for shipping perishable fruits; and re application of Fruit Growers Association of Ontario for an order making effective this year order 24976, May 15, 1916, and if possible to extend the time of such service so as to read "from June 15," instead of "July 1." Upon its being represented to the board that the service required under order 24976 has been given a thorough test, and that on the showing made the board is not justified in directing that it be continued, it is ordered that order 24976, providing for the continuance of extra car service at Jordan, to be handled on train 97, be rescinded.

Freight Rate on Pedigree Bull.

26184. June 5.—Re complaint of D. A. McPhee, of Vankleek Hill, Ont., against rates charged by Ottawa & New York

and Grand Trunk Railways, on a registered Holstein bull, shipped from Russell to Vankleek Hill. Upon its appearing that the certificate of registration showing the bull to be a pedigreed animal was presented to the company's agent at the time of shipment, with the request that the shipment be made on the released valuation, as provided by the company's live stock contract; and that the failure to carry at the reduced rate was the fault of the company or its agent, and not that of the shipper, it is declared that the charge the Ottawa & New York and the Grand Trunk Railways were authorized to make for the said shipment should have been based on 4,000 lb. at one-half 1st class standard tariff rate, and leave is therefore granted the said railways to refund to the complainant the difference between such charge and the amount collected.

Interswitching at Thorold.

26186. June 5.—Re application of Town of Thorold for an order requiring interswitching between the Grand Trunk and the Niagara, St. Catharines & Toronto Railways at Thorold, it is ordered that the Grand Trunk and the Niagara, St. Catharines & Toronto Railways be directed to provide interswitching facilities between their respective railways at Thorold, the said railways to submit to the board, within 30 days, a plan showing the proposed transfer track, and an estimate of its cost.

Demurrage Improperly Collected.

26187. May 31.—Re complaint of Canadian Handle Manufacturing Co., of Strathroy, Ont., against a demurrage charge of \$23 made by Michigan Central Rd. at Tilbury, Ont., on a shipment of logs from Warren, Mich. Upon its appearing that the toll in question was collected contrary to the provisions of sec. 315 of the Railway Act and rule 20 of Canadian Car Service Rules, it is declared that the M.C.R. was not authorized to make the said demurrage charge, and leave is therefore granted the railroad to refund to the complainant \$23.

Rates on Pedigree Live Stock.

26194. June 6.—Re application of Canadian Pacific Ry. Co., under sec. 340 and 341 of the Railway Act, for approval of its Tariff C.R.C. no. E-3299, being a local freight tariff of rates on pedigree live stock, when shipped by the Ontario Department of Agriculture, Live Stock Branch. Upon the recommendation of the Board's Chief Traffic Officer, the Department of Agriculture offering no objection, it is ordered that the said tariff be approved.

Interchange Tracks at Ottawa.

26200. June 8.—Re application of New York Central Rd., lessee of Ottawa & New York Ry., under sec. 228 of the Railway Act, for an order requiring that the Ottawa & New York and the Grand Trunk Railways' tracks be so connected at or near Ottawa as to admit of the safe and convenient transfer or placing of locomotives, cars, and trains from the tracks or lines of the one railway to those of the other; and that such connection be maintained and used, as shown on the plan on file with the board. Upon the report and recommendation of the Chief Operating Officer and an engineer of the board, and proof of service or notice of the application upon the G.T.R., it is ordered that the applicant company be

authorized to connect the Ottawa & New York Ry. tracks with those of the G.T.R. as shown on the said plan.

Rates on Ore and Rock.

26240. June 23.—Re application of Canadian Copper Co., of Copper Cliff, Ont., for an order disallowing Algoma Eastern Ry. Co.'s Tariff C.R.C. 167, advancing rates on ore and rock, effective Feb. 5, 1917. Upon hearing the application at Ottawa, Mar. 20, 1917, the applicant and the Algoma Eastern Ry. being represented by counsel, and consenting to the withdrawal of the application, it is ordered that the same be refused.

White Pass & Yukon Ry. Season Release.

26243. June 23.—Re complaint of J. E. Lilly & Co., of Dawson, Yukon, against abrogation of its season release with respect to certain items of Northern Freight Classification 6, providing alternative ratings based on stipulated valuations; and against amended Rule 21, item 1 of Supplement 2 to said classification. Upon hearing the complaint at Ottawa, June 19, 1917, in the presence of counsel for the White Pass & Yukon Ry., and upon reading the submission filed on behalf of the complainant, it is ordered that the complaint be dismissed.

"Follow Lot" Rule No. 3.

General order 189. May 23.—Re "Follow Lot," rule 3 of Canadian Freight Classification; and re railway companies being required to show cause why the rule in commodity tariffs filed in conformity with the judgment in the eastern rates case, also rule 8 of Canadian Freight Association's Westbound Trans-continental Tariff 1, stating that rule 3 of Canadian Freight Classification will not apply in connection therewith, should not be disallowed; Upon hearing the matter at Ottawa, Nov. 21, 1916, and in Toronto, Dec. 13, 1916, the Canadian Pacific, Canadian Northern, Grand Trunk, and Toronto, Hamilton & Buffalo Railways, Canadian Freight Association, Michigan Central Rd., Canadian Manufacturers' Association, Montreal and Toronto Boards of Trade, the Thomas Davidson Manufacturing Co., Sheet Metal Products, Ltd., Macdonald Manufacturing Co., and McClary Manufacturing Co., being represented, it is ordered that the said rule 3 be amended as follows: viz.: 1. By striking out the words, "provided first car (or cars) is loaded to the classification minimum," and substituting therefor the words, "provided that each car, except the car carrying the excess, must be loaded to its visible or marked capacity." 2. By striking out the words defining the classification minimum as being "not less than 20,000 lb. per car," and substituting therefor the words, "not less than 24,000 lb. per car." And it is further ordered that rules or regulations of general application, the effect of which is to deprive tariffs of various commodities of the benefit of the so-called "follow lot" rule of Canadian Freight Classification be disallowed; provided that this order shall not be construed as preventing railway companies and shippers, if they so desire, from agreeing, in respect of a particular commodity, or of particular commodities, upon commodities on a lower rate basis, with or without higher weight minima, to which the said rule shall not apply.

Rates for Ice Cream Cones.

General order 190. May 25. Re application of Canadian Manufacturers' Association for an order amending Canadian

Freight Classification 16 by providing a carload rating for ice cream cones; or an alternative direction to railway companies to publish carload commodity rates from Toronto to Montreal, Ottawa, Winnipeg, Regina, Calgary, Edmonton, and Vancouver. Upon hearing the application at Ottawa, May 15, 1917, Canadian Manufacturers' Association, Canadian Freight Association, and Canadian Pacific Canadian Northern, and Grand Trunk Railway Companies being represented, it is ordered that Canadian Freight Classification 16 be amended to provide a carload rating of third class, with a minimum of 16,000 lb., on ice cream cones.

Immigrant Baggage Storage.

General order 191. May 26. Re application of Eastern Canadian Passenger Association for an order amending rule 23 of the Regulations Governing Baggage Car Traffic in Canada, as prescribed by general order 151, Nov. 8, 1915. Upon reading what is filed in support of the application, and the recommendation of the Chief Traffic Officer, it is ordered that the said rule be amended by adding the following: "Storage—Rule 23. Exception (4)—Immigrant baggage will be stored free of charge for any portion of a period of, but not exceeding, five days after arrival, at the ports of Montreal, Toronto, and Winnipeg.

Salt and Ice for Refrigerator Cars.

General order 192. May 30. Re application of Canadian Manufacturers' Association for an order disallowing charges made by railway companies for salt supplied to refrigerator cars with ice; and re the proposed tariffs of railway companies increasing charges for ice supplied to refrigerator cars, the said tariffs having been suspended by general orders 164, April 25, 1916, and 165, May 16, 1916. Upon hearing the application at Ottawa, July 20, 1915, March 21, 1916, June 6, 1916; Calgary, July 10, 1916; Winnipeg, July 14, 1916, and Ottawa, Dec. 19, 1916, the Canadian Pacific, Grand Trunk, Canadian Northern, Grand Trunk Pacific, and Ottawa & New York Railways, the Michigan Central Rd., Canadian Manufacturers' Association, Ontario Fruit Growers' Association, Swift Canadian Company, P. Burns & Co., and the Montreal, Toronto, Winnipeg, Calgary, and Edmonton Boards of Trade being represented, it is ordered that the application for an order disallowing the charges now being made by the railway companies for salt supplied to refrigerator cars with ice be refused. And it is further ordered that the tariffs showing charges for ice supplied to refrigerator cars, which were suspended by the general orders 164 and 165, be disallowed.

Freight Classification Supplement Approved.

General order 193. May 31. Re application of Canadian Freight Association, on behalf of railway companies, under sec. 321 of the Railway Act, for approval of proposed Supplement 9 to Canadian Freight Classification 16, containing certain increases, reduced, and additional ratings. Notice having been given in the Canada Gazette by the railway companies, as required by sec. 321 of the Railway Act, hearings having been held, and the proposed changes having been fixed, by consent of the parties, or by orders of the board, or reserved for order of the board; and upon the recommendation of the Chief Traffic Officer, it is ordered that the said proposed Supplement, as finally revised and submitted for approval by the Chairman of the Canadian

Freight Association, by letter dated May 12, 1917, be approved, subject to the following provisions, viz.: 1. That the proposed carloads ratings and minimum weights for games or toys, other than those of iron or steel, be struck out, and that there be submitted therefor a carload rating of 3rd class and a minimum of 14,000 lb. a car for toys and games of all kinds, as specified in the said supplement (excepting those made of iron or steel), in straight or mixed carloads. 2. That the item providing for popped corn or puffed rice confectionery be added to the grocery list of the classification, and that the ratings provided for these articles in cartons include bags. 3. That the said supplement give effect to general order 190 of May 25, 1917, fixing a carload rating for ice cream cones.

Express Rates on Horses.

General order 194. June 6.—Re application of Express Traffic Association of Canada, on behalf of express companies, for an order authorizing them to advance the estimated weight of horses, in carloads, from 10,000 to 12,000 lb. a car. Upon hearing the application at Ottawa, Feb. 20, 1917, the Express Traffic Association of Canada, the Department of Agriculture, the Montreal and Ontario Jockey Clubs, and other parties interested being represented, and upon the recommendation of the Chief Traffic Officer, it is ordered that the express companies be authorized to amend the Express Classification for Canada so as to increase the weight upon which the express charges for the carriage of horses are based from 10,000 to 12,000 lb. a carload.

Cartage Charges.

General order 195. June 23.—Re complaints of Toronto Board of Trade, Pilkington Bros. and Consolidated Plate Glass Co. of Canada, against proposed increase in charges for cartage as contained in tariffs filed by the various railways. Upon hearing the complaints at Toronto, April 14, the Toronto and Montreal Boards of Trade, Pilkington Bros., the Grand Trunk and the Canadian Pacific Railways, Canadian Freight Association, Dominion Transport Co., and Shedden Forwarding Co., being represented, it is ordered that the companies' tariffs be amended by striking out the clause reading as follows: "Cartage charges will be collected on cartage freight upon the same basis of weights as assessed by the railway companies," and that there be substituted therefor the following: "Cartage charges will be collected on the basis of actual weight, subject to the minimum provided in Canadian Freight Classification."

Building Capacity for Rolling Stock.—

The U. S. Council of National Defence requested recently that a committee of car and locomotive builders be formed to investigate the capacity of car and locomotive building plants in the country, and the extent of their ability to turn out additional motive power and equipment for railways in the U. S. and the various allied countries. A strong committee of the higher officials of the various plants has been formed, and the investigation is proceeding rapidly.

Aerial Railway for British Columbia.—

A press report states that the Delta Copper Co. proposes to build 3½ miles of aerial tramway and a power plant at Skeena Crossing. The company's office is at 703 Tegler Building, Edmonton, Alta., its Chief Engineer being H. E. Clements, with office at Skeena Crossing.

Canadian Pacific Railway Construction, Betterments, Etc.

Manitoba District.—Among the works to be carried out at the eastern end of the district this year are the building of a new station at Dryden, Ont., and the extension of yard facilities at Ignace, Ont.

New station buildings are to be erected at Carey, Hazelridge and Riverton, Man.; automatic signals are to be installed at the Brandon terminals, and the freight shed at Swift Current is to be enlarged.

Tenders are under consideration for the construction of a concrete subway for pedestrian traffic under the tracks at Virden, Man. J. C. Holden, Brandon, Man., is resident engineer in charge of the work.

Saskatchewan District.—A train service was put in operation from Moose Jaw to Shaunavon, Sas., June 18. This was rendered feasible by the completion of a piece of line between Vantage and Assiniboine.

New station buildings have been, or are to be erected at Consul, Hatton, Kinley, Melaval, Piapot, Stalwart, and Vidora, Sask.

Progress is reported to have been made with the diversion of Frenchmen's River at three points west of Shaunavon, so as to protect bridges against spring freshets.

The new stone building at Regina for the Dominion Express Co., and the addition to the freight shed are reported to be well advanced.

Alberta District.—It is reported that among the additional betterments to be carried out during this year are the enlargement of the station at Macklin, and the erection of new stations at Enchant, Jenner, and Lomond, Alta.

A press report states that plans are being prepared for a rearrangement of the tracks in the yards, and the building of a station and residence at Magrath, Alta. The work, it is stated, is not likely to be undertaken this year.

Grant Hall, Vice President and General Manager Western Lines completed an inspection trip recently through the territory to be served by the projected extension of the Suffield-Retlaw line, into the Turin-Kipp district.

The finishing up work on the extension of the line easterly from Sterling, heretofore terminating at Pakowki, between that point and Manyberries, Alta., has been completed, and the train service was extended to the last named point June 3. (June, pg. 232.)

Alaska Rates.—In the Alaska investigation, in which the Pacific & Arctic Ry. & Navigation Co., the British Columbia-Yukon Ry. Co., the British Yukon Navigation Co., and the American Yukon Navigation Co. were complained of among others, the Interstate Commerce Commission has decided as follows: Respondents' rates, regulations, and practices governing transportation between points within Alaska and between points in the United States and points in Alaska are not found to be unreasonable. Special contract rates accorded cannery and mining companies on through rail and water shipments from points in the U.S. to points in Alaska found unjustly discriminatory. Allegations concerning the payment of rebates and the ownership by respondent railways or their interest in mines or minerals which they transport not sustained.

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

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

The C.P.R. has, according to a Montreal press dispatch, lent \$10,000,000 to the Imperial Munitions Board, to assist in the purchase of munitions in Canada during this year.

The Canadian Northern Ry. Patriotic Association, for the four months ended April 30, contributed \$24,554.15 to the Canadian Patriotic Fund. The association covers the whole system from coast to coast.

The Timiskaming & Northern Ontario Railwaymen's Patriotic Association, up to Mar. 31, had contributed \$18,278.36 to the Red Cross Society, \$25,491.42 to the Canadian Patriotic Fund, and \$11,860.25 directly to enlisted employes.

No. 2 Section, Skilled Railway Employes, which was mobilized in Montreal and arrived in England early in May, is now known as No. 13 Light Railway Co., R.E., British Expeditionary Force. They left Aldershot, Eng., June 7, for France, to operate light railways running from the base to the front.

C.P.R. Employes Enlisting in the U.S.—The C.P.R. has announced that it will allow all employes who enlist in the U.S. army or navy salary for 6 months, payable monthly, provided that they cross the ocean. On their return they will be given their former positions, or similar ones.

Canadian Railway Builders.—A special war correspondent, telegraphing recently from the Canadian forces in France, said: "One of the most urgent needs after a big push, such as Vimy, is laying railway tracks to a point as near as possible to the front line. Canadian railway units have done fine work in this respect, and completed laying 22 miles of track in five days recently."

G.T.R. Employes and the War. From the commencement of the war to the end of April, 3,342 G.T.R. employes had enlisted. Of these, 178 had been killed and 300 wounded. Two employes were awarded the Victoria Cross, four received the Distinguished Conduct Medal, two received Military Crosses and six, military medals. In addition, three employes were mentioned in dispatches. The company has contributed \$120,000 to the patriotic fund, and had paid to employes enlisting \$810,000 to the end of February. These amounts are in addition to those contributed to patriotic funds by employes.

The Timiskaming & Northern Ontario Ry. News Patriotic Association had up to April 30 subscribed as follows:—Canadian Red Cross, \$18,775.28; Canadian Patriotic Association, \$26,208.51; Canadian donation enlisted employes, \$12,297.59; total, \$57,281.38. In addition to the above, many personal subscriptions for considerable sums have been made by members of the commission and employes and the entire Toronto office staff are active members of the 50,000 Club for the duration of the war. Special arrangements have been made by the Commis-

sion whereby employes are enabled to subscribe for government war savings certificates, and all departments of the road are availing themselves of the opportunity to have and serve.

A war correspondent, F. A. McKenzie, telegraphing to the Toronto Star from London, after a fortnight's visit to the western front, said: "One enormous improvement will be the system of railways, which is largely replacing the motor lorry service. New standard gauge lines are largely built by the Canadian corps, whose record feats are exciting great praise. One C.N.R. battalion which I visited had just completed building a section of line and a bridge 140 ft. long. They started Friday and finished Tuesday, then went at a line beyond, 12,069 ft. long. It was begun Tuesday and finished Wednesday night, the men working solely at night time on account of the enemy fire. The gallantry and ingenuity of these railway pioneers is amazing. They push rails right up to the enemy front. Their leader, Col. J. W. Stewart, maintains his old Western characteristics, saying little and keeping himself in the background, avoiding display, but organizing the machine perfectly."

PERSONAL NOTES.

Jas. Irwin, station agent, London & Port Stanley Ry., Port Stanley, Ont., has enlisted in the 63rd Battery, C.E.F., at London, Ont.

Major Maitland Kersey, D.S.O., Managing Director, Canadian Pacific Ocean Services, Ltd., London, Eng., was appointed to the staff of General Pershing, of the U.S. Army, during the latter's stay in England.

Capt. M. N. McPhee, of the Canadian Infantry, who was killed in action in France recently, lived in Edmonton, Alta., for several years. He was employed as a civil engineer on the Grand Trunk Pacific Ry.

Major W. P. Wilgar, B.A.Sc., M.Can.Soc.C.E., of the 4th Canadian Divisional Engineers, has been mentioned in Field Marshal Sir Douglas Haig's recent dispatches from the Canadian Expeditionary Force's headquarters in France.

George McLaren Brown, Reserve of Officers, Canadian Militia, and European Manager, C.P.R., has been appointed Assistant Director (unpaid) at the War Office in London, with the rank of Lieutenant-Colonel while so employed.

Lt. Col. G. D. Fearman, Chief Accountant, Dominion Power & Transmission Co., who went overseas in command of the 120th Battalion, C.E.F., has returned to Hamilton, Ont., and has reverted to the command of the 13th Royal Regiment there.

Robt. Vaux, Quartermaster-Sergeant, B. Company, Royal Highlanders of Canada, wrote his brother, G. W. Vaux, General Agent, Passenger Department, Union Pacific Rd., Chicago, recently, from France, that he was the only original non-commissioned officer left in the company.

D. Robertson, formerly Storekeeper, Grand Trunk Pacific Ry., Edmonton, Alta., having been honorably discharged from military duty on account of injuries received at the front in France, and not being able to return to duty, has been appointed acting Storekeeper, G.T.P.R., Transcona, Man.

H. L. Chipman, formerly Manager, Plant Line, Halifax, N.S., who has been on military duty almost since the war started, retired from the company's management at the end of 1916. He was Lt. Col., 66th Princess Louise Fusiliers, and is now in command of Wellington Barracks, Halifax.

Lieut. Hugh A. Crombie, who received a severe shell wound in the thigh in France, June 15, is son of David Crombie, General Superintendent, Canadian Northern Ry., Toronto. He went overseas with the Canadian Engineers, and subsequently transferred to a forestry battalion.

Capt. Redmond E. H. Hamilton, of Douglas Lake, B.C., who went overseas about a year ago in the 239th Battalion Overseas Railway Construction Corps, under Lt. Col. J. W. Stewart, is reported dead. He was engaged on construction on the Grand Trunk Pacific and Pacific Great Eastern Railways and lived in Prince George, B.C., for some time.

Major C. F. Hanington, M.Can.Soc.C.E., who is in the 7th Battalion, Canadian Railway Troops, British Expeditionary Force, was engaged on Canadian Northern Pacific Ry. location and construction in British Columbia, and on its completion received an appointment in the Public Works Department, Ottawa, which he held up to the time of joining the C.E.F.

Capt. H. E. Redmond Hamilton, of Vancouver, who went overseas last year with the Railway Construction Battalion, under Lt. Col. J. W. Stewart, with the rank of lieutenant, has been killed in action in France. He was engaged on the Grand Trunk Pacific Ry. construction for a time and was stationed at Prince George. He was a cousin of John Redmond, the Irish Nationalist.

Lieut. T. E. Ryder, Manager, St. John, N.B., branch, Canadian Fairbanks Morse Co., Ltd., who is on leave of absence for military duty was an officer in the St. John Battery previous to the war. When war broke out he enlisted for active service and was attached to the Ammunition Column Heavy Battery. He has been mentioned in dispatches, awarded the Military Cross, and has been promoted to Captain.

Capt. F. H. Moody, B.A.Sc., Jr., M.Can.Soc.C.E., who was reported wounded, May 26, was for three years prior to the war, Mechanical Editor, Canadian Railway and Marine World. He was in the Queen's Own Rifles, Toronto, for several years, rising to lieutenant, and went overseas as major in command of a company in an Ontario infantry battalion. He reverted to the rank of captain in order to get to France. His injuries from gunshot consist of a fractured left forearm and some flesh wounds. On June 14, we were officially advised that he was in the 4th London General Hospital. He hopes to be back on duty about the end of July.

Lieut. J. B. Thom, of the Canadian Engineers, British Expeditionary Force, who was reported on June 24 as having been wounded, is a son of the late Jas. Thom, Manager of the White Star-Dominion Line Steamships at Montreal for many years. He left Ottawa for overseas Mar. 9, 1916, and was in the same company as Lieut. Bruce H. A. Burrows, of Toronto, who was killed in action Nov. 25, 1916. They went first to the Ypres salient and afterwards to the Somme. In

the last letter Lieut. Burrows wrote before his death, to his father, on Nov. 17, 1916, he said: "Thom and I have built ourselves a very nice dugout, about 11 x 15 inside, with a good open fireplace, and now live in comfort, with hot water in the morning for shaving." Lieut. Thom could only have returned to France from leave a short time when he was wounded, as he was in England at the end of May, staying with his mother in Folkstone, and paid a brief visit to the late Lieut. Burrows' uncle, A. J. Burrows, of Kennington, Kent, on May 28.

Major W. P. Wilgar, who has been given the Distinguished Service Order, was born at Cobourg, Ont., Mar. 9, 1878, and entered railway service in 1899, since when he was, during the summer vacations to 1903, chain man, G.T.R., Cobourg, Ont., transit man, Kingston and Pembroke Ry., Kingston, Ont.; locating engineer, Bay of Quinte Ry., Deseronto, Ont.; and Resident Engineer, same road, Tweed, Ont.; he graduated from the School of Mining, Kingston, Ont., in 1893, with the degree of B.Sc., and from 1903 to 1904, was locating engineer, Central Ontario Ry., Trenton, Ont.; 1904 to 1905, in charge of exploration party in connection with the location of the National Transcontinental Ry.; 1905 to 1906, locating engineer, N. T. R., District C.; 1906 to 1908, locating engineer, N. T. R., District E.; 1908 to 1911 Division Engineer, N.T.R., District E.; 1911 to 1914, Assistant District Engineer, N.T.R., Districts C., D., and E.; Oct. 1914 to 1915, Professor of Civil Engineering, Queen's University, Kingston, Ont. He went overseas early in 1916, and is in command of the 19th Field Company, Canadian Engineers.

Brigadier General Herbert C. Nanton, C.B., R.E., has been gazetted in England as Chief Engineer attached to headquarters, with the rank of Major General while so employed. He is a brother of Sir Augustus Nanton, of Winnipeg, who is one of the C.P.R. directors and Vice President, Winnipeg Electric Ry. He was born in Toronto in 1863, graduated from the Royal Military College, Kingston, Ont., in 1883, and started his professional career as an engineer on C.P.R. location in the Rocky Mountains in 1884, H. S. Holt, now Sir Herbert Holt, being a member of the same party. He saw service in the Canadian Northwest Rebellion in 1885, the Lushai Expedition in 1888-89, the Chitral Expedition in 1895, and the South African War, 1899-1901, when he took part in the relief of Kimberley, and was mentioned in dispatches. When the present war broke out he was Deputy Director General of Military Works at Simla, India, and was transferred to the headquarters of the British Expeditionary Force in France as Colonel and temporary Brigadier General. In Feb., 1915, while acting as Chief Engineer Officer of the Indian forces on active service in the neighborhood of Ypres and La Bassee, he was made a Companion of the Bath.

Lake and Rail Rate Cancellations Case.—The Interstate Commerce Commission has decided that a carrier operating exclusively in Canada cannot be required to maintain joint arrangements with domestic carriers for the transportation of traffic from and to points in the United States. It vacated an order of suspension directed against a schedule filed by the Grand Trunk Ry. canceling joint rates with the Northwestern Steamship Co. and eastern trunk lines on traffic from Lake Superior ports.

Demurrage Rules and Coal Supply.

Judging from the opposition to the proposed revision of the existing car demurrage rules, applicable to Canada, at a hearing of the Board of Railway Commissioners recently, railway officials state that it is evident that the consignees of traffic coming from United States points, particularly coal, do not realize how acute is the situation which exists in car supply and transportation. The car shortage on railways which are members of the American Railway Association, on Feb. 1, 1917, totalled 109,988 cars; on Mar. 1, 130,082; on April 1, 144,797, and on May 1, 145,449, showing a rapidly increasing shortage, and with the United States now getting down to war work in earnest, the transportation problems will become more pressing and the car shortage more intense.

Canada's coal supply, at present, is entirely dependent upon the car supply. One Canadian railway official states that his road could not get a pound of coal unless it sent its own cars for it. With the demand increasing in their own territory it is only natural to expect that the U.S. railroads will, as far as possible, confine their cars to their own country, where they state that they are able to get better service out of them than by allowing them to come into Canada, where the demurrage rules are such as to reduce rather than increase car efficiency.

The present Canadian rules were framed in 1906. They may have suited the conditions which prevailed at that time, but they are undoubtedly not suited to meet present day conditions. It is claimed that consignees in Canada have three times the length of free time to unload cars before any charge is involved, compared with what is allowed in the U.S., where the demurrage rate is \$2 a day for each of the first five days and \$5 a day for the sixth and each succeeding day, whereas in Canada the old 1906 code of \$1 a day, after a much longer free time, still prevails.

The shipping public, in their own interest, should not oppose the proposed changes, as if the rules are not changed, and the U.S. railways, for this reason, decline to allow their cars to come into Canada with coal and other commodities, and Canadian railways are unable to provide equipment to take care of traffic offered, Canadian railways will feel that they are not wholly responsible, from a transportation point of view, for any shortage of cars and possible scarcity of coal in Canada next autumn and winter.

J. E. Dalrymple on Car Shortage and Demurrage Rates.

Representatives of various boards of trade and the railway companies are to meet in Ottawa on July 3, to outline a plan for revising the existing car demurrage rules. If an agreement can be reached the Board of Railway Commissioners will be asked to ratify the new regulations immediately. It is felt that if the present rules are not changed car shortage will become more acute month by month.

In this connection, J. E. Dalrymple, Vice President, G.T.R., said recently: "The public should have a clear realization of what is aimed at in the revision of the demurrage rules. The situation is unprecedented. In every territory on the continent there is a demand for cars that cannot be fully met. It is useless to look

to car builders for relief. They have more work than they can handle. If the situation is to be improved, or at least prevented from becoming more serious, there must be the greatest possible co-operation between the shippers, the consignees and the railways. Every car available must be kept moving and every car must be loaded to its capacity. That is, without doubt, the only way out of the present difficulties. Any measures that may be adopted to prevent the undue holding of cars for loading and unloading will, therefore, be of national advantage. Rules that were probably equitable under normal conditions are today hampering the efficiency of transportation.

"The Canadian coal supply will be largely controlled by the number of cars available. The railways have exceptional opportunities for knowing just how serious the fuel problem is. No Canadian coal can be obtained for our use. Supplies of Nova Scotia coal hitherto entering on our line at Montreal and Portland can no longer be procured, and as we can only get a limited quantity through Depot Harbor, and through Midland, Ont., we are obliged to rail our coal from the Pennsylvania mines. Not only are we obliged to do that, but we have to send our own cars down there for service between the mines and tidewater on the lakes, that is to furnish foreign roads with G.T.R. equipment.

"The increased mileage we are called upon to perform, by reason of this abnormal condition, at the four points mentioned, is equal to 132,406,000 ton miles. The extra service the G.T.R. will be called upon to perform this year, over and above the increased cost of \$5,000,000 on the purchase of coal, is equal to one freight train a day for 330 days between Montreal and Toronto. That is the situation as regards railway fuel. If the railways cannot muster sufficient cars to keep a supply of coal on their lines for locomotive purposes their operation will be interfered with, and that would be a national calamity at the present time. Precisely similar difficulties face the country in connection with a general fuel supply for commercial and household purposes.

"Every available car must be used to the fullest advantage, and no individual is entitled, at this critical period, to hold a car for a day or for an hour when it might be released. It is the duty of every user of coal to obtain his winter supply, as far as possible, immediately, and not wait until bad weather comes along, bringing with it transportation difficulties and the always pressing demand for fuel. Surely this is a time for mutual effort and board cooperation. New demurrage rules will help to bring pressure to bear upon the delinquents who selfishly hold up cars and thereby hurt every other shipper. With all cars loaded to rated capacity and every car kept on the move, as far as practicable, the facilities at the disposal of the nation's business will give a good account of themselves."

Canadian Kelp Products, Ltd., has been organized in Vancouver, to manufacture potash from kelp, and has established a plant at Sydney, B.C., where three large rotary driers have been installed, capable of handling 150 tons of kelp a day. Operations will be commenced immediately and shipments will be made to eastern points. A. R. Mann, and A. C. Mackenzie, of the Northern Construction Co., Ltd., are President and Vice President, respectively, the other directors being C. V. Cummings, Secretary Treasurer, J. M. Fahey, Manager, and C. D. Burdock.

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

Alberta & Great Waterways Ry.—J. D. McArthur, President, returned to Edmonton, Alta., June 11, after a trip over the line. The work to be completed during this year is the finishing of the line into McMurray. This will include ballasting, station building, etc. He is reported to have stated that it was expected to have the line opened up for through traffic from Edmonton to McMurray by Oct. 1. (May, pg. 193.)

Cedars, Limited, is opening up logging operations on its timber properties on the eastern side of Lynn Creek, near Vancouver, B.C. It is grading for 3.5 miles, from the site of the sawmill near the terminus, a B. C. Electric Ry. line. The line will cross Lynn Creek to the west side, a short distance south of the city waterworks intake, and will follow the west side of the creek, passing within a few feet of the caretaker's house, for about 3.5 miles up stream. Eventually, it is the company's intention to extend it a mile up the east fork of the creek, but this will not be undertaken until the timber is taken out en route.

The Dolly Varden Mines Co., which has power to build a railway in British Columbia, has named L. W. Patmore, barrister, Prince Rupert, as its attorney.

Grand Trunk Pacific Ry.—The Brandon, Man., City Council at a recent meeting expressed regret that the Dominion Parliament had not seen it way clear to compel the company to complete the extension of the Hartney-Brandon line into the city at once. Parliament has approved of an extension of time for three years for the completion of this and other branch lines authorized to be built.

The Brandon City Council has asked the company to arrange with the C.P.R. for the installation of equipment for the exchange of freight between the two railways at a point between Forest and Varcoe, at which the C.P.R. Rapid City line crosses the G.T.P.R. main line.

The laying of track on the line from Young into Prince Albert, Sask., has been completed. The branch, which is 110 miles long, starts from the main line at Young, 422 miles from Winnipeg. The branch has been in operation to the Saskatchewan River, 78 miles, for about four years; the bridge across the river, 1,400 ft. long, was completed and track laid over it in 1915, and the grading to Prince Albert was practically completed in the same year. The extension now completed is about 29 miles. (June, pg. 224.)

Grand Trunk Ry.—Representatives of the G.T.R. and the city council met in Brantford, Ont., June 7 and 8, to discuss details in connection with the St. Paul's Ave. subway and other allied matters. The city's propositions, which were discussed, and upon which the company's head office will pronounce, are: That the city waive insistence on the building by the G.T.R. of the Holmedale spur and the Eagle Place switches, and the maintenance of the Colborne St. station as a station and as a stop; that the G.T.R. convey to the city the extension of Clarence St., 66 ft. wide, south through the G.T.R.; that the G.T.R. convey to the city property to enable the city to extend Northumberland St. westerly to the line of Clarence St.; that the G.T.R. assume the total cost of the St. Paul's Ave. subway as a roadway, as directed to be constructed by the Board of Railway Commissioners.

Great Northern Ry.—The new union station on the False Creek flats, Vancouver, erected by the G.N.R. for use jointly with the Northern Pacific Ry., was opened for public use, June 1. The first train into the station carried officials of the companies and other railway visitors. During the afternoon the general public were admitted to inspect the building. The first train out, which carried the railway officials, left at 4 p.m., and was followed by the first G.N.R. train at 7.30 p.m. The Northern Pacific Ry. instituted its service a few days later. The station is at present being used also by the Canadian Northern Ry., which obtains its entrance into Vancouver over the G.N.R. line, but which is building its own station.

Vancouver City Council has issued permits for the erection of the following additional terminal buildings on the False Creek site: Car repair shop, 20 x 60 ft.; coal house, 20 x 40 ft.; car carpet cleaning house, 16 x 60 ft. Grant, Smith & MacDonnell have the contract. (June, pg. 224.)

Intercolonial Ry.—Speaking at a farewell luncheon given in his honor by the Moncton City Club, May 26, F. P. Gutelius, formerly General Manager, Canadian Government Railways, reviewed the I.R.C. development under his management and prophesied that before many years there would be a four track, rock ballasted line between Halifax and the west through Moncton.

The Minister of Railways stated in the House of Commons recently that rails for renewal purposes were required for the I.R.C., and that arrangement had been made with the Imperial Munitions Board to release sufficient steel to allow them to be rolled at Sydney, N.S. (June, pg. 224.)

The Minister of Railways stated in the House of Commons recently that the total cost of the renewal of the Perriac bridge, 81 ft. long, on the Fredericton division, was \$9,009.28, which included \$2,011.53 for improving the grade by raising the track. Thirty concrete piles, having a total length of 90 ft., were used, the cost being \$1.04 a lineal foot delivered; labor cost \$5,339.80, and a pile driver was used for 21 days on the work at a cost of \$1.42 a day, which included fuel and labor.

The Minister of Railways stated in the House of Commons recently that the total area of land bought at Milford for ballast pit purposes was 74,898 acres, at a cost of \$1,497.96. The pit was 3.58 miles from the main line, and land for right of way for a spur track was acquired for \$958.50, the price of one small parcel of land still being unsettled. The cost of building the spur line was \$38,061.01. There had already been 20,000 yd. of ballast taken from the pit, and the estimated quantity remaining was 1,700,000 yd. The ballast taken from the pit was used on the Halifax Ocean Terminals Ry., on the main line and on the spur leading to the pit. The rails on the spur line had been temporarily taken up to lay in sidings, to release National Transcontinental Ry. rails for shipment to France.

Tenders were received to June 29 for the construction of bridge substructures and concrete culverts on the Sydney and Mulgrave subdivisions.

Lacombe & Blindman Valley Electric Ry.—Track laying on the completed grade of this railway from Lacombe to

Rimbey, Alta., was started at the end of May, and it was expected that rails would be laid as far as Gull Lake by June 30. Men are at work on the right of way, clearing up the graded portion, finishing up the grading, putting in culverts and laying ties. It is hoped that the entire line will be completed by the autumn. This is a light railway, and although it was originally proposed to use electricity as a motive power, it will be operated by steam. (June, pg. 224.)

Michigan Central Rd.—Work is reported to be in progress upon what will be virtually a reconstruction of the company's bridge at Niagara Falls. The present cantilever bridge was erected in 1883 and was strengthened and improved in 1899. (May, pg. 194.)

Pacific Great Eastern Ry.—The Premier of British Columbia returned to Victoria, June 15, after having made a trip of inspection over the line from Squamish to Clinton, 120 miles. He gave out the following statement: "The general condition of the road is that the grade is substantial enough from Squamish to Clinton, but the side slopes are too steep in many places, and there is a great deal of loose overhanging rock which should be removed. The road needs a heavy coat of ballast and lining up. East of Clinton ties and rails are laid for some distance, but there is no ballast. From there most of the grading is done, and some bridges are in along a distance of 20 miles or so. Further east the grading is done, but in a number of places that came under my observation the slopes of cuts are too steep, and a good deal of stuff has slipped down on the grade. Near Quesnel, what is known as the 'big slide' is continuously shifting, as it has been for the past 25 years at that point, and has carried the grade down twice already. It is still going and the grade is down the hillside 12 or 15 ft. below the level. I looked into the situation at Quesnel very carefully. There are absolutely no engineering difficulties in the way of taking the line into the town. It means lengthening the line somewhat in order to swing over the Quesnel River into the town and on the north a mile or two to a junction with the grade as constructed, but the increased cost of construction incidental to the diversion of the line can partly be offset by a large saving in the abolition of the necessity for the high level crossing of the Quesnel on the present route. This, on the location as laid out, calls for a bridge and trestlework 3,200 ft. long, while a bridge of probably 300 ft. would cross at the low level into the town. This can be so constructed as to serve the double purpose of a railway and a highway bridge, and thus effect a permanent saving in that way. I am very strongly of opinion that Quesnel will have to be connected with the railway, either by a diversion of the main line or by a spur, not so much on account of the town itself, as on account of the country lying west of the Fraser River. The river is navigable from Soda Creek to Prince George, there is an excellent country on the west side, and for the benefit of the settlers we must bring the railway as close to them as possible, by bringing about a connection between it and the river steamboats at Quesnel." (May, pg. 194.)

Quebec & Saguenay Ry.—The Minister of Railways stated in the House of Com-

mons recently that the length of the Q. & S.R., from Ste. Anne de Beaupre, Que., eastward, was 65 miles, on which 13.5 miles of track had been laid. It is proposed to lay track on the remainder of the mileage as soon as the rails are available. (June, pg. 24.)

Red Deer Valley Ry.—The Alberta Legislature incorporated a company with this title to build a railway in the upper part of the Red Deer River valley.

St. John & Quebec Ry.—The New Brunswick Government is having a new investigation made into the cost of the construction of the section of this railway between Centreville and Gagetown, and into the letting of the contract for the building of the Gagetown-Westfield section, which contains a stipulation that the contractors may be called upon to build the Centreville-Andover section at the same prices. This contract is held by the Nova Scotia Construction Co., of which T. Cozzolino is President, and G. H. Lindsay is Vice President and General Manager. The first of these contracts was signed in May, 1916, but prior to the elections in Feb., 1917, the then government entered into a new contract with the Nova Scotia Construction Co. for the building of the Centreville-Andover section at enhanced prices, estimated to add \$77,000 to the cost of the line.

The Minister of Railways stated in the House of Commons recently that the department had not taken any steps since April, 1916, with reference to the proposal to build a bridge across the St. John River at Andover in connection with the railway, and that it is not intended to do anything in connection with the matter this year. (June, pg. 194.)

Toronto, Hamilton & Buffalo Ry.—A press report states that the company has secured 53 acres of land at the western boundary of Bridgeburg, Ont., which is to be utilized as a freight yard, and that the laying out of it will be started early in July. The company at present transfers its freight for Bridgeburg to the Michigan Central Rd. at Welland. It is stated that a spur will be built from the M.C.R. to connect with the new freight yard and that running rights will be obtained by the company over the M.C.R. between Welland and Bridgeburg. An official of the company is reported to have stated, June 14, that the matter was being given serious consideration, but that no decision had been reached. (June, pg. 225.)

The Summer Time or Daylight Saving Act.

The following is the full text of bill 82 as introduced in the House of Commons by Sir George Foster.

1. This Act may be cited as The Summer Time Act, 1917.

2. During the prescribed period in each year in which this act is in force, the time, for general purposes in Canada, shall be one hour in advance of the solar mean time.

3. This act shall be in force in each year during such time as may be prescribed by the Governor in council.

4. Wherever any expression of time occurs in any statute, order in council, order, regulation, rule or bylaw or in any deed, timetable, notice, advertisement or other document, the fixing of the time with respect to which is within the legislative jurisdiction of the Parliament of Canada, the time mentioned or referred to shall be held, during the prescribed

period, to be the time as fixed by this act. Provided, that where, in consequence of this act, it is expedient that any time fixed by any bylaw, regulation or other instrument should be adjusted, and such adjustment cannot be effected except after the lapse of a certain interval or on compliance with certain conditions, the Governor in council may, on the application of the body or person by whom the bylaw, regulation or other instrument was made or is administered, make such adjustment from the time so fixed as in the circumstances may seem to the Governor in council proper.

5. The Board of Railway Commissioners for Canada shall have power to advance by one hour the standard time used by railway companies in Canada for such period as may be prescribed by the said Board, and to make such other orders as may be necessary for the convenient carrying out of the provisions of this act in so far as railway companies may be affected thereby.

Canadian Northern Railway Construction, Betterments, Etc.

Mount Royal Tunnel & Terminal Co.—

The important work in progress in Montreal in connection with the building of the temporary station for the C.N.R. system is making satisfactory progress. The work involves the excavation of 250,000 cu. yd. of material near to Dorchester, St. Monique, Cathcart and LaGauchetiere Sts. This excavation is about 50 ft. deep, 250 ft. wide from side to side at the top, and about 1,200 ft. long from Cathcart to LaGauchetiere St. A feature of the excavation will be the bridge or viaduct carrying Dorchester St. across, which will be 165 ft. long and 64 ft. wide. It will be of concrete and steel and will be erected in two sections, the northern half towards Cathcart St., 32 ft. wide, being built first. Shafts 50 ft. deep have been sunk for the steel columns which will carry the girders, and when these are in place the work on the other half of 32 ft. width will be started. This method of erecting the bridge was adopted in order to prevent any interruption of traffic. From this bridge it will be possible to overlook the platforms and the terminal tracks up to the temporary station at LaGauchetiere and St. Monique Sts. on the one side, and towards the mouth of the tunnel under Mount Royal on the other.

The International Bridge & Terminal Co. is making application to the Board of Railway Commissioners for approval of the plan, profile and book of reference of its branch line from its tracks at the northern end of its bridge to the Shevlin Clarke mills. This is the link which will give connection between the company's projected Toronto-Hamilton-Niagara line and lines in the U.S.

Western Division.—Track laying on the line from Oliver to St. Paul de Metis is reported to be making satisfactory progress the track layers being reported to have reached mile 40 on June 14.

A ballast pit has been opened at Camrose, Alta., and gravel trains are being operated in various directions carrying material for the ballasting of the main line and branches in northern Alberta.

The company is reported to have plans prepared for the erection of a large station at Alberta Beach, 42 miles west of Alberta on the main line. It is also planning to carry out a number of improvements at that point to add to its attractiveness as a summer resort.

Pacific Division.—W. E. Siler arrived at Port Mann, B.C., June 10, from Toronto, in connection with the starting of work in the car shops there. He is reported to have said that 100 men are to be employed.

The erection of the company's station on the False Creek flats, Vancouver, is proceeding rapidly. The foundation work was completed some time ago, and at June 14, the basement had been finished, nearly all the concrete for the ground floor put in, and a considerable quantity of the steel frame work for the first floor put in place. Those in charge of the work are reported to have said that the progress was sufficiently forward to warrant the expectation that the building will be ready for opening by Jan. 1, 1918.

Vancouver Island.—We are officially advised that the bridge erected over Selkirk Water, Victoria, B.C., consists of timber trestle work on either side of the navigable channel. Part of this trestle work will be filled in and other parts will be replaced by steel and concrete within 8 years. This work will probably consist of 80 to 85 ft. girders on concrete piers. The navigable channel is crossed by a rolling lift bridge having a clear opening of 70 ft. The piers are being constructed by sinking open caissons with a jet, the interior of the caisson is then excavated by pump to the desired depth when piling is driven and the bottom of caisson is sealed with concrete. Each caisson is then pumped out and braced and the usual pier is erected on the foundation thus obtained. The driving of piles and the sealing of caissons has been completed in the larger pier and work on the other pier is practically completed. The erection of the steel superstructure is expected to be started early in July. (June, pg. 233.)

Ways of Increasing Freight Car Efficiency.

The U. S. Department of Commerce issued some letters to chambers of commerce and other commercial organizations urging the co-operation of the individual members for the purpose of releasing freight cars and increasing the amount of utility each car can be counted upon for. A flood of answers from organizations and individuals came in, and to these a second set of instructions was sent, designating just how this co-operation may be more effective. These suggestions are: Unloading promptly of all loaded cars received; to load promptly all outgoing cars and release them immediately to the railways; anticipate the disposition of freight before its arrival; do not order special types of cars when ordinary types will serve; eliminate the use of railway equipment in trap or tramp cars when the tonnage can be handled by motor truck or wagons; load all cars to their full carrying capacity, so that the maximum use of each car will be obtained.

The Dominion Railway & Plaster Co. was incorporated under the Nova Scotia Companies Act with power to build railways in connection with the development of certain mining properties. The company does not appear to have secured legislative authority to build any railways or to have become a live organization. It failed to pay its annual registration fee on Jan. 1, consequently the Registrar of Joint Stock Companies on April 25 revoked its license to do business.

The Canadian Pacific Railway's Honor Roll.

In addition to list 23, published on pg. 258 of this issue, we have received list 24, issued June 15, which brings the number of the company's officials and employes on active service, shown in the casualty lists, up to 1,309, of whom 404 have been killed and 905 wounded. As particulars of army reservists are not available, the lists of those who have given up their lives for their country, or been wounded in action, are necessarily incomplete and do not indicate fully the extent to which the company's officials and employes are participating in the great struggle. List 24 is as follows:

Allin, Harold J., sectionman, McGaw, wounded.

Barnett, James, car repairer, Regina, wounded; Bates, George, car repairer, Winnipeg, wounded; Baugh, Charles Wallace, locomotive fireman, Montreal, gassed; Brown, John Thomas, section foreman, Woodhouse, wounded; Brumby, Arthur, clerk, Calgary, killed in action; Burke, William, wiper, Farron, wounded.

Cadieux, Owen, conductor, Chapleau, wounded; Callow, William Alfred, checker, Port McNicoll, wounded; Cameron, James, clerk, Winnipeg, killed in action; Campbell, Albert Fraser, caller, Lambton, wounded; Candy, Edgar Percy, wiper, Rogers Pass, wounded; Cooke, William George, clerk, Montreal, killed in action; Crosby, Isaac Stanley, stenographer, Moose Jaw, wounded.

Davenport, James, wiper, Field, killed in action; Davis, Wilfred, inspector, Toronto, wounded; Drysdale, John A., accountant, Winnipeg, wounded; Duncan, Ralph C., cleaner, Toronto, wounded; Dunn, Harold W., clerk, Montreal, wounded.

Eadle, George, helper, Angus, died of wounds; Eaglesfield, Herbert J., time-keeper, Montreal, died of wounds; Ellis, Samuel, cleaner, Winnipeg, wounded; Evans, Thomas, waiter, Sicamous, wounded.

Farley, William, car repairer, Schreiber, believed killed; Farmer, Albert Styles, stower, Ottawa, wounded; Farthing, Arthur, car repairer, West Toronto, wounded; Fletcher, Henry Arthur, clerk, Calgary, killed in action; Flett, Lester Medley, operator, Ignace, wounded; Freeborn, Earle Johnson, operator, Pardee, wounded.

Gale, Arthur William, clerk, Montreal, wounded; Gamble, James Guy, helper, Winnipeg, wounded; Gardner, Herbert L., brakeman, Chapleau, believed killed; Geissler, Charles R., clerk, London, wounded; Geolot, Alfred Wallace, waiter, Montreal, died of wounds; Gibbons, Lancelot J., section foreman, Grafton, wounded; Grafftey, William A., transitman, Montreal, wounded.

Halliday, William C., locomotive fireman, Kenora, wounded; Hardwicke, Charles E., clerk, Peterborough, wounded; Haskell, Charles S., checker, Saskatoon, presumed dead; Hetherington, Frank H., locomotive foreman, White River, wounded; Holmes, William Jackson, locomotive fireman, East Calgary, wounded; Humphrey, Ivor Percy, carpenter, Lethbridge, wounded; Hutchinson, David, wiper, Strathmore, wounded.

Innes, John, apprentice, Montreal, killed in action.

Jackson, Gavin Hamilton, clerk, Montreal, wounded; Jackson, George Olaf, storekeeper, Fort William, died of wounds; James, Harold Douglas, cleaner,

Regina, wounded.

Kedge, Frederick George, locomotive fireman, Fort William, wounded; Kennedy, Robert L., sleeping car conductor, Montreal, wounded.

Lake, Gerald, clerk, Wolseley, wounded; Lawrence, Edward Albert, apprentice, Montreal, wounded; Ledbury, Benjamin, sectionman, Tillsonburg, died of wounds; Loup, Alexander George, locomotive man, Montreal, killed in action.

Macdonald, Hugh Stewart, wiper, Medicine Hat, died of wounds; McShane, James, locomotive fireman, Smiths Falls, killed in action; Manley, Reginald James, upholsterer, Ogden, killed in action; Manlove, Stanley H., clerk, Toronto, wounded; Marshall, Robert, locomotive fireman, Fort William, believed killed; Mathison, Albert, craneman, British Columbia Dist., killed in action; Merrikin, George, brakeman, Minnedosa, wounded; Moore, Frank C., apprentice, Montreal, wounded; Morley, Edwin, wiper, Sutherland, presumed dead; Murray, William V., porter, Winnipeg, killed in action; Myles, William Thomas, tuber, Ignace, wounded.

Nairn, Robert George G., rodman, Manitoba District, wounded; Neighbour, Henry, storeman, Winnipeg, wounded; Nickles, Joseph William, trainman, Brandon, presumed dead; Nurrish, James, checker, Toronto, wounded.

O'Toole, Frank, bridgeman, Medicine Hat, wounded; Oldfield, Kenneth, trucker, Toronto, wounded.

Paget, Bruce, bellman, Victoria, wounded; Pascoe, Henry Aitken, clerk, Winnipeg, wounded; Philp, Alexander, helper, Ogden, wounded; Prior, Percy Douglas T., apprentice, Winnipeg, died of wounds.

Rainey, James, porter, Winnipeg, killed in action; Rayton, Richard, helper, Ogden, wounded; Reynolds, George Roger, clerk, Cardston, wounded; Robson, William, helper, Winnipeg, died of wounds; Russell, William, brakeman, Souris, wounded; Ryan, Michael J., yardman, Montreal, wounded.

Sharp, Allison E., watchman, Woodstock, N.B., wounded; Shaw, John, clerk, Winnipeg, wounded; Snodgrass, William, carpenter, Moose Jaw, wounded; Symmers, Alexander, clerk, Montreal, wounded.

Taylor, Thomas Barr, clerk, Montreal, wounded; Tesquet, Jean, cook, Victoria, killed in action; Thew, Christopher, watchman, Cobourg, wounded; Thornton, Albert, helper, Fort William, wounded; Tyler, Thomas Alexander, locomotive man, North Bay, wounded and prisoner.

Upex, Percy, checker, Moose Jaw, killed in action.

Vipond, Howard Cameron, operator, Ignace, wounded.

Walton, William B., clerk, Montreal, killed; Wellspring, William, locomotive fireman, British Columbia Dist., killed in action; Wragg, Herbert, porter, Calgary, killed in action; Wynne, Cyril Brenden, stenographer, Montreal, believed killed.

The following casualties to members of the European staff on active service have been reported: Caird, Alexander Peter, clerk, London, wounded; Evans, George James, clerk, London, wounded; Caryl, Albert Edward, packer, Liverpool, killed in action; McArthur, William B., typist, London, killed in action.

There have been shown on honor lists to date: killed 404, wounded 905, total 1,309.

The Pacific Great Eastern Railway Investigation.

The British Columbia Legislature has added the following section to the Public Enquiries Act: "Whenever the Lieutenant-Governor in council deems it expedient to cause enquiry to be made into and concerning any matter relating to the election of any member of the legislative assembly, past or present, or into and concerning any matter connected with the good government of the province, or the conduct of any part of the public business thereof, including all matters municipal or the administration of justice therein, or into payments or contributions for campaign or political purposes, or for the purpose of obtaining legislation, or obtaining influence and support for franchises, charters or any other rights or privileges, from the legislature or government of the province by any person or corporation or by any of the promoters, directors, or contractors, of such corporation, or by any other person in any way connected with, representing, or acting for or on behalf of such corporation or any of such promoters, directors, or contractors, the Lieutenant-Governor in council may by commission intituled in the matter of this act, and issued under the great seal, appoint commissioners or a sole commissioner to enquire into such matters."

One of the reasons for the passing of the measure which includes the above section, was the refusal of various witnesses at the investigation into the affairs of the Pacific Great Eastern Ry. recently to answer questions as to certain sum which it was suggested may have been used as campaign funds by one or other of the political parties. Under sec. 12 of the act any witness refusing to be sworn, to answer questions, to produce documents or books or papers, shall be held to be guilty of contempt, and the commissioners holding the enquiry may deal with exactly as if they were judges of the Supreme Court, and all sheriffs and other functionaries are directed to give their aid and assistance to the commissioners in the execution of their office.

Prior to an adjournment to Aug. 14, the legislature negatived a motion to call Hon. W. J. Bowser, leader of the opposition, and former premier, to the bar of the House for refusing to answer questions at the recent inquiry. The House also released from the custody of the sergeant at arms R. D. Thomas, Secretary of the Pacific Great Eastern Ry., who had persisted in refusing before the legislature to answer questions he had refused to answer to the committee of enquiry. Mr. Thomas went to Chicago, June 1, but stated that he would return before the session reopened in August.

A motion submitted to the house to take over the entire P.G.E.R. property; to bring action against the contractors and others for the recovery of funds overpaid; to provide for the completion of the line; to provide for its operation as a government undertaking, and to apply for a Dominion subsidy, was ruled out of order.

The Bill to Amend the Ontario Railway and Municipal Board Act by increasing the Chairman, Vice Chairman and Secretary's salaries and by providing a penalty of \$1,000 in addition to any other penalty imposed by the act for neglect to obey the board's orders, was dropped during the Ontario Legislature's last session.

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 189. May 23.—Amending Rule 3 of Canadian Freight Classification 16, re minimum and maximum loading of freight cars. This order is given in full on another page.

General order 190. May 25.—Amending Canadian Freight Classification 16, re rating and minimum loading of ice cream cones. This order is given in full on another page.

General order 191. May 26.—Amending Rule 23 of Regulations Governing Baggage Car Traffic in Canada by providing that immigrant baggage be stored free for not exceeding five days after arrival at Montreal, Toronto and Winnipeg. This order is given in full on another page.

General Order 192. May 30.—Dismissing application of Canadian Manufacturers' Association for order disallowing charges made by railway companies for salt supplied to refrigerator cars with ice. This order is given fully on another page.

General order 193. May 31.—Approving Supplement 9 to Canadian Freight Classification 16, re ratings and minimum weights for games or toys, etc. This order is given fully on another page.

General order 194. June 6.—Authorizing express companies subject to Board's jurisdiction to amend Express Classification for Canada to increase weight upon which express charges for carriage of horses are based from 10,000 to 12,000 lbs. a carload.

26129. May 21.—Ordering Kettle Valley Ry. to fence portions of its right of way between Glenfir and Chute Lake, east of Penticton, B.C.

26130. May 21.—Authorizing C.P.R. to build spur to Dominion Government wharf at Vancouver, B.C.

26131. May 21.—Extending to July 1 time within which C.P.R. may build diversion of highway at Sagwa, N.B.

26132. May 18.—Authorizing Rougemont Municipality, Que., to divert highway and crossing over Quebec, Montreal & Southern Ry., at Grande Caroline road, maintenance of crossing to be paid by company.

26133. May 21.—Authorizing G.T.R. to build spur for William Kennedy & Sons, Ltd., Collingwood, Ont.

26134. May 22.—Approving agreement between Western Canada Telephone Co., of Vancouver, B.C., and British Columbia Telephone Co., Dec. 1, 1916.

26135. May 21.—Authorizing C.P.R. to build three spurs for Three Rivers Steel Foundry Co., Three Rivers, Que.

26136. May 22.—Approving Moncton & Buc-touche Ry. standard freight mileage tariff, C.R.C. 25, and rescinding order 25737, Dec. 20, 1916, approving its C.R.C. 23.

26137. May 22.—Authorizing C.P.R. to remove station agent at Domain, Man., agent to be reappointed for Sept., Oct., Nov. and Dec., in each year.

26138, 26139. May 23.—Approving agreements between Bell Telephone Co. and British American Nickel Corporation, Sudbury District, Ont., May 15, and St. Vincent Tp., Grey County, Ont., May 9.

26140. May 22.—Ordering C.P.R. to build standard 2 station at Hayter, Alta., by Aug. 1, 1918, meantime present portable building, except portion occupied as office, to be used as a waiting room; foundation to be boarded up or banked, to keep station warm, and entire box car body to be used as freight shed only.

26141. May 23.—Extending for three months from date time within which St. Martins Ry. shall repair bridges and do other work required by order 25865, Feb. 14.

26142. May 25.—Ordering that cost of building and maintaining crossing of Depew St. by G.T.R., Hamilton, Ont., be paid by city.

26143. May 23.—Ordering C.P.R. to erect standard 6 station, containing waiting room and freight shed, with platform 100 ft. long, at Enterprise, Ont., building to be heated in winter and lighted when necessary; C.P.R. also to erect a 2-pen stock yard with loading pen and chute and provide roadway to team track wide enough for wagon to turn; work to be completed by Sept. 1.

26144. May 23.—Extending to Aug. 15 time within which C.P.R. may complete siding and loading platform facilities on its Moose Jaw Northwesterly Branch, 2 miles west of South Saskatchewan River, as required by order 25617, Nov. 9, 1916.

26145. May 26.—Authorizing G.T.R. to use bridge 290, over Pine River, Essa Tp., Ont., authorized by order 25890.

26146. May 26.—Authorizing Brantford & Hamilton Electric Ry. to use bridge over Toronto, Hamilton & Buffalo Ry., near Cainsville, Ont.

26147. May 28.—Authorizing City of Montreal to build new subway on St. Denis St., under C.P.R.

26148. May 25.—Authorizing City of Montreal to build temporary crossing over C.P.R. at Melrose Ave., for pedestrian traffic, to be protected by watchmen from 7 a.m. to 11 p.m., wages to be paid by city.

26149. May 28.—Relieving G.T.R. from providing further protection at first public crossing south of Brantford, Ont.

26150. May 28.—Ordering C.P.R. to erect new station at Tramping Lake, Sask., by Jan. 1, 1918; pending erection company to take down partition between small living room and other part of structure and provide new sheeting for box car body used as freight warehouse, paint structure standard color, make interior tidy, remove coal altogether from car and provide coal bin.

26151. May 28.—Amending order 25772, Jan. 3, re building of tunnel under Calgary & Edmonton Ry. by A. D. McCormack, Casper, Alta.

26152. May 28.—Ordering that crossing of C.P.R. and Canadian Northern Ry. at Trenton, Ont., be protected by half interlocking plant; derrails be placed on C.P.R.; home signals on both lines; derrails be interlocked with home signals; plant be operated by C.P.R. trainmen, which company pays whole cost.

26153. May 28.—Authorizing G.T.R. to rebuild bridge 56, over public road near Rymal, Ont., and rescinding order 26098, May 10.

26154. May 29.—Authorizing C.P.R. to build three spurs for Mack Brick Co., St. Constant Parish, Que.

26155. May 29.—Authorizing C.P.R. to build passing siding at grade across road allowance at mileage 28.6, Oshawa Subdivision, Hamilton Tp., Ont.

26156. May 29.—Ordering Grand Trunk Pacific Ry. to erect standard A station at Quinton, Sask., by Sept. 1.

26157. May 28.—Relieving Canadian Northern Quebec Ry. from providing further protection at crossing of public highway, continuation of Notre Dame St., Bout de l'Isle.

26158. May 11.—Ordering C.P.R. to enlarge freight shed at Lesage, Que., to not less than 25 x 15 ft. inside, work to be completed by Aug. 1.

26159. May 28.—Ordering Grand Trunk Pacific Ry. to keep station buildings at Kitwanga, W. d-coy, Cedarvale and Doreen, B.C., open and heated for arrival of passenger trains; keep all l.c.l. or package freight shipments liable to damage from weather properly housed; place at least a box car body at Kitwanga and Cedarvale, by Sept. 1, for package freight other than perishable shipments, and to place stove in waiting room at Kitwanga and heat same.

26160. May 29.—Authorizing Alberta Ry. & Irrigation Co. and C.P.R. to divert portion of original road allowance between n.w. ¼ sec. 1 and n.e. ¼ sec. 2, T. 9, R. 21, west of 4th meridian, Alta.

26161. May 29.—Rescinding order 26077, May 2, re G.T.R. train service from Brantford to Tillsonburg, Ont.

26162. May 29.—Amending order 25991, April 5, re Canadian Northern Ry. spur for Canadian Cooperae Mfg. Co., South Crosby Tp., Ont.

26163. May 29.—Authorizing New York Central Rd. to rebuild bridge 43-A, near Northfield station, Ont.

26164. May 30.—Relieving G.T.R. from providing further protection at Browns Crossing, near Tara, Ont.

26165. May 30.—Authorizing Saskatchewan Government to build highway over east end of C.P.R. station grounds at Antler, Sask.

26166. May 30.—Ordering G.T.R. to erect passenger station at Orillia, Ont., to be completed by Oct. 1.

26167. May 31.—Approving Edmonton, Dunvegan and British Columbia Ry. form of live stock contract F-115.

26168. May 31.—Ordering Canadian Northern Ry. to publish joint tariff on canned goods in carloads, from and to points in Ontario, west of Ottawa, Peterborough and Whitby, to become effective by June 15.

26169, 26170. June 1.—Ordering C.P.R. to provide portable stations at Gouverneur, Sask., and Six Mile Creek, B.C., to be completed by Sept. 1.

26171. May 31.—Authorizing Canadian Northern Ry. to build spur for Atlas Coal Co., Drumheller, Alta.

26172. June 5.—Suspending, until further order tariffs advancing rates on grain and grain products filed to take effect June 5 and subsequent dates.

26173. May 30.—Relieving C.P.R. from providing further protection at crossing in Redvers, Sask.

26174. May 31.—Authorizing City of Hamilton, Ont., to build highway over Hamilton Radial Electric Ry. at Harvey St.

26175. June 1.—Ordering Canadian Northern Ry. to appoint grain agent at Fenn, Alta., from Sept. 15 to Dec. 31.

26176. June 2.—Authorizing Grand Trunk Pacific Branch Lines Co. to carry traffic over its Young to Prince Albert Branch, Sask., between mileage 87 and 111.8, Prince Albert, until Aug. 31; speed not to exceed 15 miles an hour.

26177. June 2.—Extending for two months from date time within which C.P.R. shall install bell at Duke St., Guelph, Ont., as per order 25786, Jan. 8.

26178. June 5.—Refusing City of Toronto's application for rehearing of application for order regulating use of steam whistles and ringing of bells on locomotives within city limits.

26179. June 5.—Ordering G.T.R. to install gates at Victoria St., Thamesville, Ont., to be operated by day and night watchmen; work to be completed by Sept. 1, 20% of cost to be paid out of railway grade crossing fund, 10% by Howard Tp., 15% by Thamesville, and 55% by G.T.R.; maintenance and operation to be paid, 10% by Howard Tp., 15% by Thamesville, and 75% by G.T.R.

26180. June 5.—Extending, for 30 days from date, time within which C.P.R. shall improve station facilities at Upper Kent, N.B.

26181. June 5.—Rescinding order 24976, May 15, 1916, providing for continuance of extra car service by G.T.R. at Jordan, Ont.

26182. June 5.—Authorizing Canadian Northern Ontario Ry. to connect with G.T.R. belt line at Don Esplanade, Queen St., Toronto.

26183. June 5.—Extending to Aug. 1, time within which C.P.R. shall install gates at crossing of Church St., Weston, Ont.

26184. June 5.—Authorizing Ottawa & New York Ry. and G.T.R. to refund to D. A. McPhee, Vankleek Hill, Ont., amount overcharged on shipment of a bull from Russell, Ont.

26185. June 5.—Approving Bell Telephone Co. agreement with Chippawa Hill Telephone Co., operating in Bruce County, Ont., May 15.

26186. June 5.—Ordering G.T.R. and Niagara, St. Catharines and Toronto Ry. to provide inter-switching facilities at Thorold, Ont.

26187. May 31.—Ordering Michigan Central Rd. to refund demurrage charge of \$23 on shipment of logs from Warren, Mich., to Tilbury, Ont.

26188. June 6.—Authorizing Canadian Northern Quebec Ry. to build two sidings for American Can Co., Maisonneuve, Que.

26189. June 7.—Extending for three months from date time within which G.T.R. shall build spur for International Harvester Co. of Canada, Hamilton, Ont., as per order 24801, Mar. 14, 1916.

26190. June 7.—Authorizing C.P.R. to build spur for James Richardson & Sons, at Port Arthur, Ont.

26191. June 7.—Authorizing C.P.R. to build sidings for Red Deer Board of Trade, Red Deer Grocery Co., Stephenson Bros., and Latimer & Botterill, Red Deer, Alta.

26192. June 5.—Ordering that crossing of Colborne St., Brantford, Ont., by Grand Valley Ry. and G.T.R. be protected to Board's satisfaction.

26193. June 6.—Ordering that cost of installing gates required by order 25633, Nov. 16, 1916, at Gravel Road, Morrisburg, Ont., be paid—20% out of railway grade crossing fund, 5% by Stormont, Dundas and Glengarry Counties, 5% by Williamsburg Tp., 5% by Morrisburg, and 65% by G.T.R. Maintenance—10% by Morrisburg; 10% by Williamsburg Tp., 10% by counties named and 75% by G.T.R., and rescinding order 7319, June 17, 1909.

26194. June 6.—Approving C.P.R. local freight tariff C.R.C. no. E-3299, showing rates on pedigreed live stock when shipped by Ontario Department of Agriculture's Live Stock Branch.

26195. June 6.—Authorizing City of Toronto to build double track street railway across G.T.R. by overhead trestle south of Eastern Ave.

26196. June 6.—Extending express companies' collection and delivery limits in Montreal for period of war only. The order is given more fully later on in this issue under Among the Express Companies.

26197. June 9.—Extending to Sept. 1, time within which half interlockers may be installed at crossings of Victoria Ave. and Franklin St., Fort William, Ont., conductors to flag cars over the crossings.

26198. June 8.—Authorizing G.T.R. to build spur for City of Hamilton.

26199. June 8.—Approving Toronto, Niagara & Western Ry. revised location through Trafalgar Tp., Ont., mileage 19.79 to 27.

26200. June 8.—Authorizing New York Central Rd. to connect Ottawa & New York Ry. with G.T.R. at Ottawa, Ont.

26201. June 5.—Authorizing Esquimalt & Nanaimo Ry. to build spur at mileage 0.16 into Songhees Indian Reserve, B.C.

26202. June 12.—Amending order 26148, May 25, re temporary crossing of C.P.R. at Melrose Ave., Montreal.

26203. June 11.—Rescinding order 25799, Jan. 12, suspending order 25752, Dec. 22, 1916, pending disposition of action against Mathias Range Aqueduct Co., by Quebec & Lake St. John Ry., to restrain it from building water pipe.

26204. June 11.—Approving plan of shelter or train shed over southerly tracks at G.T.R. Central Station, Ottawa.

26205. June 12.—Approving location of C.P.R. Standard A2 station at Carey, Man.

26206 to 26208. June 11.—Approving Bell Telephone Co. agreements with Northcote Farmers' Telephone Co., Renfrew Co., Ont., May 28, St. Marc Co-operative Telephone Association, Vercheres County, Que., May 27, and St. Sebastien d'Iberville Telephone Co., Iberville and Missisquoi Counties, Que., May 29.

26209. June 12.—Authorizing C.P.R. to build passing siding at grade across Hall St., Renfrew, Ont.

**Canadian Railway
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**Uniform Maintenance of Way Flagging Rules for
Impassable Track.**

The Board of Railway Commissioners ther protection as follows: (b) By day passed general order 188, April 23, as follows: Re complaint of the Brotherhood of Locomotive Engineers alleging that the Canadian Pacific and the Canadian Northern Rys. have wilfully violated the flagging rules in force on their respective systems in the operation of trains in Western Canada; and applying for the adoption of certain regulations by the board, having in view the protection of railway employes. Upon reading the communications and submissions filed on behalf of certain of the railway companies interested, and the complaints, and the report and recommendation of the Chief Engineer and the Chief Operating Officer of the board, after a conference between the board's officers and representatives of the Grand Trunk, Grand Trunk Pacific, Canadian Pacific, Canadian Northern, and Toronto, Hamilton & Buffalo Railways, the Michigan Central, the complainants, the Brotherhood of Locomotive Firemen and Enginemen, the Brotherhood of Railroad Trainmen, the Order of Railroad Conductors, the Order of Railway Telegraphers, and the International Brotherhood of Maintenance of Way Employes held in Toronto, Aug. 4, 1916, upon notice to the parties in interest, and in pursuance of the powers conferred upon it under secs. 26, 30, 268 and 269 of The Railway Act, and of all other powers possessed by the board under the Act: It is ordered that the following regulations for the uniform maintenance of way flagging rules for impassable track, to become effective June 1, 1917, be prescribed for the observance of every railway company within the legislative authority of the Parliament of Canada:

1. Before undertaking any work which will render the track impassable, or if rendered impassable from any cause or defect, trackmen, bridgemen, or other employes of the company shall protect the same as follows:

2 (a). On double track; (b) on three or more tracks; (c) in mountain territory; and (d) on all lines with frequent or fast train service—Send out a flagman in each direction with stop signals, at least 1500 ft. in daytime, if there is no down grade towards the obstruction within one mile, and there is a clear view of 6,000 from an approaching train; 3,600 feet at other times and places, if there is no down grade towards the obstruction within one mile; 5,400 ft. if there is a down grade towards the obstruction within one mile. The flagman must, after going the required distance from the obstruction to ensure full protection, take up a position where there will be an unobstructed view of him from an approaching train of, if possible, 1,500 ft., first placing two torpedoes on the rail (not more than 200 nor less than 100 ft. apart), on the same side as the engineer of an approaching train, 300 ft. beyond such position. The flagman must display a red flag by day and a red light by night, and remain in such position until recalled or relieved.

3. On other lines, (a) By day place a red flag and, in addition, by night a red light, on the same side of the track as the engineer of an approaching train, at a point 600 ft. from the defective or working point, with two torpedoes placed on the rail opposite each other so as to cause but one explosion, 150 ft. in advance of the red signal, and provide fur-

place a red flag, supported on two staffs with flag drawn out between them at right angles to the track and 5 ft. above rail level; and, in addition, by night, a red light; on the same side of the track as the engineer of an approaching train so that it will be clearly in his view, at least 3,600 ft. from the defective or working point, if there is no down grade towards the obstruction; 5,400 ft. if there is a down grade within one mile of the obstruction, or as much farther as may be necessary to ensure full protection. (c) Place two torpedoes (not more than 200 nor less than 100 ft. apart) on the rail on the same side as the engineer of an approaching train, 300 ft. in advance of the red signal.

4. Trains stopped by flagman, as per rule 2, shall be governed by his instructions and proceed to the working point, and there be governed by signal or instructions of the foreman in charge.

5. Trains stopped by red signal, as per rule 3, shall replace the torpedoes exploded and proceed to the working point signal, and there be governed by signal or instructions of the foreman in charge, unless in the meantime stop signal had been removed.

6. In the event of train order protection being provided, the defective or working point may be marked by signals placed in both directions as follows: Yellow flags by day and in addition yellow lights by night, 3,600 ft. from the defective or working point; red flags by day, and in addition red lights by night, 600 ft. from the defective or working point, on the same side of the track as the engineer of an approaching train; except on double track, where trains run to left, in which case signals shall be placed to the left hand side as seen by an engineer of an approaching train, and there is a clear view of at least 1,200 ft.

7. When weather or other conditions obscure day signals, night signals must be used in addition.

And it is further ordered that the foregoing rules be printed in the working time tables of the said railway companies for the guidance of all employes. Subdivisions to be named, setting out which of the rules are applicable to each. Frequent service shall mean nine or more trains per diem. And it is further ordered that General Order 161, Feb. 23, 1916, made herein, be rescinded.

Acton Burrows, Managing Director, Canadian Railway and Marine World, has been unanimously re-elected Honorary Secretary-Treasurer of the Canadian Electric Railway Association for the eleventh consecutive year. He has also been unanimously re-elected chairman of the Canadian Press Association's Trade and Class Section, and a director of the Association, for the third consecutive year.

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

	Acres.
Calgary and Edmonton Ry.	6,503.33
Canadian Northern Western Ry.	81.35
Qu'Appelle Long Lake and Saskatchewan Rd. and Steamboat Co.	1,742.38
Total	8,327.06

Transportation Appointments Throughout Canada.

Canadian Government Railways.—The Minister of Railways issued the following circular June 1:—F. P. GUTELIUS has resigned from the position of General Manager of Canadian Government Railways to accept service with another railway. The Canadian Government Railways are divided by the River at Quebec into two operating divisions, to be designated as Canadian Government Railways, Eastern Lines, and Canadian Government Railways, Western Lines. C. A. HAYES is appointed General Manager, C.G.R., Eastern Lines. Office at Moncton, N.B. F. P. BRADY is appointed General Manager, C.G.R., Western Lines. Office at Winnipeg, Man.

The following circular was issued by C. A. Hayes and F. P. Brady, General Managers of Eastern Lines and Western Lines, respectively, June 1:—The following general officers are appointed, all lines: C. B. BROWN, Assistant General Manager Eastern Lines,—Chief Engineer. S. L. SHANNON, Comptroller and Treasurer. H. F. ALWARD, General Solicitor and General Claims Agent. D. A. STORY, Freight Traffic Manager, reporting to General Manager, Eastern Lines. H. H. MELANSON, Passenger Traffic Manager, reporting to General Manager, Eastern Lines. G. R. JOUGHINS, Superintendent of Rolling Stock. W. N. RIPPEY, Superintendent Car Service. Offices at Moncton, N.B.

J. H. NORTON has been appointed Division Freight Agent, Halifax, N.S., vice M. F. Tompkins, promoted.

E. H. MARTIN, heretofore Assistant Superintendent, has been appointed Superintendent, District 4, Intercolonial Division, vice L. S. Brown, promoted. Office, New Glasgow, N.S.

K. STEWART, heretofore Chief Dispatcher, New Glasgow, N.S., has been appointed Assistant Superintendent, District 4, Intercolonial Division. Office, New Glasgow, N.S.

A. T. WELDON, heretofore Assistant General Freight Agent, has been appointed General Freight Agent, vice D. A. Story, promoted. Office, Moncton, N.B.

M. F. TOMPKINS, heretofore Division Freight Agent, Halifax, N.S., has been appointed Assistant General Freight Agent, vice A. T. Weldon, promoted. Office, Moncton, N.B.

L. S. BROWN, heretofore Superintendent, District 4, Intercolonial Division, New Glasgow, N.S., has been appointed Assistant General Superintendent, Eastern Lines, and not Assistant to the General Superintendent, as was reported in our last issue. Office, Moncton, N.B.

J. C. BECKWITH, heretofore Engineer of Construction, has been appointed Division Engineer, vice H. T. Ruhl, resigned to enter Delaware & Hudson Co.'s service, and his former position has been abolished. Office, Moncton, N.B.

A. J. GRAY, heretofore Division Freight Agent, St. John, N.B., has been appointed Assistant General Freight Agent. Office, St. John, N.B.

W. A. COWAN, M.Can.Soc.C.E., heretofore Division Engineer, Transcontinental Division, Cochrane, Ont., has been appointed General Superintendent, Transcontinental Division, vice F. P. Brady, promoted. Office, Cochrane, Ont.

A. V. REDMOND, heretofore Resident Engineer, District 2, Transcontinental Division, Cochrane, Ont., has been appointed Division Engineer, Transcontinental

Division, vice W. A. Cowan, promoted. Office, Cochrane, Ont.

A. H. WILLETT, heretofore Assistant Division Engineer Transcontinental Division, Cochrane, Ont., has been appointed Resident Engineer, District 2, Transcontinental Division, vice A. V. Redmond, promoted, and his former position has been abolished. Office, Cochrane, Ont.

J. H. DUFF has been appointed Assistant Superintendent, District 2, Transcontinental Division. Office, Grant, Ont.

Canadian Northern Ry.—A. S. DAVIS, heretofore Soliciting Passenger Agent, has been appointed Travelling Passenger Agent, Toronto.

A. W. JOBSON has been appointed Soliciting Passenger Agent, Toronto, vice A. S. Davis, promoted.

W. B. MARSHALL, heretofore Night Locomotive Foreman, has been appointed Locomotive Foreman, Humbolt, Sask., vice N. McLean, enlisted for active military service.

H. BAYLIS, heretofore machinist, Winnipeg, has been appointed Night Locomotive Foreman, Humbolt, Sask., vice W. B. Marshall, promoted.

F. G. FLESCHER is reported to have been appointed Locomotive Foreman, Lucerne, B.C., vice W. M. Armstrong, enlisted for active military service.

G. McLEAN, heretofore machinist, has been appointed Locomotive Foreman, Port Mann, B.C., vice T. Young, who has been appointed operator of the gas-electric car operated on Vancouver Island.

V. BATTLE has been appointed City Ticket Agent, Niagara Falls, N.Y.

Canadian Pacific Ry.—W. BLACK has been appointed Locomotive Foreman, McAdam Jct., N.B.

J. PRENDERGAST, heretofore Assistant Foreman, Glen Yard, Montreal, has been appointed Locomotive Foreman, Quebec, Que., vice W. J. Buckley, transferred.

A. E. PALMER has been appointed Locomotive Foreman, Sherbrooke, Que., vice E. Bowie, transferred.

W. J. BUCKLEY, Locomotive Foreman, Quebec, Que., has been appointed Locomotive Foreman, Glen Yard, Montreal, vice A. W. Lowe, resigned.

C. A. WHEELER, heretofore Locomotive Foreman, Smiths Falls, Ont., has been appointed Locomotive Foreman, North Bay, Ont., vice A. E. Palmer, transferred.

H. C. NELSON, heretofore draughtsman, District Engineer's office, North Bay, Ont., has been appointed Resident Engineer, Chapleau, Ont., vice A. O. Wolff, transferred.

K. D. JOSEPH, heretofore acting Trainmaster, McAdam Jct., N.B., has been appointed Assistant Trainmaster, Sudbury, Ont.

JOHN LEE, heretofore locomotive draughtsman, is reported to have been appointed Shop Engineer, Winnipeg.

J. J. McDONELL has been appointed Chief Dispatcher, Saskatoon Division, Saskatchewan District, vice J. H. Scott. Office, Saskatoon.

W. L. CODINGTON, heretofore Resident Engineer, Revelstoke, B.C., has been appointed Resident Engineer, Vancouver, B.C., vice T. E. Price, on leave of absence for active military service.

A. G. BROOKER has been appointed City Ticket Agent, Chicago, Ill., vice G. H. Griffin transferred.

Agent, Chicago, Ill., has been appointed Travelling Passenger Agent, St. Louis, Mo.

S. E. CORBIN has been appointed City Passenger Agent, St. Louis, Mo.

Canadian Pacific Ocean Services.—W. STONE has been appointed General Agent, Passenger Department, Yokohama, Japan, vice G. M. Jackson, transferred.

J. R. SHAW, heretofore General Agent Passenger Department, Shanghai, China, has been appointed General Agent, Passenger Department, Hong Kong, China.

G. M. JACKSON, heretofore General Agent, Passenger Department, Yokohama, Japan, has been appointed General Agent, Passenger Department, Shanghai, vice J. R. Shaw, transferred.

Chicago and Northwestern Ry.—A press report states the office at Vancouver, B.C., operated heretofore as a branch of the Seattle, Wash. agency, under charge of E. A. Dye, Travelling Agent, has been made a separate agency, in charge of Mr. Dye, as General Agent for British Columbia.

Delaware and Hudson Co.—H. T. RUHL, Division Engineer, Canadian Government Railways, Moncton, N.B., is reported to have been appointed Engineer Maintenance of Way, D. & H. Co., Albany, N.Y.

Grand Trunk Pacific Ry.—D. ROBERTSON, formerly Storekeeper, Edmonton, Alta., has been appointed acting Storekeeper, Transcona, Man., vice W. G. Whiteley, who has resumed his former position as chief clerk there.

The following station agents have been appointed, Balcarres, Sask., D. W. McMillan; Riverhurst, Sask., V. D. Sibbald.

Grand Trunk Ry.—Owing to Mrs. Chamberlin's serious illness, E. J. CHAMBERLIN, President, has been granted three months leave of absence, from June 14, in order that he may take her for an extended trip as soon as she is able to travel. The Chairman, A. W. Smithers, has appointed Vice President H. G. KELLEY to perform Mr. Chamberlin's duties during that period, and all communications for the President are to be addressed to Mr. Kelley.

J. L. BURNS has been appointed Chief Dispatcher, Richmond, Que., vice E. C. Potter.

The following station agents have been appointed: Peterborough, Ont., A. MacNab; King, Ont., A. M. Clarke; Lefroy, Ont., F. A. Tebo; Riverdale, Ont., A. G. Gulston; St. Paul's, Ont., C. A. Ober; Holstein, Ont., W. B. Rife; Whitehall, Ont., A. C. Ritza; Edgington, Ont., W. C. Hogan.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—H. T. DUFFY, heretofore District Passenger Agent, Moose Jaw, Sask., has been appointed General Agent, Toronto, vice F. A. Nancekivell, resigned to enter other business.

R. H. ZIEBELL has been appointed District Passenger Agent, Moose Jaw, Sask., vice H. T. Duffy, promoted.

Winnipeg Joint Terminals.—JAMES CLARK, heretofore Night Yardmaster, Canadian Northern Ry., Winnipeg, has been appointed General Yardmaster, Winnipeg Joint Terminals, vice W. McAuley, who has resumed his duties as switchman.

Railway Rolling Stock Notes.

The G.T.R. has ordered 10 locomotives from Canadian Locomotive Co., and 5 from American Locomotive Co.

The Timiskaming & Northern Ontario Ry. has received 2 conductors' cabooses from Preston Car & Coach Co.

Canadian Government Railways have bought 23 second hand Hart-Otis cars, 40 tons capacity, from F. H. Hopkins & Co.

The South African Government has ordered 20 mountain type locomotives, 22 x 26 in. cylinders, 175,000 lb. in working order, from American Locomotive Co.

The Canadian Locomotive Co. has shipped to the British Government 18 consolidation locomotives, of the order of 40, mentioned in Canadian Railway and Marine World for February.

The Russian Government has ordered 5,000 four-wheel freight cars, 1,200 goods capacity, from American Car and Foundry Co., and also 5,000 from Standard Steel Car Co.

The Russian Government has ordered 250 decapod locomotives, and 68 six-wheel tank locomotives, from American Locomotive Co. and 250 decapod locomotives from Baldwin Locomotive Works.

The Timiskaming & Northern Ontario Ry. has ordered 100 steel frame box cars, 40 tons capacity, from Canadian Car & Foundry Co. They will be duplicates of those the company is building for Canadian Government Railways, except that the draft gear will be of the friction type instead of the twin spring type.

Canadian Government Railways have received 13 steel frame box cars, 50 tons capacity, from Eastern Car Co.; 81 wood box cars, 30 tons capacity, from Canadian Car and Foundry Co.; and 10 second hand passenger cars, 97 second hand coal cars, 40 tons capacity, and 2 second hand locomotives, from General Equipment Co.

The C.P.R. has received 78 freight refrigerator cars, and 9 automobile furniture cars, completing an order of 260, from its Angus shops, Montreal. The vans previously mentioned as having been ordered at Angus shops have been increased to 27, but are being built at Winnipeg, and 12 of them have been delivered.

Respecting the 5,000 cars which Canadian Government Railways have ordered, it is stated that the cost will be about \$13,000,000, the cost averaging some \$2,600 each. It is also stated that in addition to those to be used on the government railways, some of the cars will be leased to other lines requiring them. This has not been officially confirmed.

Following are chief details of the 1,000 steel frame box cars, 40 tons capacity, which Canadian Government Railways are having built by Eastern Car Co. for delivery in Dec. and Jan.:

Length inside	.....36 ft.
Width	.....8 ft. 6 1/2 in.
Height, floor to bottom of carline	.....8 ft. 9 1/2 in.
Width of side door opening	.....5 ft.
Height, rail to top of brake mast	.....13 ft. 11 1/4 in.
Height, rail to centre of coupler	.....2 ft. 10 1/2 in.
Centre to centre of body bolsters	.....26 ft.
Draft gear	.....Twin spring
Coupler	.....Simplex, 5 x 7 in.
Air brake	.....Westinghouse K.C., 8 x 12 in.
Axles	.....M.C.B., 5 x 9 in.
Wheels	.....Chilled cast iron, M.C.B., 33 in.
Journal boxes	.....McCord, 5 x 9 in.
Journal bearings	.....M.C.B., lead lined
Wedges	.....M.C.B., drop forged
Bolsters and brake beams	.....Simplex

Canadian Government Railways have ordered 1,000 steel frame box cars, 40 tons capacity, for complete delivery by Jan. 31, 1918, from Eastern Car Co.; 1,000

steel frame box cars, 40 tons capacity, for delivery in November and December, and 2,000 similar cars, and 1,000 stock cars, delivery to commence in October and be completed by Mar. 1, 1918, from Canadian Car & Foundry Co. The last two mentioned orders are to be built at Canadian Car & Foundry Co.'s plant at Fort William, Ont. It is expected that the government will place additional orders for rolling stock shortly.

Following are chief details of the 3,000 steel frame box cars, 40 tons capacity, which Canadian Government Railways have ordered from Canadian Car & Foundry Co.:

Length inside	.....36 ft.
Width inside	.....8 ft. 6 1/2 in.
Height, floor to bottom of carline	.....8 ft. 0 1/2 in.
Width, side door opening	.....5 ft.
Height, side door opening	.....7 ft. 8 3/16 in.
Length between end sills	.....36 ft. 11 1/2 in.
Width over side sills	.....8 ft. 9 1/2 in.
Height, rail to top of brake mast	.....13 ft. 11 1/4 in.
Height, top of rail to running board	.....13 ft. 4 1/2 in.
Height, top of rail to centre coupler	.....2 ft. 10 1/2 in.
Height, sill to bottom side of plate	.....7 ft. 10 3/16 in.
Height, top of rail to eaves	.....12 ft. 7 7/8 in.
Width over eaves	.....9 ft. 3 1/2 in.
Trucks, centre to centre	.....26 ft. 10 in.
Draft gear	.....Twin spring
Couplers, bolsters and brake beams	.....Simplex
Air brakes	.....Westinghouse K.C. 812
Trucks	.....Diamond arch bar type
Axles	.....M.C.B., 5 x 9 in.
Wheels	.....33 in. cast iron
Centre plates	.....Cast steel
Journal boxes	.....McCord malleable iron
Dust guards	.....M.C.B. standard wood
Brake shoes—Dominion Brakehoe Co.'s cast iron,	steel back

Freight and Passenger Traffic Notes.

The C.P.R. has issued a booklet pointing out the advantages offered for settlement in the eastern provinces.

The White Star Line of steamers, trading to Sarnia and Port Huron, Ont., has decided to omit calling at these and any other Canadian ports and confine its trading to United States ports.

The Toronto, Hamilton & Buffalo Ry. re-established its through sleeping car service from Hamilton, Ont., to Pittsburg, Pa., and Cleveland, Ohio, June 4. The train leaves Hamilton at 8.23 every evening.

The Edmonton, Dunvegan & British Columbia Ry., with its associated lines, the Alberta Great Waterways Ry. and the Central Canada Ry., has opened a ticket and express office in the old Quebec Bank Building, Jasper Ave., Edmonton, Alta.

The C.P.R. trains on the its Gatineau Valley branch will continue to be operated in and out of the Broad St. station, Ottawa, this year as usual, the reported proposal for running powers to enable them to run to and from the Central station not having been acceded to by the G.T.R.

The opening of the McArthur lines from Edmonton to Peace River Landing, Alta., has directed considerable attention to that territory, and already tourist travel is being directed thither from the United States. The river steamer D. A. Thomas is being operated on Peace River, on a schedule, in order to work with the railways in handling the traffic.

In order to advertise the attractions of its Rocky Mountain section for tourist travel, the Canadian Northern Ry. is arranging for an exhibition of pictures. H. L. Beatty, of Toronto, is painting a number of pictures; colored photographic views are being made for moving pictures, and these will be explained by talks by O. Scott, of the company's passenger department.

Steamship & Railway Ticket Office has

been incorporated under the Manitoba Companies Act, with a capital of \$20,000, and offices in Winnipeg, to carry on the business of selling railway and steamship tickets, the buying and selling of exchange and other business in connection therewith. The provisional directors are: Jos. Finkelman, Mrs. N. Finkelman, M. Cates, Mrs. F. Cates and S. H. Green, Winnipeg.

The Grand Trunk Ry. has issued a booklet, "The Transcontinental Line," descriptive of the route from the Atlantic to the Pacific, offered by the Intercolonial Ry. from the Atlantic coast to Montreal, the G.T.R. thence to North Bay, the Timiskaming & Northern Ontario Ry. thence to Cochrane, the National Transcontinental Ry. thence to Winnipeg, and the Grand Trunk Pacific Ry. thence to Prince Rupert, B.C.

The Alberta & Great Waterways Ry.'s summer traffic is being carried on by a gas driven car, leaving Edmonton for Lac la Biche, Alta., at 8.30 a.m. on Thursdays and Saturdays, returning at 7 a.m. on Fridays and Mondays. There is also to be a mixed train to Lac la Biche, leaving Edmonton at 7.30 a.m. Tuesday mornings, and returning the following day. The remaining mileage to McMuray is being operated by the contractors.

The summer traffic schedule on the Edmonton, Dunvegan & British Columbia Ry., with its branch line, the Central Canada Ry., came into operation, June 10. A train leaves Edmonton for McLennan and Peace River at 17 o'clock Tuesdays and Fridays, and on the return trip reaches Edmonton at 21.30 on Thursdays and Sundays. On Mondays and Thursdays a mixed train runs from Edmonton to South Jct., returning on Tuesdays and Fridays.

The Grand Trunk Pacific Ry. train service from Young to Prince Albert, Sask., was put in operation, June 24. Heretofore the train service has only extended to St. Louis, the crossing of the South Saskatchewan River. A train leaves Young at 8.35 a.m., Tuesdays, Thursdays and Saturdays, arriving at Prince Albert at 2.15 p.m. the same days, and returning leaves Prince Albert at 3.45 p.m., Mondays, Wednesdays and Fridays, reaching Young at 9.27 p.m. the same days. These trains connect at Young with the daily trains on the main line.

The Central Vermont Ry. is issuing tourist tickets for combined rail and auto trips during the summer. The most important tour is described as "The King's Highway trip." Passengers will leave New England points and travel by railway to St. Alban's and then motor to Montreal, about 70 miles, via Lakewood, ferry across Missisquoi Bay, Lake Champlain, to East Alburt, thence via Clarenceville, Lacolle and "The King's Highway," to Montreal, with an alternative route via Phillipsburg, St. John's and Chambly Canal. This trip takes in the Green Mountains and the White River, Winooski and Champlain Valleys.

Rotenberg's Ltd. has been incorporated under the Ontario Companies Act, with authorized capital of \$100,000 and office in Toronto, to carry on a railway and steamship ticket, tourist, transportation, telegraph and express agency, and other allied businesses. The officers are Louis Rotenberg, Sr., President; Max Rotenberg, Jr., Secretary-Treasurer. The company takes over the ticket agency business heretofore carried on by L. Rotenberg & Sons.

Railway Finance, Meetings, Etc.

Canadian Northern Ry.—A bill has been passed by the House of Commons authorizing the company to issue collateral trust bonds, redeemable in currency, against the company's securities held by the Dominion Government, payable in sterling, which have been or may be acquired by the Imperial Government. This is a war measure, and is being passed for the same reasons as a similar measure for the C.P.R., to enable the Imperial Government to place war loans with these bonds as security, should the necessity arise.

The Finance Minister stated in the House of Commons, June 7, that no advance had been made "to a railway company" by order in council so far as he knew. The question was asked in reference to a report that the government was advancing a further sum to the C.N.R.

The Senate passed a resolution, May 29, asking for copies of all orders in council passed in conformity with the provisions of the act of 1914, under which \$45,000,000 was granted to the C.N.R. under certain conditions. The orders in council had to be passed, it was explained, with reference to the portions of the railway in British Columbia.

Canadian Northern Saskatchewan Ry.—There was deposited with the Secretary of State at Ottawa, June 5, a trust deed made between the company, the British Empire Trust Co., the National Trust Co., and the Crown, securing an issue of 4½% guaranteed debenture stock on certain terminals and bridges in Saskatchewan.

Canadian Pacific Ry.—The House of Commons has passed a government bill, authorizing the company to issue currency securities to retire sterling securities now held by the British Government, so that they may be used as collateral securities for British war loans in the U.S. The Finance Minister stated that this was a war measure initiated by desire of the Imperial Government. It was not intended at present to make such an issue of bonds, but it was desired to have the legislation enacted in order to be prepared for the contingency should it arise. This matter was brought forward at the C.P.R. annual meeting, when it was stated that the arrangement then made for the issuing of a loan in the U.S. had been abandoned owing to the entry of the U.S. into the war on the allies' side.

Central Ry. of Canada.—The Exchequer Court of England has dismissed the application for the appointment of a receiver, giving the company until July 1 for the completion of its plan of reorganization. To carry out this plan it is necessary to obtain consent of 75% of the bondholders, and at the time of writing it was stated that 72% had consented.

Magdalen River Valley Ry.—At a meeting of the directors at Quebec, June 13, a bylaw was passed changing the head office from Quebec to New Carlisle, Que. F. Murphy, Quebec, is Secretary.

Michigan Central Rd.—There was deposited with the Secretary of State at Ottawa, June 8, two agreements relating to the M.C.R. equipment trust of 1917.

National Transcontinental Ry.—Sir James Loughheed stated in the Senate, June 7, that the N.T.R. gross earnings for the fiscal year ending Mar. 31, were \$5,916,550.99, and the working expenses \$7,806,922.20.

St. John & Quebec Ry.—Sir James Loughheed stated in the Senate, June 7,

that the gross earnings of the St. John & Quebec Ry., which is owned by the Province of New Brunswick, but operated as a part of the Intercolonial Ry., for the fiscal year ended Mar. 31, were \$81,325.63, and the working expenses \$98,300.42.

Timiskaming & Northern Ontario Ry.—Passenger earnings for April, \$61,143.72; freight earnings, \$137,094.51; total earnings, \$198,238.23; against \$51,565.76 passenger earnings; \$181,245.31 freight earnings; \$232,811.07 total earnings, for April, 1916.

Betterment Works on the Canadian Government Railways.

The betterments carried out on the Canadian Government Railways during the last financial year, according to a statement by the Minister of Railways in the House of Commons recently, include the following: The relaying of 85 miles of Intercolonial main track with 85 lb. rails, the laying of 10 miles of 85 lb. rails on the New Brunswick & Prince Edward Island Ry., the putting in of 1,100,000 new ties over the system, the reballasting of 170 miles of track, the extension of 8 passing sidings, the construction of 2 new passing sidings, 14 business sidings and 52 private sidings. Terminal yards were enlarged on the Intercolonial, giving additional accommodation for 3,061 cars, as follows: Chaudiere Jct., 580; Ste. Rosalie Jct., 230; Moncton, 369; Truro, 282; Rockingham, 1,600. This work on the terminals alone cost over \$250,000. A concrete grain elevator of 1,000,000 bush. capacity is being erected at Transcona, Man.; and one of 500,000 bush. capacity at St. John, N.B., both to be completed in the autumn. The steamship Northumberland was acquired from the Charlottetown Steamship Navigation Co. for use between Prince Edward Island and the mainland. In addition to repairs to a large number of buildings, 22 steel railway bridges were erected, and 6 overhead bridges were replaced with steel spans.

Transportation Conventions in 1917.

August.—International Railroad Master Blacksmith's Association, Chicago, Ill.

September.—Railway Signal Association, Atlantic City, N.J.

Sept. 11.—Master Car and Locomotive Painters Association of the United States and Canada, Chicago, Ill.

Sept. 18-20.—Association of Railway Telegraph Superintendents, Washington, D.C.

Sept. 18-21.—Roadmasters and Maintenance of Way Association, Chicago, Ill.

October.—American Association of Dining Car Superintendents, San Francisco, Cal.

October.—Railway Real Estate Association, Duluth, Minn.

Oct. 16-18.—American Railway Bridge and Building Association, St. Paul, Minn.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

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, 805 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 Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, Counsel, Kingston, 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.

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.

Shipping Federation of Canada—Thos. Robb, Manager, 42 St. Sacramento Street, Montreal.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Transportation Club of Vancouver—H. W. Schofield, 553 Church Street, Vancouver, B.C.

Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.

Winnipeg Traffic Club—James Gehrey, Bannatyne Avenue, Winnipeg, Man.

Marine Items too Late for Classification.

Another Icebreaker Proposed.—The Minister of Marine stated in the House of Commons recently that the question of building another icebreaker, to take the place of the J. D. Hazen, sold to the Russian Government, is under consideration.

The Landbo Transportation Co., Ltd., the incorporation of which was announced in our last issue, owns the freight steamship Landbo. The officers of the company are: E. F. Pardee, President; N. S. Gurd, Vice President; A. L. Burnham, Secretary; J. A. Boland, Buffalo, N.Y., Treasurer. The office is at Sarnia, Ont.

The Reid Towing & Wrecking Co. Ltd. has been incorporated under the Dominion Companies Act, with \$200,000 authorized capital, and office at Montreal, to acquire the business and property formerly owned by the Reid Wrecking Co., Ltd., Sarnia, Ont. As announced in our last issue, the property has been acquired by R. M. Wolvin, Winnipeg, who is associated with several transportation and grain concerns, chiefly Canada Steamship Lines, Ltd., which gave rise to the report that the Reid Wrecking Co. had been acquired by that company.

Men for U. S. Vessels.—The U. S. Shipping Board announces a country-wide call for engineers to serve on the forthcoming merchant marine fleet. Not less than 5,000 additional engineers will be needed on U. S. ships in the next 18 months. Anticipating this demand, the board will establish marine engineering schools, in which to train men not now qualified to receive papers, with terms to begin on July 20. The Board is also recruiting for the merchant marine 5,000 masters and mates, and is establishing a chain of schools in navigation on both sea coasts to train those needing preliminary instruction.

The Rideau Steamboat Co., Ltd., the incorporation of which was announced in our last issue, has bought the steamboat Wanakewan from A. W. Campsall, Ottawa, and operates it between Ottawa and Kemptville for local and general transportation and for private picnic parties. The steamboat was built at Kingston, Ont., in 1910, and is screw driven by engine of 8 n.h.p. Her dimensions are: length, 70.2 ft.; breadth, 15 ft.; depth, 5.2 ft.; tonnage, 68 gross, 44 register. The officers are: W. J. Best, President and Manager; F. W. McKinnon, Vice President; Andrew Haydon, Secretary-Treasurer; W. Campsall and W. E. Beaton, directors.

Electric Railway Department

Operating of Two-Car Trains in City Service.

By D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co.

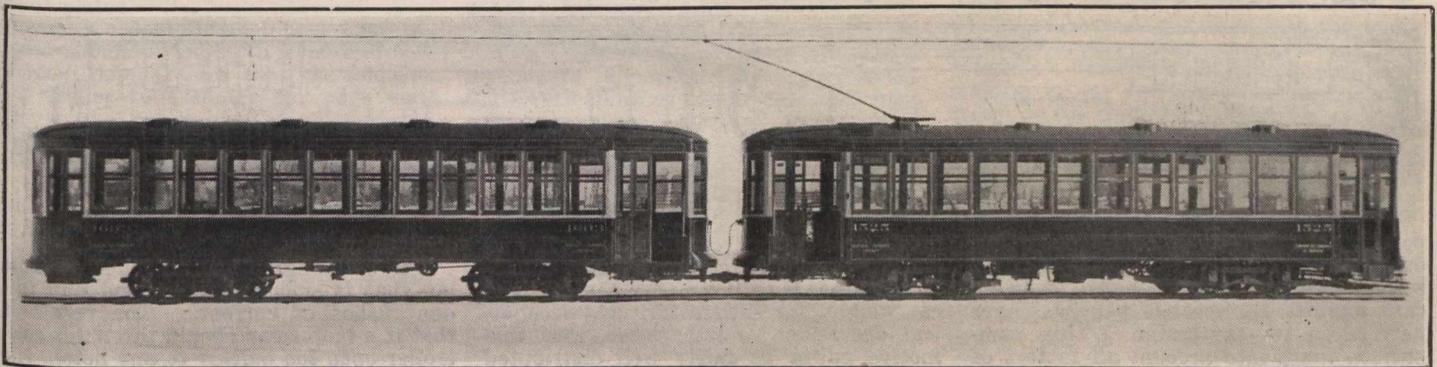
(Copyright, Canada, 1917.)

It is the universal practice on steam railways to operate a string of cars, as long as possible, as a train unit. Elevated and subway services have developed along the same lines. The operation of city street cars in single units is still standard practice almost everywhere. The natural evolution of any custom is usually guided by logical reasoning, but is often influenced or even suspended by questions of expediency. The development of steam railway practice has been guided largely by considerations of efficiency and economy, with relative freedom from local restriction as to direction and frequency of service, because of the occupation of a public right of way. Furthermore the requirements and essentials of long distance transportation are quite different from those pertaining to the incidental movements of people within the

tions, and again as a relief from congestion. In the larger cities, having congested areas, the more important aspect is the possibility of carrying a larger number of people away from a given area in a given time with a minimum number of cars. This last factor introduces the close relation that exists between efficiency and economy. The solution of the problem of congestion is not the simple matter of adding more cars. All effort should rather be applied to the acceleration of the average movement of a limited number of cars away from certain areas, keeping in mind the fact that 10 cars moving around a loop at an average speed of 10 miles an hour will carry as many people as will 20 cars moving around the same loop at 5 miles an hour, and give far better satisfaction to everyone concerned. This does not mean that

body design and inefficient means of entry and exit.

Perhaps the first serious discussions of the possibilities of train operation in city streets are a paper written for the A.E.R.A. by Mr. Franklyn in 1911 and a report by a joint committee of the same association in 1912. The committee arrived at certain conclusions and made recommendations based on experiment as well as careful thought. The opinion expressed was strongly in favor of further development and the idea has now taken firm hold throughout the country. It is safe to predict that we will soon see trains of two or more cars, as standard operating practice, in many growing cities, where public opinion will not countenance the temporary expedient of elevated tracks as an intermediate step between surface lines and subways.



Two-Car Train, Montreal Tramways Company.

limits of a city. On long suburban runs, operated electrically, the advantages of multiple unit trains are pretty well recognized, but the idea of train operation in city streets does not seem to have received the attention that a study of conditions would indicate that it should.

The modern street car is a development of the palanquin, the rickshaw, the ox cart and the horse drawn cab, through the public chaise and bus. One of the fundamental requirements of street car operation is frequency of service. Disregard of this fact results in the loss of the best paying customer, viz., the short haul passenger. This factor tends toward a large number of small independent units. When the density of traffic on a street is such as to demand a service of large single car units, with a headway of less than 3 or 4 minutes, there are several reasons for serious consideration of the combination of two or more units into trains. The practice may be considered first as a means of meeting the variation in the volume of traffic, by the addition of trailers or multiple units to cars running with a reasonable headway on a fixed schedule, instead of confusing and disorganizing the operation of the line by changing the time tables at different times of the day. The troublesome question of extra platform labor is also favorably affected.

The subject can be approached from two distinct points of view, that of economy of operation under ordinary condi-

cars are to be run at dangerous maximum speeds during the few seconds that such speeds could be reached, but that we should make a careful study of all the factors that help to restrict and slow down the average rate of transportation and take serious steps to eliminate the unnecessary causes of delay.

After all the more obvious improvements have been effected, such as educating the public to move quickly, and designing platform arrangements that will enable them to do so, training motormen to make bold but safe acceleration, and to apply their brakes on the same principles, and training of conductors toward sharp and energetic action of an infectious order, we have to turn to such means as the coupling up of single units into trains. Altogether aside from the selfish idea of economy, consideration of efficiency and quality of service rendered to the public demand any modifications of existing practice that tend to minimize the objectionable features of street congestion. The idea of train operation of street cars is by no means new. The first and more obvious method adopted was the addition of a trailer to a motor car. This practice has not always been satisfactory, not because the principle was wrong, but because the means at hand for carrying out the idea were wanting in many respects. The success of this practice was in most cases seriously limited by factors of gradient, tractive effort, motor capacity, unsuitable couplers, car

It is generally admitted that the evils resulting from congestion are hardly appreciable up to a certain density of traffic, but that when a point is reached, when the distribution of the various streams of fairly continuous movement, the confusion and consequent slowing down of motion at intersections increases very rapidly with each further increment. The number of people that can be transported from one point to another on a car line with reasonable regularity in a given time is controlled by several factors, the principal of which are: (1) Speed of movement between stops. (2) Number of stops. (3) Interference of vehicular and pedestrian traffic. (4) Delays at street intersections. (5) Time at rest for loading. (6) Free headway or spacing between car units.

A little consideration will show that items 1 and 2 do not materially affect the comparison between one and two-car trains when the number of stopping points is reasonably restricted. Item 3: The net result of vehicular interference is in favor of two-car trains, principally because the spaces between cars are longer, and drivers have more opportunities of cutting in on car tracks and out again, without interfering with the movement of cars. The greatest time saving is effected under items 4, 5 and 6. The amount of traffic that can be distributed at any intersection depends upon several conditions. When a car or vehicle crosses in one direction, all move-

ment in the other direction must stop. The amount of delay depends upon the time that the intersection is occupied by the moving unit. The interruption of crossing traffic is not restricted by the time a unit takes to pass a given point, because, before a movement occurs, the crossing must be cleared and a safety zone established ahead. When this safety zone is established, a two-car train will occupy the intersection only slightly longer than one car, because by the time the front car has cleared, the train has developed considerable speed and the second car passes very quickly. Furthermore, only half the number of safety zones must be established. Delays on account of actual loading and unloading are cut down nearly one half, because two cars at rest can load as quickly as one.

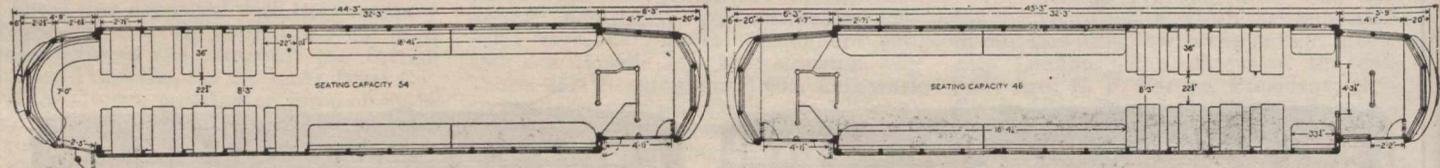
Mr. Jackson, of the Public Service Railways, New Jersey, who had charge of extensive experiments made with train operation in Newark in 1912, stated before the American Association in that year, that careful records showed that a single car occupied a crossing 118 ft. long, an average of 16.9 seconds, while a two-car train occupied the same crossing only 20.4 seconds, an increase of only 20%. Furthermore, that the actual interchange of passengers at congested

car interferes with that of the car following, the rate of traffic movement begins to slow down. A point is soon reached when the addition of more cars actually results in so much slowing down of the whole chain of cars, the consequence is that fewer people are carried away from a given point in a given time, and, furthermore, the service is less satisfactory to both the company and the passenger, because of the greater time required to deliver the latter at his destination after he has succeeded in finding space on a car.

Coupling cars in pairs almost doubles the free headway between units, and enables every motorman to move more quickly between stops. Interference from cars ahead is very materially reduced and more people will be carried away at a higher speed than when single car units are employed. Experiments with trailers hauled by motor cars have been conducted for about three years on St. Catherine St. in this city. The results have been satisfactory, especially since the public as well as the train crews became accustomed to their use.

A certain slowing down of schedule speed is inevitable on account of limited traction for acceleration and a slightly increased number of stops. It has been our experience that average conditions of

various systems of controlling multiple unit trains, and taking into account the fact that all modern cars in this city are already equipped with the E-35 controller, it was decided to adopt the Westinghouse P-K apparatus. The standard equipment has been modified to suit our conditions. All main wiring and apparatus will be located under the car body. A master controller will be on the front end of each car, and the auxiliary 12 volt storage battery under a seat. The master controller will be a miniature copy of the K-35 in arrangement of notches, and will be handled in exactly the same manner, except that an extra notch has been added, which will give automatic acceleration, within the limits of a current relay, over the whole range. Owing to the fact that motormen may only occasionally be called upon to operate this type of control, and that all motormen would have to be specially trained, it was thought unwise to adopt any system that was radically different in operation from an ordinary car. When making a start the motorman can either throw the controller wide open to the automatic position, or he may advance one notch at a time to take care of unusual traffic or rail conditions, or if he should have to accelerate on a grade on which the automatic advance would be too slow or inoperative



Plan View of Two-Car Train, Montreal Tramways Co.

points, according to a count extending over one week, showed an average of 1.7 seconds per passenger handled in single cars against 1.2 seconds per passenger handled in two-car trains. This comparison takes into account all factors of delay, and is not a simple comparison of the average time occupied per passenger in actually boarding and leaving the cars.

Of perhaps more importance than any is the advantage of greater free headway when cars are operated in pairs. It is an unfortunate fact that when the demand for transportation is greatest, and people are most anxious for quick transport to or from business, the rate of movement of traffic of all kinds slows down. The movement of street cars is especially affected, because they are constrained to move on fixed tracks and cannot move around obstructions or take to less crowded streets. More cars have been added to meet the rush hour traffic. In addition to the extra delays to each car unit, caused by a larger number of people boarding and leaving, and the consequently increased number of stops, the safety zone between cars has been reduced in length. Motormen are unable to get up normal rates of speed in case the car ahead should stop, or slow down unexpectedly. Every delay to any car in the series is repeated back from car to car down the street. At each intersection, several cars are stopped in line. Each of these cars must move up a car length at a time, and again stop while the first car of the line is unloading, loading, and waiting for signal from traffic officer after a stop of a minute or so. It is quite common for a car to require 5 or 6 minutes to move up to and pass a single intersection. In other words, when the number of car units on a line is increased to a point where the movement of one

grade acceleration, condition of rail, and density of traffic, require a motor capacity of from 8 to 9 h.p. per ton of light car weight, for satisfactory and economical operation. Furthermore, that this motive power be fairly well distributed over all wheels of the train, to ensure a fair rate of acceleration and hill climbing capacity.

Bad rail conditions and heavy grades encountered on all cross town lines prevent the general use of ordinary trailers in this city. In order to overcome this difficulty, the management decided to order 50 two-car trains, with motors on both cars, all operated by a master controller in the front car. Each car might be operated as a separate unit, but on account of the special arrangement of doors at front end of the trailer, which has the important result of eliminating indecision of passengers in making choice of car, it is not likely that advantage will be taken of this fact for other purpose than for shunting.

Description of Cars.

Length of body	32 ft. 3 in.
Width of body	8 ft. 5 in.
Weight of motor car without load.....	43,800 lb.
Weight of trail car without load	36,470 lb.
Weight of train without load	80,270 lb.
Motors, motor car	4 50 h.p.
Motors, trail car	2 50 h.p.
Brakes	automatic air
Doors	air operated
Steps	folding type
Seats per car, motor car	42
Seats per car, trail car	45
Control	electro, pneumatic, automatic
Color	Montreal Tramways green

It is interesting to note that although the total rated power of motors per train is 300 h.p., they can safely develop 600 h.p. for short periods. About 400 h.p. per train is necessary to operate the heavier cross town grades on a fair rail.

Control.—After due investigation of the possibilities and advantages of the

altogether.

The P-K engine has an inherent time lag that is sufficient to prevent any undue rushes of current. The result is that if a motorman should throw his controller open too quickly to any notch, the main controller will notch up at a slower rate to that point. Additional features of the P-E control as applied to the Montreal Tramways Co.'s cars are: a line switch controlling all breaking of main motor circuits, to relieve controller fingers; a door interlock in the master controller circuit, to prevent cars starting until all doors are closed; a train line switch arranged to open the master control circuit, in case of emergency application of the brakes; an emergency hand operated switch to short circuit the door and train line switches, in case they are out of order; buzzer system and motorman's signal light operated from the control battery; paralleling of batteries, the train to load all batteries equally; automatic charging of batteries from compressor circuit.

The air brake system is so designed as to provide a high degree of safety. The motorman applies brakes to all wheels of both cars. Furthermore, should he fail to do so in case of danger, the conductor of either car can instantly apply the brakes on all wheels of train without moving from his position. Should draw bars part, power is cut off and the brakes are automatically applied to both cars. The doors will be so interlocked with the power system that the motorman will be unable to start car until all doors of train have been closed tight. All automatic features are operated from storage batteries, so as to ensure their normal operation when power is off or trolley should leave wire.

A new system of lighting has been

arranged that will have a much better appearance, as well as providing better light. Five 94-watt tungsten lamps, with semi-opaque reflectors and automatic shunting cut-outs will be located down the centre of car. An auxiliary circuit of five 23-watt tungsten lamps will serve to illuminate signs, and provide an emergency light over conductor's position, in case of a burnt out fuse.

Electric heaters will be controlled by a special thermostat and automatic switch, to maintain a uniform temperature in car, and will overcome the discomfort due to local overheating of certain seats in mild weather. The difficult matter of ventilation has received special attention, and it is hoped that the new scheme will ensure sufficient circulation of air in mild weather, without consequent draughts and discomfort during the extreme colds of winter. In addition to the regular floor ventilators, there has been provided a hinged sash at the top of the left hand front vestibule window.

Further improvements in truck design will tend to make cars ride even more smoothly than at present. Springs are arranged to give a graduated reaction that will largely eliminate the track vibration when cars are light. Vibration is further reduced by the substitution of hinged bolster guides in place of ordinary rubber plates.

Power Consumption.—I feel that attention should be called to a more or less mistaken popular idea that the addition of a trailer to a motor car adds very little to the power consumption of the latter. As a matter of fact, the same quantity of energy is actually required to transport a pound of weight, whether that pound is located on the first or second car of a train, and the power necessary for propulsion under stated conditions is simply a question of weight hauled. It can be conscientiously stated that tests will show the contrary. Why this appearance of unreliability of tests? I will attempt a simple explanation by stating that such a test will surely show, if carried to its full conclusion, that the equipment of the single unit has not been properly selected for single car operation and is much more efficient when loaded up by the addition of a trailer.

The tendency of the operating department is always toward a demand for over capacity of motors, and too high a gear ratio for efficiency; the argument invariably being that motormen cannot maintain schedules otherwise. The natural result of the higher power is that train crews are deliberately encouraged to do their work in an inefficient manner, since they do not have to consider the refinements of operation in their efforts to keep on time. If a trailer be added to such car, the result is a slowing down of the motors over the same route, the motor capacity is more in keeping with the weight handled and the crew must study and practice refinements of operation in order to keep on time. The free running speed of such a train is not as great as a single car, therefore acceleration must be prompt and the rate of braking more severe. Both these practices make for higher efficiency, which results in the apparent saving of power shown by tests. The rheostatic losses are cut down, and, of even more importance, perhaps, the amount of power legitimately used for acceleration, and which must be finally wasted in wearing out and heating the brake shoes, will be reduced in proportion to the squares of the maximum speed on the run between stops.

It must be remembered that if you

double the maximum speed, you expend four times as much power, which is nearly all wasted at the end of each run. Incidentally, of course, the conductor must be more sharp in the doing of his work and all loafing must be eliminated. I can safely state that very nearly as efficient operation could be obtained on single cars, if the gear ratios were made higher, to give lower speed, and the motor capacities lowered in proportion, always keeping in mind that hill climbing and winter conditions may justify installation of power above the point of maximum efficiency. Our experiments with trailers in this city has brought us to a realization of this fact, and we expect to get efficient operation, within the economical capacity of our standard motors, by adding only two extra motors of equal unit capacity to take care of 80% additional load.

I should, perhaps, add that there are certain elements that do fairly make for higher power efficiency in trailer operation, as opposed to single cars, but they are not of very serious moment, viz.: (1) Elimination of motor friction on trailer. (2) Slight reduction in wind resistance. (3) Operation of trailer over freshly cleaned rail. (4) Elimination of energy expended in acceleration of extra armatures. Savings under items (2) and (3) apply to multiple trains.

The chief offsetting disadvantages to consider are: (1) Loss of tractive capacity due to idle weight on trailer axles. (2) Overloading of motor car equipment with consequent increased maintenance and liability of breakdowns. (4) Operation at less efficient point on efficiency curve on all but free running speeds.

The questions of whether a simple trailer system, or a multiple unit system, is the best, and whether trains should be operated continuously or only during rush hours, can only be decided after an intelligent study of local conditions, both physical and financial. From a strictly engineering point of view, the advantages of multiple unit operation leave very little room for the consideration of simple trailers, unless the traffic demand is such that trailers can be operated continuously on fairly level streets, without extreme climatic variations. Under these ideal conditions the operation of street cars would be guided by the same principles as steam trains.

Guelph Radial Ry. Wages.—The management of this line, which is owned and operated by the City of Guelph, Ont., has raised its conductors' and motormen's wages 1c an hour, the new rate being: 1st year, 23c; 2nd year, 24c; 3rd year, 25c. The wages of the shopmen are varied, the average being 27½c.

Officials of Division 583, Amalgamated Association of Street and Electric Railway Employes of America notified the Calgary City Council, June 14, that they demanded exclusive recognition, with the following rates of wages: 1st year, 35c an hour; 2nd year, 38c an hour; 3rd year, 40c an hour, with 50c an hour for running one-man cars, together with sundry alterations in the working conditions. The majority of the employes on the municipal railway do not belong to the union, but belong to a local association. The council recognizes both bodies.

The Toronto Ry. is reported to have ordered 100 trucks, to be delivered by the end of the year, in order to carry out the Ontario Railway and Municipal Board's order to provide additional cars for immediate service.

Electric Railway Employes Strike in Vancouver.

The agent of the Street Railway Men's Union in Vancouver, B.C., announced, June 13, that the men had unanimously decided to go on strike immediately. This resulted in tying up the service in Vancouver and on the interurban lines to New Westminster. The line to Lulu Island is operated under a different agreement, the crews being under the jurisdiction of the Brotherhood of Railway Trainmen, but subsequent to the strike on the other the line was closed down by the company lines.

A statement issued by G. Kidd, General Manager, June 11, said: "The company voluntarily increased the men's wages last year, the agreement being extended to June 30, 1918. About a month ago the company intimated to the men that owing to the abnormal conditions they had again considered the question of granting some relief, particularly to the lower paid men, and they proposed to give a war bonus to the employes covered by the above agreement. The bonus proposed was as follows: 15% to employes earning \$60 a month or less; 10% to employes earning more than \$60 and not more than \$70 a month; 5% to employes earning more than \$70 and not more than \$80 a month. I have at meetings with the men pointed out the serious conditions of the company's finances and the losses we are making in our railway business, the increase in the cost of all materials we use, the decrease in the population, and the competition to which we are subjected, making it impossible for us to earn anything like a fair return to our investors. The representatives of the men, though impressed with the company's point of view, have stated that they do not consider the company's offer sufficient, and that the increase in the cost of living is greater than the company's offer will adequately provide for. I pointed out to them that the cost of living in Vancouver, compared with other cities in Canada, is at present very favorable, as the following figures will show: Taking Vancouver as a basis and calling it 100%, the cost of living in Winnipeg is 118; in Toronto 125; in Montreal 110. The wages of the motormen and conductors, four years in service, in Vancouver, are 35c an hour, plus the additional bonus referred to above. In Winnipeg the corresponding wages are 36c; in Toronto 30c; and in Montreal 27c."

Under the scale in force prior to the strike a man starting was paid 27c an hour, and was increased from time to time up to 35c. The men asked for a starting rate of 35c, increasing according to the term of service to 45c.

In referring to the men's decision, Mr. Kidd said, on June 13: "We presented the best offer it is possible to make to the men, and the matter now rests with themselves."

It is reported that the jitneys have been doing a big business, an increasing number being rushed into the service in the endeavor to meet the emergency. The company has made no attempt to operate a service.

A press dispatch from Vancouver, June 22, stated that the strike had ended, and that cars commenced running in Vancouver on that date. It also stated that the company had decided to pay a war bonus aggregating about \$300,000 a year, on the understanding that the transportation situation in the city would be enquired into by an expert.

Canadian Electric Railway Association's Annual Meeting.

The Association's annual meeting in Montreal, June 5 and 6 was largely attended by officials of member companies throughout Canada, and was probably the most successful in the association's history. The President, E. P. Coleman, General Manager, Dominion Power & Transmission Co., Hamilton, Ont., who presided, opened the meeting by an address on the association's work and many other important matters affecting the electric railway industry.

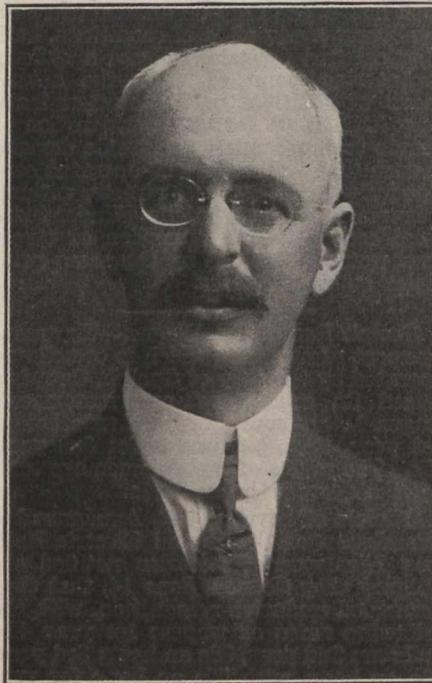
The Honorary Secretary Treasurer, Acton Burrows, presented a very complete report, dealing with the association's work during the past 12 months. In referring to the membership he showed that out of 1,417.62 miles of electric railway in Canada, owned and operated by private companies, at June 30, 1916, only 181.65 miles were controlled by companies outside the Association's membership. The report also dealt with the following questions: Transportation of postal mail; abolition of juries in trials of cases against companies; Nova Scotia legislation re hours of labor and rates of fare; Quebec legislation regulating vehicle traffic; headlights on electric railway cars in Ontario; lavatory accommodation on interurban railways, collection and dissemination of information; wages of employes; standard practice in laying paving blocks; car wheel data; standard cars in cities; one-man car operation; employment of women as conductors, Amalgamated Association of Street and Electric Railway Employes of America; assessment of track in cities; compensation for abolition of perpetual franchise; revenue and free passengers; transportation for officials' wives; commission to town agents for selling tickets and handling freight and express; reporting of accidents in Ontario, jitney regulations. The report was discussed section by section, as read, and action was taken on a number of subjects referred to.

The following papers were read and discussed: Labor questions, by C. L. Wilson, Assistant Manager, Toronto & York Radial Ry. Bonuses to motormen, by W. S. Hart, Secretary Treasurer, Three Rivers Traction Co. Some track maintenance problems, by W. F. Graves, Chief Engineer, Montreal Tramways Co. Car wheels, by G. Gordon Gale, Vice President and General Manager, Hull Electric Co. Purchasing and storekeeping methods, by J. S. Mackenzie, Purchasing Agent, Winnipeg Electric Ry. Storekeeping and purchasing methods, by J. B. Griffith, Purchasing Agent, Dominion Power & Transmission Co. A practical method of stores accounting, by S. Potter, Master Mechanic, Detroit United Ry. Two car electric train operation, by D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co. Commutation books, school books and reduced rate tickets, by A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry. Move quickly and help us take you home quicker, as a step towards rapid transit, by A. Gaboury, Superintendent, Montreal Tramways Co. Interurban motors as feeders to electric lines, by W. N. Warburton, General Manager, and Secretary Treasurer, London & Lake Erie Ry. and Transportation Co. Reasons for the use of the name light-safety-car, by R. H. Wheeler, Engineer, Three Rivers Traction Co. Handling complaints, by A. D. B. Van Zandt, Publicity Agent, Detroit United Ry. Tungsten

versus carbon lamps for car use, by S. Roseveare, Electrical Engineer, Toronto Suburban Ry. These papers are copyrighted and will be published in the association's official proceedings, for distri-



Charles L. Wilson
Assistant Manager, Toronto & York Radial Ry.,
and President, Canadian Electric Railway
Association, 1917-18.



Edward P. Coleman
General Manager, Dominion Power & Transmis-
sion Co., and President, Canadian Electric
Railway Association, 1916-17.

bution to officials of member companies.

The following officers, etc., were elected: President, C. L. Wilson, Assistant Manager, Toronto & York Radial Ry. Vice President, A. Eastman, Vice President & General Manager, Windsor, Essex & Lake Shore Rapid Ry. Honorary Secretary Treasurer, Acton Burrows, Man-

aging Director, Canadian Railway and Marine World, re-elected for the 11th consecutive year. Executive Committee, E. P. Coleman, General Manager, Dominion Power & Transmission Co.; James D. Fraser, Director and Secretary Treasurer, Ottawa Electric Ry. Co.; A. Gaboury, Superintendent, Montreal Tramways Co., G. Gordon Gale, M. Can. Soc. C. E., Vice President & General Manager, Hull Electric Co.; H. G. Matthews, General Manager, Quebec Ry., Light, Heat & Power Co.; E. L. Milliken, Manager, Cape Breton Electric Co. Assistant Secretary, A. A. Burrows, Secretary and Business Manager, Canadian Railway and Marine World. Legislation Committee, J. D. Fraser, Director and Secretary Treasurer, Ottawa Electric Ry.; H. M. Hopper, General Manager, New Brunswick Power Co.; George Kidd, General Manager, British Columbia Electric Ry.; H. R. Mallison, Managing Director, Nova Scotia Tramways & Power Co.; H. G. Matthews, General Manager, Quebec Ry. Light, Heat & Power Co.; Wilford Phillips, General Manager, Winnipeg Electric Ry.; C. L. Wilson, Assistant Manager, Toronto & York Radial Ry.

On the evening of June 5 the companies' officials attending the meeting were entertained at dinner at the Windsor Hotel by the Montreal Tramways Co., its General Manager, J. E. Hutcheson, occupying the chair. The dinner was a most enjoyable one, an excellent musical programme having been provided. Brief speeches were made by the chairman, and by E. P. Coleman, James Anderson, Manager, Sandwich, Windsor & Amherstburg Ry.; Patrick Dubee, Secretary Treasurer, A. Gaboury, Superintendent, W. G. Graves, Chief Engineer, Montreal Tramways Co.; George Ham, of the C.P.R. headquarters staff, and Chief Tremblay, of the Montreal Fire Department. On June 6, Mr. Hutcheson entertained the retiring and incoming officers and executive committee at luncheon at the St. James' Club, Sir Alexander Bertram being also a guest. In the afternoon, the company's officials attending the meeting were taken in the Montreal Tramways Co.'s official car on a tour of inspection of some of that company's principal properties, including the Hochelaga power house, the capacity of which is being largely increased, and the Youville shops.

Montreal Tramways Co.'s Wages.—The Montreal Tramways Co. has voluntarily increased its conductors and motormen's wages 2c. an hour.

The Port Arthur Public Utility Commission and the Utilities Committee of Fort William, on June 3, at a meeting, agreed to fix the wages of motormen and conductors on the electric lines in the two cities, commencing June 16, as follows: 1st 6 months, 30c an hour, next 18 months, 35c; over 2 years service, 36c; an extra 1c an hour for operation on one-man cars. Time and a quarter will be paid on regular day off, if called for duty, and also on legal holidays. No overtime allowed for Sundays or for extra time other than mentioned above.

The Windsor, Ont., east end citizens' association were addressed recently on the municipal ownership of street railways by A. Simmers, who claimed that a municipal line would be run for service, whereas privately owned lines were run for profit.

Winnipeg Electric Railway's Employes' Wages Arbitration Etc.

The Board of Conciliation and Investigation appointed by the Minister of Labor on April 27, to deal with differences between the company and certain of its employes, members of Winnipeg Division 99, Amalgamated Association of Street and Electric Railway Employes of America, held meetings between May 16 and June 2, reported that after hearing evidence and after conferences with the company's officials and with a committee of employes, it was successful in negotiating a settlement and a written agreement was executed. The board, which consisted of Isaac Pitblado, K.C., representing the company, R. A. Rigg, M.L.A., representing the men, and Judge R. H. Myers, as chairman, further reported as follows: "The demand for increased wages came at a very inopportune time for the company, whose revenues have declined to an alarming degree since the outbreak of war. Looking at the matter solely from the company's ability to pay, it is not at present in a position to add to its operating expenses. While other business concerns are able to add any increased cost of production to the price of their commodities, the company's rates of fares are fixed by contract with the city of Winnipeg (confirmed by statute) and cannot be increased. Two main features have contributed to the decline in the company's revenues—1st, the business conditions created by the war, and, 2nd, the jitney competition which sprang up shortly after the outbreak of the war. While the decline in receipts, from the falling off of business caused by the outbreak of the war was, of course, uncontrollable, the jitney competition stands on a different footing. The company feels very strongly that this jitney competition as carried on in Winnipeg is extremely unfair to it, and it has urged strongly before the board its position. The company has an exclusive franchise, by which, in consideration of a fixed agreement as to the rates of fares to be charged, it was to have a monopoly of the street car business on the streets of the city. At that time there was no idea of transportation by means of jitneys, and the company contends that the permission by the city of the jitney competition, with the minimum of regulation which now exists, is in effect a breach of the city's agreement with it. However this may be, the Board cannot but appreciate the serious financial loss which is being inflicted upon the company by this jitney competition, which has been strenuously urged by the company as a reason why it is unable to pay the men higher rates of wages. On the other hand, while the board appreciated the position in which the company had found itself, the application for higher wages by the motormen and conductors was justified in view of the increased cost of living. The employes presented to the board very full and carefully prepared statements showing the Winnipeg prices of the various necessities of life, and the great increase which had taken place in such prices in recent years. Both the company and the employes could only be induced to sign the attached agreement after having been assured that the award of a majority of the board would be along the lines set forth in the agreement. Throughout all our endeavors the spirit of conciliation and a sincere desire to reach an

amicable conclusion was evinced, and the board desires to express its appreciation of the fairness and courtesy which marked the conduct of all parties and their representatives alike to the board and to one another, and we feel assured that the good feeling which has heretofore existed between the employes and the company's officers will long prevail. The board expresses its gratitude to all parties concerned for the assistance given in the investigation and the spirit of fair play that was exhibited."

Following are the rates paid up to May 1 and the current ones under the new agreement per hour:—

	Old.	New.
1st 6 months	25c	28c
2nd 6 months	27c	30c
2nd year	28c	31c
3rd year	31c	33c
Over 3 years	34c	36c

Extra conductors and motormen reporting regularly at the company's stated times, according to present system, every day during the week, and ready and able to work, to be paid a minimum wage of \$9 a week. Wages to be paid semi-monthly on the 15th and last days of month, as nearly as possible. Overtime on public holidays to be paid at rate of time and a half; exhibition time and other similarly busy days included. Sunday work to be paid at the rate of 10 hours pay for 8½ hours work, which shall constitute a day's work on Sundays. Conductors and motormen training students to be paid 25c a day extra while so engaged.

Following are some of the other principal provisions of the agreement: Neither the company nor the employes will discriminate against any employe because of his being, or not being, a member of any street railway employment union. Free transportation to be given all conductors and motormen on Winnipeg Electric Ry. when in uniform, or producing a badge furnished by company. Free transportation to be given conductors and motormen on the company's outside lines, on application to general office. Maximum number of passes for any one day to be 10. Passes to be good on any day except holidays. Conductors to be supplied with tickets and change to value of \$25.

Each conductor to be given a uniform pea jacket, and each motorman a uniform overcoat every two years. Any conductor or motorman leaving the service within six months may return the coat by paying \$1 a month for the time he has had it, or may keep the coat by paying for it, less \$1 a month for the time he has had it. The company to pay half the cost of the first uniforms, all uniforms thereafter to be furnished free. Conductors to be provided with a summer cap each year, and a winter cap every two years, and motormen with summer and winter caps every two years. Conductors and motormen leaving the service within four months after receiving a uniform will be charged full price for it.

The agreement to be in force for one year from May 1, 1917, and thereafter from year to year until changed. Either party desiring to change it on May 1, 1918, or on May 1 of any subsequent year to notify the other party at least 30 days before such date.

The Edmonton Radial Ry. had a car destroyed by fire on the Highland Ave. line, June 13, owing to a trolley wire falling. Estimated loss, \$7,000.

Electric Railway Finance, Meetings, Etc.

The British Columbia Electric Ry. has paid the City of Vancouver \$3,464.32 percentage due for May, an increase of \$334.59 over May, 1916.

British Columbia Electric Ry. and allied companies:

	Apr. 1917	Apr. 1916	7 mths. to Apr. 30, '17	7 mths. to Apr. 30, '16
Gross ..	\$447,429	\$421,265	\$4,513,808	\$4,248,085
Exp. . .	350,341	343,398	3,544,407	3,513,532
Net . . .	97,088	77,867	969,401	734,553

Capre Breton Electric Co.:

	Apr. 1917	Apr. 1916	Jan. 1 to Apr. 30, '17	Jan. 1 to Apr. 30, '16
Gross . .	\$34,508.77	\$28,234.65	\$138,853.72	\$118,859.79
Exp. . .	21,727.37	18,295.86	85,286.22	76,004.32
Net . . .	12,781.40	9,938.79	53,567.50	42,855.47

The New Brunswick Power Co. has placed on the Canadian market \$250,000 of its issue of \$1,000,000 of 7% cumulative first preferred stock, the other \$750,000 having been taken in the United States. The company owns the street railway and other properties formerly owned and operated by the St. John Ry. Co. It has an authorized issue of \$2,000,000 of common stock; \$3,500,000 of first preferred cumulative 7% stock; \$1,500,000 of second preferred non-cumulative 7% stock, and an authorized bond issue of \$5,000,000, of which there is outstanding \$2,000,000 common stock; \$1,000,000 first preferred stock; \$350,000 second preferred stock, and \$1,750,000 of 5% bonds due 1937.

Nova Scotia Tramways & Power Co.—A half yearly dividend of 3% on preferred stock has been declared payable July 2.

Sherbrooke Ry. & Power Co.—It was reported to the Sherbrooke, Que., City Council, June 6, that F. W. Teele, Vice President, S.R. & P. Co. had discussed with a committee the question of the relations between the city and the company. A draft of a new franchise was discussed, as was also a suggestion for the taking over of the company's electric railway interest at a price to be fixed by arbitration. The estimates as to the value of the railway plant vary from \$225,000 to \$275,000. The committee was authorized to further consider the matter before making any recommendation.

Toronto Civic Ry.—Revenue for May, \$22,512.60; passengers carried, 1,325,856; compared with \$18,714.48 revenue, and 1,106,064 passengers carried for May, 1916.

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

	Apr. 1917	Apr. 1916	4 mths. to Apr. 30, '17	4 mths. to Apr. 30, '16
Gross . .	\$970,367	\$883,209	\$3,896,595	\$3,546,784
Exp. . .	490,524	444,212	2,129,129	1,853,075
Net . . .	479,843	438,997	1,767,466	1,693,709

Toronto Railway:

	1917	City percentage	1916	City percentage
Jan. . . .	\$510,053	76.508	\$473,784	69.847
Feb. . . .	473,184	70.976	470,704	70.614
Mar. . . .	531,080	105.857	518,555	97.237
Apr. . . .	510,334	102.066	496,172	99.234
May	510,870	102.174	500,515	100.103
	\$2,535,521	\$457,581	\$2,459,730	\$437,035

Winnipeg Electric Ry.—The gross earnings for April were \$265,594.18; net after operation, \$71,414.78; net after fixed charges, \$10,166.26.

	Apr. 1917	Apr. 1916	4 mths. to Apr. 30, '17	4 mths. to Apr. 30, '16
Gross . .	\$265,594	\$282,498	\$1,159,350	\$1,169,808
Exp. . .	194,179	171,463	837,262	730,148
Net . . .	71,415	111,035	322,088	439,660

The London, Ont., City Council has extended to May 1, 1918, the arrangement with the London St. Ry for the operation of Sunday cars.

Electric Railway Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—A press report states that the company has applied to the Victoria City Council for permission to build a second track on part of its line on Esquimalt Road. (May, pg. 203.)

Edmonton Radial Ry.—Tenders have been asked for the supply of three miles of grooved trolley wire, about 6,720 lb., to replace the wire from 112th St. and Jasper Ave. to 124th St., both tracks, also one track on Alberta Ave., namely from John St. to Alberta and Kirkness Sts. (May, pg. 203.)

London St. Ry.—The City Engineer reported to the City Council recently that the company was doing as rapidly as possible all the work for which it was responsible in connection with the streets being paved.

In connection with a new agreement for the operation of Sunday cars, the question of building a second track on Richmond St. had been raised. C. Currie, President, informed the committee which arranged the matter that if the city would widen the street about 3 or 4 ft. a second track would be laid. (Jan., pg. 30.)

Moncton Tramways, Electricity & Gas Co.—We are officially advised that the city has let contracts for paving about 11 city blocks on High St., 7 city blocks on Main St., 6 city blocks on King St., and 2 city blocks on Mechanic St. The company's lines run on all these streets, and it will have to pay for 8 ft. in width of this paving along its tracks. In consequence of this the track is being fixed to suit the new grade. New cross ties are being put in where needed.

The company has completed a new machine shop with machinery for doing all kinds of machine work, including lathes, drill presses and grinders. All the machinery is motor driven. (June, pg. 243.)

Nipissing Central Ry.—We are officially advised that the only new work contemplated is the rebuilding of the car barns at North Cobalt, Ont., destroyed by fire, Mar. 4.

We are officially advised that the portion of the buildings at North Cobalt, Ont., destroyed by fire recently, will be rebuilt during the summer. Only the car barn and office portions of the building were destroyed the machine shop and substation being saved intact.

Nova Scotia Tramways & Power Co.—We are officially advised that it is not proposed to carry out any track extensions in Halifax, N.S., during this year.

Regina Municipal Ry.—The City Commissioners of Regina, Sask., on June 15, took into consideration a report as to the cost of building an additional half mile of track on Pasqua St., in order to convert the red and blue lines into a belt line. Without providing for an interlocking plant and 4 diamonds, the grading, track laying and other work is estimated to cost \$12,000. It was arranged to have the proposal discussed at the next meeting of the city council.

The building of a second track on Elphinstone St. to the exhibition grounds is under consideration. (Jan., pg. 31.)

Sandwich, Windsor & Amherstburg Ry.—The Walkerville, Ont., Town Council, on June 12, ratified an agreement authorizing the company to build a Y on Ottawa St. One of the provisions of the

agreement reserves the town's right to use the road for its own railway, or allow any other company authorized by the town to have its use. The Y is reported to have been installed. (Jan., pg. 31.)

Winnipeg Electric Ry.—The Winnipeg City Council is applying to the Manitoba Public Utilities Commission for an order to compel the company to pay a share of the cost of the projected Provencher Ave. bridge.

By an order in council of Dec. 7, 1914, the Dominion Government provided for the sale to the W.E.R. of certain water power lands on the Pinawa channel, Winnipeg River, upon which the company has erected a large hydro electric power plant from which power is being delivered in the City of Winnipeg. Subsequent to the passing of this order the Department of Justice ruled against the selling of water power lands. After considerable negotiations the company agreed to accept a lease of the lands in question, which was granted under a recent order in council. The area of the lands leased is 567.20 acres; the lease is to be for 21 years renewable in perpetuity, but at a rental to be fixed with each renewal period of 21 years. The rental of the present lease is 50c an acre. (Nov., 1916, pg. 425.)

Additional Cars for London Street Railway.

The London St. Ry. has ordered in the U.S. 5 single truck, single end, p.a.y.e. cars for early delivery, though it is not anticipated that they will be obtained until December. They will be of the same type as those ordered in 1913, which were fully described and illustrated in Canadian Railway and Marine World for Dec., 1913, and Jan., 1914. Those cars were originally built with 10 cross seats, 2 longitudinal seats and 3 stationary seats, 2 longitudinal and 1 cross; the 2 longitudinal and 1 cross seats being at the forward end, and the rear end being occupied with 2 longitudinal seats; the aisle ran through the centre of the car. This arrangement was changed after the cars had been in service some time, experience showing that more aisle space could be obtained by arranging the cross seats on one side of the car, and placing a longitudinal seat the entire length of the car on the other side. This system will be followed in the new cars, viz.: a longitudinal seat along the left hand side of the car, and 5 cross seats and 2 longitudinal seats on the right hand side of the car. The longitudinal seat has a hand rod above it, instead of straps, and this is considered to be of greater convenience and utility than the usual hand straps. The longitudinal seats accommodate one less passenger than the cross seats. All seats are padded and covered with rattan, no springs being used, thus avoiding all trouble due to broken springs. The cars will be 32 ft. 4 in. long over all, with bodies 20 ft. 8 in. long. They will be 8 ft. 2 in. wide over sheathing. The cars ordered in 1913 cost approximately \$4,500 each, but the ones just ordered will cost about \$6,500 each.

The Edmonton Radial Ry. employees waited on the city utilities committee, June 11, to give reasons for objecting to operate one-man cars. The committee informed the men that it was not intended to run one-man cars throughout the city, and promised to give consideration to other matters raised.

The Ontario West Shore Ry. Fiasco.

The hearing of the case against the Toronto General Trust Co. by T. Stothers and the municipalities of Goderich, Kincardine, Ashfield and Huron, for an accounting of money received and expended in connection with the construction of the Ontario West Shore Ry., was concluded at Toronto, June 15, judgment being reserved. The municipalities guaranteed bonds for \$400,000, and made an arrangement whereby unguaranteed bonds would be issued up to \$200,000, the bonds being secured by a mortgage to a trustee, on the roadbed and assets of the railway. The defendants were appointed trustees, May 1, 1908, and were authorized to issue bonds up to \$15,000 a mile of railway under contract to be built, on certificates signed by the Secretary of the company showing the necessary details. The money realized from the sale of bonds was only to be used for railway purposes and pro rata with the sale of the guaranteed bonds, and payment was to be determined upon progress certificates issued for 90% of work actually done, and signed by the engineer. The balance of 10% was only to be paid on completion of the railway. The railway was never completed, but all the money was paid out, and it is claimed that the trustees are liable for the amounts wrongfully paid. The Chief Engineer, V. M. Roberts, admitted having issued progress certificates in blank, while acting under orders from the President, J. W. Moyes, who has since disappeared. Gross negligence is alleged against the Trust Co., the plaintiffs claiming that the company should have taken precautions to see that the certificates were correct and in order.

As announced in our last issue, tenders were received by the liquidator, during May, for the purchase of a quantity of construction material, rails, etc., lying along the right of way. The tender of the Hydro Electric Power Commission of Ontario was the highest received, and was accepted. The prices accepted include: \$40 a ton for track, including rails, fish plates, spikes, etc.; \$45 a ton for a quantity of steel rails, not laid; \$5 per 100 lb. for bolts out of track; \$80 a ton for spikes out of track; \$45 a ton for fish plates out of track; and 5c a lb. for structural steel. The poles and ties were not sold. The prices given above will enable the liquidator to realize about \$120,000 on the materials mentioned.

Jitney Traffic Notes.

In Vancouver 285 jitneys have been licensed this year, and 347 men have qualified as drivers.

In Winnipeg the question of bonding jitney owners is still under consideration. The Automobile Club, which brought the matter forward, does not desire to interfere with the business except to the extent that necessary protection be afforded to the public.

The Guelph Radial Ry. hauls freight to the Ontario Agricultural College under an agreement made a number of years ago. A deputation, representing the city council, which owns the railway, was, on June 13, instructed to wait upon the Ontario Government in regard to the matter. The city contends that the rate paid for freight does not pay the cost of haulage, owing to the great increase in the cost of labor, etc., since the agreement was entered into.

Mainly About Electric Railway People.

J. G. Kilt, President of the projected Morrisburg & Ottawa Ry., died suddenly in Ottawa recently, aged 54.

W. J. Carrique, President, Canadian Street Car Advertising Co., who died at Montreal, Aug. 15, 1916, left an estate valued at \$476,611, including 1,298 shares in the company, valued at \$31,000.

W. Hodge, formerly Manager, Cornwall Ry. Light & Power Co., and Stormont Electric Light & Power Co., was presented with a silver desk set by the employes of the two companies, on June 17, on leaving.

Charles Lewis Wilson, who has been elected President, Canadian Electric Railway Association, was born at Boston, Mass., May 23, 1871, and from 1888 to 1891 was Master Mechanic, Eureka Milling Co., Toronto; 1891 to 1892, in Freight Department, G.T.R., Montreal; 1892 to 1904, in different positions on Toronto Ry.; 1904 to 1907, Traffic Manager, Toronto & York Radial Ry., Toronto; and since 1907, Assistant Manager, same company.

Arthur Gaboury, who has been re-elected a member of the Canadian Electric Railway Association's executive committee, was born at Montreal, April 6, 1875, and entered Montreal Street Ry. Co.'s service, June 4, 1894, since when he has been, to Oct., 1900, conductor and motorman; Oct. to Nov., 1900, Assistant Inspector; Nov. to Dec., 1900, night clerk, Cote St. barn; Dec., 1900, to Sept., 1903, day chief clerk, St. Denis; Sept., 1903, to May, 1906, Claims Agent; May, 1906, to 1907, Assistant Superintendent; and from 1907, Superintendent, which position he still occupies in Montreal Tramways Co.'s service.

James Dewar Fraser, director and Secretary-Treasurer, Ottawa Electric Ry., Ottawa, who has been re-elected a member of the Canadian Electric Railway Association's executive committee, was born at St. Andrews, Que., Mar. 26, 1851. From 1871 to 1882, he was accountant and telegraph operator, W. McClymont & Co., Ottawa; 1882 to 1891, Secretary-Treasurer, Ottawa City Passenger Ry.; in 1891 he was appointed Secretary-Treasurer, Ottawa Electric Ry., which position he still holds. In 1893 he was also appointed Secretary-Treasurer, Ottawa Car Co., now Ottawa Car Manufacturing Co., and in 1906 he was elected a director. In 1903 he was elected a director of the Ottawa Electric Ry. Co., and in 1914, also a director of the Ottawa Traction Co. In addition to these positions he is a director and Secretary-Treasurer, Wallace Realty Co. He was Vice-President, C. E. R. A. for 1914-15, and President 1915-16.

E. P. Coleman, who, as immediate past President, continues as a member of the Canadian Electric Railway Association's executive committee, was born at Taunton, Mass., June 14, 1867, and educated at the public schools there. He was from Feb. 9, 1885, to Feb. 9, 1896, in the Huber Printing Press draughting room at the shops of the Taunton Locomotive Manufacturing Co., with which his father and grandfather had been associated for many years; Jan. 1, 1896, to Sept. 1, 1900, Treasurer and General Manager, Attleboro Steam & Electric Co., Attleboro, Mass.; May 5, 1898, to Mar. 31, 1899, in U.S. service during the Spanish War as Second Lieutenant and Battalion Adjutant, 5th Massachusetts Infantry; July 1,

1899, to Sept. 1, 1900, General Manager, Plymouth Electric Light Co., Plymouth, Mass.; Sept. 1, 1900, to June 1, 1905, Vice President and General Manager, Consolidated Lighting Co., Montpelier, Vt.; June 1, 1905, to Mar. 1, 1907, in practice as consulting engineer, general, electric light, power, railway and quarry work, and Treasurer and Manager, Wetmore & Morse Granite Co., Montpelier, Vt.; Mar. 1, 1907, to Jan. 1, 1909, General Manager, Great Northern Power Co., Duluth, Minn.; Mar. 1, 1909, to Oct., 1912, Manager of Railways, and since Oct., 1912, General Manager, Dominion Power & Transmission Co., Hamilton, Ont. He has been a member of the Canadian Electric Railway Association's executive committee for several years, and was Vice President for 1915-16 and President for 1916-17.

Electric Railway Notes.

Edmonton Radial Ry. car barn mechanics are to have their wages increased to 50c an hour.

The Ontario Railway and Municipal Board, on June 19, confirmed the new schedule of fares for the Port Arthur Civic Ry. and the Fort William Municipal Ry.

The Ontario Railway and Municipal Board has approved the International Ry.'s standard freight tariff of maximum mileage tolls, O.R.B. no. 1, to be governed by Freight Classification 16.

The Montreal City Attorney advised the Board of Control, June 5, that the contract made with a company on June 12, 1912, to operate a system of auto-buses in the city was null and void, because the company had not carried out its obligations within the time required.

The Montreal Tramways Co. proposes to prevent the practice of riding on the steps of its cars by fitting cars with a device which will close doors to prevent any additional passengers getting on. The device was tested in the presence of the City Engineer recently.

The Calgary Municipal Ry.'s car formerly used on the Ogden St. line, was partially destroyed by fire, June 10. T. H. McCauley, Superintendent, has recommended the commissioners to reconstruct the car as a combined freight and passenger car for use as required on the Ogden, Bowness and Sarcee lines.

The Vancouver, B.C., City Council has instructed its solicitor to notify the British Columbia Electric Ry. that the corporation holds the company responsible for damage done to the city's water system through electrolysis. A conference is being arranged between the officers of the council and the company.

The Toronto Suburban Ry. has bought three semi convertible, p.a.y.e. cars from Tuscaloosa St. Ry., Tuscaloosa, Ala., and also an express car and snow plough from Ridgeway, Pa. All of the foregoing have been received, in addition to four large interurban cars from Preston Car & Coach Co.

The British Columbia Legislature has authorized the Vancouver City Council, subject to certain conditions, to own and operate power plants. The city has for some years been prevented from developing hydro electric power plants for the supply of light and power, owing to a section in the corporation act of 1895, which gave a practical monopoly to the British Columbia Electric Ry.

The Mayor of Toronto stated, June 16, that valuator appointed by the city and

the Toronto & York Radial Ry. had submitted figures relative to the proposed purchase by the city of the T. & Y.R.R. Metropolitan Division. If a satisfactory settlement cannot be arrived at after negotiation, the matter will, it is said, be submitted to arbitration.

One the latest type of one-man cars put on the Calgary, Alta., Municipal Ry., June 13, the front gates, where passengers make exit and enter, are equipped with folding steps, which are closed when the door is shut. This makes it impossible for persons to run and jump on the step before the car comes to a stop. Similarly, the door, after being opened, cannot be closed as long as a passenger has even one foot on the step. This obviates any possibility of a portion of a passenger's coat or skirt getting caught when the door is closed by the motorman before the passenger has fully alighted.

The Toronto Suburban Ry. service, on its extension from Lambton to Guelph, Ont., is being improved to meet the increasing business offering. Additional cars are being placed on the route, and service is being given as follows: Lambton to Guelph, 2 trips a day; Lambton to Georgetown, 3 trips a day, and Lambton to Cooksville, 8 trips a day. For the present, the large interurban cars operated on this route will not be run into Toronto, passengers transferring to the lighter built cars at Lambton. The Sunday traffic is increasing steadily, and a 2-car train is run each way on that day to accommodate passengers.

Edmonton Municipal Railway and Other Public Utilities' Results.

A. G. Davidson, City Commissioner, has supplied the following statement for the year 1916:

Electric light and power ..	\$196,255.16	\$64,788.82
Waterworks ..	173,220.90	24,410.04
Telephone ..	167,965.95	9,570.84
Power house (up to June 30, 1916) ..	119,468.34	39,430.71
	\$656,910.35	\$138,200.41
Street railway ..	132,755.88	*119,597.66
	\$789,666.23	\$18,602.75

*Deficit.

In commenting on the foregoing, the City Commissioner says: "Taking the utilities as one corporation, they show a surplus of \$789,666.23 over and above operation and maintenance expenses, and a surplus of \$18,602.75 over all charges. In this connection it may be pointed out that a private corporation does not lay aside what is known under municipal ownership as a sinking fund, to retire debentures at the end of a certain number of years. It would be sufficient for a private corporation to pay to its shareholders a moderate rate of interest on their shares and lay aside a certain amount for future contingencies, but utilities operated by a municipal corporation are not only required to pay all operating, maintenance and depreciation charges and interest, but are also compelled to put aside a large sum each year into the sinking fund for the redemption of the capital moneys invested, which is no doubt the safe thing to do, but when comparing municipal ownership with private ownership, this fact should be borne in mind. The street railway has a surplus of \$132,755.88 over operation and maintenance expenses, and is earning 4 1/3% on the capital invested, and showed a betterment of \$16,161.05 over 1915, which is considered satisfactory."

Marine Department

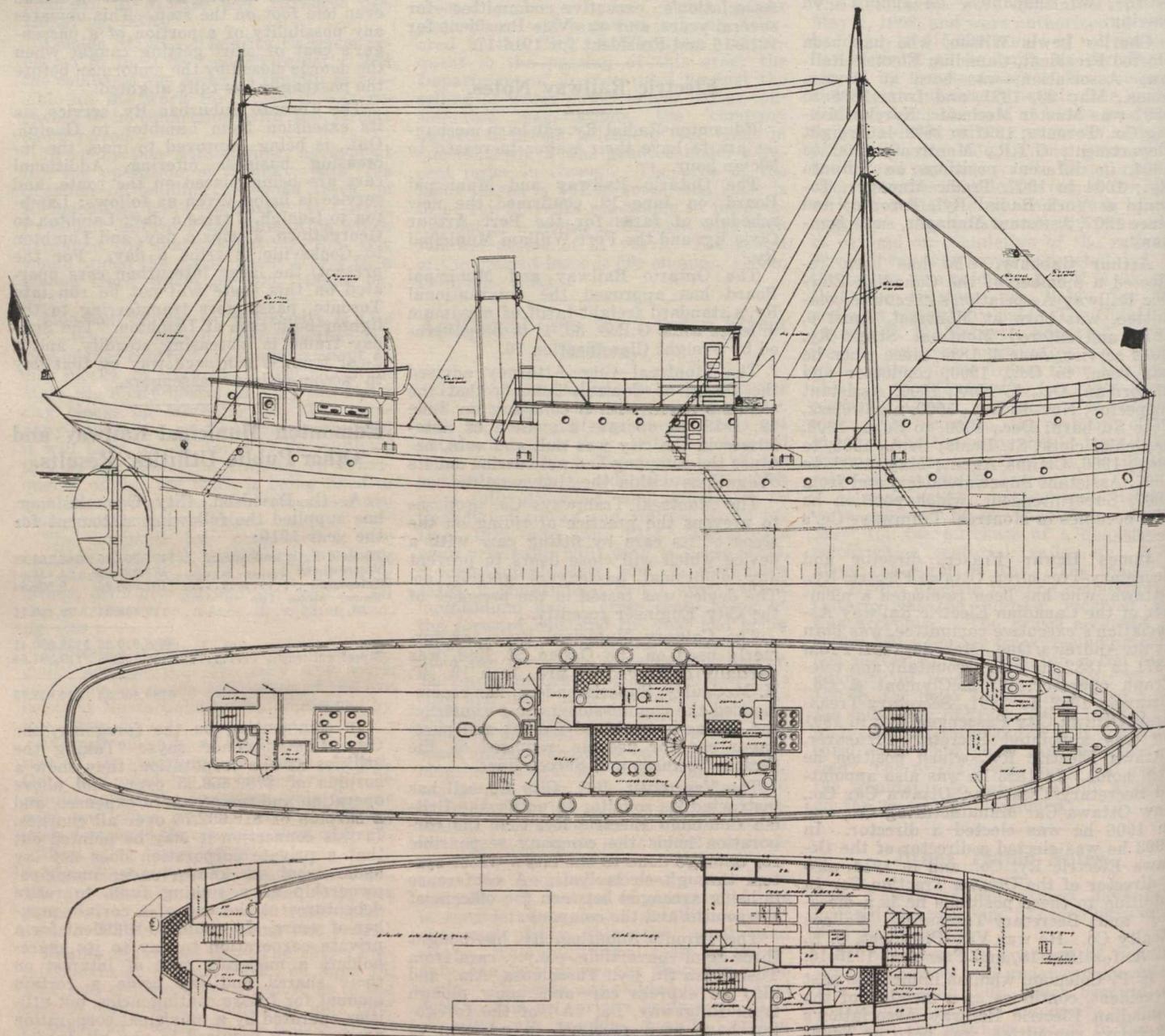
Launching of Canadian Government Vessels in Toronto.

One of the most unique, interesting, and probably unprecedented, events in Canadian shipbuilding, took place at the Polson Iron Works, Ltd., shipyards, Toronto, on June 16, when, starting at noon, four steel hulls for steamships for the Dominion Government were launched within 14 minutes. Six keels were laid early in May, four of the hulls were

down draught, and working at 180 lb. steam pressure. The vessels will be fitted with electric light, are steam heated, and have evaporating outfits fitted complete for salt water service. The machinery, boilers, auxiliaries, spars, booms and joiner work were all ready for installation when the launching took place, and the company expects to make a record in

Maximum speed, 158 ft. a minute.
Maximum list, 22°.
Metricentre in launching condition, 3 ft. 2 in.
Launching attachment used, tricker and sling.
Weather, cloudy and cool.
Total time required for 4 vessels, 14 minutes.

The christening of the vessels was performed by Mrs. Hugh McKay, of St. John, N.B., and Miss Hazen, daughters of Hon. J. D. Hazen, M.P., Minister of Marine and



Profile and Plan Views, Canadian Government Vessels built in Toronto.

launched on June 16, as stated above, and the other two were expected to be ready by the end of June, or early in July.

The dimensions of the vessels are: length over all, 140 ft.; breadth, 23½ ft.; depth moulded, 13½ ft. The machinery will consist of fore and aft compound surface condensing engines; cylinders 18 and 38 in. in diameter x 24 in. stroke, developing 500 h.p. The boiler equipment will consist of water tube boilers, having

the delivery of the vessels during July, which will anticipate the contract delivery date by about two months.

Following are details of the launching arrangements, etc.:

Travel from keel to end of ways: Outside boats, 18½ ft.; inside boats, 49½ ft.
Pitch of ways, ¼ in. to 1 ft.
Area of sliding ways, 120 sq. ft.
Weight per ft. of sliding ways, 2,500 lb.
Lubricant, 100 lb. tallow; 12 lb. soft soap, per hull.
Number of ways used, 4 per pair of boats.
Hulls listed shorewards, 16°.
Weight of each hull, 150 tons.

Fisheries, and who was present, together with G. J. Desbarats, C.M.G., Deputy Minister of Naval Service, and Admiral C. E. Kingsmill, Director of Naval Service, as well as a number of prominent Toronto citizens. As the four hulls were launched, they were christened Ypres, Vimy, Mes-sines and St. Julien, respectively. The other two will be christened St. Eloi and Festubert. The general arrangements were in charge of J. B. Miller, President, and A. H. Jeffrey, Manager and Secre-

tary, Polson Iron Works, the launching being directly in charge of W. Newman, the company's Naval Architect and Works Manager. After the launching refreshments were served to the invited guests in a marquee in the company's yard.

Mr. Hazen, in the course of a brief speech, said: "The successful termination of the war will depend, to no small extent, on the ability of the British Empire and our allies to maintain sufficient shipping to carry on essential trades. The successes that we have achieved all along since the war commenced are due in no small measure to the efficiency of the British and allied mercantile fleets. Lloyd George has said quite recently that one of the best ways of carrying on the war is by the production of ships, and then more ships. Let me remind you that the losses to shipping, as the result of submarines and other enemy agencies, have been enormous, although they have not

Canadian shipyards merchant steamships totalling approximately 150,000 tons carrying capacity. The cost of producing this tonnage will be in the vicinity of \$25,000,000. In addition, there are building in various Canadian yards wooden vessels aggregating a total carrying capacity of about 30,000 tons."

Referring to the obstacles encountered by Canadian shipbuilders before the war, Mr. Hazen said that owing to the small wages paid in shipyards in Great Britain it was almost impossible for Canadian firms to enter into competition. After the war Great Britain will require all the tonnage that will be available to transport troops to the colonies and take care of her commercial interests. He stated that in connection with the operations at Saloniki there were over 200 ships engaged in the commercial trade. He predicted that after the war there would be a great development in the shipbuilding



Canadian Government Vessels on the Ways in Toronto.

This illustration shows the four hulls just prior to being launched on June 16. Two other hulls will be noticed at the back of the picture.

nearly approximated the Germans' boastful expectations and predictions. They have, nevertheless, been serious, totalling up to the end of April last about 5,811,100 tons. How stupendous this loss is, you will understand when I point out that the replacement value approximates, if it does not exceed, one thousand million dollars. But, notwithstanding these enormous losses, there is the comforting thought that the construction of new ships has, during the period of the war, been well maintained, more especially by Great Britain and the United States.

"Without entering into any details, I may say that the total of the world's mercantile marine tonnage at the close of 1916 was 48,683,136 tons. Even if it should so happen that the present ratio of destruction should be maintained for another year or, say, until the end of June, 1918, if we maintain the present ratio of construction, the net reduction of the world's tonnage would be only about 2%. Recent reports, however, go to show that there is no probability of the present ratio of destruction being maintained. There is tremendous activity in ship construction in Great Britain, the United States and Japan, and there is evidence that the ratio of construction in the Canadian shipbuilding yards from coast to coast will be more than maintained. There are at present under construction in Can-

industry of Canada, a condition which would prevail for some considerable time. In fact, he believed that shipbuilding would eventually be one of the greatest of Canada's commercial industries.

Insuring U. S. Seamen.—The U. S. Treasury Department announces the completion of arrangements for the insurance against war risks of masters, officers, and crews of U. S. merchant vessels by the Bureau of War Risk Insurance of the Treasury Department in accordance with the provisions of an act approved June 12. Policies thus protecting seamen of the U. S. merchant marine will be issued by the bureau in connection with vessels sailing from the U. S. on and after June 26 and vessels sailing from abroad to the U. S. on and after July 10.

Channel Markings in Shoal Water in the St. Lawrence.—In some shoal waters, especially on the coast of the Gulf of St. Lawrence, it is the practice to mark the edges of channels by driving bushes or balises in the mud banks along the edges of the deeper water, instead of, or in addition to, buoys. The Marine Department announces that hardwood bushes are to be used on the starboard side of the channels, and evergreen bushes on the port side.

United States Committee on Inland Water Transportation.

The Council of National Defence has appointed an inland water transportation committee, with Gen. W. M. Black, Chief of Engineers, U. S. Army, as chairman. Daniel Willard, President Baltimore & Ohio Rd., and chairman of the council's advisory commission, who has special charge of matters relating to transportation, is a member ex officio. The other members of the committee are: W. S. Dickey, vice chairman, Kansas City, Mo., President Kansas City-Missouri River Navigation Co.; George E. Bartell, President of the Philadelphia Bourse; Capt. J. F. Ellison, Cincinnati, formerly secretary of the National Rivers and Harbors Congress; Joy Morcon, Chicago, director in many financial, mercantile, and transportation companies; J. E. Smith, St. Louis, President Mississippi Valley Waterways Association; M. J. Sanders, President New Orleans Board of Trade, representative Harrison-Leyland Lines; Lieut. Col. C. Keller, of the Corps of Engineers, who will act as secretary of the committee.

It will be the committee's duty to bring together the companies engaged in inland water transportation, including those on the Great Lakes, in order to meet the war situation and increase and make more efficient the freight carrying facilities of the country's waterways. It is hoped through the committee's agency to aid in some degree in meeting the existing shortage of freight cars in the sections where water transportation is possible.

Shipbuilding in the United States for War Needs.

The United States Shipbuilding Board, Emergency Fleet Corporation, which has charge of the U. S. Government's programme for building cargo steamships, is composed of five trustees, namely, Wm. Denman, San Francisco, President; General G. W. Goethals, New York, General Manager; J. A. Donald, New York; W. L. Solean, R. H. Bailey, Jr., T. C. Abbott and E. P. Bertholf, Washington.

Canadian Railway and Marine World was informed some little time ago that the Emergency Fleet Corporation would build 1,000 wooden cargo ships, especially for the Atlantic traffic. We are now advised that it is expected that approximately 200 wooden steamships, and 350 steel ships, will be built under the corporation's supervision within the next 18 months. The approximate dimensions of the wooden ships are: length 290 ft., beam 46 ft. The steel ships will differ in size, depending on the type that the shipyards are capable of building, or have been in the habit of building.

On June 19 it was announced that the following contracts had been given:—Seattle Construction & Drydock Co., Seattle, Wash., 10 steel steamships; Foundation Co., Newark, N.Y., 10 wooden hulls; Groton Iron Works, Noank, Conn., 12 wooden hulls; Ship Construction & Trading Co., Stonnington, Conn., 2 wooden hulls; Sanderson & Porter, New York, 10 wooden hulls; Maryland Shipbuilding Co., Baltimore, 6 wooden hulls.

Gen. G. W. Goethals, General Manager, U. S. Shipping Board, Emergency Fleet Corporation, has ordered through the Southern Pine Emergency Bureau lumber for 100 ships to be sawed by the southern mills at an average price of \$35 per 1,000 ft. at the mills.

Government Statements on Shipbuilding in Canada.

In the House of Commons on June 1, Hon. W. Pugsley asked if the government had any information to give in regard to building of wooden vessels in Eastern Canada and said that the Imperial Munitions Board in giving 2,500 tons as a minimum for the vessels they were ordering for the British Government were discouraging shipbuilding in Eastern Canada. The Minister of Marine, in replying, and in the course of further discussion, said among others: "The reason why the Imperial Munitions Board is not prepared to place contracts for wooden vessels of less than 2,500 tons is because of absolute instructions on that point from the British Government, and the vessels which the British Government wish are limited to 2,500 tons, and they are not, up to the present, willing to authorize the building for them of smaller vessels. That is a policy, of course, which they have to determine; they are the owners of the vessels; and it is for them to declare what sort of vessels they require. The junior member for Halifax stated the other night that vessels of that size could not be built in the Maritime Provinces, because it was impossible to secure the lumber to build them. I communicated this statement both to the Colonial Secretary and to the Director of Shipping, Sir Joseph Maclay, pointing out that I trusted they would reconsider the matter, and that in the public interest they would see whether or not vessels of a smaller size were desirable for their purposes, and, if they were, that orders would be placed in Canada for their construction. I have not received an answer to that communication yet. The answer, of course, has to be decided by the British Government, through the Imperial Munitions Board. There are being constructed in Nova Scotia at present by private individuals 48 wooden vessels, the builders believing that there will be a good margin of profit on vessels of that sort; and that it will prove a profitable undertaking. The information I have is to the effect that the vessels are from 1,500 tons down to about 100. The junior member for Halifax, however, said that he did not think any vessels were being built in the province as large as 1,500 tons. He said that the largest under construction would be no more than 1,000 tons, and I think he even mentioned 600. If that is the case, the information that was sent to me by a gentleman who I thought was very well informed as to conditions in Nova Scotia, must be erroneous.

The junior member for Halifax pointed out the very great difficulty there would be in building large wooden ships in the lower provinces on account of the difficulty in getting timber. Still, there is considerable activity in shipbuilding in Nova Scotia, as is evidenced by the 48 vessels now under construction. From the information I have received there is no need to give a bonus to encourage the construction of wooden vessels. The reason is that these vessels can be built and operated at a very substantial profit, providing they escape the submarines and mines, on account of the high freight rates.

The question of building ships in this country for use after the war, to be owned by this government, is a very important one. Hon. gentlemen will, of course, understand that it would involve the expenditure of a very large sum, and at present when such very large sums have

to be raised for carrying on the war, the question of raising additional millions would cause the Finance Minister a great deal of concern; it is a policy that cannot rashly be undertaken, but will require the most careful consideration. If private individuals are willing to go into the building of ships of this sort, the government would not be justified, I think, in entering into competition with them. One of the difficulties in the past about private individuals entering into the building of ships in this country has been the danger of having the ships, after they were completed, commandeered for war purposes, and if commandeered by the British Government they would not earn the ordinary commercial rates, which have been fixed by a special committee in England and which are not as high as the ship could earn under private ownership.

There are under construction at the Vickers works in Montreal 6 cargo steamers of 7,000 tons each. Other vessels are also being constructed at that yard, one of 2,630 tons, and others of less tonnage. The shipyard employs over 2,000 men and keeps them as busy as possible. At the Davie shipbuilding yards, Levis, there is a steel vessel of 5,000 tons being constructed. At Sorel, in certain private shipyards, there is a great amount of activity in shipbuilding. Near Quebec, on the Island of Orleans, a company with which James Playfair is connected, is building 4 wooden ships of from 1,500 to 2,000 tons, and I am informed that a large portion of the lumber is being brought from British Columbia. A gentleman was here today who is largely engaged in shipbuilding, and he states that he has made arrangements for bringing a large quantity of British Columbia lumber to points on the St. Lawrence, where he is going to construct some 8 or 10 wooden ships, as large, I presume, as those that are being built on the Island of Orleans, from 1,500 to 2,000 tons each. The ships that are being constructed at the Island of Orleans are well on the way to completion, and work has been commenced on two others.

The Nova Scotia Steel and Coal Co., of New Glasgow, N.S., has under construction three cargo steamships of a total tonnage of 6,800. The Shelburne Shipbuilders Co. is building a wooden cargo steamer of 320 tons. Robert Rutledge, of Sheet Harbor, N.S., is building a wooden cargo steamer of 325 tons. The Quebec Shipbuilding and Repairing Co., Isle of Orleans, is building two auxiliary schooners of 2,490 tons, and a tug boat is being built at Sorel of 410 tons. In addition, there is a large amount of other construction which I do not care to speak about here, going on at the Sorel shipyards, at the Davie works, Levis, at Polson's, Toronto; at Canadian Vickers, Montreal, and at other shipyards throughout the country. On the Great Lakes the Port Arthur Shipbuilding Co. is building 4 cargo steamships aggregating 9,748 tons. The Collingwood Shipbuilding Co. is building one steel cargo steamship of 7,988 tons, and two steel oil tankers of 4,800 tons. The Polson Iron Works, Toronto, are building 2 cargo steamships of 4,400 tons each and 6 cargo steamers of 3,500 tons each, in all 8 steamships, in addition to other marine construction work which is going on there. The Thor Iron Works, Toronto, has two steel cargo steamships in the stocks of 5,000 tons

each. The Georgian Bay Shipbuilding and Repairing Company, Midland, Ont., launched a large steamer there recently and other construction is in progress. On the Pacific coast a great deal of shipbuilding is carried on. The Coughlin Co. has a contract for 5 large steel steamships of 8,800 tons each, and in the Wallace yards 2 steel vessels of 4,600 tons each are in course of construction.

"I have a list of wooden vessels being built at points on the Atlantic coast aside from those that are building under contracts placed by the Munitions Board. This list is complete so far as I know at present. It may not be uninteresting to call attention to the fact that the British authorities have issued an order excluding sailing vessels from the war area. This step has been taken because of the risk to which these vessels are exposed from submarines, through their inability to escape. In reaching this decision the authorities are moved, I assume, by the consideration, not only of loss of vessels, but of the loss of cargoes as well. They have made a request of us to adopt the same policy and to exclude Canadian sailing vessels from the war area. I suppose that the possession of auxiliary power by a vessel would make the danger much less, and I should think that would make a difference. The following is the list of wooden sailing vessels now under construction, the figures appended giving the gross tonnage:

- J. W. Comeau, Comeauville, N.S., 1 schooner, 329.
- Dr. McDonald, Meteghan, N.S., 1 schooner, 544.
- John Deaveu, Meteghan, N.S., 1 schooner, 400.
- I. Comeau, Little Brook, N.S., 1 schooner, 250.
- O. Blinn, Grosses Coques, N.S., 1 schooner, 350.
- Therhault Bros., Belliveau Cove, N.S., 1 schooner, 350.
- J. N. Rafuse, Bridgewater, N.S., 3 schooners, 755.
- Leary & Sons, Bridgewater, N.S., 2 schooners, 265.
- Robar Bros., Bridgewater, N.S., 1 schooner, 130.
- William Naugler, Bridgewater, N.S., 1 schooner, 300.
- W. R. & C. A. Huntley, Parrsboro, N.S., 1 schooner, 490.
- Wagstaff & Hatfield, Port Greville, N.S., 1 schooner, 400.
- G. M. Cochrane, Fox River, N.S., 3 schooners, 1,349.
- James E. Pettis, Spencer's Island, N.S., 1 schooner, 425.
- T. K. Bentley, Advocate Harbor, N.S., 1 schooner, 449.
- Esther Harkinson Shipping Co., Belliveau Cove, N.S., 1 schooner, 360.
- Peter McIntyre, St. John, N.B., 1 schooner, 450.
- Southern Salvage Co., Liverpool, N.S., 2 schooners, 530.
- J. S. Gardner, Liverpool, N.S., 1 schooner, 340.
- W. K. McKean Co., Liverpool, N.S., 1 schooner, 400.
- Albert Parsons, Walton, N.S., 1 schooner, 400.
- G. A. Cox, Shelburne, N.S., 1 schooner, 200.
- W. C. McKay & Son, Shelburne, N.S., 4 schooners, 620.
- Estate Joseph McGill, Shelburne, N.S., 1 schooner, 160.
- J. Ernst & Son, Mahone Bay, N.S., 2 schooners, 520.
- J. McLean & Sons, Mahone Bay, N.S., 1 schooner, 95.
- Smith & Rhuand, Lunenburg, N.S., 3 schooners, 332.
- Lewis Hardwood Co., Lewiston, N.S., 2 schooners, 1,000.
- J. Brown, Public Landing, N.S., 1 tow barge, 50.
- E. F. Williams, Dartmouth, N.S., 1 schooner, 350.
- Quebec Shipbuilding & Repairing Co., St. Laurent, Que., 2 schooners, 2,600.
- C. Griffin, Isaacs Harbor, N.S., 1 schooner, 40.
- J. A. Balcom Co., Ltd., Margaretsville, N.S., 1 schooner, 400.
- J. X. Lenteigne, Lower Caraquet, N.B., 1 schooner, 28.
- Meteghan Railway & Shipbuilding Co., Meteghan, N.S., 1 schooner, 470.
- Shelburne Shipbuilders, Ltd., Shelburne, N.S., 1 schooner, 350.
- R. Rutledge, Sheet Harbor, N.S., 1 schooner, 300.
- J. W. Raymond, Port Maitland, 1 schooner, 375.
- Robin, Jones & Whitman, Liverpool, N.S., 1 schooner, 340.

"None of these vessels is large, but the list shows that there is a very considerable activity in shipbuilding. The people of the Maritime Provinces, so far as I can learn, have not shown much anxiety to engage in the building of larger vessels.

"Six or eight months ago a gentleman who was interested in shipbuilding in Montreal told me he was going to proceed with the construction of 10 schooners from 2,500 to 3,000 tons each, and that he would as soon build them in the Maritime Provinces as anywhere if there were people there to take the contracts. I communicated with the St. John Board of Trade and others in St. John, and told them of that proposition. After enquiring my correspondents wrote me that they could not find anybody who was willing to enter into a contract for the construction of such vessels at that time. The question of price was not raised; it would have been satisfactory. These people said that shipbuilding in New Brunswick had become almost a lost art. It flourished years ago. In those days there used to be ship carpenters, sail makers, caulkers, and other ship's tradesmen, but these have pretty well disappeared. At any rate the parties with whom I communicated could not find any one willing to enter into a contract for the construction of these ships. I say this to show that at present there are difficulties in the way of constructing vessels of large size. This applies especially to New Brunswick. In Nova Scotia shipbuilding has been better maintained, schooners and other vessels have always been built in that province, and that accounts, probably, for the greater shipbuilding activity in Nova Scotia to-day. As I understand it, if there are builders who will build what the British Government requires—and they must be the judge of their own requirements—they will have no difficulty in getting contracts from the Imperial Munitions Board.

There is no doubt that there is a greater development of shipbuilding in Canada than the country has known for many years. I believe as a result of what is going on today the shipbuilding yards in Canada will be placed in a considerably better position than they have been at any time during the past 25 or 30 years. I further believe that when the war is over they will be able to compete on more even terms with the shipbuilders of the United Kingdom. But up to the present Canadian shipbuilders have had no protection. British registered ships built in the Old Country have come into our ports to compete with the ships that were built in this country without paying any duty even upon their equipment and the things that were necessary to enable them to sail their ships. But, there has been an enormous advance in wages in the United Kingdom. My belief is that wages there after the war is over, will never get down to the point at which they were before the war and which gave the shipbuilder there an undue advantage in competition with the shipbuilders in this and other countries. Wages in the United Kingdom are quite as high as they are in Canada and I do not believe they will come down for some years, because there will be great activity after the war is over in building ships. The troops will have to be brought back, the munitions and equipment will have to be brought from the front and in consequence of submarine attacks there will be fewer ships than there were at the outbreak of the war. To carry on the business of the world

there will be a great demand for ships, in consequence of which the shipyards of Great Britain and Canada will have a great deal of work to do and they will require to build a good many ships for carrying on the business for some years to come. I expect the Canadian shipyards, with the impetus they are getting now, will be able to compete with the shipbuilders of the United Kingdom. You find shipyards with contracts for 6 and 8 large ships and as a result their yards will be better equipped and in a very much better position to compete than they were before.

"Some contracts were placed in Canada for neutral governments or owners with the full approval of the British Government. That approval was obtained before the contracts were entered into. In most cases these vessels have in the course of construction been commandeered for the British Government and instead of flying the flag of neutral countries they will fly the British flag and be used for the purposes of Great Britain in connection with the war and the carrying on of her trade."

In the course of the discussion the Minister of Trade and Commerce said:—"The Imperial Munitions Board are building such vessels as they are building on the order of the British Government, and they build to the specifications that the British Government requires. The Canadian Government is furnishing no shipyards, making no contracts, planning and building no vessels other than the 2,500 tons vessels that are being built by the Imperial Munitions Board."

Grounding of the s. s. Cape Corso.

An investigation was held recently into the causes of the grounding of the s. s. Cape Corso in the vicinity of Cape Chat in the Gulf of St. Lawrence, May 15. Following is a summary of the judgment given in Montreal, by Capt. L. A. Demers, Dominion Wreck Commissioner, concurred in by Capt. F. Nash and C. Lapierre, as nautical assessors. After reviewing the evidence, the court finds that the story as told by the master, Capt. A. Henderson, does not correspond with the entries in the scrap log. Where he stated straight courses had been steered from Fame Point to the scene of the casualty, the log indicates that varied courses were steered. The court has a suspicion that the master attempted to mystify it when he stated that immediately before the vessel struck he went to the bridge and ordered full speed astern, which he afterwards corrected by saying that the order had been given by the second mate before he reached the bridge. The evidence indicates that the master's actions were not in accordance with what is expected of a careful mariner. He is a stranger in these waters, and said he made good courses in crossing, making Cape Ray as expected, though this is contradicted by the second mate, who said the vessel had to be hauled in in that vicinity. The weather is said to have been thick, the scrap log says rain, and the evidence shows snow. The master says the vessel struck lightly, while the log reports that she struck heavily. The court holds that when a change of course was made, in heading the vessel directly for the land, speed should have been reduced, soundings taken, and the master should have remained at his post until the object for which the course had been changed had been attained. As he failed on these

points, the court holds him at fault, and unhesitatingly affirms that he navigated his vessel carelessly.

An examination of the scrap log reveals the fact that a wholesale erasure of entries formerly made by the second officer for the period prior to, and at the time of the grounding, had been made, and entries concocted subsequently and inserted to correspond with the story told before the court. As a result of this the court was convened a second time to secure a more thorough explanation of the erasures, and the second officer stated that it was the chief officer's suggestion that he erased with a view to abbreviate the entries made. The chief officer offered unsatisfactory explanations regarding the abbreviations, and the master acknowledged having himself made certain entries regarding a course in the place of one erased, but could not recollect what was marked there before. The evidence of the several witnesses differed, in fact the whole evidence and the number of erasures in the scrap log have been very crude attempts to mystify the court. The contradictions in the evidence at both sittings, the tampering with the log, the courses given in evidence and those found in the log, all indicate and cause the court to conclude, that the master did not navigate his vessel prudently, that he attempted to mystify the court, and that he wilfully altered a course entered in the scrap log. The first officer's conduct in advising the second officer to abbreviate his entries on the navigation of the vessel is reprehensible. No other erasures are found in any part of the log. The court reprimands the chief officer, Fred Stark, severely.

The master, in an indirect manner, appeared to reflect on the operation of the Cape Chat fog signal, but enquiries proved that it had been in operation constantly for 32 hours, covering the whole period of the casualty, and for a considerable time before and after the accident occurred.

Since war conditions have existed, the court has exercised leniency, bearing in mind the mental strain to which vessel masters are at present subject, and it is its intention to continue this practice so long as present conditions obtain, with errors of judgment, and when the evidence indicates that elementary precautions have been taken to bring the vessels to their respective destinations without mishap. In this case, had the log not been tampered with in such a barefaced manner, the court would have taken into consideration the fact that the master was surrounded with inexperienced officers and boys of few months experience, who were detailed to steer the vessel, but for the reasons mentioned, the certificate of the master, A. J. M. Henderson, no. 026394 is suspended for two months from May 19. Regarding the second officer, John Shaw, his alteration and erasure of entries in the log, whether voluntarily or under pressure is deserving of the strongest condemnation, and not knowing what led to the tampering, the court does not deal with his certificate, but as he is very young and inexperienced, he is severely censured and reprimanded. The court retains the scrap log for transmission to the Board of Trade in England, with other documents.

A. W. Atwater, K.C., represented the North of England Protective Association, and R. T. Heneker, K.C., looked after the interests of the master and second officer on behalf of the Imperial Merchant Service Guild.

Proposed Government Control of Lake Freight Rates.

Some reference was made in Canadian Railway and Marine World for June to the proceedings of the House of Commons committee, which is dealing with the revision of the Railway Act, especially regarding the clause which gives the Board of Railway Commissioners jurisdiction over the rate for traffic carried by any railway company by sea or by inland water, between places in Canada, so far as deemed applicable by the board, and which clause it was proposed to amend by making it apply to all freight traffic carried by any carrier by water between places in Canada. This amendment was strongly opposed by Francis King, M.A., Counsel for the Dominion Marine Association, as well as by various boards of trade and chambers of commerce and others throughout the provinces chiefly affected.

Mr. King outlined the opposition to the amendment proposed, and reviewed to some extent the opposition made to similar proposals in 1914 and 1915. He emphasized the point that the opposition was to the amendment only, and not to the general clause as it has stood for several years in the Railway Act, and confuted the suggestion made by a member of the committee that the questions dealing with the vessel traffic and railway traffic were analogous. So far as traffic on vessels operated in connection with railways was concerned, the association had no objection to it being under the board's jurisdiction. In the case of a railway, it enjoys a monopoly on the road it uses, and which the government helped to build; it operates between definite points on definite schedules on a fixed roadway. It does not necessarily tie up a whole train and train crew in taking on and unloading freight, and in any event it does not as a rule carry freight and passengers on the same train, although it may so carry express traffic, and it is not subject to marine risks, with insurance against them. Railway traffic does not include the infinite variety of classes of carriers to be found amongst the vessels trading in any one district, which includes everything from a large vessel to a gasoline launch, and it is not subject to variations in carrying capacity due to fluctuations in the available draught of water. Freedom from control of rates as suggested is of itself a remedy for high rates or a monopoly, as it ensures the freedom of absolute competition, not only between boats now on the lakes, but also as a factor in the control of railway rates. Under present conditions the lake carrying companies are working under tremendous difficulties, a large amount of tonnage having been removed from the lakes to the ocean, and rates increase when vessel capacity goes down. From time to time it has been suggested that the coasting laws be abrogated, thus allowing U.S. vessels to compete with Canadian vessels on their own ground. The Dominion Marine Association has consistently opposed this course, but if a reciprocal abrogation were arranged Canadian vessels then could join in the larger traffic on the other side, coal up and ore down. The association has no agreement or understanding amongst its members regarding the regulation of tolls or traffic. A number of years ago some such agreement was made, but it was realized

that a mistake was made, and it was entirely outside the constitution and should never have been attempted. There is no arrangement with any U.S. marine associations or any shipping organization regarding rates, and there never was such an arrangement. The members of the association could be described as common carriers and carriers, as it is contended that so far as the bulk freighters are concerned, they are not common carriers, who are supposed to take whatever is delivered on the dock and carry for the public in the ordinary way as a railway does. He contended that the act as it stands at present should remain in force, so far as the clause under discussion is concerned, that is, that the vessels which carry in connection with the railway companies should come definitely under the board's jurisdiction, in accordance with the words of the statute, but it is not necessary nor desirable to go further. So far as the U.S. is concerned, bulk freight carriers on the Great Lakes are not under the jurisdiction of the Interstate Commerce Commission, but package freight vessels operated in connection with the railway companies were included in the Interstate Commerce Act when it became law. It was then proposed to include in that act the port to port traffic of package freight vessels, but that point was eliminated from the bill. He claimed that the tendency under the board's jurisdiction would be to switch export grain from Canadian to U.S. channels. At present there is more Canadian grain exported from U.S. ports than from Canadian ports, and this, it is claimed, is due to shortage of facilities at Montreal, due partly to the elevators there being used for storage purposes, the longer haul through the St. Lawrence, the higher insurance rates, and the alleged ocean combine, which absorbed any difference made in the tariff on the lake route, which was made in an effort to hold the lake trade to the Canadian ports. The control of tolls and tariffs by the board would be considered most objectionable, not as a question of the vessels' interests, but as not being in the interest of the trade and commerce of the country. It would increase the tendency to drive grain out of the Canadian channel into a channel where it would run through Buffalo. Over 50% of the grain from Fort William runs through Buffalo, chiefly because the shipper orders it by that route, owing to a lower through rate.

Several other speakers were heard by the committee, the objections being more or less the same, with a few additional points of evidence here and there, which strengthened the case against the proposed amendment. The cumulative effect of the evidence, and the strong position occupied by the opposition, caused the committee to strike out the objectionable part which it was proposed to add to the section, thus leaving matters concerning control of lake freight rates as they were.

Permissible Draught on Welland Canal.

—Notice was given recently that from June 15, until further notice, no vessel would be allowed to enter and pass down through the Welland Canal, drawing more than 14½ ft., and no vessel will be allowed to enter and pass up, drawing more than 14 ft.

Welland Canal Accident.

The wooden steamship Nipigon, owned by W. J. Harlow, Toledo, Ohio, upbound and light, struck and carried out the two head gates of lock 1, Welland Canal, on May 26, about 4.45 o'clock p.m. The vessel and gates were carried out into the harbor below. Owing to the fact that the old and new canals are connected above lock 1, a great quantity of water was released, and it was not possible to close the two foot gates until 4.15 a.m. on May 27, when the water had ceased to lower further. The large quantity of water coming down the old canal, which is used for water power, and from the Cataract Power Co.'s tail race, made it very difficult to close the lower lock gates. When the gates were closed, which operation required but a minute or two, there was a head of approximately 6 ft. of water acting upon them. Two spare lock gates were placed in position and the lock was ready for operation on May 27, at 2 p.m., but navigation could not resume as the reach had not sufficiently filled up. Traffic began again at 6.45 p.m., having been interrupted for 25 hours. About 17 downbound and 4 upbound vessels were delayed for periods varying from the full 26 hours to a few hours.

The Nipigon was not seriously injured. Her propeller was badly damaged, two of the blades being broken off when the boat was carried by the rush of water into the west docking. The estimate of the cost of repairing the damage to canal property is \$4,000. It appears that the accident was due to excessive speed of the vessel in entering the dock. The engines were not working ahead, but centred. They could not be reversed in time to avert the collision with the upper gates. A wire cable placed on a snubbing post slipped through the compressor.

Shipbuilding Possibilities at Quebec.

The Quebec Board of Trade, of which J. G. Scott, ex-General Manager, Quebec & Lake St. John Ry., is President, is urging the claims of Quebec as the most suitable location for a large shipbuilding plant, and recently took steps to bring the matter before the British Premier, in view of the extensive shipbuilding program being undertaken in Canada in British interests. The British Premier referred the matter to the Imperial Munitions Board in this country, and the Chairman communicated with the Board of Trade to the effect that the Munitions Board would be pleased, if Quebec interests made the necessary investment and made a serious effort to equip yards for the construction of vessels, to co-operate with the city, or company which may be established, to secure the necessary plates for steel shipbuilding, provided the company give a satisfactory price for building vessels, and an unmistakable assurance that they will be completed within the time specified on contracts.

During the campaign which the Board of Trade has been carrying on for some time to induce some of the larger shipbuilding firms to locate in Quebec, invitations were extended to several companies in Great Britain, Ireland and France. Several of these have replied, mostly to the effect that the matter had been under consideration previously, but owing to the lack of government support, and to other causes, proposals for such establishments had been dropped.

Shipbuilding Activities Throughout Canada.

British Columbia.—While no definite official announcement is yet available, there are a large number of probably authentic reports as to what R. P. Butchart and J. W. Troup, who are representing the Imperial Munitions Board in British Columbia, are doing, and they are said to have let a number of contracts for wooden steamships. The reports are summarized as follows:

Cameron-Genoa Shipbuilders, Ltd., has been given a contract for 4 steamships.

British Columbia Construction & Engineering Co. will, it is said, get a contract for building some steamships at New Westminster.

Western Canada Shipyards, Ltd., Vancouver, has, as stated more fully in another paragraph, been given contracts for 6 steamships.

Peter Lyall & Sons, contractors, Montreal, have leased or bought Wallace Shipyards, Ltd., yard No. 2 and have been given an order for 6 steamships.

The British Columbia Trades Association has been interviewing Messrs. Butchart and Troup, with a view of having engines, hoisting gear and other equipment for the steamships built in B. C. shops.

The Foundations Co., Ltd., of Montreal, which is really a branch of the Foundation Co., New York, etc., has been given a contract for 5 steamships, which may be increased to 9. It has leased a 10 acre site on the former Songhees Indian reserve, Victoria.

Wallace Shipyards, Ltd., North Vancouver, has been operating two yards, from which it has already launched 3 auxiliary schooners for Canada West Coast Navigation Co. The 4th will be launched shortly, leaving 2 more to complete the order. It will probably be given a contract for 6 steamships by the Imperial Munitions Board.

In reference to the standard type of wooden vessel to be built in Canada, it was stated in our last issue, on pg. 245, as having been officially given out in British Columbia, that the vessels would be propelled by steam, with triple expansion engines of about 950 i.h.p. We are officially advised that the engines will have about 1,000 i.h.p.

J. J. Coughlan, of J. J. Coughlan & Sons, on returning to Vancouver recently, is reported to have said: "Our first boat is well under way and will take to the water in November at the present rate of construction. We are now laying the keel for the second and third vessels. The second vessel will be launched in December and the third in February next. We are contemplating clearing away space for a fourth keel. When the first vessel is launched we will lay the keel for the fifth vessel on the berth which she vacates and the sixth vessel will be built on the berth now occupied by the second one." Mr. Coughlan added that the first vessel is for a British concern and the other five for the British Government.

Western Canada Shipyards, Ltd., has been organized in Vancouver, by an amalgamation of Northern Construction Co. Ltd. and Palmer Bros., Grant Smith & McDonnell, and Armstrong, Morrison & Co. Ltd. The directors are A. R. Mann, President and Managing Director; W. H. Armstrong, First Vice President; P. N. Carlson, Second Vice President; C. V. Cummings, Secretary-Treasurer; Alex. Morrison, Grant Smith, E. V. Hauser, W. C. Ditmars, and A. B. Palmer. It has secured, as a site for its plant, the old

Royal City Mills property, belonging to the British Columbia Electric Ry. on False Creek, Vancouver, with 70 ft. frontage and 100 ft. depth. The site is being prepared, about 2,000 piles having to be driven. The company has a contract from the Imperial Munitions Board for six wooden ships. Ways are being built to lay down four vessels at once. It is expected the first keel will be laid by July 20 and that between 400 and 500 men will be employed.

Shipbuilding Bounties.—Thos. Cantley, Chairman of the Board, Nova Scotia Steel & Coal Co., New Glasgow, N.S., in speaking at the Canadian Manufacturers Association at Winnipeg, June 12, in regard to shipbuilding, said that conditions in the shipping trade at present presented an unrivalled opportunity for Canada to jump to the front as a shipbuilding country. A Dominion Government bounty would stimulate the shipbuilding industry, and he considered that some such encouragement was necessary in order to bring about a shipbuilding revival.

The Pacific Shipbuilding Co., Ltd., which has, as stated in our last issue, been incorporated under the Dominion Companies Act, with authorized capital of \$50,000, has its office at 310 Winch Building, Vancouver, the persons principally interested being J. C. Shields, lumberman, and J. T. Robinson, broker, of Kamloops, B. C. It was stated to be the company's intention to establish a shipbuilding yard at New Westminster, but nothing as far as can be learned, has yet been done in that connection, and the company does not yet appear to have any contracts for vessel building.

Replacing the Quadra.—When the Marine Department estimates were under consideration in the House of Commons, June 1, on the item \$150,000 for the construction of two steamships to replace the C.G.S. Quadra in British Columbia waters, the Minister of Marine said:—"They will be built in Canada, and of wood. The Quadra was lost in collision, and we find that we can do much better by building two smaller vessels than one large one. We have managed to get along in the meantime by chartering a vessel, and in view of existing conditions, it is not likely we shall proceed with the construction of those vessels this year. That is a matter for consideration."

The Imperial Oil Co.'s oil tank steamship Reginolite, the fourth to be built for it by Collingwood Shipbuilding Co., was launched at Collingwood, Ont., June 21, without any ceremony. The vessel, which is intended entirely for ocean service, has the following dimensions: Length, 250 ft. between perpendiculars, 259 ft. over all; beam, 45¾ ft.; depth, 25 ft. to upper deck; deadweight carrying capacity, 3,500 tons. The machinery will consist of a set of triple expansion engines, with cylinders 18, 30, and 50 in. x 36 in. stroke. Steam will be supplied by two Scotch boilers 13½ x 11 ft. long, working at 180 lb. pressure. The vessel will take the highest class in Lloyd's Registry for ocean service. Her construction has been under the supervision of R. W. Henderson, Marine Superintendent, Imperial Oil Co. A fifth vessel, to be called Talarolite, is still on the stocks at Collingwood.

Polson Iron Works, Ltd., Toronto, in addition to the 6 steel vessels for the Naval Service Department, which are de-

scribed on another page, are building ten 3,500-ton deadweight freight steamships, all of the same type, to British Corporation specifications, highest class for ocean service, the last of them to be finished before the close of navigation in 1918. The plates and other material has all been purchased and are being delivered. The principal dimensions are: Length over all, 261 ft.; breadth moulded, 43½ ft.; depth moulded, 22 ft. 11½ in. The propelling machinery will consist of triple expansion surface condensing engines, cylinders 20½-33-54 in. x 36 in. stroke, developing 1,250 h.p. Each vessel will have two Scotch marine type boilers, each 14 ft. diameter x 12 ft. long, equipped with forced draught, and designed for 180 lb. working pressure. The vessels will be equipped throughout for ocean service, with electric plants and searchlight, cargo winches, steam windlasses, steam and hand steering gears, and 15-ton evaporator outfits.

Polson Iron Works, Ltd., Toronto, is making the following extensions and alterations to plant: New boiler shop, 250 x 90 ft.; construction of steel, concrete and glass; to be equipped with the most modern electric cranes and up to date machinery. The foundations for this building are being prepared. The present boiler shop will be overhauled and refitted for an extension to the machine shop and engineering departments, to permit that department to expand. A new gantry crane, 65 ft. wide x 50 ft. high, of 10 tons capacity, is being erected on the east side of the dock, which will make it possible to lay down four 3,500 D. 5 vessels at the same time. New buildings have been erected as storehouses, one on the west dock for lumber being stacked for seasoning purposes, and another to accommodate the auxiliaries and parts purchased outside. This building, having already proved too small for certain of the auxiliary machinery, has been placed on the west dock. The company is running continuously, day and night, double shifts, employing at present about 1,000 hands. It has been very fortunate in securing material, having placed orders for in the neighborhood of 10,000 tons of steel.

Terms for Wooden Shipbuilding.—The following letter from W. I. Gear, Director of Steel Shipbuilding, to a member of the House of Commons was read in the house recently: "The Imperial Board has been authorized by the British Ministry of Shipping to arrange for the construction of a certain number of wooden ships in Canada according to a standard type. The design and specifications can be seen at the board's office. The vessels are of approximately 2,500 tons deadweight, being 250 ft. long, 40 ft. beam and 21 ft. draught. The terms on which the board is placing these contracts are the reimbursement of the contractor for the actual cost of building, including labor, material and overhead, plus a fixed sum by way of profit for each vessel constructed. Under these circumstances, and because definite results must be secured, the board will examine closely into the capacity, resources and experience of each firm seeking a contract. With regard to the plant, etc., employed in the construction, individual arrangements will be made in each case on the basis of allowing a reasonable amortization as part of the cost of construction, or in the case of an existing plant allowing a reasonable rental for

the use of the plant as part of the cost. With regard to any construction undertaken in Eastern Canada, the essential point will be for the contractor to satisfy the board that he has or can obtain on reasonable terms a sufficient quantity of suitable lumber to build the type of ship required. It is not safe to reckon on obtaining lumber from British Columbia; first, because we expect that most of the lumber suitable for the purpose, which is cut there, will be taken up in wooden ship construction on the Pacific coast, and second, because it is doubtful whether any large quantity of lumber could be brought across the continent in the present railway situation even if it were available."

SHIPBUILDING NOTES.

The Cotton Co., Ltd., contractors, Vancouver, B.C., is reported as going to establish a shipbuilding plant at False Creek, Vancouver, to build 10 vessels for eastern shipping concerns.

Halifax Shipbuilding Co., Ltd., has been incorporated under the Dominion Companies Act, with \$3,000,000 authorized capital and office at Halifax, N.S. The provisional directors include J. B. Kenny, barrister, and several law students.

The Ernst Shipbuilding Co., Ltd., has been incorporated under the Nova Scotia Companies Act, with \$25,000 authorized capital, to take over and operate the shipbuilding plant hitherto carried on at Mahone Bay, N.S., by J. Ernst & Sons.

The Westminster Marine Railway Co., New Westminster, B.C., is reported to have acquired a lease of Poplar Island, in the Fraser River, from the Dominion Government, on condition that it be used for a shipbuilding and repair plant.

A. Sydney, N.S., press dispatch says the Dominion Bridge Co., Montreal, and the Beardmore interests acting together, propose to establish a steel shipbuilding plant in Nova Scotia and that the matter is being considered by the Nova Scotia Shipbuilding Commission.

The Sydney Foundry & Machine Works, Ltd., as mentioned in our last issue, has purchased a small floating drydock, for use in connection with its plant at Sydney, N.S., where it does a large ship repair business. It is the intention to commence a shipbuilding business there, and to build a larger drydock.

The Newfoundland Shipbuilding Co., of which the principal is stated to be Christoffer Hannevig, of Christiania, Norway, is reported to have settled on a site for its proposed plant, at Harbor Grace, Nfld. C. Hannevig is President of Christoffer Hannevig, Inc., general shipping agents and vessel brokers, New York.

The Falmouth Shipbuilding & Transportation Co., Ltd., the incorporation of which was announced in our last issue, has an authorized capital of \$45,000, and its head office at Windsor, N.S. The officers are: E. E. Armstrong, President; A. P. Clark, Secretary-Treasurer; F. W. Dimock, J. L. Sexton, T. B. Atkins and T. A. Mosher, directors. One wooden vessel is under construction at Falmouth, and will be sold on completion.

Shipbuilders Corporation, Ltd., the incorporation of which, with a capital of \$250,000 and office at Toronto, was mentioned in our last issue, was to have been formed for the purpose of engaging in shipbuilding at some point on the Pacific coast, but we are advised that under existing circumstances the promoters, who are associated with the Canadian North-

ern Ry., have postponed the organization of the company indefinitely.

The Tusket Shipbuilding Co., Ltd., mention of which was made in our last issue, was incorporated under the Nova Scotia Companies Act in April, with \$75,000 capital, and office at Tusket, to build wooden vessels. The capital, which is all common stock, is issued in shares of \$1 each. The officers are: L. N. Fuller, President; G. W. Eden, Treasurer, and H. C. W. Power, director. Contracts are reported to have been accepted for the supply of a quantity of lumber, and also for the erection of a sawmill for the handling of it at Tusket.

The Goderich Drydock & Shipbuilding Co., Ltd., the incorporation of which was mentioned in our last issue, is reported to have arranged for a site for the construction of docks, etc., and it is stated that the government has made a concession and undertaken to assist in or facilitate the construction of docks, etc., it being the company's immediate object to build vessels. With regard to this latter statement, it may be remembered that those responsible for the placing of shipbuilding contracts on behalf of the Imperial Munitions Board have already stated that it is not the intention to subsidize or assist in the establishment of shipbuilding

plants. Where a shipbuilding plant has been organized, and those in charge of same can assure the board of their ability to carry out contracts, orders will be given. In so far as government aid in the construction of a drydock is concerned, there is an act granting aid for construction of approved drydocks by guarantees of interest for a term of years on certain expenditure. As the company had not been organized at the time of writing, the government could not have undertaken to assist in or facilitate the construction of docks, etc.

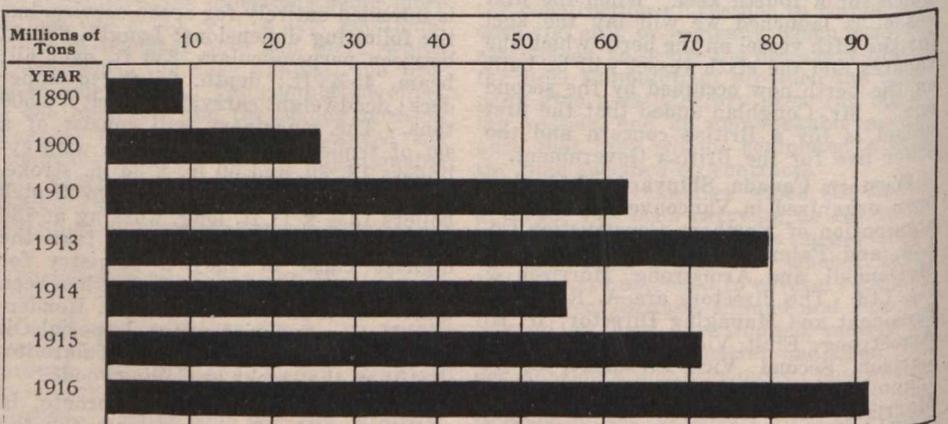
Suggested Suspension of Coasting

Laws.—The U.S. Government was reported, June 4, to be considering the suspension of the coasting laws, forbidding foreign vessels to engage in the U.S. coasting trade, thus permitting an interchange of vessel traffic between Canadian and U.S. vessels on the Great Lakes and along the coasts. This, it is stated, would remove the congestion at Atlantic and Gulf ports, as well as on the Great Lakes, at U.S. and other points, and would release a number of U.S. coasting vessels for ocean service. It is stated that the British and Canadian governments will consent to the arrangement if it is proposed by the U.S.

Sault Ste. Marie Canals Traffic.

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

ARTICLES	CANADIAN CANAL	U. S. CANAL	TOTAL
Flour Eastbound Barrels	327,870	548,290	876,160
Wheat Bushels	14,562,735	26,393,324	40,956,059
Grain Bushels	4,763,614	12,794,965	17,558,579
Copper Short tons	2,427	9,783	12,210
Iron ore Short tons	1,430,213	4,006,254	5,436,467
Pig iron Short tons			
Lumber M. ft. b.m.		23,524	23,524
Stone Short tons			
General merchandise Short tons	5,671	6,393	12,064
Passengers Number	274		274
Westbound			
Flour Barrels			
Grain Bushels			
Coal, hard Short tons	20,710	223,810	244,510
Coal, soft Short tons	156,450	1,047,667	1,204,117
Iron ore Short tons	2,000	13,883	15,883
Manufactured iron Short tons	921	14,126	15,047
Salt Barrels	54,600	58,679	113,259
Oil Short tons			
Stone Short tons			
General merchandise Short tons	32,809	130,090	162,899
Passengers Number	227	19	246
SUMMARY			
Vessel passages Number	649	1,626	2,378
Registered tonnage Net	1,794,197	5,220,932	6,925,119
Freight			
—Eastbound Short tons	1,996,493	5,152,336	7,148,834
—Westbound Short tons	220,680	1,438,378	1,659,058
Total freight Short tons	2,217,178	6,590,714	8,807,892



Sault Ste. Marie Canals freight traffic.

Atlantic and Pacific Ocean Marine.

The Allan Line s.s. Carthaginian struck a floating mine and sank, about June 18, soon after leaving Glasgow, Scotland, for Montreal.

The s.s. Waitotara, owned by Union Steamship Co. of New Zealand, and which sailed from Vancouver, May 19, for Australasia, is reported to have been destroyed by fire, together with her cargo.

The Union Steamship Co. of New Zealand, which operates the mail line between Canada and Australasia, is reported to have amalgamated with the Peninsular & Oriental Steam Navigation Co.

Canadian Pacific Ocean Services, Ltd., is reported to have chartered the s.s. Key West, 8,800 tons. It is reported that the company will operate her across the Pacific, in which service it has a number of other steamships on charter, including Strinda, Arabien, Kenku Maru and Unkai Maru.

The Dominion Government is reported to have purchased the dredge Kennaquhair from Canadian Dredging Co., Midland, for service in James Bay. It is stated that it is leaving Port Arthur immediately, and will take about a month on the journey. The dredge was built at Welland in 1908, with a registered tonnage of 452. Its dimensions are: length, 100 ft.; breadth, 40 ft.; depth, 9.5 ft.

Maritime Provinces and Newfoundland.

The pilot commissioners of the pilotage district of Shepody Basin, N.B., have increased the inward pilotage rate on vessels from 1½c to 2½c a registered ton, and the outward pilotage rate from 2c to 2½c a registered ton.

A portion of pier 5 at West St. John, N.B., about 150 ft. long, carrying a warehouse and a portion of the grain conveyor system, collapsed, June 13, and a large number of heavy cases of merchandise for export were reported lost.

The British s.s. Njord, with a cargo of coal from Sydney, N.S., for St. John's, Nfld., was abandoned in a burning condition, about 40 miles east by north of Newfoundland, early in June. The crew were taken off by the British schooner E. B. Walters, and landed at St. Pierre, Miquelon.

The s.s. Premier, while leaving Sambro, N.S., June 4, during foggy weather, ran ashore on Pollock Ledges. The crew were saved and assistance was sent to the vessel, which was hard aground. The Premier was formerly owned in Sault Ste. Marie, Ont., and was sold to Nova Scotia parties about two years ago.

The Canada Atlantic & Plant Line Steamship Co.'s certificate of registration has been revoked by the Nova Scotia Registrar of Joint Stock Companies, it having made default in payment of its annual registration fees. The reason for the company's cessation of Canadian business was given in our last issue.

At a meeting of the Nova Scotia Steel & Coal Co.'s directors, at New Glasgow, N.S., June 5, Thos. Cantley, President, stated that the first steel steamship to be built by the company would be launched early in July. She could have been launched early in June, but it was the intention to keep her on the ways until she was ready for sea. The second steamship, which is about 25% larger than the first,

is well advanced. After the first has been launched, the keel of a third will be laid.

A. & R. Loggie, Loggieville, N.S., are reported to have purchased the s.s. Orontes from Wallace Fisheries, Ltd., Vancouver, B.C. The vessel was built at Beverley, Eng., in 1895, and is screw driven by engine of 60 n.h.p. Her dimensions are: length, 111.5 ft.; breadth, 21 ft.; depth, 11.5 ft.; tonnage, 178 gross, 76 register. The vessel will be taken to Nova Scotia from Vancouver by way of the Panama Canal, in charge of Capt. Reynolds and a crew of 8. It is stated to be the intention of the new owners to secure a complete trawling outfit from Denmark and equip the vessel as a beam trawler.

Province of Quebec Marine.

Canada Steamship Co.'s repair plant, machine shop, upholstering shop and stores, together with three small vessels in course of construction, were destroyed by a fire which threatened the whole town of Sorel, June 10. The company's loss is estimated at \$150,000, which is covered by insurance.

Respecting the steamship service between Gaspé Bay, Dalhousie and Campbellton, for which a government subsidy is paid, the Minister of Trade and Commerce stated in the House of Commons, June 4, that all steamship contracts made by the department stipulate certain ports of call, and that such calls are insisted on when it is possible to make them. In many cases calls are not possible in rough weather. No complaint had been made so far this year as to the service, which is performed by the Gaspé & Baie des Chaleurs Steamship Co.

Ontario and the Great Lakes.

The name of the s.s. Roi Tan, owned by the Canadian Towing & Wrecking Co., Port Arthur, has been changed to Siskiwit.

The Rideau Steamboat Co., Ottawa, has appointed G. Depencier, captain, and B. W. Campsall, chief engineer, of its s.s. Wanakewan, for the current season.

The Public Works Department is receiving tenders for the reconstruction of part of the cribwork of the wharves at the entrance to the Kingston drydock.

The Pelee & Lake Erie Navigation Co., Ltd., has applied to the Lieutenant Governor in Council for the acceptance of the surrender of its charter, as from July 3.

The Upper Ottawa Improvement Co.'s s.s. G. B. Greene, which has been practically rebuilt at Quyon, Que., during the winter, was launched there, June 8, and was expected to be ready for service by the end of the month.

The Hamilton Shipbuilding & Ferry Co. is operating the steamboats Aletha and Brockville, P. Walsh being captain, and M. Dorey, chief engineer of the former, and G. Kirk, captain, and J. Kirk, chief engineer, of the latter.

The White Star Line, Detroit, Mich., operating on the Great Lakes, is stated to have decided to eliminate all Canadian calls during this year, owing to the Dominion Government decision that all vessels carrying freight shall instal a water sprinkler system as a fire protection.

Canada Steamship Lines' s.s. W. Grant Morden arrived at Port Colborne recently with the largest single grain cargo

ever brought down the lakes. It consisted of 750,000 bush. of oats, valued at over \$600,000. The cargo was discharged in 15 hours, which is stated to be a record in handling grain.

The vessel demand on the Great Lakes was reported to be light during June. Tonnage offered at 6c a bush. for wheat was not placed, some of it being utilized for contract ore. A charter cargo of wheat from Fort William to Buffalo was booked at 3¼c, and grain men are not bidding ahead. Lumber rates from the head of the lakes to Tonawanda, N.Y., were around \$5.

Canada Steamship Lines, Ltd., has offered to provide accommodation on its vessels on the Niagara Division for parties of returned soldiers, twice a week, for trips across the lake, and thinks that trips to Queenston Heights and Niagara Falls might also be arranged. W. E. Burke, Assistant Manager of the company, has placed his services at the disposal of the Overseas Club for this purpose.

Canada Steamship Lines, Ltd., is being sued by J. E. Carter, a vessel broker, for \$50,000 damages for breach of contract. He claims that he and D. Haney entered into an agreement with the company under which they were to receive \$25,000 commission on the sale of each of certain steamships, and that the steamships Glenellah, Rosedale, Strathcona and Trinidad were sold through their efforts, and that the company refused to pay the commission.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for May, as follows: Superior, 602.38; Michigan and Huron, 581.14; St. Clair, 576.07; Erie, 572.93; Ontario, 246.51. Compared with the average May levels for the past 10 years, Superior was 0.47 ft. higher; Michigan and Huron, 0.65 ft. higher; Erie, 0.15 ft. higher, and Ontario, 0.36 ft. lower.

Some minor rioting occurred at Port McNicoll, June 15, when about 150 alien employes engaged in loading and unloading vessels at that C.P.R. lake terminal struck work for increased pay. The company employs about 700 dock workers there, of whom about 150 are Austrians and Bulgarians. These attempted to intimidate the other workers to join in the strike, but without success.

The s.s. Forest City, owned by the Silver Islet Navigation Co., Port Arthur, is reported to have been sold to the Great Lakes Transportation Co., Midland, for service on the Georgian Bay route. She was built at Wilmington, Del., in 1891, and was formerly named King Edward. She has a steel hull divided by 5 watertight bulkheads, and is equipped with a beam condensing engine, with cylinder 38 x 108 in., 400 i.h.p. at 25 r.p.m., and supplied with steam by 2 Scotch boilers, 11 x 9 ft., at 25 lb. Her dimensions are: length, 175 ft.; breadth, 31 ft.; depth 9½ ft.; tonnage, 571 gross, 449 register.

The Mathews Steamship Co.'s s.s. Steelton was seized under an order of the Superior Court, at Montreal, recently, at the instance of an employe, as security for an action for damages under the Workmen's Compensation Act. The vessel was released on the company giving security for \$5,000, as fixed by the court. The employe alleges that he was instructed to jump from the deck of the vessel to the St. Gabriel pier, about 15 ft., whereby he was badly injured, and he claims that the company is responsible for the act of its officer in giving such

order and for not providing a means of descent.

The Collingwood Steamship Co. has been organized, with head office at Collingwood, and incorporation is being sought. The following provisional officers have been elected: Capt. G. C. Coles, President; M. P. Byrnes, Vice President; H. Storey, Secretary; J. F. Zimmerman, Treasurer, and Capt. F. G. Moles, Manager. The s.s. *City of Meaford* has been secured, and has been placed in service between Collingwood and Sault Ste. Marie. She was owned by Perks Bros., Meaford, and was built there in 1906 and originally named *Seaman*. Her hull is of oak, and she is of the following dimensions: length, 111 ft.; breadth, 24 ft.; depth, 8 ft. 5 in.; tonnage, 328 gross, 223 register.

The U.S. Engineer Office, Detroit, Mich., has given notice that, owing to the obstruction caused by the wrecks of the steamships *Saxona* and *Pentecost Mitchell* in the channel to the westward of Pipe Island, in the St. Marys River, the use of the channel has been discontinued temporarily. All vessels have been instructed to take a course starting north-east of the Frying Pan Island light, and running to abreast of the Pipe Island twins, and thence to the old intersection of the two courses southwest of Lime Island. To mark the new channel, the Watson reefs gas buoy 5 has been removed to Pipe Island coal, and gas buoys have been established at the edge of the shoal northeasterly of the Pipe Island twins and at the southerly edge of the shoal off Squaw Island.

The A. B. Mackay Steamship Co.'s s.s. *Natironco* and the Detroit & Cleveland Navigation Co.'s s.s. *Eastern States* collided in the lower Detroit River, near Grassy Island, June 19, both vessels being considerably damaged. The former was beached on the Canadian side of the river, and the latter returned to Detroit with her stem broken and her bow twisted. It is alleged that the *Natironco* was improperly lighted, and that her lights did not show clearly. The *Natironco* was built at Detroit, Mich., in 1892, and named *Pioneer*. She was acquired by the National Iron Co., Toronto, and the National Steamship Co. was formed to own and operate her in the company's interests. She was later taken over by the Merchants Mutual Line, Ltd., a subsidiary of Canada Steamship Lines, Ltd., and early this year was purchased by the A. B. Mackay Steamship Co., Ltd., Hamilton.

Manitoba, Saskatchewan and Alberta.

John Walter, Ltd., is this year operating the s.s. *City of Edmonton* from Edmonton to Shandro, about 125 miles below Edmonton, on the North Saskatchewan River, calling at intermediate points. The first trip was made May 31. During last autumn some clearing of the channel was done by the Dominion Government, and it is anticipated that further work will be done, including the erection of landing stages at certain points.

The Winnipeg and St. Boniface Harbor Commissioners have given notice that all vessels, power boats, or launches, etc., sailing in Winnipeg and St. Boniface harbor, on the Red River or Assiniboine River, within the limits of the two cities, are required to register with the harbor master, when permits will be issued and number plates placed on each vessel so

registered. The registration fee is \$2, and a penalty of \$50 or imprisonment for 30 days is provided for owners operating vessels without having them registered.

Pas, Man., has been a busy shipbuilding point during the past spring. The North Canada Fish Co. has had built barges nos. 1 and 2, a 40 ft. gasoline tow boat, and another tow boat. These will be employed in carrying fresh fish from the numberable lakes surrounding Pas, all of which are easily accessible by water from that point. The fishing season opened June 15, when the boats were put in service.

The development of the navigation interests in the Pas district has been rapid, and although there is at present over \$150,000 invested in various boats, barges, etc., engaged in commercial work, there are no facilities whatever for the docking of the boats or the handling of the freight moved. The need of them is very apparent, and it is hoped that notwithstanding the war it may be possible to get the Dominion Government to do something.

The Ross Navigation Co. successfully launched its barge no. 7 on May 12, and succeeded in floating down the Saskatchewan River its barge no. 8, which was bought from the City of Prince Albert. The barge was manned by a crew of six men and equipped with long sweeps for guiding it through the crooked channels. The trip, which was made in 10 days, covered a distance of nearly 325 miles. These two barges, which will carry 75 and 100 tons respectively, will be used in transporting copper ore from the head of navigation at Sturgeon River to Pas, for reshipment to the Trail smelter at Trail, B.C. The Ross Navigation Co. has also built the s.s. *Nipawin*, 85 ft. long, 20 ft. beam, and 4½ ft. draught. She is equipped with dry back Scotch boiler and stern wheel engines.

British Columbia and Pacific Coast.

A meeting of shareholders of Melmore Steamship Co., Ltd., is to be held at Victoria, July 6, to receive the liquidators' winding up report.

The C.P.R. s.s. *Princess Maquinna*, on the Vancouver Island West Coast route, struck a submerged rock off the entrance to Kyuquot Sound, June 16, and sustained some damage to her hull. She completed her trip and returned to Victoria, June 19, when she was examined and repaired.

The Malahat Motor Ship Co.'s auxiliary powered schooner *Esquimalt* was expected to be launched from the Cameron-Genoa Shipbuilders' yards during June. It is expected that she will be completed and ready for service by the end of July or early in August, when she will proceed to Vancouver to load about 1,500,000 ft. of lumber for Australia.

The C.P.R. s.s. *Princess Victoria* was replaced in service early in June after an extensive overhaul. She displaced the s.s. *Princess Charlotte* on the triangular route, the latter taking the run to Seattle. The s.s. *Princess Alice* had a general overhaul preparatory to being placed on the Alaska run, June 8, and the s.s. *Princess Charlotte* will be placed on the same route about July 10.

A delegation of member of the Vancouver Board of Trade waited on the Dominion Government at Ottawa recently and conveyed the board's request that Vancouver should be made a national free port. Members of the government are

reported to have promised that Vancouver would be dealt with in exactly the same way as Montreal had been, with a harbor commission which may secure money from the government for improvements at a low rate of interest. It was stated that a dry dock is to be built by private enterprise, with a government subsidy as an aid.

Capt. Coughlin, of the steam tug *Cleeve*, has entered action in the Admiralty Court at Vancouver, against the Grand Trunk Pacific Coast Steamship Co., claiming \$1,100 damages sustained in Dec., 1916, when his vessel was in a collision with the s.s. *Prince Rupert* in the Burrard Inlet. The casualty came before the Wreck Commissioner's court in December, and the blame for the casualty was fixed on Capt. Coughlin. He appealed against the decision, with which one of the nautical assessors disagreed, and a rehearing was ordered. In the second hearing it was decided that as the *Prince Rupert* was the overtaking vessel, she was to blame.

Mainly About Marine People.

William Dott, of the Allan Line Steamship Co., Liverpool, died there, June 2.

T. R. Job, of Job Bros., shipowners and merchants, Liverpool, Eng., and St. John's, Nfld., died recently, aged 81. He commenced business in 1866.

Capt. J. A. Tymon, formerly well known as a master of vessels navigating inland waters, and latterly captain of one of the Toronto Ferry Co.'s vessels, died at Toronto, June 5, aged 50.

Capt. D. M. Estes, a veteran mariner of the St. Lawrence River, chiefly in the Thousand Islands district, died at Brockville, Ont., June 20.

H. R. Storey, purser, s.s. *Hamonic*, Northern Navigation Co., has resigned on his appointment as Secretary, Collingwood Steamship Co., and purser of its s.s. *City of Meaford*.

Major H. Maitland Kersey, D.S.O., J. A. Martin and Capt. J. V. Forster, of Canadian Pacific Ocean Services, Ltd., were presented to the King recently, on the latter's visit to the s.s. *Metagama*, while in Liverpool, Eng.

A. C. Sheridan, General Agent, Canada Steamship Lines, Ltd., Buffalo, N.Y., who died there recently, had been with the company and its predecessor for about six years. He was the first agent of the Richelieu & Ontario Navigation Co., when it opened its Buffalo office, and was appointed District Passenger Agent there for Canada Steamship Lines in 1916, and just prior to his death had been appointed General Agent in charge of freight and passenger business.

The International Mercantile Marine Co.'s annual meeting was held at Hoboken, N.J., June 4. The official estimate for 1916, as furnished by the President, showed gross earnings for 1916 of \$26,299,595, compared with \$13,581,660 earned in 1915, and a deficit of \$302,528 in 1914. The President announced that in view of the disturbed shipping situation, it had been decided not to take up the liquidation of accrued dividends on the preferred stock, amounting to about 88%. The exact earnings cannot yet be stated, owing to the delay in getting in the returns from British subsidiaries, but the full report was expected to be issued during June. A dividend of 3% on the preferred stock was paid April 14.