

Canadian Railway and Marine World

December, 1918

The Canadian Railway War Board's Executive Committee.

The Canadian Railway War Board's executive committee's first meeting since its re-organization, by the addition to it of E. W. Beatty, President, C.P.R.; and by the substitution of D. B. Hanna, President, Canadian Northern Ry., for the former President, Sir William Mackenzie, was held in Montreal Nov. 6, being attended by Lord Shaughnessy, Chairman, C.P.R. Co., who continues as Chairman of the Canadian Railway War Board; Vice Chairman, H. G. Kelley, President, Grand Trunk Ry.; E. W. Beatty, President, C.P.R.; D. B. Hanna, President, Canadian Northern Ry., and A. H. Smith,

becoming acute last winter, is now greatly modified.

"The supply of freight cars has been increased by 14,000 new cars bought by the government for the government roads. These new cars, added to the better loading, quicker handling and more rapid unloading methods obtained through the Canadian Railway War Board's efforts, mitigate the danger of car shortage. That, however, does not mean that economical methods may be relaxed. Last winter over 20,000 Canadian cars were lost in the United States traffic tie-up. It is hoped that this winter

cept in so far as the roads are still understaffed. A special labor board, formed at the request of the Canadian Railway War Board, with the co-operation of the brotherhoods, is administering the McAadoo award very satisfactorily. Over 14,000 railway employes have been laid off by influenza, but are now returning to work. Forty-five thousand doses of anti-flu serum have been sent west by the board to forestall any further spread of the disease.

"Old trouble spots have been carefully guarded. The temporary isolation of the Drumheller coal fields in Alberta by rail-



The Canadian Railway War Board's Executive Committee

From photograph taken in Canadian Pacific Ry. Co.'s board room at Montreal, Nov. 6, 1918. From left to right those present are—Howard G. Kelley, President Grand Trunk and Grand Trunk Pacific Railways; D. B. Hanna, President, Canadian Northern Ry.; Lord Shaughnessy, K.C.V.O., Chairman, Canadian Pacific Railway Co., who is also Chairman of the Canadian Railway War Board; A. H. Smith, formerly President, New York Central Rd.; E. W. Beatty, President, Canadian Pacific Railway Co., and W. M. Neal, General Secretary, Canadian Railway War Board. The oil paintings on the walls are of Lord Mount Stephen to the left and Lord Strathecona to the right.

formerly President, New York Central Rd., now Eastern Regional Director, United States Railroad Administration, who represents U.S. lines operating in Canada. The following statement was issued after the meeting:—

"Whether peace comes tomorrow or next week, Canada's trade arteries are in healthy condition and will meet even the most complex changes in the current of traffic, without confusion or congestion. Thanks to the foresight of the Dominion Government in ordering locomotives to be built at a time when some of the Canadian roads were unable to finance and purchase, the power situation is now fairly satisfactory. Two hundred new locomotives are now in service on the Canadian Government, Canadian Northern and Grand Trunk Railways. The scarcity of locomotives, which was on the verge of

the U.S. lines will be able to return Canadian cars almost as fast as they get them.

"There is more track-room this year, although the traffic handled has been heavier than ever. The Canadian Railway War Board was successful in getting several heavy movements, such as the fuel and pulpwood movements, well out of the way during the summer, when traffic is light. This clears the roads for essential winter traffic and the unusually heavy movement of wheat by rail during the coming winter. The condition of rails and roadbed is not as satisfactory as might be desired. New rails have been denied the roads owing to the heavy demand for steel for munitions. Out of the 100,000 tons finally allotted only 80,000 have been received. These have been used to good advantage on the main lines.

"The labor situation is satisfactory, ex-

way breakdown last winter, and the consequent fuel shortage in certain prairie districts, will almost certainly not happen this winter, as the vital section of line has been double tracked. The board has made working plans for the Canadian Northern, Canadian Pacific and Grand Trunk Pacific to co-operate in carrying traffic in the west should any one road find itself overburdened. The board has arranged also that the Michigan Central, Toronto, Hamilton & Buffalo, C.P.R. and G.T.R. shall all haul traffic direct into Toronto. Formerly the G.T.R. had the only direct route. The Michigan Central hauled from the frontier to Welland, the T.H. & B. from Welland to Hamilton and the C.P.R. from Hamilton to Toronto. The locomotive coupled on at the frontier will now run through to Toronto.

"Plans are being perfected for further

unification of terminal and other facilities. There is reason to believe that except for possible contingencies of storm and zero weather, epidemics and labor shortage, Canada's railway system is in more nearly perfect condition to face peace conditions and the reconstruction period than any in the world."

Regulations for Care of Railway Rolling Stock.

The United States Railroad Administration's Operating Division has issued the following instructions to all railways:

Care of Journal Boxes.—It is desired that all freight car journal boxes be repacked with properly prepared packing at least once every 12 months, at which time all packing will be removed from the boxes and the boxes cleaned; dust guards to be renewed when wheels are changed. The date and place where the work is done must be stenciled on the car body in 1 in. figures and letters, using the same station initial that is used for airbrake stencil. This work to be done as far as possible when cars are on repair track undergoing heavy repairs. When on repair track for heavy repairs, cars which have not had boxes repacked within 9 months will have all boxes repacked and the record stenciled on the car as above. This does not contemplate any change in the intermediate packing of boxes when it is necessary to do so. No change should be made in the stenciling unless all boxes are repacked.

Inspection of Ashpans and Spark Arresters.—A careful and thorough inspection of every part of the spark arresting appliances in front end of locomotives must be made every time the front end door is opened for whatever purpose; but at intervals of not more than 7 days, and at the same time, the ashpans, hoppers, slides, or other apparatus for dumping cinders and dampers must also be inspected. Observe if the slide or hopper operates properly and closes tight. When conditions such as extreme drought or the state of adjoining property or crops require it, this inspection must be made at least once every 24 hours.

A record of condition on arrival must be made under the proper heading on an approved form, immediately following each inspection, with the date made, together with a complete statement of any repairs or renewals required. The above record to be made and signed by the person who made the inspection.

Nettings and spark arresters must be put in perfectly tight and serviceable condition before the locomotive is put into service. Renew netting and plates in front end when worn thin or defective, instead of patching them. Ashpans and hoppers must be tight, and dampers, slides, or apparatus for dumping cinders must be in good working order, closing tight.

Record of repairs and renewals made must be entered under the proper heading on an approved form when repairs have been made, with the date; the entry to be made and signed by the person doing the work.

These are the minimum requirements, and local conditions or regulations requiring additional precautions are not affected hereby.

The Organization of a Canadian Railway.—E. S. M. MacNab, Engineer of Car Lighting, spoke at the Montreal weekly electrical luncheon on Nov. 20, on "The organization of a Canadian railway."

Birthdays of Transportation Men in December.

Many happy returns of the day to:—

E. T. Agate, ex-Assistant Superintendent Lake Superior Division, Canadian Northern Ry., Capreol, Ont., now of Pittsford, N.Y., born there Dec. 7, 1874.

A. G. Albertson, City Ticket Agent, C.P.R., San Francisco, Cal., born at Copenhagen, Denmark, Dec. 31, 1887.

J. H. Barber, Engineer, Double Track, C.P.R., Toronto, born at Cobourg, Ont., Dec. 20, 1856.

H. E. Bissell, Land and Tax Agent, Grand Trunk Pacific Ry., Winnipeg, born near Noyan, Que., Dec. 31, 1867.

N. E. Brooks, ex-Engineer, Maintenance of Way, Western Lines, C.P.R., now at Sherbrooke, Que., born there, Dec. 25, 1866.

W. W. Butler, Vice President and Managing Director, Canadian Car and Foundry Co., Montreal, born at Danville, Ohio, Dec. 9, 1862.

J. M. Cameron, General Superintendent, Alberta District, C.P.R., Calgary, born at Lochabar, N.S., Dec. 18, 1867.

W. C. Casey, General Agent, Passenger Department, Canadian Pacific Ocean Services, Ltd., Winnipeg, born at Moncton, N.B., Dec. 12, 1882.

G. W. Caye, General Purchasing Agent, G.T.R., Montreal, born at Malone, N.Y., Dec. 1, 1865.

John Flynn, Car Foreman, C.P.R., Smiths Falls, Ont., born at Richmond, Que., Dec. 5, 1867.

G. C. Gahan, Assistant General Auditor, C.P.R., Montreal, born there Dec. 28, 1874.

W. H. Gardiner, City Freight Agent, C.P.R., and District Freight Agent, Esquimalt and Nanaimo Ry., Victoria, B.C., born there Dec. 6, 1859.

A. S. Goodeve, member Board of Railway Commissioners for Canada, born at Guelph, Ont., Dec. 15, 1860.

A. J. Gorrie, ex-Superintendent District 1, Transcontinental Division, Canadian Government Railways, Quebec, now of Toronto, born at Raith, Kirkcaldy, Scotland, Dec. 10, 1868.

W. H. Grant, General Tie and Timber Agent, and acting General Storekeeper, Eastern Lines, Canadian Northern Ry., Toronto, born at Acton, Ont., Dec. 8, 1858.

F. P. Gutelius, General Manager, Delaware & Hudson Rd., U.S. Railroad Administration, Albany, N.Y., born at Mifflinburg, Pa., Dec. 21, 1864.

Jas. H. Hall, President, Western Transportation Co., Ltd., Ottawa, Ont., born at Hawkesbury, Ont., Dec. 20, 1863.

J. T. Hallisey, Superintendent, District 6, Intercolonial Division, Canadian Government Railways, Truro, N.S., born at Beaver Bank, N.S., Dec. 29, 1862.

D. B. Hanna, President, Canadian Northern Ry., Toronto, born at Thornliebank, Scotland, Dec. 20, 1858.

R. W. D. Harris, Trainmaster, Moose Jaw Division, Saskatchewan District, C. P.R., Moose Jaw, born at Victoria, B.C., Dec. 12, 1879.

J. J. Hennigar, District Freight Agent, Great Lakes Transportation Co., Windsor, Ont., born at Topeka, Kan., Dec. 21, 1884.

A. J. Isbester, ex-Assistant District Engineer, Port Arthur District, Canadian Northern Ry., Port Arthur, Ont., born at Ottawa, Dec. 18, 1879.

L. S. Landers, Assistant Engineer, Canadian Government Railways, Levis, Que., born at Farnham, Que., Dec. 15, 1888.

J. T. McGrath, ex-Superintendent of Motive Power and Equipment, Chicago and Alton Rd., Bloomington, Ill., born at Toronto, Dec. 6, 1869.

A. T. McKean, Division Freight Agent, C.P.R., Winnipeg, born at St. John, N.B., Dec. 18, 1886.

E. S. McMillan, Road Foreman of Locomotives, G.T.R., Montreal, born there, Dec. 14, 1880.

J. M. MacArthur, Superintendent, Medicine Hat Division, Alberta District, Medicine Hat, Alta., born at Toronto, Dec. 8, 1885.

A. E. Macdonald, General Claims Agent, Canadian Northern Ry., Winnipeg, born at Woolwich, Eng., Dec. 11, 1870.

L. Macdonald, Division Freight Agent, G.T.R., Toronto, born at Montreal, Dec. 10, 1871.

A. D. MacTier, Vice President, Eastern Lines, C.P.R., Montreal, born at Blairgowrie, Scotland, Dec. 27, 1867.

W. J. Mathison, Assistant Superintendent, District 1, Intercolonial Division, Canadian Government Railways, Montreal, born at Havelock, Ont., Dec. 12, 1877.

J. C. O'Donnell, Superintendent, Divisions 2 and 3, Central District, Canadian Northern Ry., Winnipeg, born at Cobden, Ont., Dec. 17, 1879.

Alfred Price, General Manager, Eastern Lines, C.P.R., Montreal, born at Toronto, Dec. 6, 1861.

W. J. Radford, Assistant to General Manager, Toronto Suburban Ry., Toronto, born at Boldre, Hants, Eng., Dec. 23, 1870.

G. D. Robinson, Ocean Lines Department, British Ministry of Shipping (Canada), Montreal, born at St. John, N.B., Dec. 7, 1877.

G. E. Smart, Superintendent Car Department, Canadian Government Railways, Moncton, N.B., born at Edinburgh, Scotland, Dec. 23, 1873.

W. Tansley, Car Service Agent, New Brunswick District, C.P.R., St. John, N.B., born at Shelburne, Ont., Dec. 27, 1872.

M. F. Tompkins, Freight Agent, Assistant General Freight Agent, Canadian Government Railways, Moncton, N.B., born at Margaree, N.S., Dec. 6, 1878.

H. H. Vaughan, Consulting Engineer, C.P.R., Montreal, Vice President and General Manager, Dominion Bridge Co. and Vice President and Managing Director Dominion Copper Products Co., born at Forest Hill, Essex, Eng., Dec. 26, 1868.

R. C. Vaughan, Assistant to President, Canadian Northern Ry., Toronto, born there, Dec. 1, 1883.

A. P. Walker, Assistant Engineer, Ontario District, C.P.R., Toronto, born at West Hartlepool, Eng., Dec. 9, 1860.

E. H. Wood, Foreman, Michigan Central Rd., Kensington, Ill., born at St. John, N.B., Dec. 30, 1880.

Canadian Ticket Agents' Association.

—The following are the officers for the current year: President, H. F. Whittier, Trenton, Ont.; Vice President, J. Rainsford, Clinton, Ont.; 2nd Vice President, J. A. McDonald, Valleyfield, Que.; 3rd Vice President, A. C. Rorabeck, North Bay, Ont.; Secretary-Treasurer, E. de la Hooke, London, Ont.; Executive Committee, W. Jackson, Clinton, Ont.; W. J. Moffatt, Toronto; C. B. Janes, Orillia, Ont.; O. M. Hare, Tilsonburg, Ont.; W. H. C. Mackay, St. John, N.B.

Repairing Locomotive Fittings.

The tools here illustrated are a few of many similar devices used in the Southern Pacific Co.'s shops at Sacramento, Calif. Fig. 1 shows a self-feeding reamer for reclaiming worn distributing valve bushings in air-brake equipment, and fig. 2 shows all parts of the tool in detail. This tool, which is adapted for self-feeding through the work, is made up of a central body, or mandrel, B, 16½ in. long and

ing nut E at the rear is 12 per inch. One complete turn of the nut therefore means the equivalent of an expansion of the reamer of 0.0277 inch.

The reamer D has 18 teeth milled to a depth of 3/16 in. and six 1/16 in. saw cuts are run through from end to end as shown. Except for a distance of ½ in. at the rear face the saw cuts are carried

button-head screws which pass through body-sized holes in the bronze feed nut and enter tapped holes in the steel guide nut.

In use the steel guide nut is screwed into the end of the distributing-valve casing by removing the cap plug, and this brings the feed nut into alignment with the bushing to be reamed, so that when

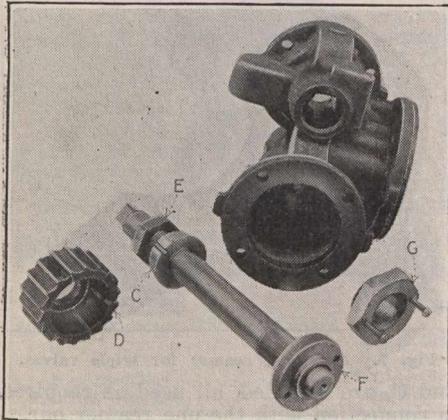


Fig. 1. A 14-in. expanding self feeding reamer.

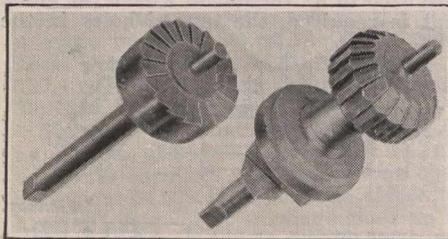


Fig. 3. Hand reamers for steam turret.

1½ in. in diameter, except for the enlarged portion, which carries the reamer proper, and at the outer end is a fine thread for feeding it through a guide nut while at the rear end is a coarser thread for receiving and adjusting the nut which sets the reamer up on the taper at C.

The reamer proper is shown at D, and

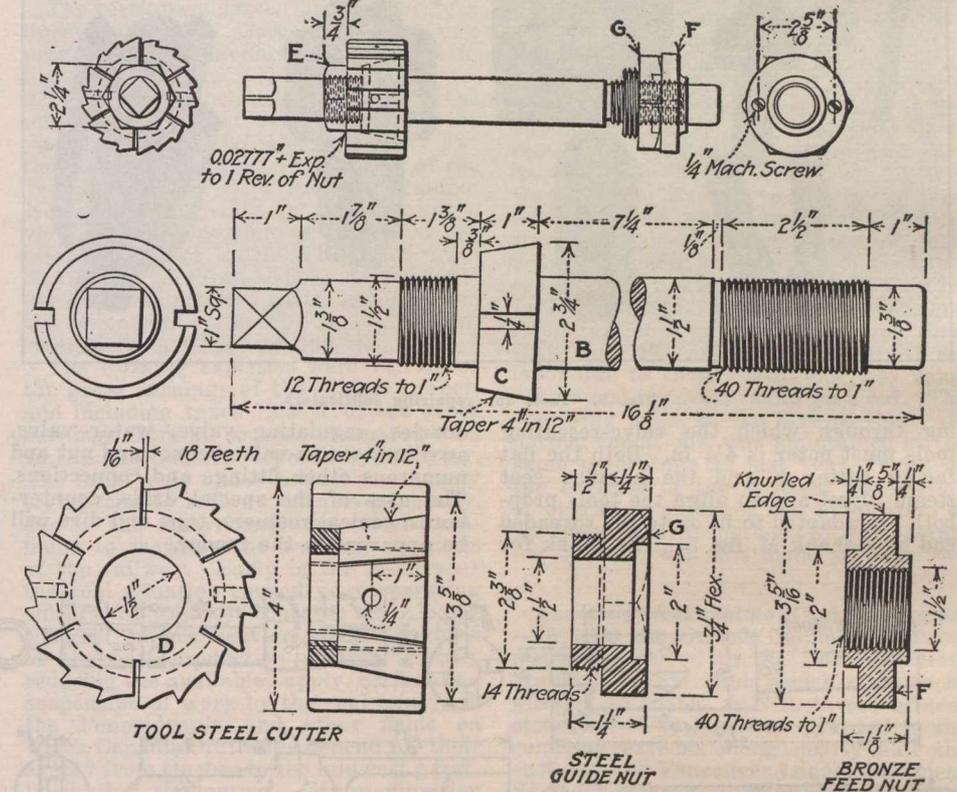


Fig. 2. The reamer members.

down to the bore, so that there is a good opportunity for the reamer to expand with close uniformity for the greater portion of its length. Midway of the face there is a ¼-in. pin inserted to enter a groove of the same width in the conical body C. on which the device is mounted, to provide against the rotation of the tool

the reamer is run into place with its threaded inner end entered through the feed-nut thread the mandrel is correctly positioned for the passing of the reamer through the bushing. On applying a wrench to the squared end of the reamer shank the tool is drawn forward through the work at the rate of 0.025 in. per revo-

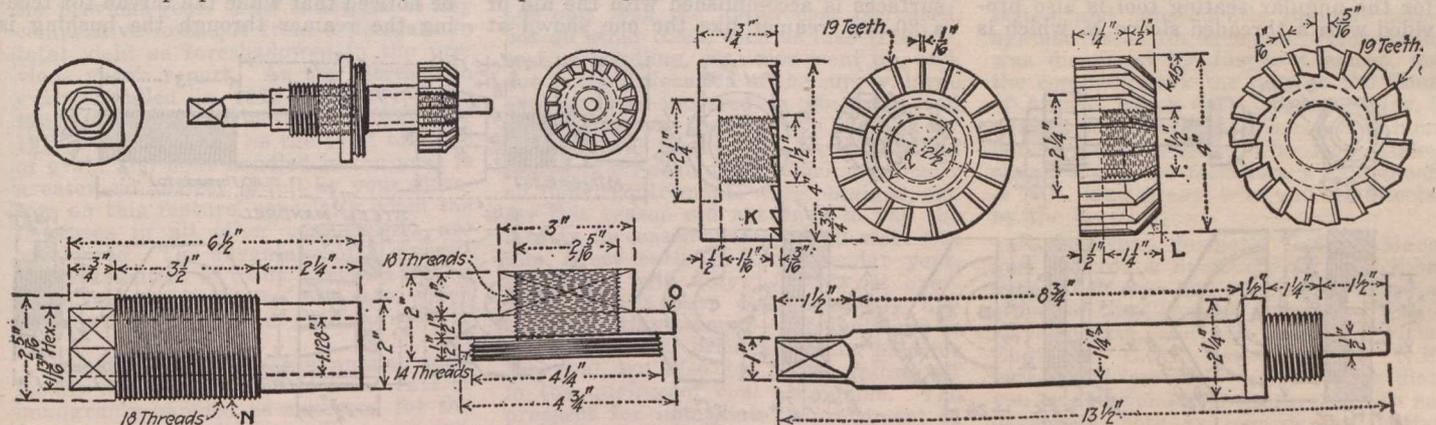


Fig. 4. Details of hand reamer for steam turret.

like all other parts of the tool it is also shown distinctly in fig. 1 in front of the distributing valve which is to be overhauled, the same reference letters being used on both illustrations for convenience in comparison.

Upon referring to fig. 2 it will be seen that the conical body C is a taper of 4 in. to the foot. The thread for the adjust-

ment is a reverse thread of 12 per inch. Upon its seat. Near the leading end of the mandrel B there is a fine-pitch thread (40 per inch) which receives the feed nut (F). This is a bronze nut, with knurled edge, and with a shouldered face to seat in a counterbored recess in the corresponding face of the steel guide nut (G) when the tool is assembled. The two nuts are then secured together by two ¼-in.

button-head screws which pass through body-sized holes in the bronze feed nut and enter tapped holes in the steel guide nut. In use the steel guide nut is screwed into the end of the distributing-valve casing by removing the cap plug, and this brings the feed nut into alignment with the bushing to be reamed, so that when

cone were forward and the reamer consequently pressing back against an enlarged taper center.

Another set of hand tools is shown in figs. 3 and 4 for finishing steam-turret or fountain valve seats. The tapped open-

tool is shown assembled at the left in the drawing, fig. 4, and also in the illustration, fig. 3. The group of tools illustrated in figs. 5 and 6 are used for the repair of lubricators. The lubricator parts taken care of by the tools shown are the feed

is included in the drawing, fig. 6.

The expanding reamer in fig. 7 is applied to the saving of worn-out bushings in various sizes of triple valves for air-brake equipment. While constructed along similar lines to the reamer in fig. 1 there are various points of difference.

This particular reamer is applicable to numerous classes of valves, by merely changing the guide nut, a feature indicated by the detail drawing, fig. 8, where three different sizes of guide nuts, A, B

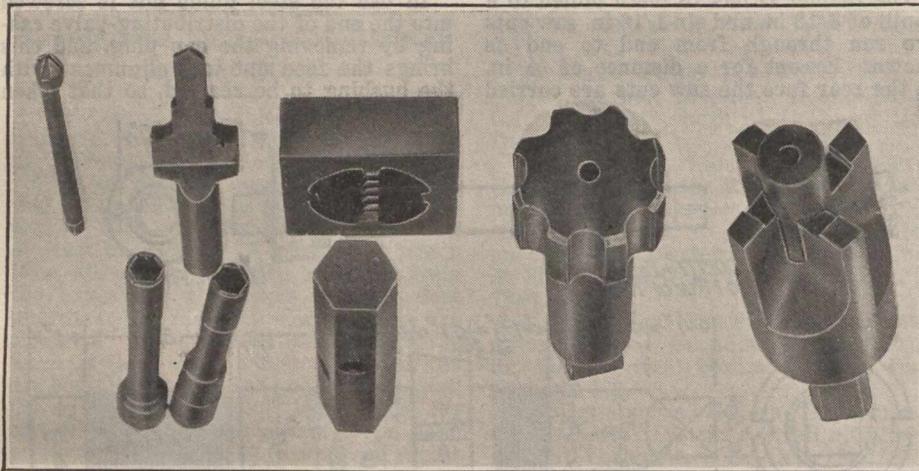


Fig. 5. Tools for repairing lubricators.

ing through which the valve-reseating tools must enter is $4\frac{1}{4}$ in. Both the flat facing cutter K and the angular seat steam turret and so align the tools prop-

nozzles, regulating valve, water valve, auxiliary steam-valve bonnet and nut and numerous other fittings and connections. The uses of the special drills, counterbores, conical reamers, taps and dies will be apparent to the reader.

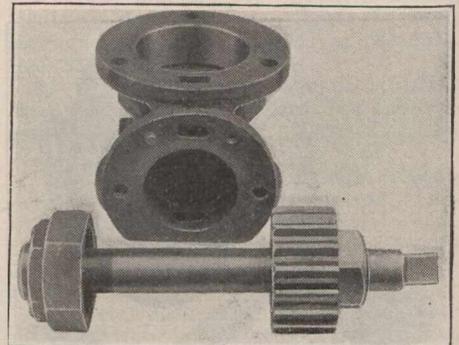


Fig. 7. Adjusting reamer for triple valves.

and C, are included, all used as required in connection with the one reamer bar.

The feed nut is provided with a pair of $\frac{1}{4}$ -in. holes for 2 machine screws which are used to fix the nut to whichever guide nut is required, the tapped holes in the

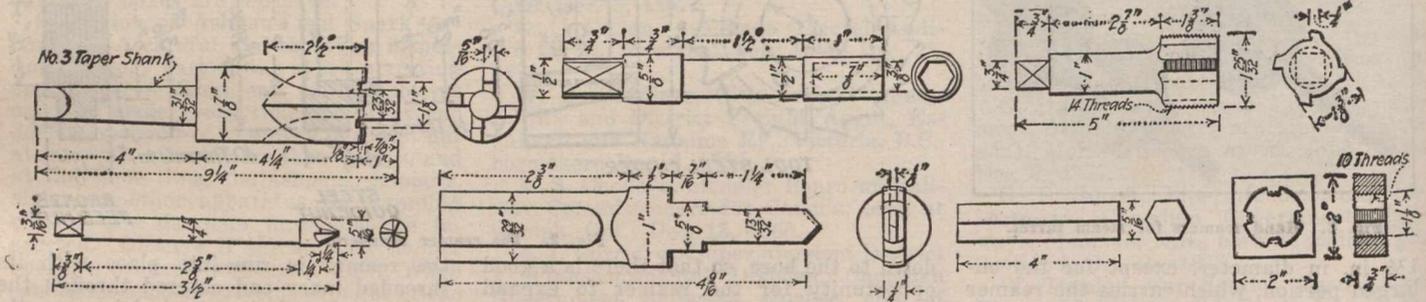


Fig. 6. Dimensions of lubricator tools.

each cutter has a pilot $\frac{1}{2}$ in. in diameter to enter the valve-guide hole under the steam turret and so align the tools properly for the cut. The shank or mandrel for the angular seating tool is also provided with a threaded sleeve N, which is

There are various valve seats in the lubricators made with a 30-deg. angle. These valve seats become worn in the course of time and the reseating of the surfaces is accomplished with the aid of a 30-deg. reamer like the one shown at

latter all occupying a definite position at uniform distance from the center to allow them to be used interchangeably in connection with the main feed nut. It may be noticed that while the thread for feeding the reamer through the bushing is

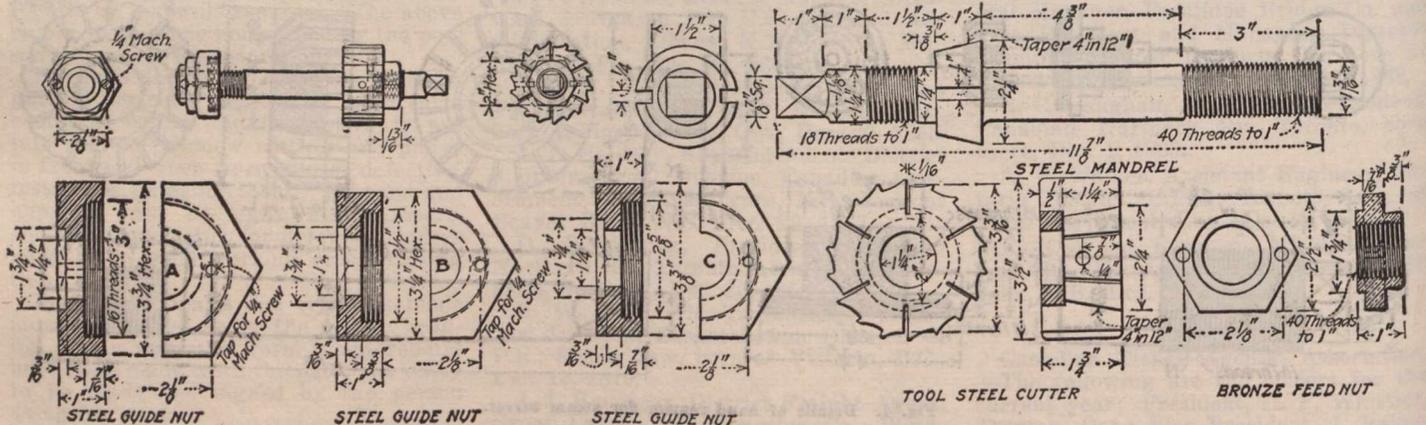


Fig. 8. Details of $3\frac{1}{2}$ -in. reamer.

bored out 0.003 in. larger than the body of the tool, to allow the latter to rotate properly. The thread on this sleeve is adapted to carry the nut O, which serves as a feed nut. The feed nut is screwed into the $4\frac{1}{4}$ -in. tapped hole in the top of the steam turret, and the sleeve N is then turned by its squared portion to feed the tool downward against the work. The

the right side in both figs. 5 and 6. Flat drills of the type shown at the bottom and left in fig. 8 and in the lower right-hand corner in fig. 5 are applied in finishing parts of the valve fittings and similar cases of attachments. Other fittings are taken care of by counterbores and facing tools of the general form represented at the extreme left in fig. 5, a detail of which

the same as that used on the reamer in fig. 1, there is a difference in the pitch of the adjusting thread behind the reamer proper, the thread on the reamer being 18 pitch.

The foregoing article, by F. A. Stanley, is reproduced from American Machinist, to which we are indebted for the photographs and drawings.

Canadian Northern Railway's Annual Report, Meeting, Etc.

The C.N.R.'s annual meeting was held in Toronto, Oct. 25, when the report for the year ended June 30, 1917, was presented, over the signature of Sir Wm. Mackenzie, the former President, the financial statements being signed by D. B. Hanna, the former Third Vice President, and now President. Owing to the belated presentation of the report, much of the information contained in it is not of current interest, and therefore only brief extracts from it are given below.

The annual meeting was purely a pro forma one, and the board of directors as constituted recently, after the company's property passed into the Dominion Government's possession, was re-elected.

Extracts from Annual Report.

The results of the operations of the system for the year were as follows:—

| | |
|--|-----------------|
| Gross Earnings— | |
| Passenger traffic | \$ 7,611,807.94 |
| Freight traffic | 32,188,799.93 |
| Express, mail, telegraph, interest and profits from elevators and other subsidiary companies, investments, etc. | 3,694,468.69 |
| | \$43,495,076.56 |
| Working expenses (including taxes, etc.) | 31,349,408.18 |
| Net earnings | \$12,145,668.38 |
| Interest charges | 14,607,805.35 |
| Net deficit | \$2,462,136.97 |

The average mileage operated throughout the year was 9,396, compared with 8,048 for the previous year; the total mileage in operation at the close of the fiscal year being 9,433.4, an increase of 137.4 over the mileage in operation June 30, 1916.

The gross earnings were \$43,495,076.56, an increase of \$8,018,801.50, or 22.6%, and the gross earnings per mile of line operated were \$4,629.11, against \$4,408.08 the previous year. Net earnings show an increase of \$2,772,137.84, or 29.57%, and net earnings per mile of line operated were \$1,292.64, compared with \$1,164.70 the previous year.

The statement of freight carried shows, with one exception, an increase in the tonnage of all commodities handled. Revenue tonnage increased by 7.887%—the average haul increased by 30.93 miles. Grain is the only commodity which shows a decrease, viz., 1,258,048 bush. less than the previous year. This is not due to any competitive loss, but from a decrease in total yield as foreshadowed in the previous year's report. As the increase in grain handled in 1916 over 1915 was 125.31%, and as the increase of 1917 over 1916 is 123.2%, and as the total tonnage of grain and flour handled in the year is greater, no anxiety is felt by your directors on this feature, especially when the increases in all other commodities are considered. The advantage of a diversified distribution of traffic is shown by the slight increase in the ton mile rate, which advanced from .679 in 1916 to .688 in 1917.

Not since 1912 has the annual commodity statement shown so many cars of immigrants handled as appeared for the fiscal year under review. European immigration is for the present discontinued and these figures represent the movement of settlers—from eastern provinces to some extent, but more largely from the United States—of the most valuable type from a traffic producing point of view, as home-seekers from these fields invariably bring to the country a large equipment, enabling them to become shippers in a comparatively short time.

Coal traffic from the Drumheller district in Alberta is showing a very satisfactory development, the returns for the last six months of the calendar year showing an increase in tonnage of 138%, the total for the six months of 1917 being 329,552 tons, compared with 137,997 tons for the same period of 1916. The coal from this section is being used in a rapidly widening field with correspondingly increasing revenue for your system.

The territories served by your western lines continue to show most promising progress in the production of live stock, including hogs and sheep. This is reflected by the substantial increases in the number of head of cattle brought over your lines to the Winnipeg market. For the last calendar year the returns of the Winnipeg market show that the Canadian Northern brought in to that market a very large proportion of the total receipts, viz.:—of cattle 42.6%, of hogs 33.4%, and of sheep 36.3%. In the same period the number of cattle brought into the Winnipeg market by the C.N.R. increased from 63,004 to 120,345.

The working expenses were 74.77% of the gross earnings of the system proper, and including taxes 72.08% of the gross earnings from all sources, compared with 74.73% and 73.58% respectively last year. The fiscal year under review was a very trying one to railway officials generally, due to the many conditions which combined to increase the working expenses of the railway. Early in the fiscal year the coal situation caused your operating officers the greatest concern. In Alberta the coal miners went on strike for three of the best production months, greatly reducing the available supply. Strikes and suspension of work by the coal miners in the Pennsylvania and other fields on which Canadian railways depend for their supply from Quebec to the midwest greatly limited the output. Many munition plants had increased their operations during the year, and were making additional demands for steam coal. The transfer of lake tonnage to the Atlantic affected the amount of coal regularly obtainable from lake ports, and it was only by the most energetic measures that a supply could be obtained. Under such conditions the price of fuel coal soared upward—not only was the initial cost increased, but all other costs, such as lake freights, cost of handling, etc., also went up, and, due to the dislocation of the supply, large expense was incurred in abnormal rail movements over the system's lines. Your company was fortunate in having unfilled contracts for coal, under which practically all their requirements were obtained, and for this reason did not have to pay the largely increased prices which were put into effect early in the calendar year. Beginning with July 1, 1917, net operating figures have been seriously disturbed on this account—not due alone to the much higher price now being paid for fuel coal, but also due to the falling off in the quality of coal obtainable. The prospect for immediate improvement in this respect is not reassuring. All other materials have been similarly affected. The cost of the principal supplies in use by the railway has increased from 50% to over 100%. A few actual increases are as follows:—

| | 1916. | 1917. | Increase % |
|-------------------------|--------|--------|------------|
| Coal, per ton | \$3.56 | \$5.70 | 60.11 |
| Steel rail, per ton ... | 35.00 | 60.00 | 71.43 |
| Track spikes, per cwt.. | 2.50 | 4.50 | 80.00 |
| Angle bars, per cwt... | 1.65 | 3.50 | 112.12 |

| | | | |
|--------------------------|-------|-------|-------|
| Brass castings | 25.50 | 39.15 | 53.50 |
| Iron and soft steel bars | 2.20 | 3.77 | 71.14 |
| Steel and iron sheets.. | 2.30 | 3.50 | 52.17 |

Lumber and timber increased 25% and all rubber supplies about 70%. Not only were prices high, but it was in many cases often impossible to obtain the required materials at any price. Since the close of the fiscal year, the above prices have shown further increases. The cost of living also increased. This was seized upon by every class of labor employed by the railway as a ground on which to make demands for increased wages. On the top of this there developed a great shortage of unskilled labor, which was particularly felt in the maintenance of way department. Under such conditions it is remarkable that operating expenses only increased by \$5,246,663.66, or 20.10%. But, in order that there may be no misunderstanding about the matter, it is stated that due to the shortage of labor, work considered necessary and desirable could not be undertaken, and must therefore only be considered as deferred, and this situation is aggravated to the extent that from the expenditure incurred for labor due to these conditions, less value is obtained for every dollar paid out. The operating ratio, in the face of these abnormal conditions, was maintained at the same percentage as last year. Only by the exercise of the strictest supervision of operating expenses and application of the most efficient methods by our operating officials, was this made possible.

Esquimalt & Nanaimo Ry. Land Rights.

—In 1883 the British Columbia Government transferred to the Dominion Government certain lands which were to be granted to the E. & N.R. in aid of construction. The land belt granted to the company extends along nearly half the east coast of Vancouver Island, from near Seymour Narrows to Saanich Inlet. When the Dominion Government transferred the lands, it transferred the foreshore lands and the mineral rights under them in so far as they were vested in the Dominion. In later years H. W. Treat and his associates staked out certain lands in the Chemainus District, at the mouth of the river, and obtained licenses from the B.C. Government. The E. & N.R. protested, and subsequently brought action against Treat for trespass. This action was dismissed by Justice Clement, and the company took the case to the Court of Appeal, which gave judgment, Nov. 5, against the company. There are a number of other persons who have staked claims along the foreshore within the E. & N.R. land areas, who will be affected by the decision.

E. G. Evans, formerly General Manager, Moncton & Buctouche Ry., which has been taken over and is being operated as a part of the Canadian Government Railways system, and who is now Division Engineer, C.G.R. at Moncton, N.B., writes: "I certainly must congratulate you on the wonderful progress which has developed, both as regards the matter, information and general make up of the Canadian Railway and Marine World, to which I have been a subscriber for several years."

Canadian Northern Railway Executive Committee.—At the C.N.R.'s annual meeting in Toronto recently, an executive committee was appointed, consisting of all the directors, and the quorum was fixed at four.

The Chippewa-Queenston Power Canal and Construction Railway.

Digging partly in fine, wet clay sand, productive of dangerous slides when undrained, and partly in very stable red clay, what are said to be the two largest electric revolving shovels in the world are stripping the site of the Queenston-Chippewa Canal, most of the flow section of which will be in rock. The canal, which will take water from the Niagara River above the Falls, through the Welland River, locally known as Chippewa Creek, and deliver it to a 300,000 h.p. power plant below the last rapids, is part of a project to develop 305 ft. net head of the 327 ft. difference in level between Lakes Erie and Ontario. The work is being pushed during the war by the Hydro-Electric Power Commission of Ontario, as a conservation measure, made urgent by the great shortage of power, both steam and electric, in the territory served by power from Niagara Falls, and by the fact that none of the plans now in operation at the falls can be made to develop more than two thirds of the total available head, while the treaty limit of possible diversion from the falls has been nearly reached, making it necessary to utilize the small surplus of available water under the maximum head which physical conditions will permit.

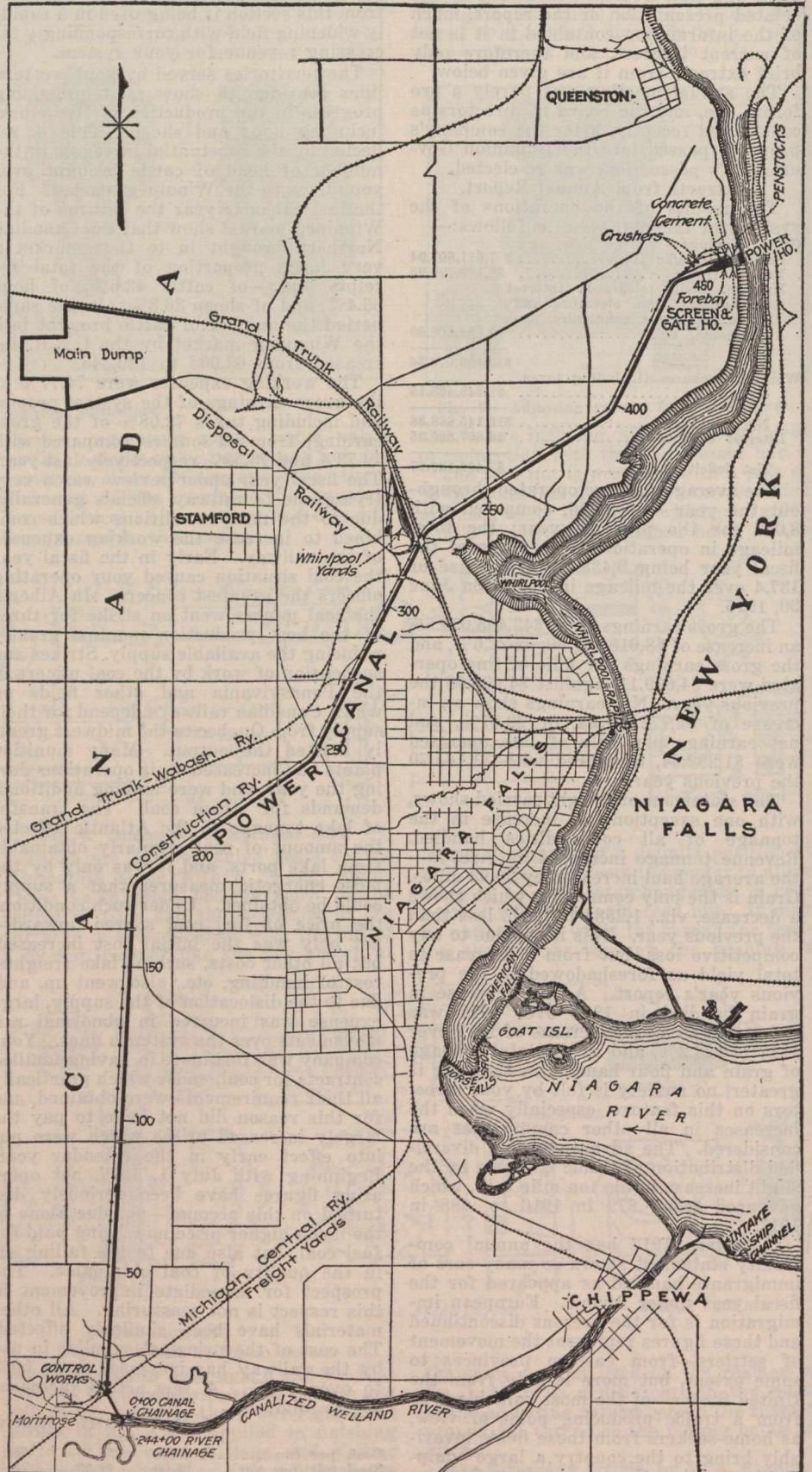
The construction, which is being carried on by the commission's forces, involves the removal, from the Welland River and the artificial section of the canal, of 13,000,000 yd. of earth, which is being taken out by cableway and dredge on the river section and by the big shovels in the dry cut, and 4,000,000 yd. of rock from the canal and forebay, to be removed by the big shovels and by standard railway shovels. In addition to the power house and the gatehouse, 10 concrete arch bridges, 3 of them carrying railways, and a reinforced concrete intake structure requiring extensive cofferdam work in the Niagara River, are among the structures required.

The dredged river channel, with a gradient of 0.63 ft. to the mile and a mean velocity of 2.0 ft. per second, and the canal, with a gradient of 1.1 ft. to the mile and an estimated velocity of 6 to 7 ft. per second, will pass 10,000 sec.-ft. of water. The power house will contain six 52,500 h.p. units, and the site itself, as well as the scheme as a whole, is capable of being expanded, by the provision of additional waterways and power house space, to take the entire quantity of water that can be diverted under the present treaty on the Canadian side, amounting to slightly more than 1,000,000 h.p. capacity.

Drawing water from Grass Island pool, after a slight fall from Lake Erie, and delivering it back into the Niagara River below the last rapids at a point where the fall to Lake Ontario is but little more than a foot, the general scheme of development is thought to be by far the most favorable of any yet conceived, and will cost, complete, about \$25,000,000. The time of completion is conditioned by the excavation, on account of the heavy yardage involved, and the opening up of the work and the method of attack with large shovels was dictated by the character of the overburden, which could not be depended upon to support heavy, concentrated loads. The nature of the soil, which contains a considerable quantity of ground water and is so fine in places as to have the appearance of clay, made the use of large draglines, operating from the

tops of the slopes, out of the question. For the same reason it was desirable to carry the heavy excavating equipment right through on the rock surface, to avoid the continuous trouble with soft ground. This required shovels with a

great reach, cars on a track 64 ft. above the rock surface having to be loaded at several points. Very large revolving shovels were therefore selected for the work. One has a 90-ft. boom set at 53 deg., with a 58-ft. dipper stick and a 5-yd.



Power Canal and Construction Railway, from Welland River to Niagara Gorge below Rapids.

dipper. Another has an 80-ft. boom set at 45 deg., a 54-ft. dipper stick and an 8-yd. dipper. A third shovel, similar to the second, will soon be installed. After the earth is stripped and the three shovels are put on the rock excavation, all will be equipped with 5-yd. dippers.

The cut is made by starting a pilot near one side of the canal prism with a railway shovel, loading cars on the ground surface. In this cut are run the loading tracks for the big shovel, which follows the pilot cut on the rock surface. The loading tracks connect with the main line at both ends, giving the shovels run-around service. With 20-yd. air-dump cars in eight and ten-car trains, the big shovels have been able to load 4,000 yd. in an eight-hour day.

The entire line of the canal is to be paralleled by a double track standard gauge electric trolley railway 175 ft. west of its center line. Near the middle of the work is a Y from which a double track railway runs 2 miles to the main dump, which is capable of taking 20,000,000 yd. The hauling equipment consists of one hundred and fifty 20-yd. air-dump cars, twelve 600-volt direct-current 50-ton electric locomotives, and 7 steam locomotives. The maximum grade on the construction railway, which, when complete, will contain 40 miles of single track, is 1%, and the haulage equipment is capable of making 10 miles loaded and 20 miles light with 10-car trains at any point on the line.

The trolley wires are offset 7 ft. from the center line of the tracks to permit the loading of dump cars, and in order to pass locomotive cranes, of which there are three 40-ton and two 15-ton machines on the work.

The order in which the work was opened up was dictated both by the length of time required for the excavation and by the location of 3 existing railroad crossings. Two of these are close together, as may be seen from the map, a short distance south of the Whirlpool Gulch, a deep cut which it is believed was once the bed of the Niagara River. Just south of this gulch occurs the heaviest earth cut on the canal, a face of 100 ft. being encountered here for a short distance. The shovel that started in at the south face of this gulch has a 5-yd. dipper rigged to load cars on tracks 64 ft. above grade. It was possible to dispose of the excavation from this shovel to the extent of 1,500,000 yd. in the Whirlpool Gulch itself, making it unnecessary to cross a main-line railway in order to get to the central dump. Since the short section between the Grand Trunk Ry. crossing and the next crossing south was the location for the Y leading off to the main dump, and since it could therefore be excavated before the railway crossings were constructed, this point was selected for starting the other large shovel. With the excavation begun in this way, both shovels could be kept busy while the first bridge was being built. The construction railway will pass under these railway bridges, and sufficient clearance is provided for the large shovels by taking down the booms. The southerly shovel will be let out in this way and will proceed south, following the construction railway and the pilot cut for the loading tracks, until the overburden is completely stripped; being helped, in all probability, by the third shovel when it arrives. The loading tracks will then be lowered to the rock surface, a pilot cut will be made by the railway shovels, as in the earth section, and the shovel now operating at the Whirlpool Gulch will follow through, tak-

ing out the rock cut to grade. The other shovels will, on the completion of the earth excavation, turn north to meet it.

North of the Whirlpool Gulch the cut is almost entirely in rock, and there is a large forebay, approximately 300 by 1,000 ft., to be excavated. This rock will be removed by the railway shovels, of which there are two of 3½-yd. and one of 2½-yd. capacity. There are also two ⅞-yd. caterpillar revolving shovels on the work.

The forebay excavation was begun when the two large shovels were started, in order to provide rock for track ballast and for concreting. As the heavy end of the rock excavation is near the forebay, and as little stripping had to be done, the main crusher plant was located here. The rock, which is Niagara limestone, will be used as aggregate for all the concrete. A concrete plant located at the lip of the gorge above the power house will be able to concrete the head house and power house by gravity. As these structures will not take more than 18 months to build, it has not been necessary to start them yet, and no work beyond the clearing of the building site has been undertaken at this point.

The remaining portion of the work, the dredging of the Welland River, is being carried on simultaneously by a 3-yd. dipper dredge and a large cableway operating a clamshell bucket. On account of bridges, houses and rough ground, the cableway was not able to start within 4,400 ft. of the intake, and the work between that point and the Niagara River will be done by the dredge, the material being scowed into the Niagara River. The cableway has an 80-ft. head tower and a 60-ft. tail tower, both travelling on railway trucks on parallel double tracks. The span is 800 ft., and the rig handles a 3-yd. clam. The head tower on the north bank of the river is set far enough back so that all the excavated material can be disposed of by dumping it on that bank. The total cut in the Welland River is to a depth of 30 ft. below the surface, but at 24 ft. below the surface a limited deposit of quicksand has been struck, which cannot be dug with any type of grab bucket yet tried on the cableway. It will probably be necessary to remove this quicksand with a dipper dredge.

As might be expected, the early construction of the railway bridges is essential to the prosecution of the excavation. The first started is the center one. This bridge will let the southern shovel out, and by the time it is finished there will still be sufficient time to construct the Grand Trunk crossing before the second shovel will be ready to come through with the rock cut.

To build these bridges, holes had to be dug in the ground, and steel sheet piling used for cofferdams. As shown in one of the photographs, the crown of the arch in the first bridge built is below the ground surface. This bridge is for the Niagara, St. Catharines & Toronto Ry. (electric), but the loading specified by the electric railway company was as heavy as that for either of the steam railway bridges.

The railway bridges each contain about 3,500 yd. of concrete, each being a single arch. This excludes the wing walls, which will not be placed until the canal excavation has been completed. Because the bridges are built below the original ground surface, the concreting proved easy. It was only necessary to set up a mixer with a loading hopper on the edge of the excavation and spout the concrete directly to place in the forms. The mixer at the first of these bridges was served

by a locomotive crane, material being received on a spur from the Grand Trunk Ry. The excavation was carried out with two derricks, the material being dumped around the cofferdam.

The first rock excavation available was at the lower end. The forebay excavation was begun by shooting out a 10-ft. lift over the entire area, about 1,100 holes being fired at once. About one pound of dynamite to the yard, including that used for springing the holes, was used. Each hole was sprung with 5 or 6 sticks and loaded with 15 or 20 sticks, the spacing being 7 ft. each way. Several experiments with blasting caps wired up in various ways were tried in an adjacent open field, to make sure that the loaded holes would be fired simultaneously. The firing was done with a high-amperage but low-voltage current thrown with a single switch. As a result of this blast, about 60,000 yd. was broken fine enough to be handled by the railroad shovels.

The crusher plant near the forebay receives material by rail in the 20-yd. dump cars. These discharge direct into a large hopper lined with 2½ x 6 in. steel bars laid flat, and feed a 60 x 84 in. jaw crusher operated by a 250 h.p. motor. This crusher reduces the stone to 8 in. size and delivers it to a belt which takes it to the top of the secondary crusher house, where it is fed into 3 gyratory crushers that reduce it to 2 in. size. From these crushers the material passes through a screen which removes dust and oversize aggregate, and is then carried on a suspended belt conveyor over the storage pile. At the end of the storage pile is the bin structure for the receipt of 1 in. stone to be used for reinforced concrete work. The 1 in. material is obtained by bypassing the oversize aggregate, after it leaves the screen, into a small auxiliary gyratory crusher, which delivers its product directly into the bin mentioned above. Under the storage pile is a gallery containing another conveyor for delivering stone to the concrete plant, which it is planned to build as shown in the layout drawing.

The rock-excitation work on the canal itself is carried out in such a way as to produce smooth sides and secure the maximum flow. It is the intention to channel the rock down to the water line in advance of blasting, and to break the rock back below this face so as to allow for a 6 in. lining of concrete throughout the entire flow section. There are 15 duplex channelers cutting to a depth of 20 ft. at one operation on the work, most of them being at present employed around the forebay. The channelers and the tripod drills are operated by compressed air delivered by a 10 in. pipe.

There will be 12 motor-driven compressor units, having a total capacity of 12,000 ft. per minute, on the work. A capacity of 8,000 ft. is concentrated at the Whirlpool station in the center of the work now in progress, and the other 4,000 ft. is located at Montrose station at the southern end of the line. Six of these machines are now in operation at the first mentioned station, where one of the main transformer substations for the work is also situated. After-coolers are used on the compressors, and it has not been necessary to employ reheaters, although these may be resorted to in cold weather. At present the loss of pressure in delivery from the central station to the drills is about 3 lb. per sq. in., the drills taking air at a little more than 100 lb.

Because plenty of electric power was available, and because shipments of coal are becoming more and more difficult to

obtain promptly, electric power was used wherever possible on the work. As stated, the haulage equipment uses 600 volt direct current, transformed by rotary converters at the central stations. The other equipment uses 440 volt alternating current, the lines to the two large electric shovels carrying current at 4,000 volts to transformers on the shovels themselves. For the smaller plant units the current is stepped down before being delivered to the machine.

For organization purposes, the work,

which is being done entirely by the Hydro-Electric Power Commission's forces, has been divided into four sections. The first of these includes the deepening of the Welland River. The second is the portion of the main canal from station 0 to station 235, the third is the other half of the main canal from station 235 to the forebay, and the fourth section includes the power house, gatehouse and the forebay itself. Sir Adam Beck is chairman of the commission, for which F. A. Gaby is Chief Engineer, H. G. Acres Hydraulic

Engineer, T. H. Hogg Assistant Hydraulic Engineer and M. V. Sauer Designing Engineer. The work is in charge of J. B. Goodwin, Works Engineer, under whom G. H. Angell is General Superintendent and A. C. D. Blanchard Field Engineer. F. W. Clark is Assistant Field Engineer, R. T. Gent Plant Engineer, and William Snaith Office Engineer. C. F. Whitney is resident engineer on Divisions 1 and 2, George Lowry on division 3, and W. S. Orr on division 4.—Engineering News-Record.

The Business Box Car.

By W. J. Bohan, Mechanical Engineer, Northern Pacific Railway.

I will begin this paper with a specific definition of a railway. A railway, opinions in some quarters to the contrary notwithstanding, is an institution of public necessity, founded, maintained and operated for the purpose of efficiently conducting transportation to the satisfaction of its patrons in such a manner that the physical qualities of the property and equipment may amply meet the imposed demands and a fair dividend on the investment be realized.

One of the principal factors necessary to the conducting of transportation is box cars. An impression of the importance of box cars as they affect dividends can be gained from the following facts: A total of 261,100 box cars were owned and operated by eight leading western and northwestern railways in the U.S. during the last year, or an average per road of approximately 32,600. The total number of box cars represents 50.7% of the total freight cars owned by the roads. These box cars may fairly be said to represent an original investment of \$210,000,000.

The total average cost of repairs per road per year for a 4-year period for all classes of cars on the roads was \$3,481,000. The average cost of repairs per car per year was \$64.00. The minimum cost per car per year for one of the roads was \$41.00. The maximum cost per car per year for one of the roads was \$110.00, a difference between minimum and maximum cost per car per year of \$69.00,—\$5.00 more than the average cost of repairs per car per year for all the roads mentioned. The character of transportation on each of these roads is the same, and the ratio of the number of box cars to the total number of freight cars of all classes is closely approximate, and it is fair to assume for the purpose of this paper that the above repair cost ratios for the different roads would obtain for box cars.

The claims paid for losses due to grain leakage by a large grain carrying line of the same group of roads for four years ending in 1917, averaged \$80,000 a year, grain being carried in both owned and foreign cars. The average damage claims paid per year on account of defective equipment on all commodities other than grain for the same period was \$17,000. A stockholder of an enquiring turn of mind, the chief operating official, or the president of one of these railways, invariably of an enquiring turn of mind where earnings are concerned, in view of the high loss and damage costs and wide difference in repair figures, would be justified in asking, "What is the matter?" Several things are the matter, and one of them is undoubtedly lack of business balance in car construction—box car construction—that being the type of car under consideration.

Years of mental and physical energy have been spent on box car design by the best and most loyal of men, both technical and practical, as volumes of records of the M. C. B. Association and technical periodicals will bear testimony of; and a generally satisfactory box car is not yet with us. Have we kept it back by a flux of figures on stresses and strains, lacking the leaven of sound engineering judgment? Have we delayed its coming by building upon too narrow conceptions of the problem, likened to the opinions of the six blind men of Hindustan regarding the physical make up of the elephant? Have we co-operated with each other sufficiently in treating a large subject in a large way, by exerting our energies toward a broad and careful analysis of the subject, with full realization that box cars are business agents of the railways that own them, and that their dividend earning capacity depends upon their commercial efficiency as well as upon their mechanical details, and that the two qualifications are correlated? The fact that we have not the generally satisfactory box car indicates at least that the progress of its development has been slow. The time has arrived when we must develop an efficient box car in its fullest sense. Stress of times, public opinion, unusual volume of business of many varieties, shortage of equipment, scarcity of labor and material with constantly upward trend in prices of both, demand it.

What have we to offer in the way of a business box car? The business box car must be free from leakage of lading, weather proof and practically fire proof, have a so-called non-sweating interior free from projections and pockets, be easily accessible, have properly dimensioned door openings and substantial free positive functioning doors and fastenings, and so constructed as to lend itself to diversified lading, with incident supplementary doors, blocking, etc. In short, a car popular with the shipper,—a dividend earning unit having a maximum demand. It must, in addition to these qualities, have a minimum light weight, a maximum utility and carrying capacity per unit of weight, reasonable first cost, and freedom from the repair track.

Two principal elements enter into the design and construction of such a car. First, accurate technical engineering information, and second, sound, practical business judgment based upon experience, the latter largely predominating, for the reason that evidence is lacking to date that anyone ever reduced the things that happen to a box car to conclusive figures. There are some examples of car construction in operation in this country today that create the impression that cars are sometimes figured to death. I do not

wish to belittle either figures or figurers, but I do wish to say that figures are very valuable material, and even figurers should use them carefully.

In a recent article in one of the railway periodicals, a statement in substance is made that in train service the car body has three movements, all of which absorb a part of the force applied at couplers. This is true as far as it goes, and if this were all, figuring would be comparatively easy. It, however, stops where the real trouble begins. The fact of the matter is that the box car is subject, not only to these three forces, but to the resultant of their combined action and many others of such varying direction, intensity and rapidity of occurrence that their accurate mathematical determination is out of the question. Among these forces may be mentioned those due to poorly balanced design, unevenness of track, curvature, centrifugal force, train handling, draft action, irregular lading, shifting of lading, atmospheric conditions, etc.

Briefly, all of these forces combine in what may be called "team work" against the life of the box car. Close observation and experience with a large number of different types of box cars indicate that the general and greatest result of this team work manifests itself in twisting the car. Such being the case, team work in an opposite direction by the various members of the car must be the natural antidote. I believe the most economically efficient box car to be one in which every detail, even the grab irons, is made to do its fair share in assisting the natural functions of the car and resisting the stress and abuse to which it is exposed. The body of such a car should not be built around any one member, but all of its members should form a unit, having maximum inherent strength and resilience, and acting as a unit in dissipating all reasonable strain action. It should have the fewest possible primary and special parts, so that joints, gussets, rivets, bolts and fastenings which work and wear to the detriment of the car, increase its cost of upkeep and loss of time on repair tracks, may be reduced to a minimum.

A general specification for a car that would meet the requirements outlined would be briefly as follows: The weight for say a 40 ft., 40 ton box car should be between 45 and 50% of the stencilled capacity. I should say it should not exceed 48%. This weight can be obtained without sacrifice of strength.

In connection with the matter of efficient weight: The electric motor builder designs a standard motor to handle 25% overload rating for 2 hours without abnormal stress. This rating is the result of careful engineering and experience in all the electrical, mechanical and commer-

cial phases of electric motors. There seems to be no reason why box car design should not be determined upon the same relative basis. It is, of course, to be understood that a 25% overload rating is not the correct rating for a box car. I have never believed that a railway could earn as much money hauling 25 tons of tare per unit of revenue producing load, as it could by hauling 20 tons of tare per the same unit of revenue producing load.

The body should be steel frame throughout, preferably pressed steel of resilient quality. The underframe, sides, ends and roof should be diagonally braced throughout. There is no question about the efficiency of diagonal bracing. Its value has been many times demonstrated in the reclamation of thousands of old cars. As the diagonal bracing of the entire construction, as previously mentioned, will distribute the strains due to live load and shocks to all members of the car, the fish belly type of center construction is not necessary. Ten inch center sills of ordinary cross section are sufficient.

Side and end posts and braces at the points of attachment with sills and plates, underframe bracing at the points of attachment with center and side sills, and roof bracing at the points of attachment with ridge pole and plates, should be directly connected, i.e., the usual construction using gusset plates or other secondary members should be eliminated, as the strength and efficiency of the car can be materially increased by so doing, and unnecessary parts eliminated. Auto-genous (electric or oxyacetylene) welding may be used to material advantage in such a construction.

Diagonal underframe bracing at the ends should be securely tied to both center and end sills at their junction, and extend continuously around the ends of the body bolster and cross ties, with alternate connections to center and side sills. The same general construction may be followed in the roof for the attachments of diagonal bracing and plates, ridge pole and door carlines. At the door openings, underframe should be substantially reinforced by supplementary diagonal bracing. The plate may be similarly reinforced above the door, or the door track constructed to form the reinforcement. The roof reinforcement at the door openings may be made by the use of carlines at the door posts. The end construction with its attachments to end sills and plates, is similar to the side construction.

The corner posts should be formed by directly connecting the end side post and side end post members throughout their entire length. This will not only tie the car together securely, but it will materially assist in forming an integral construction. The corners may be further reinforced by continuous corner and end grab irons.

Side and end sheathing should be constructed of 2 sections of sheet steel, their junction reinforced by plates, and all securely riveted together, forming side and end girths, the girth reinforcing plate extending continuously from side door post to side door post around the end of the car. End and side lining should be of matched lumber, sides $\frac{3}{4}$ in. or 13/16 in., ends 1 $\frac{1}{4}$ in., the lining extending from floor to plates. The floor may be of the usual 1 $\frac{1}{4}$ in. matched stock secured to furring of underframe, using standard grain strips at intersections of floor and sheathing.

The roof should be of the circular type and may be constructed of 2 sheets of no.

16 steel, running lengthwise of the car, with joint at ridge pole, the 2 roof sheets being securely riveted between the ridge-pole and a weather proof ridge-pole cap. The roof sheets should also be securely riveted to the diagonal braces, end and side plates, thus forming an integral member of the car capable of sustaining its share of the load. It is necessary that the inside of the roof be what is commonly called "non-sweating." This can be taken care of by the application of a heavy coat of ground cork and red lead or mineral paint applied to exposed metal surfaces.

The door should be of steel, framed and sheathed similar to the body of the car, and mounted with weather-proof shields at posts and plates.

The truck should, like the body, have as few parts as possible and be preferably of the cast steel type.

Particular attention should be given the brake beam mounting, to ensure even brake shoe wear and proper alignment of levers and rods. All of these points are of extreme importance, not only in that they may perform their special functions properly, but that irregular transmission of stresses to the car itself be avoided as far as possible.

Brake equipment of standard makes is quite satisfactory. Special attention, usually lacking, to secure proper application and alignment of parts, is absolutely necessary to obtain safe and efficient results.

Draft gear should be of the friction type, having a minimum recoil action, which should be just sufficient to readjust the parts in release. Travel should be approximately 4 in. The shock dissipating capacity should be the maximum obtainable with prescribed travel and standard clearance conditions. The draft lug fastenings should approach strength sufficient to resist maximum shocks regardless of draft gear capacity.

The holes in framing should be die punched to templets. All rivets and bolts should be of the best quality obtainable and of full cross section. Bolts should have properly proportioned heads and clean cut and accurate threads to provide for wrench fit of nuts. Nuts should also be of best quality and manufacture. Application of both rivets and bolts should be made without drifting, rivets having full and concentric heads and driven at proper temperature. Double nuts, lock nuts, cotters and split keys, where used, should be given special attention. I consider a good design of nut lock superior to a cotter or split key, on account of extreme difficulty in getting proper application of cotters or split keys. No one little thing is a source of more trouble on a car than loose nuts.

Too much stress cannot be placed upon the importance of more careful practical engineering study of both general and detail design to secure a well balanced, resilient car unit. Some manufacturers have done a great deal of excellent work in this direction, on underframes, but have not, in my opinion, extended the resilient features far enough, as there is no reason why it should not extend to the entire superstructure. Particular attention should also be given to the selection and assembly of the best material obtainable.

In conclusion, it must always be borne in mind that the most efficient business box car is one so constructed and assembled that it will afford a maximum resistance to the development of chronic conditions arising from general and not maximum service stress. Such a car rea-

sonably maintained will have the physical strength to take care of reasonable maximum stress and at the same time represent a minimum first cost and up-keep, and be commercially efficient.

The foregoing paper was read before the Western Railway Club in Chicago.

Sound Advice to Railway Men.

G. A. Hoag, Superintendent, Canadian Northern Ry., Capreol, Ont., issued the following bulletin recently:—

As a railway man, have you the gambling microbe? What has it done for you? Any good? Any harm? Stop and think! This microbe is like all other microbes, making use of every moment, increasing, spreading; spreading at an alarming rate when once it gets a start on you or me, and we have not backbone enough to see the red flag ahead and answer its call. Stop again and think of how many accidents this microbe has caused. If we only knew the trouble it has caused. How? By some one employe not taking his proper rest before starting out on a run, etc. If you have this microbe, flag it; flag it quick, before it is too late, and results in some accident, the cause of which never comes out (although such knowledge many a man carries under his smock and jeans). Do you want to have that weight to carry around all your life? Gambling, poker playing, etc., are some of the surest methods of keeping men poor, keeping them down, causing them to be morose. They lead to other crimes and ruin many a clever man's career. Wise men do not gamble. Are you unwise?

Railway life may be, and is, a little rough. Are you trying to iron out the rough spots? Are you trying to help the other fellow? Is there the need of the rough, foul language we hear spoken so thoughtlessly, not perhaps before our own families, but often heard by the other man's wife and child? By the way, do we look at it the same as if our own heard such language? Or perhaps it makes no difference who hears the words thus thoughtlessly spoken. This is a weakness, and is so looked upon by the strongest men. Can you afford to let your weakness get the better of you, or can you flag this weakness in yourself? Will you try it? Strong men are usually simple of speech. Profanity drives the better away and draws the lower to you.

How many men are honest all the time; honest with themselves; honest with the other fellow; honest with themselves as to their health; in their habits; honest with their mates and their fellow men at all times and in all things. How many of us are willing and sometimes anxious to get something for nothing? This again perhaps thoughtlessly; but is it fair? Is it honest, after all?

These are little notes which I hope will be taken as they are meant. Just a few facts to think over and to help us to help each other. Try them. Think them over. Ask yourself if they fit in anywhere. If they do, and you improve by them, you are the winner. Do not let the red flag fade!

Carriage of mails by railways.—The Board of Railway Commissioners gave notice of a sitting in Ottawa for Nov. 19 to hear the application of the C.P.R. and G.T.R., on behalf of those and other railways, asking that the board fix fair and reasonable rates for the carriage of mails, but at the Post Office Department's request the hearing was postponed to a date to be fixed by the board.

Central Vermont Railway Co's Annual Report.

Following are extracts from the report for the year ended Dec. 31, 1917.

| | |
|--|----------------|
| Gross receipts | \$4,816,577.55 |
| Operating expenses | 4,022,047.46 |
| Balance | \$ 794,530.09 |
| Taxes | 207,009.15 |
| | \$ 587,520.94 |
| Net debit from rentals, etc. | 73,066.04 |
| | \$ 514,454.90 |
| Hire of equipment— | |
| Credit balance | 11,712.69 |
| | \$ 526,167.59 |
| Interest on securities held by company | 50,386.61 |
| | \$ 576,554.20 |
| Fixed charges | \$ 731,283.34 |
| Net result, deficit | \$ 154,729.14 |

Train Mileage.

| | | |
|---------------------------|-----------|-----------|
| | 1917. | 1916. |
| Freight | 861,219 | 1,054,674 |
| Passenger | 1,074,207 | 1,117,924 |
| Mixed | 88,914 | 95,129 |
| Special | 2,171 | 2,941 |
| Total revenue miles | 2,026,511 | 2,261,668 |
| Non revenue | 44,153 | 32,439 |
| Total | 2,070,664 | 2,294,107 |

Car Mileage.

| | | |
|----------------------|--------------------|-----------|
| Passenger 4,888,464 | Decrease from 1916 | 88,277 |
| Freight ..22,246,918 | Decrease from 1916 | 5,828,477 |

The percentage of expenses to earnings was 83.50% as compared with 72.20% in the preceding year.

Traffic.—The number of tons carried one mile was 267,482,693, a decrease of 59,308,745; the earnings per freight train mile were \$3.49, an increase of 43c, and the earnings per ton mile 1.20c, an increase of 0.19c.

The number of passengers carried one mile, 41,165,036, shows a decrease of 1,691,179; the earnings per passenger train mile \$1.27, an increase of 9c, and the earnings per passenger per mile 2.60c, an increase of 0.12c.

Maintenance of Way and Structures.—

On the First District 4.5 miles of new 80 lb. open hearth rail have been laid between Everts, Vermont, and White River Jct., Vt., and 8.1 miles have been laid with relaying 80 lb. rail, replacing lighter weight rail. On the Third District 26.4 miles new 80 lb. open hearth rail have been laid as follows—15.3 miles between White River Jct. and South Royalton, 4.7 miles between Essex Jct. and Burlington, and 1.9 miles between Oakland, Vermont and Georgia, 7.3 miles relaying 80 lb. rail have been laid relieving lighter weight rail.

Industrial tracks to extent of 8,132 ft. have been constructed, and 4,635 ft. additional yard tracks have been built.

Three grade crossings at Montpelier have been eliminated by an overpass, and new highway and a grade crossing in Willington, Conn., has been discontinued.

A building has been constructed at St. Albans for accommodation of U. S. Immigration Department, and for a part of our audit department staff. A new combination freight and passenger station was erected at Riverton to replace structure destroyed by fire. A 3,000 ton capacity ice house was built at St. Albans to store sufficient ice to meet the increased requirement.

New modern 150-ton, dead-rail, track scales have been installed at Palmer, Brattleboro and White River Jct.

New steel bridges have been erected at Three Rivers, Montague, Millers Falls, Gill and Milton. Bridge 21, Williamstown, a trestle structure, was rebuilt

with steel and 7 trestle bridges, aggregating 309 ft. in length, have been renewed. Sixteen other bridges received extensive repairs.

Maintenance of Way and Equipment.

During the past 18 months there were purchased and put in service one 10-wheel superheated passenger locomotive of our 218 type, and 6 consolidation superheated freight locomotives of modern design—these locomotives weighing 192,000 lbs. on drivers and having a tractive power of 49,500 lbs., have given extremely satisfactory service, both as to their

| | | | | |
|--------------------------------|--------------|--------------|--------------|--------------|
| | 1914 | 1915 | 1916 | 1917 |
| Tons one mile | 314,478,346 | 292,446,458 | 326,791,438 | 267,482,693 |
| Tons per train mile | 226.91 | 250.58 | 277.30 | 278.33 |
| Tons per loaded car mile | 14.44 | 14.05 | 14.64 | 15.51 |
| Miles | 3,242,225 | 2,919,557 | 2,970,898 | 2,720,960 |
| Freight earnings | 2,981,316.28 | 2,898,881.44 | 3,290,654.75 | 3,214,417.38 |
| Passenger earnings | 1,072,912.07 | 1,008,427.42 | 1,063,403.53 | 1,069,747.79 |
| Total earnings | 4,372,765.42 | 4,260,598.53 | 4,811,329.64 | 4,816,577.55 |
| Car miles loaded | 21,771,268 | 20,814,804 | 22,324,264 | 17,251,131 |
| Car miles empty | 8,664,276 | 8,293,951 | 7,512,920 | 6,226,981 |

hauling capacity and as to economical operation. In continuing the work indicated last year, 3 more compound consolidation locomotives of the 400 class have been converted to simple superheated locomotives with highly satisfactory results. Ninety locomotives have received heavy repairs and 202 light repairs. The benefits derived from the improved condition of our motive power have been clearly demonstrated. The past winter is reputed to have been the worst in history and notwithstanding the severe strain on the locomotives during that season, we have been enabled to handle the heaviest business on record this spring without delay.

During the period covered by the report 2 new steel mail cars were purchased. In St. Albans shops 6 steel under-frame milk cars, 11 box cars and 2 snow ploughs were constructed, 167 freight cars had steel draft equipment applied and metal roofs were placed on 219 cars.

Operating Results, Etc.—In December, 1917, the U. S. Government took over the operation of the railways and your company has been under government direction since that time. Although a tentative operating contract has been submitted, nothing definite has been agreed upon. When the time arrives it will be necessary to act, and a resolution will be submitted to this meeting giving the board authority in the premises, and appointing such officer as you may designate to negotiate and execute the contract on behalf of this company. Under the terms of the proclamation the Government takes over "each and every system of transportation, and the appurtenances thereof located wholly or in part within the boundaries of the continental U. S." Whether it is the purpose of the government to include the roads owned and operated by this company in Canada is yet to be determined.

During 1917 application was made to the Central Vermont Transportation Co., a subsidiary of your company, for the sale by the transportation company of the steamships Manhattan and Narragansett, which were originally built to run between Providence and New York. Negotiations following this application were terminated when on Jan. 1, 1918, the U.S. Shipping Board commandeered the boats for the government. Hearings have been had before the Shipping Board

to determine the compensation therefor, but no conclusion has been reached. Claim was made by the company that it should be allowed the original purchase price, plus the cost to date, amounting for both boats to \$1,638,252.08. It is expected that a definite order will be made in the near future. There was outstanding against the boats at the time they were commandeered, a first mortgage obligation of \$450,000.

The report of operation of the company for 1917 shows a deficit of \$154,729.14 after paying fixed charges. This

is due to increased cost of labor, coal and material. The increase in the items of either wages or coal alone would more than account for the deficit. It will be interesting in this connection to study the subjoined statement showing a comparison of operating data for 1914, 1915, 1916 and 1917, from which it appears that while the total revenue for the past two years was substantially the same the locomotive miles decreased 250,000 miles; the loaded car miles decreased 5,073,133 miles, and the empty car miles decreased 1,285,939 miles, showing the efficiency of the road has been maintained and increased, and that under normal conditions the property would have shown an exceedingly handsome profit.

Quebec Central Railway's Annual Report.

The Q.C. Ry.'s report for the year ended June 30, 1917, gives the following results.

| | |
|---|----------------|
| Revenue | \$1,926,403.79 |
| Operating expenses | 1,424,558.62 |
| Net revenue | 501,845.17 |
| Other income | 5,500.53 |
| Interest on debenture stock and mortgage bonds | 257,560.94 |
| | \$249,784.76 |
| Surplus income balance from 1917 .. | \$87,544.99 |
| Balance net revenue account | 249,784.76 |
| | \$337,329.75 |
| Dividend on share capital | 169,080.16 |
| Balance | \$168,249.59 |
| Appropriation for additional equipment, betterments and improvements to property ..\$30,000 | |
| Transfers to reserve contingent fund | 50,000 |
| | 80,000.00 |
| | \$88,249.59 |

The company's property was leased to the C.P.R., Oct. 2, 1912, for 999 years, at a guaranteed rental based on the interest on the outstanding 1st, 2nd and 3rd mortgage bonds, and 4% dividend on the outstanding stock for 5 years from July 1, 1912, and 5% afterwards.

The officers and directors for the current year are: Grant Hall, Montreal, President; I. G. Ogden, Montreal, Vice President; J. H. Walsh, Sherbrooke, Que., General Manager; A. D. MacTier, Montreal; L. A. Carrier, Levis, Que.; T. Lindley and C. D. Brassey, London, Eng. H. C. Oswald, Montreal is Secretary.

The Canadian Engineers' Splendid Work on the Western Front.

The overseas correspondent of Canadian Press, Ltd., in writing from the Canadian forces headquarters on the western front recently said:—"Much of the success of the operations of the Canadian Corps opening on Sept. 27, was due to the splendid work of our engineers. The engineering preparations for the Bourlon Wood operations were undertaken on five days notice, and were exceedingly difficult owing to the nature of the ground. On the front over which the Canadian Corps attacked, the way was barred by the Canal du Nord, 100 ft. wide, with banks up to 15 ft in height, the water in many places being over 8 ft. deep, and with the River Agache, 15 ft. wide and 8 ft. deep, parallel and close to the canal.

"The problem confronting the engineers in preparing for the attack involved the repair of roads demolished by shell fire; the pushing forward of cross country tracks for infantry and horse transport to the front line; the pushing forward of light tramways to the front line to facilitate the delivery of ammunition stores and supplies; the provision of engineer material of all sorts, and the construction of new headquarters for battalions, brigades, divisions, etc., and dugout accommodation and shelters as quickly as they could be improvised. A difficult question was the provision of water supply for the large number of horses, approximately 40,000 assembled in a very congested area.

"The problem was to get the infantry and the guns over the canal in the face of enemy barrage and to provide sufficient facilities in the way of roads, bridges, tramways, etc., which would ensure the supply of ammunition for the guns being sustained and the supply of stores, munitions and rations for the large number of troops engaged. As it was clear that the enemy's barrage would fall naturally on the canal and be retained there, the following were provided for: Seven infantry foot bridges of an unsinkable type; 10 crossings for guns and horse transport, 5 of which had to be developed at once for heavy traffic, even while the continuous stream of guns and ammunition wagons was pouring over them. At least ten times Canadian engineer officers flying at a height of about 500 ft. traversed the length of the canal involved, reconnoitering for the best spots for tank crossings, bridge sites and infantry crossings.

"Great were the preparations. Following were the results: Before 'zero' hour 18 miles of roads had been repaired up to the front line and 7 miles of tramways constructed. On these tramways over 3,000 tons of ammunition a day were being delivered to advanced dumps and gun positions. The huge concentration of horses was provided with the necessary water supply. After 'zero' all crossings were put through successfully, in spite of heavy gun and machine gun fire. The attack kicked off at 5.20 a.m., and the first guns crossed the canal at 8.40 a.m.

"The engineers went over with the infantry to get their footbridges across, and the engineer wagons, with their 6 horse teams, were pushed forward so rapidly that in several cases all the horses were killed by machine gun fire, and the

men got their material down to the bridge sites by man-handling the wagons. In one case a party of Boche machine gunners, who had been overlooked by the mopping up parties, emerged from a concealed tunnel, and attacked the engineer party attempting to bridge the canal. The engineer officer in charge took part of his men and beat off the attack, and at the same time kept the work of construction going without interruption.

"The bridges constructed were of all types: pontoon, trestle, heavy pontoon and heavy steel bridges for all traffic. A remarkable record was made in the erection of two heavy steel bridges of 110 ft. span under heavy fire. The materials were got on the sites at 2 p.m., and the approaches were prepared and the bridges erected and open for heavy work in 12 hours actual labor.

"By 2 p.m. three new pumping installations had been installed on captured ground and sufficient horse troughs to water 5,000 horses an hour. All materials were got forward to the infantry and the positions gained consolidated. About three miles of tramways were constructed and in operation, and over 1,000 wounded were evacuated on returning ammunition trains operated by Canadian Tramways Corps.

"The battle of Bourlon Wood was an engineers' battle. The success of the whole operation depended on the speed with which the necessary crossings of the Canal du Nord were provided, and the way in which they were maintained and improved during the day, so as to enable the guns and infantry to be maintained in the positions which they had reached in their advance.

Railway Equipment for U.S. Naval Guns on the Western Front.

Press dispatches from France detailing the destruction wrought back of the German lines by huge naval guns operating with the French and United States forces make it possible now to disclose some particulars of these guns and how they were built, which has been a jealously guarded secret.

They were originally intended for the new battle cruisers, but a change in the design of the cruisers left the guns available for other use, and as there was in the navy no immediate need for them afloat, the chief of the Navy Bureau of Ordnance recommended that they be placed on railway mountings for land service with the armies in France. He felt that if the guns could be placed upon railway mountings, that would make them readily mobile like the British and French naval guns of smaller caliber, they would prove a valuable adjunct to the U. S. artillery forces overseas, and he was directed to proceed with the design and construction.

The U. S. naval guns throw a heavier projectile and have a greater muzzle velocity than any previously placed on a mobile shore mounting. From the first it was seen that in order to make the project successful, the railway battery must be made completely mobile, so that it might operate without being based at any one particular spot. For this

reason, it was necessary to provide not only the railway cars mounting the guns, but also locomotives and cars sufficient to accommodate all the operating personnel of the expedition, together with the ammunition, repair shops, cranes, stores and miscellaneous material. The final plans and specifications which were prepared at the Naval Gun Factory, Washington, were completed in less than 30 working days, being ready for submission to the bidders about Jan. 25, 1918.

Large mounts were to be built, capable of taking these big caliber guns, each mount with its accessories to be operated as an independent train. The equipment included locomotives, gun cars, ammunition cars, crane cars, construction, sand, timber, berthing and kitchen, fuel, workshop, and staff radio cars, car for officers, battery headquarters and miscellaneous purpose cars. The locomotives built for this purpose were standard consolidation type with 4 pairs of drivers. The weight of the locomotive alone is approximately 83 tons and the weight of the tender approximately 56 tons. A form of pit foundation was provided to enable the guns to be fired at high angles of elevation. The removal of the gun from over the pit formation and its restoration to complete mobility is but the work of a few minutes. The entire amount is covered with armor plate, 1,600 sq. ft. of plate being required. By shifting the position of the gun mount on the tracks the gun can be brought to bear on any desired target and the proper angle of train obtained.

The car equipment is unusually complete. One car is a complete machine shop, with every facility for repairs, with blacksmith forge and anvil, lathes, shapers, grinders, and drill presses. Ammunition cars are heavily armor plated. The kitchen cars have complete cooking and serving apparatus; the berthing cars have folding bunks for the men, and other cars carry complete sets of spare parts.

Every effort was made to secure rapid construction, work being begun the day the contracts were awarded. The Baldwin Locomotive Co. built the locomotives and the Standard Steel Car Co. the box cars. The huge steel girders were fabricated by the American Bridge Co., some of the plates being so large they could not be produced at its Pencoyd works and had to be manufactured in Pittsburg. Work at all these plants proceeded night and day, and the material and completed mounts and cars were produced in record time. Many of the important parts of the gun mounts were made at the Naval Gun Factory, Washington, which worked under forced draft, and had its part of the work done ahead of schedule, as did the other builders. The first gun, mounted complete, left the Baldwin shops April 25 for the army proving ground at Sandy Hook, where the tests were made in the presence of officers of the Army and Navy and of the allied governments.

These guns are all manned and operated by officers and men of the U. S. Navy. The first party of officers and men for this expeditionary force arrived in France June 9; the first shipment of material left the U. S. on June 20, and the entire organization was completed and ready to move to the battle front in France late in August. This battery was in action at the front for the first time on Sept. 16, and continued in active operation until the armistice.

Wages of Railway Maintenance of Way Employes.

Following is a copy of Canadian Railway War Board agreement 2, entered into Nov. 8:—

Agreement between the Canadian Railway War Board and the United Brotherhood of Maintenance of Way Employes and Railway Shop Laborers, in respect to increases in rates of pay and certain conditions of service in conformity with terms of Supplement 8, General Order 27, of the Director General, United States Railroad Administration, for employes in the maintenance of way department.

1. This agreement shall be effective on the following railways:—Canadian Government, Canadian Northern, Canadian Pacific, Dominion Atlantic, Esquimalt & Nanaimo, Fredericton & Grand Lake, Grand Trunk, Grand Trunk Pacific, Halifax & Southwestern, Kettle Valley, New Brunswick Coal & Railway, Quebec Central, and on other railways under the jurisdiction of the Canadian Railway War Board, as defined in article 4 of this agreement.

2. The rates of pay and conditions of service defined herein shall be effective from Sept. 1, 1918.

3. (a) The rates of pay for the various classes of employes in the maintenance of way department on the railways specifically named in article 1 of this agreement shall be as follows:—

rates not less than the equivalent of \$115 a month.

(d) In cases in which mechanics and helpers to mechanics in the maintenance of way department were on Jan. 1, 1918, prior to the application of any increase effective that date, receiving less than 40c per hour and 30c per hour, respectively, basic minimum rates of 40c per hour and 30c per hour, respectively, shall be established, and to these basic minimum rates and all rates of 40c per hour and 30c per hour, respectively, and above, 13c per hour shall be added, establishing basic minimum rates of 53c per hour and 43c per hour, respectively.

(e) The rates of pay defined in clause (a) of this article for the various classifications of employes named shall be applied only on the railways named in article 1 and in the territories on such railways where such classifications are specified in existing or immediately preceding schedules.

(f) Classifications of employes specified in existing or immediately preceding schedules on any railway named in article 1 in any territory on such railways, and not named in clause (a) of this article, shall be maintained on such railways in such territory. The rates of pay for such employes shall be increased over the rates of pay in effect Jan. 1, 1918, prior to the

ernment, Canadian Northern, Canadian Pacific, Grand Trunk and Grand Trunk Pacific, the rates for yards of similar size and character on the railways named shall be used.

4. (a) On railways under the jurisdiction of the Canadian Railway War Board, other than those specified in article 1 of this agreement and which participated in the increase in freight rates provided for in order in council 1863 effective Aug. 12, 1918, the rates of pay of maintenance of way department employes shall be increased over the rates of pay in effect Jan. 1, 1918, prior to the application of any increases effective that date, by \$25 a month on monthly rates, 96c a day on daily rates, or 12c per hour or 13c per hour on hourly rates according to classification, provided, however, that all sectionmen shall be paid an hourly rate and receive an increase of 12c per hour on their equivalent earning per hour as at Jan. 1, 1918, irrespective of the basis, i.e., monthly, daily, or hourly, on which they have previously been paid, with a minimum of 28c per hour and a maximum of 40c per hour; and provided further that bridge and building, painter, mason, concrete, bricklayer and plasterer foremen shall receive rates not less than the equivalent of \$115 a month, that section foremen shall receive rates not less than the equivalent of \$100 a month, that pile driver, ditching and hoist engineers shall receive rates not less than the equivalent of \$105 a month, and that mechanics shall receive a minimum of 53c per hour, and helpers to mechanics a minimum of 43c per hour.

(b) Articles 2, 5, 6, 7, 8 and 9 of this agreement shall also apply to the railways covered by this article.

5. Eight consecutive hours, exclusive of the meal period, shall constitute a day's work.

6. (a) Overtime shall be computed for the ninth and tenth hours of continuous service, pro rata on the actual minute basis, and thereafter at the rate of time and one-half: provided, however, that in the event of the Director General, U.S. Railroad Administration, issuing any supplement or interpretation specifying some other basis for the payment of overtime for maintenance of way employes, such other basis shall be effective in the same manner and from the same date as made effective on the U.S. railways, but not prior to Sept. 1, 1918.

(b) When notified or called to work, outside of regular working hours, employes shall be paid a minimum allowance of 3 hours straight time.

(c) In computing overtime rates per hour for monthly and daily rated employes, fractions of a cent, one-half or over, shall be counted at the next cent above, and fractions of a cent less than one-half at the next cent below. For hourly rated employes fractions of a cent, one-quarter to one-half inclusive, and three-quarters or over, shall be counted at the one-half cent and the next cent above respectively, and fractions of a cent between one-half and three-quarters and less than one-quarter shall be counted at the half-cent and the next cent below respectively.

7. The provisions of this agreement shall supersede any provision in existing or immediately preceding schedules which conflict therewith.

8. The increases in rates of pay provided for herein are effective as from

Track Department.

| | | | |
|---|---------|--------------|---------------|
| Section foremen | | | |
| 1st class yards | per day | | \$4.40 |
| 2nd " " | " " | | 4.30 |
| 3rd " " | " " | | 4.20 |
| 4th " " | " " | | 4.15 |
| All other section foremen | | | 4.10 |
| Assistant section foremen, 5c per hour in excess of rate paid laborers whom they supervise. | per day | | \$4.35-\$5.50 |
| Foremen of extra gangs | " " | a minimum of | \$4.10 |
| Ass't foremen of extra gangs | " " | | 5.10 |
| Snow plow foremen | " " | hour | .37 |
| Sectionmen in classified yards | " " | | .36½ |
| All other sectionmen | " " | | |

Bridge and Building Department.

| | | | |
|---|-----------|-----------|--------|
| B. & b. foremen | per day | | \$5.10 |
| Painter foremen | " " | | 4.85 |
| Mason, concrete, bricklayer and plasterer foremen | " " | | 5.10 |
| Pile driver, ditching and hoist engineers | " " | | 4.70 |
| Carpenters | per hour | (minimum) | .53 |
| Painters | " " | | .53 |
| Masons | " " | | .53 |
| Brick layers | " " | | .53 |
| Plasterers | " " | | .53 |
| Plumbers | " " | | .53 |
| Pipe fitters | " " | | .53 |
| Tinsmiths | " " | | .53 |
| Blacksmiths | " " | | .53 |
| Bridgemen or rough carpenters | " " | | .43 |
| Pump repairers | " " | | .53 |
| Pumpmen—One pump | per month | | 92.00 |
| Pumpmen—Two pumps | " " | | 98.30 |
| Signalmen at interlocked crossings, | | | |
| 13 levers or under | per month | | 90.00 |
| 14 to 23 levers inclusive | " " | | 94.00 |
| 24 levers or over | " " | | 103.00 |
| Signal maintainers | per hour | (minimum) | .53 |
| Signal repairmen | " " | | .53 |
| Signalmen or watchmen at highway or railway (not interlocked) crossings | " " | | .36½ |
| Track and bridge watchmen | " " | | .36½ |
| Bridge tenders (manual operation) | " " | | .36½ |

(b) The rates of pay as specified herein shall, except as otherwise provided, be the maximum rates, and it is agreed that for classes of positions for which existing or immediately preceding schedules provide a range of rates, such range of rates shall be continued in effect with the same differentials below the maximum rates as have previously existed.

(c) In cases in which shop and yard foremen carpenters under existing or immediately preceding schedules receive a rate of pay above or below the rates paid bridge and building foreman, the same differentials shall continue in effect, provided, however, that they shall receive

application of any increases effective that date, by \$25 per month on monthly rates, 96c per day on daily rates, or 12c per hour or 13c per hour on hourly rates according to classification.

(g) On railways and in the territories where under existing or immediately preceding schedules it has been the practice to pay the two pump rate to pumpmen on single pumps where two men are employed, on single pump where water is treated, or on single pump and doing coal hoisting, the practice shall be continued.

(h) In applying the rates of pay for section foremen in 1st to 4th class yards on railways other than the Canadian Gov-

Sept. 1, 1918, and are to be paid according to the time served to all maintenance of way department employes who were then in the service, or who have come into the service since and remained therein. The proper ratable amount shall also be paid to those who have been for any reason since Sept. 1, 1918, dismissed from the service, but shall not be paid to those who have left it voluntarily. Employes who have left the service to enter the army or navy shall be entitled to the pro rata increases accruing on their wages up to the time they left.

9. It is agreed that the Canadian Railway War Board and the Central Committee for Canada of the United Brotherhood of Maintenance of Way Employes and Railway Shop Laborers shall confer promptly upon notice from either party to the other, regarding the incorporation into this agreement of any amendments or interpretations which may be issued by the Director General U.S. Railroad Administration, to his general order 27 and supplement 8 thereof, affecting employes in the maintenance of way department, as a result of the negotiations now in progress, and also with respect to any question which may arise regarding the interpretation of this agreement.

Maintenance of way employes' committees shall confer with their respective railway managements with respect to any increase in rates of pay due for Aug., 1918, under the application of general order 27 of the Director General, U.S. Railroad Administration.

The agreement was signed on behalf of the Canadian Railway War Board by W. D. Robb, Vice President, G.T.R., for the chairman of the Administrative Committee, and by W. M. Neal, General Secretary. On behalf of the Central Committee for Canada United Brotherhood of Maintenance of Way Employes and Railway Shop Laborers, it was signed by Wm. Dorey, Chairman, and W. Jewkes, Secretary.

Quebec and Saguenay Railway Operations, Etc.

By chap. 22, the Dominion Statutes of 1916, the Minister of Railways was authorized to acquire, under the provisions of the statutes of 1915, chap. 16, the Quebec, Montmorency & Charlevoix Ry., from St. Paul St., Quebec, to St. Joachim, 43.2 miles; also the Quebec & Saguenay Ry. and the Lotbiniere & Megantic Ry., at prices to be fixed by the Court of Exchequer, the total outside value being placed at about \$4,000,000, which parliament voted to make the purchase and to complete the lines. Proceedings were taken in the Court of the Exchequer during 1917 to fix the value of the Q. & S. Ry. and the L. & M. Ry. lines, and a report was presented, certain points being reserved in respect of the Q. & S. Ry. Before the Exchequer Court's report was made, parliament, in 1917, voted \$3,667,745, by way of revote, to pay for the three lines authorized to be purchased. The matters reserved by the Court of Exchequer in respect to the Q. & S. Ry. were discussed prior to the last session of parliament, when an act was passed amending the statute of 1916 in several details and authorizing the taking over of the Q. & S. Ry. We are informed that the details of this purchase have not yet been completed.

The Q. & S. Ry. has been opened for traffic from St. Joachim to St. Paul, and a tri-weekly service has been given over it since August. We are advised that the

Q. & S. Ry. passengers are transferred to the Quebec Ry., Light & Power Co.'s line at St. Joachim and are carried from there into Quebec, 25 miles. Freight service is being worked on a joint tariff basis, the Q.R.L. & P. Co. locomotives hauling trains between Quebec and St. Joachim, and the Q. & S. Ry. locomotives hauling the trains between St. Joachim and St. Paul.

The Quebec, Montmorency & Charlevoix Ry. (which is owned by the Q. Ry., L. & P. Co.) and the Lotbiniere & Megantic Ry. are still being operated as independent lines.

Record Locomotive Construction in the United States.

The United States standard gauge steam locomotive industry, operating under the direction of the War Industries Board, has increased its rate of production approximately 100% in the past three months. In a recent week the output of the three standard gauge companies was 144 locomotives. Since 1910 and up to last August, the highest number ever turned out in a single year was 3,776, which would represent an average weekly output of 72.6 locomotives.

The achievement is particularly noteworthy from the fact that, in bringing about this tremendous jump in production, it has been unnecessary to expend a dollar to increase plant facilities or enlarge the existing works—items of considerable expense in the development of most of the other war industries of the country. Redistribution of orders and concentration by each of the plants on particular types of locomotives has made possible an intensity of effort unprecedented in the industry.

The Pershing locomotive, built on standardized plans designed by the U.S. Military Railways, has not only been made the sole type of steam locomotive in use behind the U.S. lines in France, but, at the instance of the War Industries Board, has been adopted by the British and French Governments as the standard type for their armies on the western front.

Last August the Government, face to face with an immediate and urgent demand for steam locomotives for use in the U.S. and France, was seriously considering the establishment of government plants to meet the emergency. It was proposed that approximately \$25,000,000 should be spent for this purpose. At the suggestion of the War Industries Board the expenditure was held up in favor of the present plan.

Under the arrangement adopted, the construction of all the locomotives of standard gauge for use in France was assigned to the Baldwin Locomotive Works, whereas all orders for the U.S. Railroad Administration were divided between the American Locomotive Co. and the Lima Locomotive Works. These three companies comprise the entire standard gauge steam locomotive industry of the country. By this method of distributing the work, each of the plants has been able to develop extraordinary speed.

Normally the output of the Baldwin works never exceeded 60 locomotives a week. In a recent week it turned out 87 locomotives complete, not to mention 7 gasoline locomotives and 3 electric locomotives, and general repairs on 10 steam locomotives, and the promise is for even better returns. The American Locomotive Works has likewise accomplished ex-

cellent results, for while the number of locomotives is not so great, the tonnage represented in the output is proportionately as large; that is to say, whereas the Pershing locomotive weighs about 83 tons complete, the average weight of the locomotives called for by the U.S. Railroad Administration is approximately 150 tons. Similarly the Lima works have developed to a marked degree in the last three months: and, as in the case of the other two concerns without expansion of plant or plant facilities.

The importance of the results attained in this direction in their relation to the war programme of U.S. generally is indicated by the fact that the U.S. government is spending this year in the construction of these locomotives—both for use in France and on the government-operated roads—approximately \$200,000,000.

Re-employment of Soldiers and Sailors on U.S. Railways.

The majority of U.S. railways under federal control have already made announcement with respect to the preservation of seniority rights for employes who have entered the service of the army and navy and have indicated that so far as practicable preference in re-employment or reinstatement would be given to soldiers and sailors when mustered out of the service.

1. In order that as nearly as practicable there shall be a uniform treatment of this matter, the following general principles will govern:

(a) In the case of an employe having established seniority rights, so far as practicable, and where the employe is physically qualified, he will be restored to such seniority rights.

(b) In the case of employes who do not have seniority rights under existing practices a consistent effort will be made to provide employment for them when mustered out of military service.

2. Upon railways where the assurances given on this subject have been more specific than the provisions of paragraph 1 hereof, such assurances shall be observed.

St. John's Ambulance Association's Police Shield.—The shield presented by Lord Shaughnessy for first aid competition among police teams of Eastern Canada, was won in the competition for 1918 by the team from the C.P.R. Angus shops, Montreal. The shield was presented to the winning team by Fred Cook, of Ottawa, for the society, Nov. 7, and it will be held by Lord Shaughnessy until another team wins it. The members of the winning team each received a gold pin. The shield was originally presented for competition in 1914, and this is the first occasion on which it has been won by a C.P.R. team.

The Alberta Coal Mines, Limited, has been incorporated under the Alberta Companies Act with authorized capital of \$10,000 and office at Winnipeg, Man., to carry on a general mining business in the province, and in connection therewith to build spur lines and tramways and to connect them with existing railways, and to operate steam or other vessels on any navigable waters of the province. Following are the provisional directors:—B. Humberstone, Clover Bar; H. C. Anderson, Jas. C. Dunn, C. G. Sheldon, and M. Reid, Edmonton, Alta.

Revised Regulations for Interswitching of Freight Traffic.

The Chief Commissioner, Board of Railway Commissioners, gave the following judgment Oct. 26:—

The board's general order 230 changed the interswitching practice in that it compelled railway companies to give interswitching, instead of merely extending it at certain points as a matter of grace, and also threw open the interswitching service, not only to and from private sidings, but also to team tracks. In thus placing at the convenience and use of competing lines the terminal facilities of the originating carrier, and as a measure of justice to the originating carrier, the order contained the following clause:

"14. Except as hereinafter provided, the tolls herein prescribed shall not apply to deprive the initial carrier of the line haul by a reasonable route of traffic loaded or to be loaded on its railway, including sidings connecting therewith, provided it furnishes at the destination, itself or through its connections or by interswitching, the same delivery and facilities as the competing carrier at no greater charge."

Owing to protests made, the operation of the order has been stayed. The protests that have been made have been from shippers or boards of trade, and have reference entirely to the above paragraph. These protests point out that, as a matter of fact, interswitching in the past has freely been accorded by the railways to private sidings. The protest of the Border Chamber of Commerce of Windsor, Ont., may be quoted as illustrative of the position taken by the eastern shippers who objected to the provision. The protest says, among other things:—

"While our shippers recognize, in general practice, the right of the initial carrier to the line haul on business originating on its line or private sidings therefrom, providing, of course, said carrier can provide the service, still the majority of our members feel that the right to route their traffic should not be taken away from them. While 48 hours time which the board's order provides, in which the initial carrier may place equipment, probably seems reasonable, when you add another 48 hours, or maybe 96 hours, to get equipment switched from another line, same may easily constitute a serious delay. Then again, when you provide by tariff the assurance of the line haul to the initial carrier of all traffic it originates, you take away from that carrier the main incentive for the performance of a service satisfactory to the shipper. We are not aware of any case of a shipper depriving initial carrier of his just proportion of road haul, but feel that the possibility of competition in the routing of traffic should not be interfered with and, therefore, that section 14 of the board's order 230 should be eliminated. We venture the further opinion that the majority of shippers and railways will concur in this request."

The Winnipeg Board of Trade Shippers' Section also protested against the same section, in part as follows:—

"In providing that the railway on which traffic originates is entitled to the line haul, this section believes the board is depriving shippers of a valuable right they have always enjoyed, of routing their cars along the line they desire to use. The enforcement of it will have a radical effect upon the whole service of freight in carlots. It involves the removal of the only competition now remaining to shippers—competition in service. The alternative given to shippers of paying the additional freight to the point of interchange means an additional tax or increase in rates, for which no justification has been advanced."

A similar position has been taken by the Canadian Manufacturers Association. These protests are all made in ease of the position of the large shippers, who have private sidings, and therefore of the movement which, in the great majority of cases, has constituted by far the greater percentage of interswitching operations.

On further consideration it would appear fair that the extension of the interswitching practice to team tracks should not be done at any inconvenience or detriment to industries which in the past have had the service. The board's Chief Traf-

fic Officer has had this question, and the interlocking question of free cartage (which has frequently been referred to as an unjust and unfair discrimination, extended in favor of the larger shippers by certain railways), up with the railway companies and some of the larger shippers. The railway companies do not agree unanimously to an amendment of clause 14, the effect of which would be to restore the status of private sidings to their original position. In view of the fact, however, that the compulsory interswitching will enable the companies to use the tracks the one of the other, the larger systems now agree as follows:—

"In view of the services and tolls herein provided for, schedules authorizing any arrangement or device, such as free or assisted cartage, cartage allowance or the like, intended to equalize the facilities of competing carriers at common points, shall be withdrawn and cancelled within three months from the date of issuance of this order. Provided that if a carrier deem itself entitled to such equalization arrangements in a particular case, it may, within six months from the date of issuance of this order, or within six months following the establishment of interchange facilities at any particular point hereafter, apply to the board for relief."

Notwithstanding the position of some of the railway companies, I would give effect to the protests of the Canadian Manufacturers Association, the Winnipeg Board of Trade, and the Border Chamber of Commerce of Windsor, as above set out, and would strike out paragraph 14 of general order 230, substituting the following therefor:—

"Should a team track shipper expressly order his shipment to be interswitched to another carrier, notwithstanding that the initial carrier upon whose team tracks the car has been loaded can furnish at the destination, itself, or through its connections, or by interswitching, the same delivery and facilities as the said other carrier, at no greater charge, the said initial carrier may, in lieu of the toll prescribed in sec. 6, charge and collect its ordinary published rate to the interchange, which rate shall be a lawful additional charge against the shipment. Provided, however, that this alternative shall not be lawful, and sec. 6 shall apply, if within 48 hours after the shipper has requested it, the said initial carrier fails to place a suitable car reasonably convenient for loading."

General Order 252.

Under the authority conferred upon it by the Railway Act, the board hereby rescinds general order 230, dated May 17, 1918, the effective date of which was postponed from July 1, 1918, to Aug. 1, 1918, by general order 239, dated June 19, 1918; to Oct. 1, 1918, by general order 243, dated July 25, 1918; and to Nov. 1, 1918, by general order 250, dated Sept. 16, 1918, and both order and declare as follows:—

1. For the interpretation, application, and operation of this order,—

(a) "Interswitching" means the movement of freight in cars between the unloading or loading tracks of one carrier, hereinafter called the "terminal carrier," and the point of interchange with another carrier by whom, singly or jointly with a further carrier, the said traffic has been carried from its point of shipment or is to be carried to its destination, hereinafter called, singly or jointly, the "line carrier," both the terminal carrier and the line carrier which interchanges with the terminal carrier being subject to the jurisdiction of the board; the said movement being performed with or without the aid of an intermediate carrier whether subject or not subject to the jurisdiction of the board, hereinafter called the "intermediary."

(b) The "interchange" means the junction between the terminal carrier and the line carrier, or between the terminal carrier and the intermediary, nearest to the

point of loading or unloading of the car.

2. This order does not apply,—

(a) To tracks used by the terminal carrier for the transfer of freight between cars and its freight warehouse, or for the purpose of transshipment from car to car, nor to tracks otherwise set apart for its own working purposes, except team tracks;

(b) To joint movements which both begin and end in the same terminal or group of terminals or adjoining switching districts;

(c) To cars which, having been once properly interswitched for unloading, are reconsigned for unloading elsewhere within the same terminal or group of terminals.

3. Subject to the provisions of sec. 14, carriers shall at all times, according to their powers, furnish an interswitching service equal to the service accorded their own traffic at all points where interswitching facilities are, or may hereafter be, provided, under the circumstances and at the tolls herein prescribed;

Provided that no terminal carrier or intermediary shall be obliged hereunder to make any movement exceeding the distances herein specified at the tolls herein prescribed, and that the said distances be irrespective of the location of the interchange or of yard limits or boundaries.

4. The toll of an intermediary subject to the jurisdiction of the board shall not exceed, irrespective of weight, \$3 a car for any distance within and including 3 miles, or \$3.50 a car for any distance exceeding three miles to and including 4 miles.

5. If the traffic is loaded or unloaded upon private sidings connecting with the railway of the terminal carrier, or directly from or into an industry, elevator or yard abutting upon its tracks (commonly known as industrial sidings), or in any public stock yard, the toll of the terminal carrier shall not exceed 1c per 100 lb. for the actual weight thereof, subject to the minimum weight of the line carrier's tariff, for any distance within and including 4 miles from the interchange; except that the terminal carrier shall be entitled to a minimum charge of \$3 a carload of traffic included in the 7th, 8th and 10th classes of the Canadian Freight Classification, and \$5 a carload of all other traffic.

6. The toll of the terminal carrier upon all traffic other than that referred to in sec. 5, including traffic to or from team tracks, shall not exceed 2c per 100 lb. for the actual weight thereof, subject to the minimum weight of the line carrier's tariff, for any distance within and including 4 miles from the interchange; except that the terminal carrier shall be entitled to a minimum charge of \$6 a car.

7. Not less than the following proportions of the tolls herein prescribed shall be absorbed in the rate of the line carrier and the remainder shall be an addition thereto:—

(a) One-half of the tolls charged by the terminal carrier under sec. 5 as qualified by sec. 9.

(b) Of the tolls prescribed in sec. 6 one-half of the tolls permitted under sec. 5, as qualified by sec. 9, as if the movement were to or from private sidings.

(c) One-half of the herein prescribed or lower tolls of each intermediary, if any, whether subject or not subject to the jurisdiction of the board.

Provided that the line carrier may, unless its tariff rate is lower, charge and collect \$12 per car for its haul between the interchange and the point of shipment or destination when by reason of such absorption its line charges would otherwise be less than that amount.

8. The appropriate tolls hereinbefore prescribed shall not be exceeded, for the distances herein specified, in each direction for the movement from and the return to the line carrier of so-called off-line transit traffic, and the line carrier shall be subject to the absorption provisions of sec. 7 only when its through rates are the sum of its published rates to and from the stop-over point.

9. If an extra car, commonly known as an idler, is used solely to take care of an overhang of long articles loaded on an open car, it shall be charged by the terminal carrier not more than two-thirds of the herein prescribed appropriate toll for the minimum weight of the line carrier's tariff, except that the terminal carrier shall be entitled to a minimum charge of \$3 a car. If interposed between 2 cars in the same shipment to protect an overhang from each the idler shall be charged for once only.

10. No charge shall be made for the accessory interswitching of the empty car. If the car is loaded in both directions the interswitching toll shall be charged for each movement.

11. Subject to the provisions of sec. 14, nothing herein contained shall prevent the line carrier from absorbing the entire toll or tolls charged for interswitching competitive traffic, provided that the traffic and movements so treated are clearly defined in its tariffs.

12. Traffic to or from the United States shall be subject to the provisions of this order at the point of shipment or destination in Canada.

13. If an exceptional rate is published to apply to or from the tracks of the carrier line only, the ordinary rate which includes the right of interswitching shall be plainly indicated in the same schedule, and the latter rate shall not exceed the former by more than the appropriate toll herein prescribed for the interswitching service.

14. Should a team track shipper expressly order his shipment to be inter-switched to another carrier, notwithstanding that the initial carrier upon whose team tracks the car has been loaded can furnish at the destination thereof, itself or through its connections or by inter-switching, the same delivery and facilities as the said other carrier at no greater charge, the said initial carrier may, in lieu of the toll prescribed in sec. 6, charge and collect its ordinary published rate to the interchange, which rate shall be a lawful additional charge against the shipment;

Provided, however, that this alternative shall not be lawful, and sec. 6 shall apply, if within 48 hours after the shipper has requested it the said initial carrier fails to place a suitable car reasonably convenient for loading.

15. In view of the services and tolls herein provided for, schedules now in effect authorizing any arrangement or device, such as free or assisted cartage, cartage allowance or the like, intended to equalize the facilities of competing carriers at common points, shall be withdrawn and cancelled within three months from the rate of issuance of this order:

Provided that if a carrier deem itself entitled to any such equalization arrangement in a particular case, it may, within 6 months from the date of issuance of

this order, or within 6 months following the establishment of interchange facilities at any particular point hereafter, apply to the board for relief.

16. The schedules to give effect to this order shall be published and filed to come into force on Jan. 1, 1919.

Canada's Assistance to Great Britain in Transportation Matters.

Appreciation of the assistance rendered to Great Britain by Canada during the difficult period of transportation last winter has been expressed in a letter received by Sir Robert Borden from the Earl of Crawford, who is in charge of the wheat and flour situation for the allies, under the British Food Ministry. The Earl states that the Jacob Stewart, who represented the British Commission, with headquarters at Winnipeg, has explained how difficult the situation would have been without the co-operation of Sir Henry Drayton, the Chief Railway Commissioner, whose assistance surmounted difficulties which threatened to become insurmountable. He states that the Trade and Commerce Department, Canada Food Board and the Railway War Board, to mention only three of many organizations, likewise did much to promote the strength and unity from which Great Britain derived such marked benefits.

A Western Tribute to M. H. MacLeod.

M. H. MacLeod, who for nearly 20 years has been very closely identified with the Canadian Northern Ry. in Western Canada, will leave this city on Saturday for Toronto, where he will assume his new post as Vice President of this system of railways. Widespread regret is expressed in business and commercial circles that the prevalence of the influenza prevents the tendering to him of a public dinner as an indication of the very high esteem in which he is held.

It was Mr. MacLeod's privilege to be identified with the C.N.R. at the time of its great expansion, in a period when a new empire was created in Western Canada, and his name will therefore be indissolubly connected with the railway. He joined the service as Chief Engineer in 1900, after spending many years with the C.P.R., at a time when the era of rapid development in this country was just beginning and he became the general manager seven years later. During this period he shared the responsibility for all the important construction and development work on the western lines of the system. Eleven years ago Mr. MacLeod was promoted from the position of Chief Engineer of the system to that of General Manager as well, a position which he has filled with distinction and success.

Mr. MacLeod will be affectionately remembered in this city and in the west generally, as an efficient and competent railway official, who always had time to be courteous and kind. The duty which he had to discharge and the task which he had to perform were not exceeded in seriousness by those of any other westerner. The equipment of the railway was never complete, and he was compelled from the beginning to the end to carry on as circumstances might allow. He secured the most cordial co-operation of an efficient staff and exhibited high qualities of judgment and personal industry.

His manner was modest and quiet to a degree, and wherever he went through the west he made friends for the company and alienated none. Among the employees of the company there is probably not one but regrets the departure of the General Manager from this city, and this feeling is shared by thousands of citizens in the four western provinces.

Steel Rails for Canadian Railways.

In addition to the order given by the Dominion Railways Department to the Dominion Iron & Steel Co., Sydney, N.S., last spring, for 100,000 tons of steel rails for delivery to various Canadian lines, the Department on Nov. 14 gave another order to the Dominion Iron & Steel Co. for 125,000 gross tons, and to the Algoma Steel Corporation, Sault Ste. Marie, Ont., for 75,000 gross tons of 85 lb. section steel rails, for delivery to the various railways. The Algoma Steel Corporation is to commence rolling its order immediately, and the Dominion Iron & Steel Co. will start rolling the new order as soon as the first one has been completed.

We are officially advised that up to Nov. 6, the Dominion Iron & Steel Co., Sydney, N.S., had rolled 97,850 tons of steel rails out of the 100,000 tons first ordered by the Dominion Government, and that 84,140 tons had been shipped to railways as follows:—

| | First quality | Second quality |
|--------------------------------------|---------------|----------------|
| Canadian Copper Co..... | 40 | |
| Canadian Government Rys.... | 14,806 | 938 |
| Canadian Northern Ry..... | 18,841 | 1,136 |
| Canadian Pacific Ry..... | 30,282 | 2,010 |
| Grand Trunk Ry..... | 14,455 | 936 |
| Toronto, Hamilton & Buffalo Ry. | 663 | 33 |
| | 79,087 | 5,053 |

In reference to the no. 2 rails mentioned above, the following provisions in the contract may be mentioned:—"Not over 5% of no. 2 rails may be a part of the tonnage specified in this contract. Rails which by reason of surface or other imperfections are not classed as no. 1 rails will be accepted as no. 2 rails, provided they do not, in the judgment of the inspectors, contain imperfections in such number and of such character as may render them unfit for recognized no. 2 uses. Both ends of all no. 2 rails shall be painted white, except those classed as no. 2, on account of pipe, which shall be painted yellow. The former shall be stamped with 2 prick punch marks, on the ends of head, and also on the web clear of the angle bars. Rails which show pipe at ends shall not be accepted as no. 1 rails, but if they appear perfect when shortened to 27 or 30 ft., they may be accepted as 2 short rails, provided they comply with no. 2 requirements, and such rails shall be painted white at both ends."

It developed during the rolling that there was a greater percentage of no. 2 rails than 5%, due to lack of efficient rail makers, etc., but the railways accepted them.

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

| | Acres. |
|---|--------|
| Canadian Northern Ry. | 160.00 |
| Canadian Northern Western Ry. | 318.55 |
| Edmonton, Dunvegan & British Columbia Ry. | 56.33 |
| Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co. | 321.00 |
| Total | 855.88 |

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 250, Sept. 16.—Postponing to Nov. 1 effective date of general order 230, May 17, re interswitching of freight traffic.

General order 251, Oct. 4.—Amending general order 244, July 26, re reports of accidents by railway companies.

General order 253, Oct. 29.—Providing minimum weight for crushed stone and other building and paving materials, now shown as marked capacity of car but not less than 60,000 lbs.; also that no greater rate shall be charged for such materials than that to which shipper may be restricted by carrier by reason of any track bearing limitations.

General order 254, Oct. 25.—Requiring railway companies to supply hearters in all cars furnished for receipt of vegetables in carloads, subject to charges provided for in published tariff; also that hearters supplied by shippers where companies are unable to furnish them, be returned, free of charge, to point of shipment.

27782, Oct. 24.—Extending to Dec. 31 time for completing G.T.R. station at Lydden, Sask., as required in order 27506, July 29.

27783, Oct. 28.—Authorizing Canadian Northern Ry. to build highway crossing between Secs. 8 and 17, Tp. 51, Range 11, west 4th meridian, Alta.

27784, Oct. 28.—Authorizing C.P.R. to build extension of passing siding over crossing at grade between Railway St. and Maine Central Rd. at mileage 47.38, Cookshire, Que.

27785, Oct. 28.—Authorizing Town of Welland, Ont., to rebuild bridge over Welland River.

27786, Oct. 28.—Authorizing Niagara, St. Catharines & Toronto Ry. to build siding for National Abrasive Co., Niagara Falls, Ont.

27787, Oct. 28.—Authorizing G.T.R. to build spur and extension to siding for Canada Seed Co., Hagersville, Ont.

27788, Oct. 28.—Authorizing Saskatchewan Highways Department to make highway crossing over C.P.R. in n.e. $\frac{1}{4}$ Sec. 12, Tp. 9, Range 17, west 3rd meridian.

27789, Oct. 28.—Relieving C.P.R. from providing further protection at crossing of Valois Ave., Valois Station, Que.

27790, Oct. 29.—Authorizing C.P.R. to build extension to siding across Town Line road between London and Lobo Tps., Ont.

27791, Oct. 31.—Authorizing Canadian Northern Ry. to rebuild bridge over creek on the west leg of Y at Brockville, Ont.

27792, Oct. 28.—Authorizing Niagara, St. Catharines & Toronto Ry. to build bridge for Garden City Paper Co. at Merriton, Ont.

27793, Oct. 30.—Authorizing C.P.R. to build bridge for Western Canada Hardware Co., Lethbridge, Alta.

27794, Oct. 31.—Authorizing C.P.R. to build crossing at grade over road allowance between Sec. 18, Tp. 12, Range 28 and Sec. 13, Tp. 12, Range 29, west principal meridian, at mileage 68 Broadview Subdivision, Sask.

27795 to 27797, Oct. 28.—Approving Bell Telephone Co.'s agreements with Victoria Rural Telephone Co., Algoma District, Ont., Oct. 7; Livingstone Rural Telephone Co., Algoma District, Ont., Oct. 10; and Minto Rural Telephone Co., Wellington County, Ont., Sept. 17.

27798, Oct. 29.—Relieving G.T.R. from providing further protection at crossing near Pickering, Ont.

27799, Oct. 30.—Amending order 27676, Sept. 20, authorizing Canadian Northern Ry. to build spur line for Crescent Collieries at mileage 15.36, Bienfait Subdivision.

27800, 27801. Ordering G.T.R. to maintain day and night watchmen at the crossings of Wentworth St. and Victoria Ave., Hamilton, Ont.

27802, Oct. 30.—Ordering G.T.R. to operate trains between Abbotsford, Que., and the International boundary at speed not exceeding 15 miles an hour and to patrol the track between mileage 1 and 2 with day and night watchmen.

27803, Oct. 2.—Approving bylaw of City of St. Thomas, Ont., prohibiting blowing of steam whistles of locomotives.

27804, Oct. 29.—Authorizing Standard Bank of Canada, Calgary, to pay \$2,000 with accrued interest, to Red Deer Valley Coal Operators' Association deposited under requirements of order 22273, dated July 24, 1914.

27805, Oct. 29.—Extending for 60 days from Nov. 1 time within which C.P.R. shall install electric bell as required by order 27713, Sept. 24.

27806, Oct. 30.—Authorizing Calgary Power Co., Seebe, Alta., to make crossing over C.P.R. just east of bridge over Kananaskis River.

27807, Oct. 29.—Recommending to Governor General in council for approval bylaw 20 of Montreal & Southern Counties Ry. adopting as rules and regulations subjects referred to in par. (e) and (f), Sec. 307 of Railway Act.

27808, Oct. 30.—Ordering C.P.R. to pay to Mrs. Fraser, owner of lot immediately west of the Laing Produce & Storage Co.'s property, Brockville, Ont., \$1,250, as compensation for damages resulting from the construction of the spur there.

27809, Oct. 31.—Ordering Edmonton, Dunvegan & British Columbia Ry. to erect shelter at Dapp, Alta., for accommodation of freight and passengers and to provide for heating and lighting, on arrival and departure of trains.

27810, Oct. 31.—Dismissing application of Village of Rocky Mountain House, Alta., for Order directing C.P.R. to provide stock yard and other accommodation, for freight and suitable accommodation for passengers, and ordering the C.P.R. to build spur at Lochearn, Alta.

27811, Nov. 2.—Rescinding order 27074, Sept. 23, re spur for E. W. Gillett Co., Toronto, subject to condition that construction and operation authorized be without prejudice to existing or future rights of Anthes Foundry Co., or Canada Metal Co.

27812, Oct. 31.—Extending to Dec. 15 time within which building of stock yard at Ardrossan, Alta., on Grand Trunk Pacific Ry. shall be completed.

27813, Oct. 31.—Recommending to Governor General in Council for sanction Algoma Central & Hudson Bay Ry.'s general train and interlocking rules.

27814, Oct. 31.—Authorizing Saskatchewan Government to build highway crossing over Grand Trunk Pacific Branch Lines Co.'s track on surveyed road east and west through Sec. 20, Tp. 40, Range 16, west 3rd meridian.

27815, Nov. 4.—Approving location and detail plans of proposed G.T.R. station at Middlemiss, Ont.

27816, Nov. 2.—Authorizing C.P.R. to build spur for Saskatchewan Co-Operative Creameries, Ltd., Saskatoon, Sask.

27817, Nov. 4.—Authorizing Canadian Northern Ry. to extend siding across Ottawa St. at Richmond, Ont.

27818, Nov. 4.—Approving plan and specification of work to be done on Tremblay Creek under C.P.R. and Michigan Central Rd.

27819, Nov. 4.—Authorizing C.P.R. to build extension to Biggar's siding at grade over Bell's Road, near Carona, Que.

27820, Amending order 21815, Nov. 20, 1914, re installation of automatic bell by C.P.R. at crossing of Laviolette Ave., Three Rivers, Que.

27821, Nov. 5.—Ordering G.T.R. to provide a 2 ft. culvert opposite dividing line between Lots 4 and 5, Con. 3, Amabel Tp., Ont.

27822, Nov. 5.—Authorizing G.T.R. to build two spurs for Toronto Harbor Commissioners to Canada Steamship Lines' property.

27823, Nov. 5.—Authorizing Canadian Northern Quebec Ry. to build spur for Jos. Cadieux Co., Laval de Montreal, Que.

27824, Nov. 5.—Approving plans and specifications of work on Charles Butler award drain under Michigan Central Rd., Southwold Tp., Ont.

27825, Nov. 5.—Approving grade revision of London & Port Stanley Ry. between stations 57+00 and 79+00; also alterations in bridge over Thames River, London, Ont., and connection of London & Port Stanley Ry. across Phillip St.

27826, Nov. 5.—Authorizing G.T.R. to connect spurs serving Canadian Chicago Bridge & Iron Co., Bridgeburg, Ont., with Michigan Central Rd. spur.

27827, Nov. 4.—Amending order 27490, July 29, by relieving Toronto, Hamilton & Buffalo Ry. from appointing caretaker to keep station at Mount Pleasant, Ont.

27828, Oct. 29.—Relieving C.P.R. from providing further protection at crossing, near Woodstock, Ont.

27829, Oct. 24.—Approving City of Toronto bylaw 7452, July 26, 1915, respecting blowing steam whistles of locomotives, etc.

27830, Nov. 6.—Suspending, pending hearing, Ottawa Electric Ry. tariff C.R.C. 5, published to become effective Nov. 15.

27831, Nov. 4.—Ordering Canadian Northern Ry. to make highway crossing between Secs. 24 and 25, Tp. 38, Range 5, west 3rd meridian, Sask.

27832, Nov. 5.—Authorizing British Columbia Government to build highway crossing over C.P.R. at Pritchard Station.

27833, Nov. 6.—Authorizing Clarkson, Gordon & Dilworth, chartered accountants, Toronto, to examine books, papers and documents of Canadian and Dominion Express Co.'s for ascertaining tolls and expenditures in connection with their service in Toronto tolls zone.

27834, Nov. 6.—Relieving G.T.R. from providing further protection at second crossing north of Holland Landing station, Ont.

27835, Nov. 5.—Authorizing G.T.R. to take certain lands at Glen Robertson for station building; and to enable it to comply with orders 27176 and 27588, May 2 and Aug. 13, respectively.

27836, Nov. 5.—Approving agreement, Oct. 7, between Bell Telephone Co. and Keppel Rural Telephone Co. in Grey County, Ont.

27837, Nov. 7.—Authorizing Saskatchewan Gov-

ernment to build crossing over south end of C.P.R. station grounds and right of way at Loreburn, Sask.

27838, Nov. 8.—Authorizing G.T.R. to build overhead farm crossing bridge on Lot 19, Con. 11, Bayham Tp., Ont.

27839, Nov. 7.—Extending to Dec. 31, 1919, time within which Canadian Northern Ontario Ry. is required to build branch from its Cartierville yard to Cartierville village.

27840, Nov. 8.—Authorizing C.P.R. to divert road allowance on southern boundary of Sec. 27, Tp. 26, Range 25, west 4th meridian, at Swastika, Alta.

27841, Nov. 7.—Suspending, pending hearing, supplementary tariffs of C.P.R., G.T.R. and Canadian Northern Ry., cancelling commodity rates on ferro-silicon from Welland and Thorold, Ont., and Shawinigan Falls, Que.

27842, 27843, Nov. 7-6.—Authorizing Toronto, Hamilton & Buffalo Ry. to take certain lands for additional tracks at Kinneary yard, Ont.

27844, Nov. 8.—Approving revised grade of Mount Royal Tunnel & Terminal Co. from west portal of tunnel at mileage 3.37 to point just west of Lazard Road crossing at mileage 4.16 from Montreal Terminals.

27845, Nov. 8.—Suspending order 27559, Aug. 14, which apportioned cost of transfer track between Canadian Northern Saskatchewan Ry. and C.P.R., until track has been built and in operation for three months.

27846, Nov. 9.—Authorizing Mount Royal Tunnel & Terminal Co. to cross Jacques Cartier Union Ry. at mileage 5.25 from Montreal Terminals.

27847, Nov. 9.—Dismissing application of Esqueving Branch of United Farmers of Ontario, for order directing G.T.R. to provide shipping facilities for stock at Stewarttown Station, Ont., and ordering G.T.R. to protect all switching operations on sidings by one of the train crew.

27848, Nov. 12.—Ordering Bell Telephone Co. to furnish certain returns as to operating revenue, expenses, maintenance, etc., its capital charges, valuation of lands, plants, etc., in connection with its application for increased tolls.

27849, Nov. 12.—Authorizing C.P.R. to build spur for Canada Metals Co., Outremont, Que.

27850, Nov. 7.—Authorizing G.T.R. to build spur for Consumers Metal Co., Lachine, Que.

27851, Nov. 13.—Extending to Dec. 15 time within which A. B. Pottinger is directed, under order 27627, Aug. 17, to enquire into and report on cost of building of Hastings St. viaduct over Vancouver, Victoria & Eastern Ry. & Navigation Co.'s track.

27852, Nov. 12.—Approving agreement between Bell Telephone Co. and Noisy River Telephone Co., in Simcoe, Dufferin and Grey Counties, Ont.

27853, Nov. 13.—Authorizing C.P.R. to build spur for Bengo-Canadian Pulp & Paper Co. at mileage 1.27, Wayagamack spur, Cap de la Madeleine Parish, Que.

27854, Nov. 13.—Authorizing G.T.R. to build spur across Duberger St., Montreal, for Crane, Ltd.

27855, Nov. 13.—Extending for one year from Nov. 13 time during which Lake Erie & Northern Ry. is authorized to operate over crossing of Toronto, Hamilton & Buffalo Ry.

27856, Oct. 31.—Approving G.T.R. clearances at railway sidings serving Crushed Stone, Ltd., at Kirkfield, Ont.

27857, Nov. 14.—Authorizing Toronto, Hamilton & Buffalo Ry. to cross at grade unopened road allowance between Lots 6 and 7, in Hamilton, Ont.

27858, Nov. 14.—Authorizing Canadian Northern Ry. to build spur for Imperial Oil Ltd., at Youngstown, Alta.

27859, Nov. 14.—Authorizing C.P.R. to build 4 industrial spurs for Leaside Munitions Co., Leaside, Ont.

27860, Nov. 18.—Authorizing C.P.R. to build at Tenth St., Regina Beach, Sask.

27861, Nov. 16.—Suspending, pending hearing, order re Canadian Northern Ry., C.P.R., and G.T.R. tariffs showing proposed increase in local switching charges to become effective Nov. 18.

27862, Nov. 18.—Authorizing Grand Trunk Pacific Saskatchewan Ry. to build interchange track with C.P.R. in Weyburn, Sask.

27863, Nov. 15.—Ordering that in case of mixed carloads consisting of grain or grain products, as defined in special tariffs, and calf meal, from one shipper to one consignee, and shipped from jobbing points whence specific commodity rates have been, or may be, published, 8th class rates shall apply on the calf meal; the aggregate minimum weight of such mixed carloads to be that of the said special tariffs on grain and grain products.

27864, Nov. 19.—Amending order 27741, Oct. 1, re Quebec, Montreal & Southern Ry. train service.

27865, Nov. 16.—Authorizing G.T.R. to build spur for Electric Iron, Ltd., Lakefield, Ont.

27866, No. 18.—Authorizing C.P.R. to remove spur on Gowanlock & McEvoy's property in McErvine Tp., Ont.

27867, Nov. 18.—Approving agreement, Nov. 7, between Bell Telephone Co. and Cambrey Telephone Co., Victoria county, Ont.

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

Canadian Pacific Ry.—Rock ballast is being laid on the Montreal-Toronto line west of Vaudreuil, and it is expected to complete the rock ballasting of the double track this season to mileage 28 on the Winchester sub-division. This will complete this ballasting from Windsor St. Station, Montreal, to near St. Clet, 34 miles. (Nov., pg. 488.)

The Dominion Atlantic Ry. station at Bridgetown, N.S., was burned to the ground Nov. 10.

The Edmonton, Dunvegan & British Columbia Ry.'s general offices in Edmonton, Alta., a 2½ story frame building, valued at \$10,000, were destroyed by fire recently. Temporary offices have been opened. New plans have been announced for rebuilding.

Residents of the Grouard district recently urged upon the Alberta Government the desirability of building a branch of the E.D. & B.C.R. into Grouard, Alta. The Premier promised the deputation that the government will do all that is possible to secure the early building of the branch line, for which the legislature had already provided a guarantee of bonds. Hon. J. L. Cote informed the deputation that he had taken up with the company the bettering of facilities for handling the Grouard district traffic, and had been assured that the necessary steps would be taken to have increased facilities provided at Ewalda, mileage 227.2 from Edmonton Jct., and 237.2 miles from the Grand Trunk Pacific Ry. terminals in Edmonton. Grouard is situated at the western end of Lesser Slave Lake, and is 7 or 8 miles back from the railway. The deputation pointed out that inward local freight for the 12 months Sept. 1, 1917, to Aug. 31, 1918, amounted to 493 tons, while 1,223 tons had been shipped out. (Nov., pg. 488.)

Grand Trunk Pacific Ry.—Work is reported to have been started on the enlargement of the company's locomotive house, machine shops and power house, and the laying out of additional yard tracks at the Edmonton, Alta., terminals. Other extensions, it is reported, will be undertaken in the near future. (Nov., pg. 488.)

Grand Trunk Ry.—At a meeting of the Ottawa City Council, Nov. 18, the question of G.T.R. crosstown tracks was discussed, and the board of control was asked to take the matter up with the company and with the Dominion Government. The consideration of motions to have bylaws submitted at the municipal elections in Jan., 1919, for raising \$190,000 for a subway under the tracks at Lyon St., and \$200,000 for a viaduct at the crossing on O'Connor St. was postponed. The present suggestion is that the crosstown lines be removed entirely, as suggested by the Federal Town Planning Commission. (Sept., pg. 390.)

Pacific Great Eastern Ry.—A press report stated Nov. 13, that track laying had been completed from the former track end near Clinton, to 59-Mile House, 18 miles, and that work has been started laying from 59-Mile House to a point six miles southerly from Horse Lake summit. This will complete the track laying work for the season. The Northern Construction Co., which has the contract, will carry on the deepening of cuts and other similar work on the uncompleted portions of the grade right of way into Prince George, B.C., during the winter. (Nov., pg. 488.)

Pacific Great Eastern Ry.—The British Columbia Government owns and operates this railway, one section of which, from North Vancouver to Whytecliffe, 13 miles, is not yet connected up with Squamish, from which point the line runs inland to Clinton, and is under construction thence to Fort George. It has been proposed that the North Vancouver-Whytecliffe section, which runs through a suburban area, should be electrified. The Premier of British Columbia is reported to have said that the government may undertake the work. There is, he added, enough water power at three points along the principal section of the line to operate the whole line to Fort George by electricity when conditions warrant its being done. We have been officially advised that only the future possibilities of electrification have been discussed, and that no active steps are being taken at present.

The deck of the new bridge at Kitsilano, on the West Vancouver-Whytecliffe section of the line, has been completed, and traffic was reported to have been run over the new bridge Nov. 7. (Nov., pg. 488.)

St. John & Quebec Ry.—The New Brunswick Government has decided to ask the Dominion Government to take over the St. J. & Q. Ry., which extends from Centreville to Gagetown, N.B., 121 miles, with an extension southerly, nearly completed, from Gagetown to a junction with the C.P.R. near Washfield, 37.8 miles, and a projected extension northerly from Centreville to Andover, N.B., 12 miles, surveys for which have been made. The construction was financed by the New Brunswick Government, which subsequently took over the company's charter, and the completed part of the line is being operated by the Canadian Government Railways on a percentage basis. The matter was expected to be discussed at Ottawa Nov. 19. (Nov., pg. 488.)

Timiskaming & Northern Ontario Ry. The Cochrane, Ont., Board of Trade is reported to have asked the Ontario Government to proceed with the extension of the T. & N.O.R. from Cochrane to James Bay, Hudson Bay.

The Toronto, Hamilton & Buffalo Ry. has under consideration the making of extensive alterations and additions to its Forest Ave. freight yards at Hamilton, Ont. The extension, it was reported, Oct. 23, is planned to run to a point above Emerald St., and involves the closing of Ghent St. and the removal of the Aged Women's Home on Wellington St. The City Council's special railway committee met Oct. 25, to discuss the matter, notwithstanding the fact that the formal notice of the company's intention had not been received. The committee considered that it was the company's intention to connect up the Forest Ave. delivery and storage yard with the Kinnear sorting yard at Ottawa St. The committee also considered that the building of the Red Hill cut off, as recommended in the Tye-Cauchon report (see Canadian Railway and Marine World, Sept., 1917, pg. 342) would give the company the accommodation desired, while preserving the city's interests. The committee passed the following resolution:—

"That negotiations be entered upon by the city with the railway companies concerned for the purpose of carrying out of the proposals of the Tye-Cauchon report,

and that the Board of Railway Commissioners be petitioned to co-operate with the city and railway companies during the investigations and negotiations. That the city solicitor be instructed to seek legislation empowering the Board of Railway Commissioners in the case of the City of Hamilton to carry out the provisions of the Tye-Cauchon report along the lines of the bill introduced by Senator George Lynch-Staunton on April 19, 1918, and in accordance with the suggestion of Sir James Lougheed on the introduction of the bill. That the Dominion War Board be petitioned as a measure of war relief to order the construction of the Red Hill cut off, provided by the Tye-Cauchon report, and that the City of Toronto and other municipalities affected by condition of freight congestion in the Hamilton and Niagara district be advised of the situation and asked to assist in forwarding and prosecuting this petition."

The city's works committee also gave some consideration to the matter Nov. 6, and authorized the engagement of N. Cauchon and D. Grubb to prepare a plan for carrying certain streets over the railway to give access to the mountain face park.

The Hamilton City Council received, Nov. 13, a copy of a Board of Railway Commissioners judgment, authorizing the company to proceed with its expropriation of certain properties required for the extension of its Kinnear yard at Hamilton. The council's special railway committee is considering the advisability of appealing against the judgment. (Oct., pg. 438.)

Railway Rolling Stock Orders and Deliveries.

The Greater Winnipeg Water District has sold a 4-wheel switching locomotive to Peter Meagher, Duluth, Minn.

The Canadian Car & Foundry Co. has received an order from the Dominion Government for repairs to the Prime Minister's private car.

The C.P.R. has received 3 express refrigerator cars, 2 baggage and express cars and 1 wooden single track snow plough, from its Angus shops, Montreal.

The G.T.R., between Oct. 15 and Nov. 15, received 7 Mikado locomotives from the Canadian Locomotive Co., which were ordered by the Dominion Railways Department.

It is reported that experiments are being made in the U.S. as to the feasibility of using concrete in the construction of freight cars. It is stated that a gondola car is being built, for a thorough testing, and if satisfactory, cars of other types for freight service will be built.

Canadian Car & Foundry Co. delivered to Canadian Government Railways, recently, 30 Hart-Otis ballast cars, 50 tons capacity, and 376 steel frame box cars, 40 tons capacity. It has also delivered 49 all wood C.G.R. box cars, which have been repaired at the Montreal and Amherst plants.

The U.S. Government is reported to have recalled orders placed for 2,500 locomotives, 61,000 freight cars, and other minor equipment, intended for war service in Europe, since the signing of the armistice. The report also states that British, U.S. and French Governments have decided to pool their surplus rolling

stock in France, and in future to purchase through a common agency.

Canadian Northern Ry. received the following additions to rolling stock, up to Nov. 15:—10 switching locomotives from Canadian Locomotive Co.; 44 consolidation locomotives from Montreal Locomotive Works; 217 coal cars, 50 tons capacity, from Eastern Car Co.; 279 stock cars, 30 tons capacity, and 1,027 steel frame box cars, 40 tons capacity, from Canadian Car & Foundry Co.

Canadian Government Railways, up to Nov. 15, received the following additions to rolling stock:—10 Pacific locomotives from Montreal Locomotive Works; 13 Mikado-locomotives from Canadian Locomotive Co.; 323 coal cars, 50 tons capacity, from Eastern Car Co.; 396 steel frame box cars, 40 tons capacity, from Canadian Car & Foundry Co., and 2 narrow gauge locomotives from Canadian Locomotive Co., for Prince Edward Island Ry.

Railway Finance, Meetings, Etc.

Canadian Pacific Ry.—A dividend of 2½% on the common stock for the quarter ended Sept. 30, has been declared, payable Dec. 31, to shareholders of record Nov. 30. This dividend is at the rate of 7% a year from revenue, and 3% a year from special income account.

Central Vermont Ry.—The directors for the current year are: H. G. Kelley, Chairman; E. C. Smith, President; W. H. Biggarr, Vice President; Frank Scott, Vice President; E. J. Chamberlin, E. A. Chittenden, W. Seward Webb, A. Tuttle, C. P. Smith, S. E. Kilner, H. S. Marston, J. G. Smith, and W. M. Macpherson.

Grand Trunk Ry.—Application is being made to the Dominion Parliament for authority to create and issue for the company's general purposes, additional consolidated debenture stock bearing interest at 4%, of an amount the annual interest on which will not exceed £100,000.

Grand Trunk Ry.—The G.T.R., which guarantees the Detroit, Grand Haven & Milwaukee Rd. bonds, offered holders of the 6% consolidated mortgage bonds of that company, due Nov. 14 and 15, to extend the time for repayment of the bonds to Nov. 14 and 15, 1920, when repayment will be made at 101% for each bond. Holders who do not accept the extension will be paid off at par.

The Dominion Parliament will be asked next session to authorize the G.T.R. to create and issue additional 4% G.T.R. consolidated debenture stock to an aggregate amount, the annual interest upon which shall not exceed £100,000.

Guelph Junction Ry.—The directors on Nov. 22 declared a dividend of 10% on the capital stock, all of which is held by the city of Guelph, Ont. This represents approximately \$17,000, and brings up the total dividends for the year \$57,375, or 33¼% of the city's total investment.

Kaslo & Slocan Ry.—After the annual meeting of shareholders, which is called to be held in Montreal, Dec. 27, a special meeting will be held to approve an agreement to lease the line to the C.P.R., and to approve of the issue of bonds for the company's purposes.

Moncton & Buctouche Ry.—The special meeting of shareholders called for Oct. 8, and adjourned to Oct. 15, was further adjourned. The meeting was called to consummate the sale of the railway to the Dominion Government, but we are advised it will be some time yet before mat-

ters have been adjusted so that the final transfer can be completed.

Quebec Southern Ry.—Quebec South Shore Ry.—The United States Supreme Court refused, Oct. 28, to review the New York Federal Court's decree dismissing a suit brought on behalf of Quebec Southern Ry. stockholders for damages growing out of the consolidation and ultimate financial ruin of that railway and the South Shore Ry. The action was brought by the late Hiram A. Hodge's estate, the amount of damages sought being \$200,000, for alleged breach of contract for the financing and consolidation of the lines.

These two lines were acquired at the judicial sale for the Delaware & Hudson Co., and are now amalgamated and operated under the title of the Quebec, Montreal & Southern Ry.

Timiskaming & Northern Ontario Railway.—

| | Sept. 1918 | Sept. 1917 |
|--------------------------|--------------|--------------|
| Passenger receipts | \$54,223.19 | \$70,005.34 |
| Freight receipts | 155,866.27 | 125,695.48 |
| Total receipts | \$210,089.46 | \$196,700.82 |

Freight and Passenger Traffic Notes.

The Kettle Valley Ry. has stopped operating daylight trains 3 and 4, between Penticton and Petain (Hope), B.C.

The C.P.R., on Nov. 3, withdrew the compartment observation cars from trains 51 and 52 between Winnipeg, Man., and Edmonton, Alta.

The Timiskaming & Northern Ontario Ry.'s eastbound traffic, via Cochrane, Ont., in September, was 928 cars, an increase of 5.4% over August. The westbound traffic was 373 cars, an increase of 7.5% over August.

The Canadian Northern Ry. is reported to have opened a tourist and travel bureau at 605 Hastings St. W., Vancouver, to give information and arrange tours throughout America, Europe and Asia, etc. R. Hay is in charge.

The C.P.R. has substituted dining cars for cafe parlor cars on trains 353, 354 and 356 between Montreal and Quebec. These trains also carry two 22-seat parlor cars, one containing a drawing room, and the other a buffet and observation end.

We are officially advised that the Dominion Atlantic Ry. has been operating a tri-weekly service over its North Mountain branch since Aug. 15. The present timetable has been effective since Sept. 29 and shows a train service on Tuesdays, Thursdays and Saturdays.

The Grand Trunk Pacific Ry. began to run its trains into the C.P.R. passenger station and freight terminals in Saskatoon, Sask., Oct. 24. Prior to that date passengers had to make a three mile auto bus transfer from the G.T.P.R. station into the center of Saskatoon.

The through standard sleeping car between St. Paul, Minn., and Vancouver, B.C., and the tourist sleeper between St. Paul and Edmonton, Alta., have been withdrawn, the cars now only being run between St. Paul and Moose Jaw, Sask., at which point through passengers change to and from C.P.R. main line cars.

Railway traffic, particularly in Saskatchewan and Alberta, was rather badly hit during the influenza epidemic, which has now practically worn itself out. Not only were the number of trains reduced on branch lines throughout the provinces, owing to the illness of railway employes,

but under the regulations put in force by the public health departments of the two provinces, large numbers of places were quarantined, and for some time the railway companies refused to sell tickets to these points.

The Edmonton, Dunvegan & British Columbia Ry., with its associated lines—the Alberta & Great Waterways Ry. and the Central Canada Ry.—put in operation from Nov. 6 to Nov. 15, a special rate for carrying cattle and sheep in carload lots to the Peace River Valley and other points.

The Alberta & Great Waterways Ry. put its winter timetable in operation Nov. 3, between Edmonton and Lac la Biche, Alta. A train leaves the Edmonton station at the corner of 121st St. and 107th Ave., at 8.30 a.m., Mondays and Fridays, arriving at Lac la Biche, at 6.30 p.m., returning therefrom at 6.30 a.m., Tuesdays and Saturdays, and arriving in Edmonton at 4.30 p.m. Between Lac la Biche and the end of track near MacMurray, an occasional train service is provided by the contractors.

The Edmonton, Dunvegan & British Columbia Ry., in conjunction with the Central Canada Ry., put on its winter through service to Spirit River and Peace River, Alta., Nov. 3. A train leaves the Edmonton station at 121st St. and 107th Ave. at 3 p.m., Mondays and Thursdays, and arrives there on the return trip at 9.30 p.m., Wednesdays and Saturdays. McLennan, the junction point with the C.C.R., is reached at 6 a.m.; Spirit River, 12.30 p.m.; Grande Prairie, 5.30 p.m., and Peace River, 12.30 p.m., Tuesdays and Fridays. The return train leaves Grande Prairie 6.30 a.m., Spirit River 11.20 p.m., Peace River 8 p.m., Tuesdays and Fridays, and McLennan, 6.30 a.m., Wednesdays and Saturdays.

"No Strike" Order Cancelled.

The Dominion order in council prohibiting railway and other lockouts and strikes for the duration of the war was published in full in Canadian Railway and Marine World for November. On Nov. 14, the following statement was issued by the Labor Department:—

"On the recommendation of the Minister of Labor, the government yesterday revoked the 'no-strike' order-in-council, passed on Oct. 11, 1918. The immediate necessity of the original order was caused by a threatened strike, staged for Thanksgiving Day, by some 5,000 labor men. The order was not regarded by the Government as placing any disability upon the great majority of labor organizations who had accepted the government's war labor policy, as announced by order in council in July last, and were submitting all their grievances to the tribunals designated which were being operated with perfect success. The 'no-strike' order was issued only for the purpose of maintaining industrial peace during the continuance of the war, and is cancelled because it has served its purpose and is no longer necessary."

Maritime Coal & Ry. Co.—The Nova Scotia Government, on Nov. 6, approved, after amendment, the M.C. & R. Co.'s bylaw providing for increased freight rates, such rates to become effective on the same date as the company puts into effect the McAdoo scale of wages, and makes it applicable to all the employes, the new tariff to remain in force for the duration of the war and until further ordered.

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

Demobilization of Railway Troops.—The first step in regard to demobilization and the placing of soldiers back in civilian employment is reported to have been taken by the Militia Department. An order has been sent to every military district requesting the authorities to furnish information at once as to the number of men now attached to railway battalions

high tribute to the railway workers at the front. He said that if ever heroes deserved to be sung of it was the railway men. The latter were equal in heroism to any other body who served in the war. They built their lines right up to the front. They disdained danger. The engineers did things in the way of construction, which for speed and daring had

acceptance of hardship—all this was very fine, indeed.

The **Timiskaming & Northern Ontario Railwaymen's Patriotic Association**, to July 31, had contributed \$92,749.41 to the Red Cross Society and the Canadian Patriotic Association.

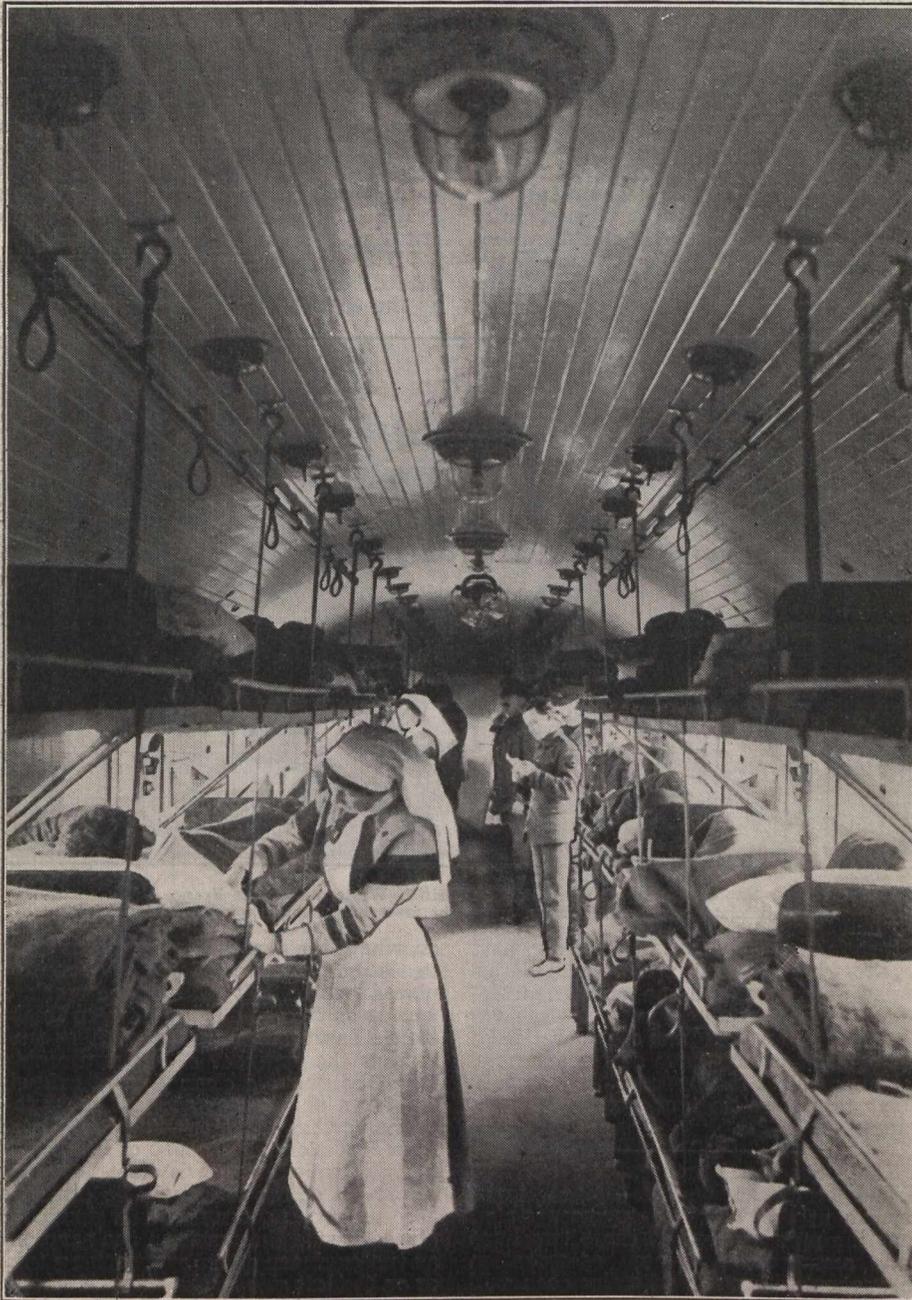
PERSONAL NOTES.

Sergt. L. Creighton, reported admitted to the General Hospital, Boulogne, France, Oct. 12, with gunshot wound in the knee, and **K. Creighton**, reported wounded, Oct. 10, are sons of **H. C. Creighton**, Superintendent, Canadian Express Co., St. John, N.B.

Lieut. J. S. Flanagan, recently reported killed in action in France, entered C.P.R. service in the Passenger Department, London, Eng., in 1912. He enlisted in Dec., 1914, and was given a commission in the 3rd County of London Regiment, Nov., 1915.

Private R. C. Morland, King's Liverpool Regiment, recently killed in action at Hendecourt, France, was 26 years old. He entered C.P.R. service in Liverpool, Eng., Apr. 15, 1907, and enlisted Feb. 8, 1916. He was mentioned in dispatches three times, and awarded the Military Medal.

Brigadier-General J. W. Stewart, D.S.O., formerly of Foley Bros., Welch & Stewart, railway contractors, Vancouver, B.C., who, it was announced recently, had been appointed to control the railway operations in France, has an appreciative friend in **A. B. Cook**, who has also been associated with railway building in Canada and elsewhere. While not accurate in all detail, the following statement indicates the manner of the man, whose work has received considerable praise from the authorities:—"Let me tell you of the case of **Jack Stewart** of Canada. He came out from the old country 30 years ago and worked for \$1 a day driving a team on a Canadian railroad. He got on in the world and in time amassed a fortune. The war broke out and Stewart enlisted as a private. He got to France and when he saw the engineers of the French and British armies at work, it gave him the itch. There was too much red tape. It took a month to have a thing started let alone completed. To build a little bridge a bunch of European engineers would take weeks. Stewart asked leave to take a hand in some of the transport work. In time he gained this privilege and when a bit of a bridge was to be built, three weeks was the time given some British engineers. 'I'll do it in two days with 1,000 Canadians,' volunteered Stewart. They gave him his way and he built the bridge in a day and a half. He built the systems of light railways up to the front line. Before he went in, the Englishmen hauled wagons and guns by hand or by horses in the way their fathers did it. Stewart networked the front lines with light railways. He went to the hills of Canada and gathered together 5,000 rough-neck railway men, bridgemen, axemen and mule skinnners, and they gave him full charge of the building of railways for all the allied armies. The allied lines never went ahead a hundred yards without being followed by a band of steel over which Stewart made it possible to keep the front line supplied constantly with men, guns and food. This was what baffled the Germans more than anything else. They couldn't understand it and never will understand it. The people of



Interior of a ward on a British ambulance train in France. British official photograph. Crown copyright reserved. Photograph loaned by C.P.R.

who have actual railway experience. The military authorities understand this order to mean that the railway troops will be demobilized first. The method adopted to reduce the strength of units locally will be to board all men and discharge those in the lower categories. In discharging the men of low categories, preference will be shown towards the married men and the older men.

The Railway Troops Service.—Rev. Dr. Beatty, of the Canadian chaplain service, preaching in Montreal recently, paid a

never been equalled. In many cases, the engineers in charge undertook, at the request of the fighting command, duties which it could not be supposed would ever be carried out—that is, the laying down of strategic railways on the instant, as it were. There would be a sudden need for this railway; and the engineers would do the impossible, and finish the job on time. The network of railways, right up to the lines, was something wonderful, and the endurance, the cheerfulness of the men, their initiative, their

America can thank God that before the United States went in Jack Stewart of Canada got his way at the front. He was the connecting link in bringing to bear on offensive and defensive works of warfare the system of doing things originated in the western states and in western Canada. There is nothing that a railway construction man will not tackle and there is little in the building line that he cannot do. And the best part of the story is that you never hear about Stewart in the papers. He is never decorated or knighted or any of the rest of it. He is a brigadier general in the Canadian army. But he is a silent worker."

Lieut. W. A. Stewart, who has been awarded the Military Cross recently, is son of W. A. Stewart, formerly Superintendent, Ontario-St. Lawrence canals. He enlisted with the 59th Battalion, Kingston, Ont., and was wounded in August.

Lieut. John Hatherly Way, eldest son



Lieutenant J. H. Way.

of Capt. J. B. Way, of Sault Ste. Marie, Ont., who was killed in action, east of Arras, France, Aug. 27, was born in the Nipissing District, Apr. 17, 1889, educated in the public schools and collegiate institute at Sault Ste. Marie, Ont., entered the service of the Imperial Bank, and was located at Rosthern, Sask., on the outbreak of war. He attended the School of Infantry at Toronto, holding a commission in the 51st Regiment, Sault Ste. Marie Rifles, and was appointed one of the officers of the 119th Battalion at its formation, taking an active part in the recruiting of that unit in the Algoma District. He proceeded to Camp Niagara in May, 1916, and overseas in July, 1916. On the break up of the unit in England he was posted to the 58th Battalion in France and was engaged with that unit during the heavy operations before Amiens, and east of Arras, where he was killed by machine gun fire, deeply regretted by his brother officers and the men of his unit, by whom he was highly esteemed. His father, Capt. J. B. Way, Freight and Passenger Agent, C.P.R., Sault Ste. Marie, went on duty with the Sault Ste. Marie Canal Military Guard

shortly after war broke out, and on Mar. 15, 1915, obtained leave of absence from the C.P.R. for military service, proceeding to Camp Niagara, Ont., as Paymaster of the Machine Gun Corps, remaining there until November, 1918, when he accompanied the corps to Exhibition Camp, Toronto.

Valuation of Materials, Etc., for Dominion Taxation Purposes.

R. W. Breadner, Commissioner of Taxation, Finance Department, Ottawa, in a paper read before the Dominion Association of Chartered Accountants recently, said:—"Another question of vital importance to those engaged in business at present is that of inventories. Owing to the very high prices now prevailing, and the practical certainty of a drop when normal conditions return, the department has ruled that inventories of merchandise shall be taken at cost, or at market values if less than cost. It is no business of the department if a company sets aside a reserve against the contingency of a

Flagging Protection on Double Tracks.

The Board of Railway Commissioners passed general order 255, Nov. 20, as follows:—Re the question of more adequate flagging protection on double tracks and the proposed amendment to rule D35 of General Train and Interlocking Rules, as outlined in circular 163, Apr. 9, 1918, and submitted for consideration to the railway companies. Upon reading the replies filed by and on behalf of the railway companies, and the written submissions and representations made to the board on behalf of the Brotherhood of Locomotive Engineers; and upon the report and recommendation of the board's Chief Operating Officer, it is ordered that General Train and Interlocking Rules, approved by order 7563, July 12, 1909, be amended by striking out the first paragraph of double track rule 35 and substituting therefor the following:—

"D35. A yellow flag or yellow light placed beside the track on the same side as the engineer of an approaching train,



Rapid Railway Construction on British Western Front in France. British official photograph. Crown copyright reserved. Photograph loaned by C.P.R.

future fall in prices, but whether any part or the whole of that reserve will be allowed as an expense can only be determined after scrutiny of the returns for assessment purposes, and consideration of the conditions that have arisen after the setting aside of that reserve. The department cannot settle that question in advance."

The Canadian Northern Ry. and the Grand Trunk Pacific Ry.—Recent press reports in the western provinces stated that the management of these two lines had arranged a close co-operation throughout the west, whereby each will use those parts of the other's tracks and terminals where such use can be more economically made in giving public service than in using its own facilities. We were officially advised Nov. 13, that the only arrangement of the kind the C.N.R. has in contemplation is running rights over the G.T.P.R. from Regina to Moose Jaw, Sask., the G.T.P.R. to use the C.N.R. terminals in Moose Jaw. Reference to this matter will be found under Canadian Northern Ry. Construction on another page. No other arrangements, we are advised, have been made; in fact, the Moose Jaw agreement will not be signed until some minor differences between the companies are adjusted.

or, where the practice is for trains to run to the left, a yellow flag or yellow light placed on the left side of the track, as well as on the same side (between tracks) as the engineer of an approaching train, so that the engineer of the approaching train shall have a clear view of said signal for a distance of at least 1,200 ft.—indicates that the track 3,000 ft. distant is in condition for a speed of but 6 miles an hour, unless otherwise instructed, and the speed of the train will be controlled accordingly. A green flag or a green light placed beside the track on the same side as the engineer of an approaching train, or on the left side of the track, if so operated, at a point beyond the slow track, indicates that full speed may be resumed."

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

| | Acre. |
|---|--------|
| Canadian Northern Ry. | 160.00 |
| Canadian Northern Western Ry. | 318.55 |
| Edmonton, Dunvegan & British Columbia Ry. | 56.33 |
| Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co. | 321.00 |
| Total | 855.88 |

Mainly About Railway People Throughout Canada.

G. M. Hickey, station master, C.P.R. station, Calgary, Alta., died there, Nov. 1, aged 25.

W. R. Flynn, of the special service department, Canadian Northern Ry., died at Port Arthur, Ont., Nov. 7, aged 29, from influenza.

John Maughan, who died at Toronto, Nov. 28, was father of W. Maughan, Assistant General Passenger Agent, Eastern Lines, C.P.R., Montreal.

Sir George Bury, who retired recently from the Vice Presidency of the C.P.R., was born Mar. 6, 1866, and not in 1886, as stated in our last issue.

Charles A. Lutz has been appointed Treasurer, United States Railroad Administration, vice L. G. Scott, Comptroller, Wabash Ry., acting Treasurer, resigned.

L. C. Clarke, engineer and contractor, North Bay, Ont., who died recently, aged 38, was for some time engaged on contract work on the C.P.R. Lake Superior Division.

Frederick Hamilton Baker, only surviving son of W. R. Baker, C.V.O., ex Secretary, Canadian Pacific Ry., Montreal, died at Edmonton, Alta., Nov. 2, aged 28.

James Barbour, Claims and Right of Way Agent, Canadian Northern Ry., Toronto, who died there, Oct. 17, left an estate of \$32,725, his widow being sole beneficiary and executor.

D. C. Coleman, Vice President, Western Lines, C.P.R., made his first trip of inspection since his recent appointment, from Winnipeg to Victoria, B.C., during the latter part of October and early part of November.

Grant Hall, Vice President, C.P.R., was entertained to luncheon, Nov. 16, by the company's Winnipeg staff, on finally leaving there for Montreal after several years residence, latterly as Vice President and General Manager, Western Lines, C.P.R.

O. H. Kerr, Travelling Auditor, C.P.R., who died at Revelstoke, B.C., Nov. 5, aged 30, entered C.P.R. service in Aug., 1902, as office boy, and was promoted to clerk in Sept., 1903, and to Assistant Travelling Auditor, Dec. 1, 1912. He was appointed Travelling Auditor July 1, 1913.

W. A. Mather, General Superintendent, Saskatchewan District, C.P.R., Moose Jaw, of whom some biographical data were given in our last issue, was incorrectly referred to as General Superintendent, Manitoba District, C.P.R., Winnipeg. His correct title was given in the list of transportation appointments in the same issue.

C. A. Hayes, General Manager, Eastern Lines, Canadian Government Railways, was presented with a chest of silver by the staff at Moncton, N.B., Nov. 20, on leaving there for a western trip, prior to taking up his appointment as Vice President in charge of traffic, Canadian Northern Ry. System and Canadian Government Rys., Toronto.

Capt. P. W. Freeman, reported wounded in the leg near the knee recently, is son of P. A. Freeman, Chief Engineer, Nova Scotia Tramways Co., Halifax, N.S. This was his third time wounded, and in addition he was gassed once. His brother, Lieut. H. G. Freeman, returned to Nova Scotia recently and was discharged owing to influenza. On his recovery he applied

to be sent overseas again, but peace has supervened.

James Powell, chief draftsman, Motive Power Department, G.T.R., Montreal, has



A. E. Warren,
General Manager, Western Lines, Canadian Northern Ry. System—Canadian Government Railways.



Geo. Hodge,
Assistant to Vice President, Eastern Lines, C.P.R.

retired, and has been appointed instructor in mechanical drawing, for the re-education of returned soldiers, at the Montreal Technical School, under Canadian Government (Civil Service) Hospital Commission. He had been in G.T.R. service for

36 years, and since 1899, as chief draftsman of the Motive Power Department. He has also been Secretary of the Canadian Railway Club for about 12 years.

A. P. Barnhill, K.C., who has been appointed a director of the Canadian Northern Ry. Co., was born at St. John, N.B., May 27, 1863, and was admitted as a barrister in 1889, and a K.C. in 1905. He practises in St. John, and was President, St. John Barristers Society in 1908-09. He is associated with several industrial and financial undertakings, and was a member of the International Commission created in 1908, to consider treaty rights and the joint use of the St. John River.

Thomas Cantley, who has been appointed a director of the Canadian Northern Ry. Co., was born at New Glasgow, N.S., in 1854, and commenced his business life as a telegraph operator. He entered business on his own account as T. Cantley & Co., in 1878, and entered Nova Scotia Steel & Coal Co.'s service in 1885, and was appointed Assistant Manager in 1889; General Manager, 1901, and was subsequently also Vice President, and President of the company, and latterly, Chairman of the board of directors.

Patrick M. Cotter, Freight and Passenger Agent, Quebec Central Ry., Quebec, Que., died there Nov. 26, aged 65. He was born at Quebec, Que., and at 15 years old entered transportation service in the North Shore Ry. office, and was later transferred to Ottawa, the company having been absorbed into the C.P.R. He subsequently returned to Quebec and entered Quebec & Lake St. John Ry. service, eventually becoming station agent, and in 1903 transferred to Quebec Central Ry. service. He was a director of the Magdalen River Ry. Co.

William J. Robider, whose appointment as General Master Car Builder, C.P.R., Montreal, was announced in our last issue, was born at Savannah, Ga., Feb. 15, 1869, and entered railway service in Oct., 1884, since when he has been, to Oct., 1905, apprentice, assistant foreman, Car Department, and foreman, Passenger Car Department, Central of Georgia Ry., Savannah, Ga.; Oct., 1905, to Oct. 15, 1918, Master Car Builder, same road, and since the operation of U.S. railways by the U.S. Railroad Administration, alternative member of the Committee on Standards and Inspection.

Robert Phipps Ormsby, who has been appointed Secretary, Canadian Northern Ry. Co., Toronto, was born at Arklow, Ireland, June 26, 1869, and was educated at Reading and Ipswich Grammar Schools, and Cambridge University, England. He was for a short time in C.P.R. service at Vancouver, B.C., and later with the Great Northern Ry. at St. Paul, Minn. He entered Canadian Northern Ry. service in 1902, as secretary to the Chief Solicitor, and in 1910 was appointed Assistant Secretary of the company, which position he held until his recent appointment as Secretary.

Emery C. P. Cushing, who has been appointed Assistant Purchasing Agent, C.P.R., Winnipeg, was born at Ottawa, Ont., Nov. 13, 1886, and entered C.P.R. service Dec. 1, 1902, since when he has been, to Mar. 15, 1907, clerk and stenographer, Passenger Department, Ottawa; Mar. 15, 1907, to Aug. 1, 1908, clerk and stenographer, General Passenger Department, Montreal; Aug. 1, 1908, to Aug. 1, 1912, clerk and stenographer, President's office, Montreal; Aug. 1, 1912, to May 1, 1918,

chief clerk and secretary to the President (Lord Shaughnessy), Montreal; May 1 to Sept. 30, Assistant to General Purchasing Agent, Montreal.

J. D. McDonald, who has been appointed Assistant General Passenger Agent, Eastern Regional District, U.S. Railroad Administration, Chicago, Ill., was born at Toronto, Aug. 27, 1855, and entered Grand Trunk Ry. service in 1868, since when he has been, to 1870, messenger, Toronto; 1870 to 1875, assistant ticket agent, Toronto; 1875 to 1896, ticket agent, Buffalo, N.Y.; 1896 to May, 1902, City Passenger and Ticket Agent, Buffalo, N.Y.; May, 1902, to Mar. 1, 1911, District Passenger Agent, Toronto; Mar. 1, 1911, to Oct., 1918, Assistant General Passenger Agent, Chicago, Ill.

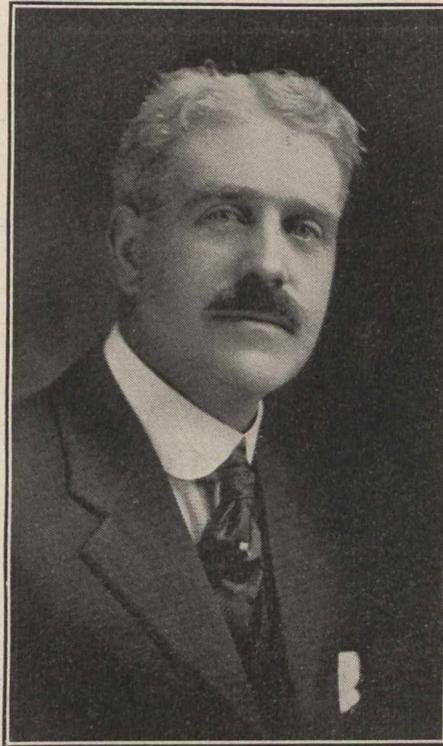
Sir Hormisdas Laporte, who has been appointed a director of the Canadian Northern Ry. Co., was born at Lachine, Que., Nov. 7, 1850, and was educated at Sault au Recollet, and McGill University. He entered business life in the retail grocery trade and passed to the wholesale trade in 1881. He was one of the founders of the Montreal Chamber of Commerce, and was a president of that body. He is President of the Saraguay Electric Co., was at one time one of the harbor commissioners for Montreal, and was Mayor of the city 1904 to 1906, and is associated with several industrial and charitable organizations.

Hon. Gideon D. Robertson, who was appointed Minister of Labor in the Dominion Government, Nov. 7, was born at Welland, Ont., Aug. 26, 1874. He was, from June, 1892, to Aug., 1896, telegraph operator, G.T.R., London Division; Aug., 1896, to Sept., 1901, telegraph operator, C.P.R., Eastern Division; Sept., 1901, to Apr., 1908, agent and yardmaster, C.P.R., Atlantic Division; Apr., 1908, to Feb., 1914, General Chairman, Order of Railroad Telegraphers on the C.P.R., and Feb., 1914, to Jan. 1, 1918, Canadian Vice President, Order of Railroad Telegraphers. He was appointed a senator, Jan. 31, 1917, and a government minister without portfolio, Oct. 23, 1917.

Charles Percy, who died at Westmount, Quebec, Nov. 30, aged 74, was formerly Treasurer, G.T.R., and retired from active service in 1900. He commenced his railway service in the railway clearing house in London, Eng., and was subsequently secretary of an association regulating the railway traffic between England and Scotland. In 1875 he was selected as Treasurer for the Great Western Ry. of Canada, and afterwards became associated with the Midland Ry., both of which are now parts of the G.T.R. system. He was later, Secretary-Treasurer, Chicago & Grand Trunk Ry. Co., and was appointed Assistant to the General Manager, G.T.R. at Montreal, in 1886, and Treasurer of the company in 1894.

T. A. Wilson, whose appointment as Superintendent, Smiths Falls Division, Quebec District, Smiths Falls, Ont., was announced in our last issue, entered railway service in Jan., 1885, since when he has been, to July, 1892, successively, call boy, Stratford, Ont.; operator and brakeman, G.T.R.; July, 1892, to Oct., 1900, agent and operator at various points. Lake Superior Division, C.P.R.; Oct., 1900, to Oct., 1912, General Yardmaster, C.P.R., Ottawa, Ont.; Oct., 1912, to June, 1916, Assistant Superintendent, District 3, Lake Superior Division, C.P.R., Schreiber, Ont.; June, 1916, to Oct. 16, 1918, Assistant Superintendent, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont.

A. E. Warren, who has been appointed General Manager, Western Lines, Canadian Northern Railway System, Canadian Government Railways, Winnipeg, was born at Taunton, Eng., June 9, 1874, entered railway service in 1889, and served



G. L. Courtney,
General Manager, Pacific & Great Eastern Ry.



C. E. Stockdill,
Assistant to Vice President, Western Lines, C.P.R.

in various capacities in Car Service Department, Superintendent's, General Superintendent's and Manager's offices, and station and yard service, C.P.R., until July, 1901, when he resigned to enter mercantile business. He entered Canadian Northern Ry. service in Aug., 1902, and has served as station agent, chief

clerk to General Manager, Superintendent, General Superintendent and Assistant to General Manager, Western Lines. From Jan. 1 to Aug. 1, 1918, he was loaned to the Dominion Government and acted as Chief Operating Officer, Department of Railways and Canals, Ottawa.

Lord Shaughnessy, Chairman, C.P.R. Co., left Montreal, Nov. 23, for a trip to England. While there he will meet his son, Capt. W. J. Shaughnessy, who has spent considerable time in France, and may possibly visit France, where his other son, Capt. A. T. Shaughnessy, who was killed in the earlier stages of the war, is buried. A Montreal daily paper states that when Lord Shaughnessy is in London, he will "take his seat for the first time in the House of Lords." Our contemporary is a little behind the times, as Lord Shaughnessy took his seat in the House of Lords, Nov. 23, 1916.

George L. Courtney, whose appointment as General Manager, Pacific Great Eastern Ry., Vancouver, B.C., was announced in a recent issue, was born at Chatham, Ont., Oct. 7, 1868, and entered transportation service in 1884, since when he has been, to 1886, clerk, G.T.R., Chatham, Ont.; 1887 to 1889, clerk, G.T.R., Hamilton, Ont.; 1889 to 1890, clerk, C.P.R., Vancouver, B.C.; 1890 to 1895, Traffic and Passenger Agent and Contracting Freight Agent, C.P.R., Victoria, B.C.; 1896 to 1900, Agent, C.P.R., Victoria, B.C.; 1900 to 1906, Traffic Manager, Esquimalt & Nanaimo Ry., Victoria, B.C.; 1906 to 1908, District Freight and Passenger Agent, C.P.R., and Esquimalt & Nanaimo Ry., Victoria, B.C.; 1908 to 1915, in private business; 1916 to June, 1918, Agent, Canadian Pacific Ocean Services, Ltd., Hong Kong, China.

George Hodge, whose appointment as Assistant to Vice President, Eastern Lines, C.P.R., Montreal, was announced in our last issue, was born there, Oct. 2, 1874, and entered C.P.R. service Mar. 24, 1890, since when he has been, to Aug., 1890, junior clerk, Passenger Department; Aug., 1890, to Apr., 1892, clerk, Vice President's office; Apr., 1892, to June, 1896, secretary to Vice President; June, 1896, to Jan., 1907, chief clerk to Vice President; Jan., 1907, to July, 1908, Superintendent, Montreal Terminals; July, 1908, to Feb., 1911, Superintendent, District 3, Eastern Division, all at Montreal; Feb., 1911, to Mar., 1912, Superintendent, District 2, Ontario Division, London, Ont.; Mar., 1912, to May, 1915, General Superintendent, Eastern Division, Montreal; May, 1915, to Oct., 1918, Assistant to General Manager, Eastern Lines, Montreal.

B. J. Farr, whose appointment as Superintendent of Motive Power and Car Department, Grand Trunk Western Lines Rd., Detroit, Mich., was announced in our last issue, was born at Elenburg, N.Y., Sept. 8, 1876, and entered railway service in 1893, since when he has been, to 1898, machinist apprentice, Central Vermont Ry., St. Albans, Vt.; 1898 to 1900, Erecting Shop Foreman, same road, St. Albans, Vt.; 1900 to 1905, General Foreman, same road, St. Albans, Vt.; 1905 to 1906, General Foreman, Motive Power and Car Department, Delaware & Hudson Co., Schenectady, N.Y.; 1906 to 1908, Master Mechanic, Motive Power and Car Department, United Fruit Co., Port Limon, Costa Rica; 1908 to 1914, Engineering Department, Panama Canal, Gatun and Cristobel, Panama; 1914 to 1916, General Foreman, G.T.R., Battle Creek, Mich.; 1916 to Oct., 1918, Master Mechanic, G.T.R., Battle Creek, Mich.

Charles Chardon Labrie, whose appointment as Purchasing Agent, Canadian Northern Ry., Vancouver, B.C., was announced in our last issue, was born at Quebec, Que., Sept. 8, 1882, and entered transportation service, May 7, 1905, since when he has been, to June, 1906, material agent, James Bay Ry., Mackenzie, Mann & Co., Ltd., Toronto; June, 1906, to July, 1907, clerk, Chief Engineer's office, same company, Toronto; July, 1907, to Sept., 1909, assistant construction accountant, same company, Toronto; Sept., 1909, to July, 1910, construction accountant, same company, Toronto; July, 1910, to Dec., 1912, construction accountant, Canadian Northern Eastern Ry., Stewart, B.C.; Dec., 1912, to Mar., 1918, Managing Accountant and Purchasing Agent, Mount Royal Tunnel & Terminal Co., Mackenzie, Mann & Co., Montreal; Mar. to Oct. 31, 1918, Auditor, Canadian Northern Pacific Ry., Vancouver, B.C.

James Joseph Walker, formerly Mechanical Accountant, Intercolonial and Prince Edward Island Rys., who died Oct. 28, was born at Halifax, N.S., Mar. 6, 1854. He entered Government railways services Sept. 3, 1869, since when he was, to Nov. 1, 1869, station master, Bedford, N.S.; Nov. 1, 1869, to Nov. 1, 1871, operator, Halifax, N.S.; Nov. 1, 1871, to Dec. 1, 1872, clerk, Halifax, N.S.; Dec. 1, 1872, to Nov. 1, 1873, operator and baggage master, St. John, N.B.; Nov. 1 to Dec. 1, 1873, brakeman, Halifax, N.S.; Dec. 1, 1873, to July 1, 1874, clerk, Moncton, N.B.; July 1, 1874, to Feb. 1, 1875, operator and baggage master, Halifax, N.S.; Feb. 1, 1875, to Aug. 1, 1898, clerk, Moncton, N.B.; Aug. 1, 1898, to Jan. 1, 1904, chief clerk, Moncton, N.B.; Jan. 1, 1904, to Sept. 1, 1916, when he was granted a pension by the Intercolonial and Prince Edward Island Railways Employes' Provident Fund.

P. Carleton Perry, whose appointment as Assistant Resident Engineer, Grand Trunk Pacific Ry., Regina, Sask., was announced in our last issue, was born at Fort William, Ont., July 27, 1889, and entered railway service, May 6, 1906, since when he has been, to Nov., 1909, axeman, chainman, rodman and inspector, G.T.P.R., Fort William, Ont.; Dec., 1909, to Mar., 1910, rodman, Northern Pyrites Co., Superior Jct., Ont.; Apr. to Nov., 1910, inspector, G.T.P.R., Fort William, Ont.; Dec., 1910, to Nov., 1911, level man and topographer, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont.; Jan. to Mar., 1912, draftsman, G.T.P.R., Fort William, Ont.; Apr. to Aug., 1912, instrument man, G.T.P.R., Fort William, Ont.; Aug., 1912, to Sept., 1914, draftsman, G.T.P.R., Fort William, Ont.; Apr. to June, 1915, rodman, G.T.P.R., Fort William, Ont.; June, 1915, to July, 1916, rodman, G.T.P.R., Edmonton, Alta.; July, 1916, to Sept., 1918, instrument man, G.T.P.R., Edmonton, Alta.

Robert Arnott Sewell, whose appointment as Assistant Superintendent, Montreal Terminals Division, Quebec District, C.P.R., Montreal, was announced in our last issue, was born at Brampton, Ont., Sept. 2, 1880. He entered transportation service with the Canadian Express Co., as clerk at Brampton, Ont., in Jan., 1895, and remained in that service until May, 1898, when he entered C.P.R. service, since when he has been, to Dec., 1898, assistant agent, Cheltenham, Ont.; Dec., 1898, to Apr., 1899, operator at various points on the Eastern Division; Apr., 1899, to Aug., 1903, operator, relieving agent and dispatcher at various points on the Ontario Division; Aug., 1903, to Jan.,

1912, agent and dispatcher at various points on the Western Lines; July, 1914, to Dec., 1916, agent, Oshawa, Ont.; Dec., 1916, to Nov., 1917, Chief Dispatcher, Toronto; Nov., 1917, to Oct., 1918, Inspector of Transportation, Eastern Lines, and for a short time, acting Superintendent, Trenton Division, Ontario District.

William C. Paul, who has been appointed Trainmaster, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont., was born at Coldstream, Ont., Dec. 22, 1889, and entered railway service Feb. 1, 1907, since when he has been, to Sept., 1908, car checker, Algoma Central & Hudson Bay Ry., Tagona, Ont.; Sept., 1908, to May, 1910, clerk, General Superintendent's office, same road, Sault Ste. Marie, Ont.; May, 1910, to Feb., 1911, accountant, same road, Sault Ste. Marie; Feb., 1911, to Oct., 1914, chief clerk, Superintendent's office, same road, Sault Ste. Marie; Oct., 1914, to May, 1916, chief clerk, General Superintendent's office, same road, and Algoma Eastern Ry., Sault Ste. Marie; May to Dec., 1916, chief clerk, General



W. J. Robider,
General Master Car Builder, Canadian Pacific Ry.

Manager's office, A.C. & H.B.R., Sault Ste. Marie; Dec., 1916, to Jan. 15, 1917, chief clerk, Chief Engineer and General Superintendent's office, same road, Sault Ste. Marie; Jan. 15, 1917, to Nov. 18, 1918, Assistant Trainmaster, same road, Steelton, Ont.

Chester P. Siems, head of the Siems-Carey Railway & Canal Co., died at his home in New York, N.Y., Oct. 23, aged 33. He was born at St. Paul, Minn., and graduated from Yale in 1907, after which he entered the engineering department of the Spokane, Portland & Seattle Ry. In 1908 he joined his father in forming the firm of Siems & Co., for carrying out large construction programmes for the Great Northern and the Northern Pacific Ry. In 1911 the firm was converted into the Siems-Carey Co., and Mr. Siems was elected president. In Feb., 1912, the Marsh-Siems-Carey-Smith Co. and the Siems-Carey, Ltd., both construction companies, were launched, and carried out contracts for the Chicago,

Milwaukee & St. Paul, Grand Trunk, and the Canadian Pacific Rys. Mr. Siems in 1916 established the Siems-Carey Railway & Canal Co. It had a contract for 2,000 miles of railway construction in China, against which protest was made by the Japanese Government and it was postponed.

Robert Walton, appointed recently Division Master Mechanic, Farnham Division, Quebec District, C.P.R., Farnham, Que., was born at Peterborough, Ont., Oct. 16, 1880, and entered C.P.R. service, Nov. 9, 1895, since when he has been, to Mar. 10, 1896, lighting switch lamps, Havelock, Ont.; Mar. 10, 1896, to Sept. 13, 1897, clerk and checker, Havelock, Ont.; Sept. 13, 1897, to Sept. 17, 1898, wiper, Havelock, Ont.; Sept. 17, 1898, to Aug. 11, 1899, fireman, Havelock, Ont.; Aug. 11, 1899, to Sept. 2, 1900, fireman, Toronto; Sept. 2 to Nov. 2, 1900, fireman, Havelock, Ont.; Nov. 2, 1900, to Feb. 21, 1905, fireman and night foreman, Havelock, Ont.; Feb. 21, 1905, to Oct. 2, 1907, locomotive man, Havelock, Ont.; Oct. 2, 1907, to Mar. 21, 1908, locomotive man, Toronto; Mar. 21, 1908, to May 16, 1912, locomotive man, Havelock, Ont.; May 16, 1912, to June 3, 1916, locomotive man, Toronto; June 3, 1916, to July 1, 1918, Road Foreman of Locomotives, Toronto; July 1 to Sept. 18, 1918, relieving Division Master Mechanic, Ontario District, Toronto.

R. Armstrong, who has been appointed Superintendent, Brandon Division, Manitoba District, C.P.R., Brandon, Man., was born at Kingston, Ont., Jan. 27, 1865, and entered railway service July 4, 1886, since when he has been, to June 1, 1894, consecutively, operator and agent at Calabogie, Ont.; agent at Lavant, Ont.; ticket and billing clerk at Kingston, Ont., and agent at Renfrew, Ont., for Kingston & Pembroke Ry. After two years in private business, he was from June 9 to 30, 1896, operator on the C.P.R. at Weyburn, Sask.; for four years, operator and agent, Mountain Section, Pacific Division, C.P.R.; two years relieving agent and dispatcher, Kootenay Section; four years yard agent, Vancouver; one year agent, Vancouver wharf; and to June 1, 1908, agent, same road, Vancouver; June 1, 1908, to Dec. 31, 1909, General Agent, same road, Fort William, Ont.; Dec. 31, 1909, to July, 1912, Superintendent, Superintendent of Terminals, same road, Fort William, Ont.; July, 1912, to May, 1913, Superintendent, District 3, Saskatchewan Division, same road, Saskatoon, Sask.; May, 1913, to Oct. 14, 1918, Superintendent, Souris Division, Manitoba District, Souris, Man.

William A. Cowan, General Superintendent, Transcontinental Division, Canadian Government Railways, Cochrane, Ont., died there, Nov. 17, from influenza. He was born at Galt, Ont., Jan. 22, 1877, and entered railway service July 23, 1899, as bridge carpenter, C.P.R., London, Ont., where he remained until Sept. 25, 1901. He graduated from the School of Practical Science, Toronto, Apr. 30, 1904, and from May 1, 1904, to Feb. 1, 1905, was transit man, C.P.R., London and Toronto; Feb. 1 to Oct. 15, 1905, Assistant Engineer of Terminals, C.P.R., Toronto; Apr. 15, 1905, to Feb. 14, 1908, Resident Engineer, District 3, Ontario Division, C.P.R., Toronto; Feb. 19, 1908, to Nov. 1, 1909, Resident Engineer, District 2, Ontario Division, C.P.R., London, Ont.; Nov. 1, 1909, to Oct. 1, 1911, Resident Engineer, District 1, Eastern Division, C.P.R., Farnham, Que.; Oct. 1, 1911, to Nov. 1, 1912, Assistant Engineer, C.P.R., Montreal; Nov. 1, 1912, to Jan. 9, 1914, Superintendent

ent, District 1, Atlantic Division, C.P.R., Brownville Jct., Me.; Jan. 10 to Mar. 15, 1914, Engineer of Construction, Halifax Ocean Terminals, Intercolonial Ry., Halifax, N.S.; Mar. 15, 1914, to May 1, 1915, Resident Engineer, District 2, Intercolonial Ry., Truro, N.S.; May 1, 1915, to June, 1917, Division Engineer, Transcontinental Division, Canadian Government Railways, Cochrane, Ont.; Feb. 1 to Apr. 1, acting Assistant General Superintendent of that division, and from June, 1917, to the time of his death, General Superintendent. The funeral took place at Quebec, Que.

William J. Pickrell, whose appointment as Master Mechanic, New Brunswick District, C.P.R., St. John, N.B., was announced in a recent issue, was born at London, Ont., Sept. 15, 1880, and entered C.P.R. service Jan. 3, 1900, since when he has been, to July 30, 1901, wiper, Toronto; July, 1901, to Oct. 31, 1904, fireman, Toronto; Nov. 1, 1904, to Aug. 3, 1906, travelling fireman, Toronto; Aug. 4, 1906, to Aug. 14, 1908, Assistant Road Foreman of Locomotives, Toronto; Apr. 15, 1908, to May 9, 1910, locomotive man, Toronto; May 10 to June 30, 1910, rule examiner, Toronto; July 1 to Oct. 14, 1910, locomotive man, Toronto; Apr. 9 to May 16, 1912, acting District Master Mechanic, District 3, Ontario Division, Toronto; May 17 to Oct. 31, 1912, acting District Master Mechanic, District 1, Ontario Division, Toronto; Nov. 1 to Dec. 1, 1912, District Master Mechanic, District 3, Ontario Division, Toronto; Dec. 2 to Dec. 8, 1912, locomotive man, Toronto; Dec. 9, 1912, to July 23, 1913, District Master Mechanic, District 3, Ontario Division, Toronto; July 29 to Aug. 17, 1913, Assistant Superintendent, District 3, Ontario Division, Toronto; Aug. 18 to Oct. 31, 1913, District Master Mechanic, District 3, Ontario Division, Toronto; Nov. 1, 1913, to Apr. 23, 1915, Assistant Superintendent, District 2, Atlantic Division, Woodstock, N.B.; Apr. 24, 1915, to Sept. 18, 1916, Master Mechanic, Ontario District, Toronto; Sept. 19, 1916, to Sept. 19, 1918, Assistant Superintendent, Farnham Division, Quebec District, Farnham, Que.

Samuel J. Hungerford, who has been appointed Assistant Vice President, Canadian Northern Ry. System, Canadian Government Railways, Toronto, was born near Bedford, Que., July 16, 1872, and entered railway service in May, 1886, since when he has been, to Feb., 1891, machinist apprentice, South Eastern Ry., and C.P.R., Farnham, Que.; May, 1891, to Aug., 1894, machinist, at various points in Quebec, Ontario and Vermont; Sept., 1894, to Aug., 1897, charge man, C.P.R., Windsor St., Montreal; Aug., 1897, to Apr., 1900, Assistant Foreman, C.P.R., Farnham, Que.; Apr., 1900, to Feb., 1901, Locomotive Foreman, C.P.R., Megantic, Que.; Feb. to Sept., 1901, General Foreman, C.P.R.; Feb., 1903, Locomotive Foreman, C.P.R., Cranbrook, B.C.; Feb., 1903, to Jan., 1904, Master Mechanic, C.P.R., Western Division, C.P.R., Calgary, Alta.; Jan., 1904, to Dec., 1907, Superintendent, Locomotive Shops, C.P.R., Winnipeg; Jan. 1908, to Feb., 1910, Superintendent of Shops, C.P.R., Winnipeg; Mar., 1910, to Apr., 1915, Superintendent of Rolling Stock, Canadian Northern Ry., Winnipeg. May, 1915, to Nov. 1, 1917, Superintendent of Rolling Stock, C.N.R., Toronto; Nov. 1, 1917, to Dec. 1, 1918, General Manager, Eastern Lines, C.N.R., Toronto.

F. P. Brady, who has been appointed General Manager, Eastern Lines, Canadian Northern Ry. System, Canadian Gov-

ernment Railways, Montreal, was born at Haverhill, N.H., June 22, 1853, and entered railway service 1869 as station baggagemaster Passumpsic Ry., since when he has been consecutively: 1873 to 1880, train dispatcher Northern Rd., at Concord, N.H.; 1880 to 1888, Chief Train Dispatcher Southeastern Ry., at Richford, Vt.; 1888 to 1889, Trainmaster C.P.R.; 1889 to 1898, Assistant Superintendent same road; 1898 to May, 1901, Superintendent same road at Smiths Falls, Ont.; May, 1901, to Sept., 1902, Superintendent districts 10 and 11, same road, at Toronto; Sept., 1902, to May, 1903, Superintendent district 19 same road at Fort William, Ont.; June 1, 1903, to Feb., 1904, Assistant General Superintendent Central Division, Winnipeg, Man.; Feb., 1904, to Sept. 16, 1908, General Superintendent Lake Superior Division, C.P.R., North Bay, Ont.; May 1, 1908, to June, 1909, Member of the Canadian Government Railways Board of Management; June, 1909, to June, 1913, also General Superintendent, Canadian Government Railways, Moncton, N.B.; June, 1913, on the abolition of the Canadian Government Railways Managing Board, to May, 1915, General Superintendent, Canadian Government Railways, Moncton, N.B.; May, 1915, to June 1, 1917, General Superintendent, Canadian Government Railways, Cochrane, Ont.; June 1, 1917, to Dec. 1, 1918, General Manager, Western Lines, Canadian Government Railways, Winnipeg, Man.

Charles A. Hayes, who has been appointed Vice President, Traffic, Canadian Northern Ry. System, Canadian Government Railways, Toronto, was born at West Springfield, Mass., Mar. 10, 1865, and entered railway service in 1882, since when he has been, to 1884, clerk, Freight Auditor's office, Connecticut River Rd., now Boston & Maine Rd.; 1884 to Oct., 1887, similar position, Boston & Lowell Ry., Boston, Mass.; Oct., 1887, to Nov., 1890, clerk, General Freight Agent's office, Boston & Lowell Ry., and its successor, Boston & Maine Rd.; Nov., 1890, to June, 1892, General Freight and Passenger Agent, Central New England & Western Ry., Poughkeepsie, N.Y.; June to Oct., 1892, Division Freight Agent, Philadelphia & Reading Rd., while it had control of the C.N.E. & W.R., Hartford, Conn.; Oct., 1892, to June, 1896, New England Agent, National Despatch Line, Boston, Mass.; June, 1896, to July, 1899, New England Agent and acting General Manager, National Despatch Line, Boston, Mass.; July, 1899, to May, 1903, Manager, National Despatch-Great Eastern Line, Buffalo, N.Y.; May, 1903, to Apr., 1908, Assistant General Freight Agent, G.T.R., Chicago, Ill.; Apr., 1908, to Oct. 16, 1911, General Freight Agent, G.T.R., Montreal; Oct. 16, 1911, to June, 1913, Freight Traffic Manager, G.T.R., Montreal; June, 1913, to June 1, 1917, Freight Traffic Manager, Canadian Government Railways, Moncton, N.B.; June 1, 1917, to Dec. 1, 1918, General Manager, Eastern Lines, Canadian Government Railways, Moncton, N.B.

Timiskaming & Northern Ontario Ry. Wages.—The Minister of Labor has appointed a board of conciliation and investigation to deal with the claims of the T. & N.O.R. clerks, station baggage men and freight handlers. R. H. Parmenter of Toronto represents the railway, J. G. O'Donoghue, Toronto, represents the men and Judge Denton, of Toronto, is Chairman.

Canadian Northern Railway Construction, Betterments, Etc.

Eastern Lines.—Reports are current that extensive betterments are to be carried out on the company's eastern lines, and particularly on the line from Toronto via Parry Sound to the junction with the transcontinental line near Sudbury.

Ottawa-Toronto Line.—We are officially advised that a contract has been let to W. Leacey, Brockville, Ont., for the construction of 2 concrete abutments to replace wooden cribs under I beam span, under Y track at Brockville.

We are officially advised that a contract has been let to the Dominion Construction Co., Toronto, for putting in concrete abutments for a deck plate girder span over a creek and the C.P.R. spur to ballast pit, at mileage 12.9, on the Trenton subdivision near Malvern, Ont. The bridge is at present carried on pile foundations.

Leaside Terminals.—It is reported that the terminal yards and buildings at Leaside, Toronto, have been so far completed that it is expected to begin occupying them within a few weeks. Everything, however, is said to depend upon the arrival of rails for laying the tracks.

Western Branch Line Betterments.—A press report states that during the construction season, now practically closed, considerable betterment work has been done on many of the western branch lines. The policy of removing wooden bridges has been continued, and on the main line a number of old bridges have been taken out and replaced by permanent steel structures on concrete abutments.

Moose Jaw, Union Station.—Grading was started Oct. 25 for the tracks to the new union station at the Crescent, Moose Jaw, Sask. The new station will be jointly used by the C.N.R. and the Grand Trunk Pacific Ry. Representatives of the company, interviewing the city council Nov. 4 on some matters connected with the work, are reported to have stated that it was hoped to have the rails laid by the end of the year, or early in Jan., 1919. A temporary station will be provided and trains will be run into it as soon as track-laying is finished.

Extension into Kamloops.—We are officially advised that it is expected to complete, in the near future, a piece of line from 300 ft. from a junction with the line on the north bank of the South Thompson River into the town of Kamloops, B.C., where a station will be built. The bridge across the river has already been built. This piece of line will form part of the projected branch line to Vernon, etc.

False Creek Terminals.—At the request of D. B. Hanna, President, the City Engineer of Vancouver has forwarded to Toronto a complete set of his plans for the development of the False Creek terminal sites and a copy of his report on harbor development. The plans show the proposed disposal of a 21 acre area of the reclaimed False Creek, through which it is proposed to have a 50 ft. channel. Provision is being made for interswitching tracks with all the railways entering the city. (Nov., pg| 485.)

The Canadian Council of Agriculture, at a meeting at Winnipeg recently, passed a resolution favoring, among other things, public ownership and control of railway, water and aerial transportation; telephone, telegraph and express systems, all projects in the development of natural power and of the coal mining industry.

The Consolidation of the Canadian Northern and the Canadian Government Railways' Management.

Sir Robert Borden, in speaking at the Toronto Exhibition directors' luncheon on Sept. 9, as reported in Canadian Railway and Marine World for October, said, among other things: "The total railway mileage owned by Canada is very large, comprising nearly 14,000 miles, and reaching from the Atlantic to the Pacific. All the lines included in this mileage should be operated as one system, and under one management. This system should not be administered by a department of the government, but it should be connected as soon as practicable with steamship lines on both the Atlantic and the Pacific, and last, but not least, its operation should be kept absolutely free from party political interference. For these reasons, and for this purpose, the Canadian Northern Ry. System's board will be reconstituted in the immediate future." To carry out the policy indicated by the Prime Minister, an order in council was passed Nov. 20, transferring the operation and management of the Canadian Government lines, including the Intercolonial Ry. and its recently acquired branch lines, the Prince Edward Island Ry., and the National Transcontinental Ry. to the Canadian Northern Ry. directors. The order is as follows:—

"Whereas the Minister of Railways and Canals represents that under the provisions of the Department of Railways and Canals Act, Revised Statutes of Canada, chap. 35, the management, charge and direction of all government railways is vested in the minister, and by the Government Railways Act, chap. 36, Revised Statutes of Canada, sec. 49, the Governor in Council is authorized to make such regulations as he deems necessary for, inter alia, the management of all or any of the government railways: and whereas the minister further represents that, with a view to attaining a maximum of economy and efficiency in the operation of the Canadian Government Railways and of the Canadian Northern Ry. System, it is desirable that there should be a board of management of the Canadian Government Railways, consisting of the persons who comprise the board of directors of the Canadian Northern Ry. Co.

"Therefore, the Governor General, by and with the advice and consent of the King's Privy Council for Canada, is pleased to order that the order in council of June 5, 1917, P.C. 1529, whereby C. A. Hayes was appointed General Manager of Eastern Lines, and F. P. Brady was appointed General Manager of Western Lines, Canadian Government Railways, shall be, and the same is, hereby rescinded; and the Governor General in council is further pleased to order and declare that the persons from time to time comprising the board of directors of the Canadian Northern Ry. Co., shall be, and they are hereby appointed, a board of management of the Canadian Government Railways, and are hereby given the powers vested in the General Manager under the general regulations of the Canadian Government Railways, adopted by order in council of Jan. 22, 1914, P.C. 184."

The mileage of the co-ordinated lines as at June 30, 1917, was as follows:

| Canadian Government Railways. | Miles. |
|--------------------------------|----------|
| Intercolonial | 1,510.40 |
| Elgin & Havelock | 27.00 |
| International of N.B. | 111.30 |
| Moncton & Buctouche | 34.00 |
| New Brunswick & P.E.I. | 36.05 |
| St. John & Quebec | 119.87 |

| | |
|------------------------------|-------|
| St. Martins | 30.00 |
| Salisbury & Albert | 45.00 |
| York & Carleton | 10.50 |

| | |
|-------------------------------------|----------|
| Prince Edward Island | 1,924.12 |
| National Transcontinental | 2,777.78 |
| | 2,003.03 |

| | |
|------------------------------------|----------|
| | 4,204.93 |
| Canadian Northern System | 9,405.44 |

13,610.37

Additional Directors.—In view of the extensive mileage in the Maritime Provinces and Quebec of the lines which have been consolidated, the government has recognized the importance of giving those provinces substantial representation on the directorate, and for this purpose the Canadian Northern Ry. directors have elected the following additional directors, viz.: Thos. Cantley, New Glasgow, N.S.; A. P. Barnhill, K.C., St. John, N.B.; and Sir Hormisdas Laporte, Montreal.

Officials, appointments, jurisdiction, etc.—As a result of the co-ordination of the various lines and for the purpose of effectually consolidating the management, the jurisdictions of the principal C.N.R. officials have been extended over the C.G.R. also, viz.: D. B. Hanna, President; A. J. Mitchell, Vice President, Finance and Accounts; R. C. Vaughan, Assistant to President; Z. A. Lash, Senior Counsel; Gerard Ruel, Counsel. M. H. MacLeod, Vice President, Operation, Maintenance and Construction; S. J. Hungerford, Assistant Vice President; E. Langham, General Purchasing Agent, and J. P. Driscoll, General Superintendent Car Service.

C. A. Hayes, heretofore General Manager, Eastern Lines, C.G.R., Moncton, N.B., has been appointed Vice President in charge of traffic, C.N.R. and C.G.R., at Toronto.

For operating purposes the C.N.R. and C.G.R. lines have been merged and divided into Eastern Lines and Western Lines, respectively; the Eastern Lines comprising all C.N.R. lines east of Port Arthur, Ont., and all C.G.R. lines east of O'Brien, Que.; the Western Lines comprising all C.N.R. lines, Port Arthur and west thereof, and C.G.R. lines west of O'Brien, Que. F. P. Brady, heretofore General Manager, Western Lines, C.G.R., Winnipeg, has been appointed General Manager, Eastern Lines, C.N.R. and C.G.R., at Montreal; and W. A. Kingsland, formerly General Superintendent, Quebec Lines, C.N.R., has been appointed Assistant General Manager, Eastern Lines, C.N.R. and C.G.R., at Montreal. A. E. Warren, General Manager, Western Lines, C.N.R., Winnipeg, has had his jurisdiction extended to include C.G.R. lines west of O'Brien, Que. Louis Lavoie, heretofore Purchasing Agent, Canadian Government Rys., Railways and Canals Department, Ottawa, has been transferred to Toronto as Assistant General Purchasing Agent, C.N.R. and C.G.R.

The accounting and auditing departments for Eastern and Western Lines, C.N.R., located heretofore at Toronto and Winnipeg respectively, are being consolidated in Toronto. C. E. Friend, heretofore General Auditor, C.N.R., Winnipeg, has been transferred to Toronto as Comptroller, C.N.R.; and J. D. Morton, heretofore Assistant Comptroller, C.N.R., Toronto, has been appointed General Auditor, C.N.R., there. Several other officials and their staffs will be transferred from Winnipeg to Toronto on Jan. 1, particulars of which and other appointments are

given in "Transportation Appointments Throughout Canada" on another page of this issue.

The C.N.R. management has secured the old Imperial Hotel property on Adelaide St. East, Toronto, for traffic department and divisional operating offices.

The circulars announcing appointments of officials having jurisdiction over both the C.N.R. and C.G.R. are headed "Canadian Northern Railway—Canadian Government Railways," and the general officers letter headings, etc., are printed in the same way. It is said that it is the government's intention to name the whole co-ordinated system Canadian National Railways, and that the necessary legislation will be introduced at the Dominion Parliament's next session.

Inspection of Canadian Government Rys.—D. B. Hanna, President, left Toronto, Nov. 26, for a trip over the C.G.R. in Quebec, the Maritime Provinces and Eastern Ontario, accompanied by most of the other directors, viz.: A. J. Mitchell, Vice President; Major Graham A. Bell, C.M.G., acting Deputy Minister of Railways and Canals; Robt. Hobson, Hamilton, Ont., and R. T. Riley, Winnipeg. Other directors joined them en route, viz.: A. P. Barnhill, K.C., of St. John, N.B., at Ottawa; Sir Hormisdas Laporte, at Montreal, and Thos. Cantley, of New Glasgow, N.S., further down the line. The party also comprised M. H. MacLeod, Vice President, Operation, Maintenance and Construction; and R. P. Ormsby, Secretary, C.N.R. S. J. Hungerford, Assistant Vice President, accompanied the party to Quebec, and F. P. Brady, General Manager, Eastern Lines, joined them at Montreal. Division and other local officials joined the party en route travelling through their respective jurisdictions.

From Toronto they went to Ottawa by C.N.R., thence to Montreal by C.G.R., and from there over the I.R.C., the Quebec Bridge and the N.T.R. to Quebec. The further itinerary planned included, from Levis via I.R.C. to Moncton, N.B., where two days would be spent, and then on to Sydney, Prince Edward Island, Halifax and St. John, returning via Quebec and over the National Transcontinental, to Cochrane, Ont., and from there to Toronto the intention being to reach Toronto early in the second week of December.

The principal objects of the directors' trip are to consider the question of betterments, new construction, additional rolling stock, etc., as well as a possible reorganization of the C.G.R. staff. It is probable that after Mr. Hanna's return to Toronto a number of changes in the C.G.R. staff at Moncton, etc., will be announced.

St. Malo Shops, Que.—The Mayor of Quebec, on Nov. 13, telegraphed the Minister of Railways, asking that the National Transcontinental Ry. shops at St. Malo, Que., be put into operation at once, in accordance with the agreement with the city, in order to provide against unemployment caused by the closing of munition plants. The Minister of Railways replied, stating that the operation of the Canadian Government Railways had been placed under the Canadian Northern Ry. directors, and advised the mayor to communicate with the President, D. B. Hanna. This is a good beginning, and it is to be hoped that a similar policy will be adhered to.

Suspension of Car Demurrage Rules on Account of Influenza Epidemic.

The Chief Railway Commissioner, Sir Henry Drayton, gave the following judgment Oct. 25:—A letter has been received by the board from the James Shearer Co., Montreal, as follows: "At our yards in Montreal we are practically tied up on account of the epidemic of Spanish influenza, and we find that the Eagle Lumber Co. at St. Jerome, to which we are shipping material to be dressed for us, is in the same predicament and in all probability cars will be under demurrage before we can even start to unload them. As this is a matter entirely beyond our control, we would ask if it is not possible to make special arrangements to have the demurrage charges withheld until the epidemic subsides. We trust you will be able to do something to relieve us, otherwise we shall be heavily penalized by the railways, due to the unavoidable illness of our employees."

The car demurrage rules do not cover a case of this character. While the rules arrived at were largely the result of negotiation and agreement between shippers and companies, a condition such as the present was never contemplated. There is no doubt as to the effect of the present epidemic. The railways themselves are unable to handle freight concurrently. A large number of cars set out for movement cannot be moved, simply because so many of the railway men are suffering from influenza that it is impossible for the railways to move them. This fact is well known and has been recognized by the shipping public.

Precisely the same conditions apply to the employees of industrial and other plants. As I see it, it would be absolutely unfair and improper to penalize shippers who cannot accept cars owing to the ravages worked by the epidemic on their employees. The matter is one absolutely beyond their control. Demurrage ought not to be charged under such conditions; and in my opinion the railways ought to be advised that demurrage ought not to be charged, and that if necessary the appropriate amending order will be made as of this date.

On Nov. 25, the Chief Commissioner gave the following judgment:—On Oct. 25 a judgment was issued providing that demurrage should not be charged where shippers were unable to accept cars owing to the ravages worked by the epidemic among their employees. This judgment was followed up by a memorandum dated Nov. 14, which was communicated to the different parties in interest by a letter from the board's Secretary, as follows: "I am directed by the board to write that

considerable misapprehension appears to exist as to the meaning of the direction given by the board on Oct. 25 last dealing with charges for demurrage during the influenza epidemic. The effect of the board's memorandum is not to abolish car demurrage tolls during the period of the epidemic. Relief, however, is extended to such consignees and consignors who were unable to load or unload cars concurrently owing to the illness of their employees. The general duty to unload promptly, where such unloading can be accomplished, still remains, but during the prevalence of the epidemic the railway companies may and must, where demurrage otherwise would be charged, relieve firms of demurrage payments to the extent that such firms have been unable to make prompt loading or unloading as a result of influenza among their employees. As a result it is the duty of the companies to consider each case on its merits, and apply the appropriate relief. As a further result, all railway companies which excuse the payment of demurrage on the grounds of influenza existing among the employees of consignees or consignors are justified in such action, having regard to all the prohibitions of discrimination."

The Car Service Bureau and those applying for relief under the judgment of Oct. 25 do not seem as yet to have arrived at any proper procedure in carrying out the board's directions, as a number of specific complaints have been received. There ought to be no difficulty in giving effect to the board's directions. The situation is perfectly plain. In the first instance, consignors and consignees who make delay either in loading or unloading cars, are subject to the penalties provided under the existing rules; but consignors and consignees who have been unable to load or unload as the result of the influenza among their employees are to be excused from the operation of the rules. Prima facie, a defaulting consignee or consignor is liable, and the onus of proof is on any consignee or consignor to show such a state of affairs existing as the result of the epidemic, and under which, with due diligence, it was impossible for the delay to have been prevented.

Applicants for relief under the board's order, so that the question can properly be disposed of not only as between the railways and the merchants, but as between merchants themselves, and so that all may be treated on a like basis and without discrimination, should file with the Car Service Bureau, or with the immediate railway company interested, evidence in writing, either by affidavit or

declaration, giving the following particulars: The number of men employed immediately previous to the epidemic. The number of men employed during the continuance of the epidemic and at the time the default in question took place. Any special or auxiliary efforts made to release the cars during such period, such as taking men when possible from other branches of the firm's activities, or securing them from outside sources, such as the services of outside carters when available, or showing that no men were available in other branches of the applicant's business. What action, if any, was taken to stop further shipments to the plant until the epidemic had ceased. If no action was so taken to show whether, in the course of trade, and having regard to the dates of shipments, any such action was possible.

Some of the complaints that have been received show that at least in part the applications are based upon the so called bunching of cars. The rules already provide for this, and apart from any specific direction, merchants are entitled to relief when cars are bunched, or in other words, when cars are being forwarded at the one time in greater numbers than as ordered and unloading facilities permit.

On the receipt of this material the matter ought to be promptly dealt with by the Car Service Bureau, or by the railway company interested, as the case may be, and under the circumstances the preliminary payment of the demurrage claim ought not to be insisted upon. It is, of course, open to the bureau or to the railway company interested to challenge the statements made and to ask in doubtful cases for further proof; but I confidently expect that the bureau and the railways will adjust, without the necessity of any board hearings, the great majority of cases which will arise.

The Car Service Bureau submits that when it is found that delays are in fact chargeable to the inability of employees of consignors or consignees owing to influenza, to load or unload, the higher tariff now in force ought to be reduced to the lower tariff of \$1 a day. There is no room for the distinction that the Car Service Bureau desires to make. When delays are unavoidable, owing to the ravages of the epidemic, it is not a question of the scale of charges; it is a question as to whether or not demurrage should or should not be charged, and the board has ruled that it ought not to be charged. No charge, therefore, of any character is to be made for unavoidable defaults attributable to the foregoing reasons.

Traffic Orders by Board of Railway Commissioners.

Interswitching of Freight Traffic.

General order 252. See page 538 of this issue, "Revised regulations for interswitching, etc., of freight traffic."

Minimum Weight for Crushed Stone.

General order 253. Oct. 29. Re complaint of Canadian Manufacturers' Association against increased carload minimum weight for crushed stone published by Grand Trunk, Canadian Pacific, and Canadian Northern Railways, effective October 1, 1918. Upon hearing the complaint at Toronto, Oct. 17, and its appearing that certain carriers have published and filed schedules increasing certain car-

load minimum weights to conform to Canadian Railway War Board's circular 75, dated Aug. 5, it is ordered that the said schedules be amended as follows, viz.: To provide that the minimum weight for crushed stone and other building and paving materials, now shown as the marked capacity of the car, but not less than 60,000 lb., be the marked capacity of the car, but not exceeding the actual weight when cars are fully loaded, subject to the said minimum of 60,000 lb. To provide that no greater weight shall be charged for the said materials than that to which the shipper may be restricted by the carrier by reason of any track

bearing limitations. That the amendments to give effect to this order come into force not later than Nov. 18, 1918.

Stoves for Fruit Shipments.

General order 254. Oct. 25. Re complaints of Dominion Brokers, Ltd., Calgary, Alta.; Plunkett & Savage, Calgary; Armstrong Growers' Association, Armstrong, B.C., and the Okanagan United Growers, Ltd., Vernon, B.C., against requirement of Canadian Pacific Ry. that, owing to the shortage of refrigerator cars and heaters, shippers of vegetables in British Columbia furnish stoves or other method of heating lined box cars, equipped with floor racks, in substitution

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TORONTO, CANADA, DECEMBER, 1918.

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for heated refrigerator cars. Upon hearing the matter at Vancouver, June 6; Calgary, Alta., June 10, and Edmonton, Alta., June 11, 1918, and upon reading the further submissions filed, it is ordered that the C.P.R., according to its powers and as required by shippers, supply heaters in all cars furnished for the receipt of vegetables in carloads, subject to the charges provided for in its published and filed tariff for cars so supplied and furnished; and it is also ordered that heaters supplied by shippers when the said railway company is unable to comply with the provisions of this order be returned by the said railway company, and by other railway companies subject to the board's jurisdiction, in cases of joint movements, free of charge to the point of shipment of the said vegetables; and it is further ordered that schedules giving effect to this order be forthwith published and filed so as to give one day's notice to the board.

Transfer Track at Yorkton.

27845. Nov. 8. Re order 25724, Dec. 15, 1916, authorizing Canadian Northern Saskatchewan Ry. (Wroxton Westerly Branch) to construct a transfer track between its railway and the C.P.R., in the n. w. ¼ of sec. 36, and the n. e. ¼ of sec. 35, Tsp. 25, R. 4, west of second meridian, at Yorkton, Sask.; and re order 27559, Aug. 14, 1918, apportioning the cost of the said transfer track; and re application of Canadian Northern Saskatchewan Ry. for an order suspending order 27559, Aug. 14, 1918, apportioning the cost of the transfer track. Upon reading what is filed in support of the application, and on behalf of the C.P.R., and upon the report and recommendation of the board's Chief Traffic Officer, it is ordered that order 27559, apportioning the cost of the transfer track, be suspended until such track has been constructed and in operation for three months, at which time the matter may be dealt with again upon the basis of the actual results of the operation.

Local Switching Charges.

278661. Re application of Toronto Board of Trade, Canadian Explosives, Ltd., Montreal, and Canadian Manufacturers' Association for an order disallowing the increased tariffs of local switching charges of the Grand Trunk, Canadian Pacific, and Canadian Northern Railways, filed to become effective Nov. 18, 1918. Upon reading what is filed in support of the application and the report and recommendation of the board's Chief Traffic Officer, it is ordered that the application be dismissed, and that the following tariffs showing the proposed increases in local switching charges to become effective Nov. 18, be suspended pending hearing and order of the board: Canadian Northern, C.R.C. E. 1151; Canadian Pacific, C.R.C. E. 3588; Grand Trunk, C.R.C. E. 4055.

Freight Rates on Calf Meal.

27863. No. 15. Re application of the W. A. Jenkins Manufacturing Co., London, Ont., for application of special mileage grain products tariff rates on shipments of calf meal. Upon hearing the matter at Toronto, June 24, the applicant company, the Canadian Freight Association, and the C.P.R. being represented at the hearing, and what was alleged; and upon reading the further submissions filed and the report and recommendation of the board's Chief Traffic Officer, it is ordered that in the case of mixed carloads consisting of grain or grain products, as defined in the special tariffs appertaining thereto, and calf meal, from

one shipper to one consignee, and shipped from jobbing or redistributing centers other than the point or points of manufacture of the calf meal whence specific commodity rates have been, or may be, published, the 8th class rates shall apply on the calf meal; the aggregate minimum weight of such mixed carloads to be that of the said special tariffs on grain and grain products; and it is further ordered that the said application, except as above provided, be dismissed.

Heater Charges for Bananas.

27886. Nov. 25 Re application of C.P.R., under sec. 29 of the Railway Act, for an order rescinding order 27461, July 22, 1918, made upon the complaint of Plunkett & Savage, against a heater charge of \$22.50 a car from Minneapolis, Minn., to Calgary, via the Minneapolis, St. Paul & Sault Ste. Marie and Canadian Pacific Railways, on five carloads of bananas ex New Orleans, declaring that the said heater charge was wrongfully made and authorizing the applicant company to repay to the complainants the excess amount charged and collected by it on the said shipments. Upon reading what is filed in support of the application and upon the report of the board's Chief Traffic Officer, it is ordered that the application be dismissed, and that the said order 27461 be suspended pending hearing and further order of the board.

27887. Nov. 25. Re application of C.P.R., under sec. 29 of the Railway Act, for an order rescinding order 27458. July 22, made on the complaint of the Vipond Fruit Co., Winnipeg, against a heater charge of \$15.00 a car on bananas from Minneapolis, Minn., to Winnipeg, declaring that the said heater charge was wrongfully made and authorizing the applicant company to refund the said amount to the complainant company. Upon reading what is filed in support of the application and upon the report of the board's Chief Traffic Officer, it is ordered that the application be dismissed, and that the said order 27458 be suspended, pending hearing and further order of the board.

Trackmen's Eyesight and Hearing.—

The Board of Railway Commissioners has issued the following circular:—"The board has given careful consideration to the employment by railways of trackmen suffering disability from defective hearing and eyesight, and to accidents resulting therefrom, and while realizing the desirability, owing to the present shortage of unskilled labor, of hampering the railways as little as possible in their selection of this class of labor, it is of the opinion that where a trackman is employed, the foreman engaging him might reasonably satisfy himself that the candidate for employment suffers no such serious physical disability with respect to hearing and eyesight as will render him specially liable to accident, or increase the hazard of the employment for which he is engaged; and the co-operation, as far as possible, of the railways is therefore asked in furtherance of this protection."

Eastern Canadian Passenger Association.—Owing to the resignation of the chairman, A. L. Miller, formerly General Agent, New York Central Rd., at Montreal, on his appointment to a similar position at Albany, N.Y., A. J. Parr, G.F. & P.A., Timiskaming & Northern Ontario Ry., presided at the association's last two meetings. The election of a chairman to succeed Mr. Miller will be made at the January meeting.

The Canadian Railway War Board's Work.

Canadian Railway Board of Adjustment No. 1.—Owing to ill health, U. E. Gillen, Vice President, G.T.R., Transportation and Maintenance, has resigned the adjustment board's chairmanship and has been succeeded by S. N. Berry, Vice President, Order of Railway Conductors; Geo. Hodge, Assistant to Vice President, Eastern Lines, C.P.R., being elected Vice Chairman. The other members of the board are:

Railway representatives, A. D. MacTier, Vice President, Eastern Lines, C.P.R.; W. D. Robb, Vice President, Mechanical Department, and acting Vice President, Transportation and Maintenance, G.T.R.; S. J. Hungerford, Assistant Vice President, Canadian Northern and Canadian Government Rys.; A. J. Hills, Assistant to President, Canadian Northern and Canadian Government Rys.

Railway employes organizations' representatives: Ash Kennedy, A.G.C.E., Brotherhood of Locomotive Engineers; G. K. Wark, Vice President, Brotherhood of Locomotive Firemen and Enginemen; S. N. Berry, Vice President, Order of Railway Conductors; Jas. Murdock, Vice President, Brotherhood of Railroad Trainmen; J. M. Mein, Deputy President, Order of Railway Telegraphers; Wm. Dorey, Vice President, International Brotherhood of Maintenance of Way Employes.

Committee on Transportation-Demobilization.—As a result of several conferences at Ottawa between the board's executive and representatives of the Dominion Government, to arrange for handling troops and civilians returning from overseas, it has been decided to place the details of arranging the traffic, which will be quite heavy, in the hands of a sub-committee of the board, composed of railway passenger traffic department officers, who have given particular attention to the handling of troops since Canada entered the war. The officers appointed are: Walter Maughan, A.G.P.A., Canadian Pacific, Montreal, chairman; H. H. Melanson, P.T.M., Canadian Government Railways, Moncton, N.B.; and C. W. Johnston, A.G.P.A., Grand Trunk, Montreal. This committee will see to the provision of the necessary equipment, the routing of traffic via lines which may be in a position to handle it best at the time, and other matters connected with the management of the traffic. The committee, which has its headquarters in Montreal, will work in close conjunction with Col. Clarke, Director of Supplies and Transport, Militia Department, Ottawa, who will act in an advisory capacity to the committee.

Freight Shed Hours.—Referring to circular 83 and the board's telegram of Oct. 10, concerning change in opening and closing hours of freight sheds. The effective date of this arrangement has been further postponed until Jan. 1, 1919, in order to provide time for further enquiries, the necessity of which has developed.

Notice of Changes in Handling Traffic.—It has come to the board's notice that occasionally changes are made by railways in their arrangements for the handling of traffic and that the public is unnecessarily inconvenienced through such changes being made effective before reasonable notice is given. There would seem to be no reason, except where immediate action is necessary, as in the case of embargo restrictions at times, for not giving the public notice of contemplated

changes which directly affect the shippers' forwarding arrangements, etc., and it is directed, therefore, that until further advised, member lines give the public not less than 10 days notice prior to the effective date of such changes.

Ontario Operating Committee.—The board has appointed a committee to supervise and regulate the movement of traffic in Ontario, so as to avoid congestions. In order that the greatest degree of satisfaction possible may be given to the public, its members will seek the co-operation of boards of trade and others. The members of the committee are: J. Balkwill, Superintendent, Canada Division, Michigan Central, St. Thomas; C. G. Bowker, General Superintendent, Ontario Lines, G.T.R., Toronto; D. Crombie, General Superintendent, Ontario Division, Canadian Northern, Toronto; W. R. Davidson, General Superintendent, Eastern Lines, G.T.R., Montreal; H. T. Malcolmson, General Superintendent, T.H. & B. Ry., Hamilton, and Allan Purvis, General Superintendent, Ontario District, C.P.R., Toronto. The committee, which will have its headquarters at Toronto Union Station, will hold its first meeting there Dec. 4.

Appointments to Board of Railway Commissioners.

The terms for which D'Arcy Scott was appointed Assistant Chief Railway Commissioner for Canada and for which S. J. McLean was appointed as one of the commissioners having expired, the Dominion Government has re-appointed Mr. McLean as a commissioner, and has appointed J. G. Rutherford, of Calgary, Alta., as another commissioner. No one has been designated as Assistant Chief Commissioner.

Simon James McLean was born in Quebec, June 14, 1871, and was educated at private and public schools there, and at Cumberland, Ont., and later, at the Ottawa Collegiate Institute, and from 1890 to 1894 was a student in the Department of Political Science in the University of Toronto. Among the academic positions held by him at various times, are 1894-5, MacKenzie Fellow, University of Toronto; 1895-6, University Fellow in Economics, Columbian University, New York; 1896-7, University Fellow in Economics, Chicago University; 1897-1902, Professor of Economics, and Sociology, University of Arkansas; 1902-06, Associate Professor of Economics, Leland-Stanford Jr. University, California; 1906-08, Associate Professor of Political Economy, University of Toronto. He is a B.A. and LL.B. of Toronto University; M.A. of Columbia University, and Ph.D. of Chicago University. While in California he was elected to the chairmanship of the transportation section of the Commonwealth Club of San Francisco. He has been a prolific writer on transportation subjects, having contributed largely to technical periodicals, reviews, etc. From 1898 to 1901 he acted in an advisory capacity to the Department of Railways and Canals, and prepared a special report which was subsequently published by that department. In 1901 he was appointed special commissioner on railway rate grievances for Canada, and conducted investigations throughout the Dominion. The findings of this investigation were embodied in a report which recommended that a railway

commission be organized for Canada, with power over rates and classification, and that it should have transferred to it the functions hitherto exercised by the Railway Committee of the Privy Council. These recommendations were adopted by the government, and embodied in the Railway Act of 1903. From 1904 to 1905 he was expert agent of the U.S. Census Bureau, and of the Interstate Commerce Commission, and conducted investigations to determine the valuation of railway property in the Western States, and in 1908 he acted as chairman of conciliation boards to investigate disputes in two mining cases. He was first appointed to the Board of Railway Commissioners for Canada, Sept. 17, 1908, for 10 years.

John Gunion Rutherford, C.M.G., who has been appointed a member of the Board of Railway Commissioners for Canada, was born at Mountain Bank, Peeblesshire, Scotland, Dec. 25, 1857, and educated at Glasgow High School, Ontario Agricultural College, Guelph, and Ontario Veterinary College, Toronto, graduating as veterinary surgeon, with gold medal, in 1879. He practised in Canada, the United States and Mexico for several years, settling in Portage la Prairie, Man., in 1884, and acted as veterinary officer to the Northwest Field Force in the rebellion in 1885, for which he holds the medal and clasp. From 1887 to 1892 he was Veterinary Inspector for Manitoba, and from 1890 to 1894, associate Editor, *Nor' West Farmer*. In 1892 he was elected to the Manitoba Legislature as member for Lakeside, and represented the constituency to 1896; 1896 to 1900, editor, *Manitoba Liberal*; 1897 to 1900, member of the House of Commons for Macdonald, Man. He was appointed Chief Veterinary Inspector for Canada in 1902, and his title was changed in 1904 to Veterinary Director General. In 1906 he was also appointed Live Stock Commissioner for Canada, and in 1908 was elected an honorary associate of the Royal College of Veterinary Surgeons, and, as a delegate, attended the International Institute of Agriculture, Rome, Italy; International Congress of Tuberculosis, Washington, D.C., and was elected President of the American Veterinary Medical Association. In 1909 he acted as chairman of the international committee on bovine tuberculosis, and was President of the C. S. Association for 1909-10. He was made a Companion of the Order of St. Michael and St. George in 1910, resigned the position of Live Stock Commissioner in July, 1911, and that of Veterinary Director General in Aug., 1912, when he was appointed Superintendent of Animal Husbandry, Department of Natural Resources, C.P.R., Calgary, Alta., which position he held until his present appointment.

Gilbert Murray, whose appointment as Resident Engineer, Grand Trunk Pacific Ry., Melville, Sask., was announced in our last issue, was born at Boston, Mass., in March, 1883, and from 1899 to 1901, was rodman and instrument man for Hyde & Sherry, Boston, Mass.; 1902 to 1904, Inspecting Engineer of the water system, Sydney, N.S.; 1904 to 1912, leveler, draftsman, transit man and Resident Engineer on location and construction of main line and branches in Alberta and British Columbia, Grand Trunk Pacific Ry.; 1913 to 1917, location and reconnaissance engineer, Edmonton, Dunvegan & British Columbia Ry., Edmonton, Alta.; 1917 to Sept. 1, 1918, instrument man, Grand Trunk Pacific Ry., Regina, Sask.

Transportation Appointments Throughout Canada.

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

Algoma Central & Hudson Bay Ry.—S. WORTH has been appointed Superintendent in charge of operations, with supervision over train, yard and station service, reporting to the General Superintendent. Office, Sault Ste. Marie, Ont.

W. C. PAUL, heretofore Assistant Trainmaster, Steelton, Ont., has been appointed Trainmaster, reporting to the Superintendent. Office, Sault Ste. Marie, Ont.

A. P. WILSON, heretofore Local Freight Agent, C.P.R., Lethbridge, Alta., has been appointed Joint Agent, A.C. & H.B.R. and Canadian Government Rys., Hearst, Ont.

Canadian Government Rys.—See Canadian Northern Ry.

Canadian Northern Ry. System—Canadian Government Rys.—The Dominion Government has placed the management of the Canadian Government Railways under a board of management, consisting of the C.N.R. directors, of which D. B. HANNA is President. For the present the lines will be operated under the joint names given above, but it is said that legislation will be introduced, at the Dominion Parliament's next session, to change the designation to Canadian National Railways.

R. C. VAUGHAN, Assistant to President, C.N.R., has had his jurisdiction extended to include the C.G.R. Office, Toronto.

Z. A. LASH, K.C., Senior Counsel, C.N.R., Toronto, has had his jurisdiction extended over the C.G.R. Office, Toronto.

F. H. PHIPPEN, K.C., General Counsel, C.N.R., having resigned, GERARD RUEL, heretofore General Solicitor, C.N.R., succeeds him as Counsel, with jurisdiction over C.N.R. and C.G.R. lines. Office, Toronto.

M. H. MACLEOD, Vice President, C.N.R., in charge of operation, maintenance and construction, has had his jurisdiction extended to include all C.N.R. and C.G.R. lines. Office, Toronto.

S. J. HUNGERFORD, heretofore General Manager, Eastern Lines, C.N.R., has been appointed Assistant Vice President, with jurisdiction over all C.N.R. and C.G.R. lines. Office, Toronto.

C. A. HAYES, heretofore General Manager, Eastern Lines, C.G.R., Moncton, N.B., has been appointed Vice President, in charge of traffic, with jurisdiction over all C.N.R. and C.G.R. lines. Office, Toronto.

GEO. H. SHAW, General Traffic Manager, C.N.R., Toronto, is reported to have resigned.

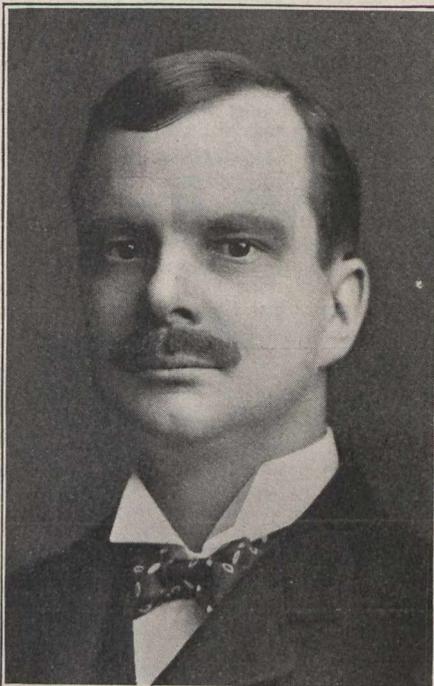
A. J. HILLS, heretofore Assistant to the Executive, C.N.R., has been appointed Assistant to the President, with jurisdiction over all C.N.R. and C.G.R. lines. He will continue to act as special representative of the executive in connection with adjustment of wages and working conditions. In addition to performing such other duties as may be assigned to him, he will exercise supervision over the Resources Department. Office, Toronto.

E. LANGHAM, heretofore General Purchasing Agent, C.N.R., has had his jurisdiction extended to include all C.G.R. lines. Office, Toronto.

LOUIS LAVOIE, heretofore Purchasing Agent, C.G.R., Railways Department,

Ottawa, has been appointed Assistant General Purchasing Agent, C.N.R. and C.G.R. Office, Toronto.

C. E. FRIEND, heretofore General Auditor, Winnipeg, has been appointed Comptroller. Office, Toronto.



C. A. Hayes,
Vice President, Traffic, Canadian Northern Ry.
System and Canadian Government Rys.



Samuel J. Hungerford,
Assistant Vice President, Canadian Northern Ry.
System, Canadian Government Rys.

J. D. MORTON, heretofore Assistant Comptroller, has been appointed General Auditor. Office, Toronto.

R. S. GOSSETT, Auditor of Disbursements, C.N.R., Toronto, is continued in that position. Office, Toronto.

T. W. RALPH, heretofore chief clerk, Auditor of Disbursements' office, C.N.R., Toronto, has been appointed Assistant Auditor of Disbursements, C.N.R. Office, Toronto.

H. G. FOREMAN, Chief Accountant, C.N.R., Toronto, is continued in that position. Office, Toronto.

W. F. ANDERSON, heretofore Auditor Freight and Passenger Receipts, Western Lines, C.N.R., Winnipeg, has been appointed Auditor of Freight Receipts, C.N.R. Office, Toronto, from Jan. 1, 1919.

E. A. KENDREE, heretofore chief clerk, Auditor Freight and Passenger Receipts' office, freight branch, Western Lines, C.N.R., Winnipeg, has been appointed Assistant Auditor of Freight Receipts, C.N.R. Office, Toronto, from Jan. 1, 1919.

H. G. HANNA, heretofore Auditor, Ontario and Quebec Lines, C.N.R., Toronto, has been appointed Auditor of Passenger Receipts, C.N.R. Office, Toronto.

F. J. GASCOIGNE, heretofore chief clerk, Auditor of Freight and Passenger Receipts' office, passenger branch, Western Lines, C.N.R., Winnipeg, has been appointed Assistant Auditor of Passenger Receipts, C.N.R. Office, Toronto, from Jan. 1, 1919.

A. C. EGAN, heretofore Auditor of Agencies, Western Lines, C.N.R., Winnipeg, has been appointed Auditor of Agencies, C.N.R. Office, Toronto, from Jan. 1, 1919.

W. L. BROWN, heretofore chief clerk, Auditor Ontario and Quebec Lines' office, C.N.R., Toronto, has been appointed Assistant Auditor of Agencies, C.N.R. Office, Toronto.

H. F. PARKER, heretofore Freight Overcharge Adjuster, Western Lines, C.N.R., Winnipeg, has been appointed Auditor of Freight Overcharges, C.N.R. Office, Toronto, from Jan. 1, 1919.

The accounting and auditing departments' offices will be located at 68 and 74 King St. East, Toronto.

J. P. DRISCOLL, heretofore Superintendent of Car Service, Western Lines, C.N.R., Winnipeg, has been appointed General Superintendent of Car Service, C.N.R. and C.G.R. Office, Toronto.

E. CRAWFORD, heretofore Superintendent of Car Service, Eastern Lines, C.N.R., Toronto, has been appointed Superintendent of Car Service, Western Lines, C.N.R. and C.G.R. Office, Winnipeg.

W. W. SLOAN, heretofore Special Agent, C.N.R., Toronto, has resigned.

F. P. BRADY, heretofore General Manager, Western Lines, C.G.R., Winnipeg, has been appointed General Manager, C.N.R. lines east of Port Arthur, Ont., and all C.G.R. lines east of O'Brien, Que. Office, Montreal.

W. A. KINGSLAND, heretofore General Superintendent, Quebec Lines, C.N.R., has been appointed Assistant General Manager, Eastern Lines, C.N.R. and C.G.R. Office, Montreal.

A. E. WARREN, General Manager, Western Lines, C.N.R., has had his jurisdiction extended to include all C.G.R. lines west of O'Brien, Que. Office, Winnipeg.

G. N. PALMER, heretofore chief clerk to Auditor of Disbursements, C.G.R., has been appointed Auditor of Disbursements, C.G.R., vice C. F. Burns, deceased. Office, Moncton, N.B.

G. ROSEBUSH, heretofore Roadmaster, Trenton and Picton Subdivisions, C.N.R., Toronto, has been appointed

Roadmaster, Tweed and Brockville Subdivisions, C.N.R., vice C. Martin, transferred. Office, Yarker, Ont.

W. M. JACKLIN, heretofore Superintendent of Track, Ontario Division, C.N.R., Toronto, has been appointed Roadmaster, Trenton and Picton Subdivisions, C.N.R., including Trenton yard, vice G. Rosebush, transferred. Office, Toronto.

A. H. CAVANAGH, heretofore Trainmaster, C.N.R., Capreol, Ont., has been appointed Assistant Superintendent, C.N.R., there.

J. DUGUID has been appointed Locomotive Foreman, C.N.R., Capreol, Ont.

A. P. WILSON, heretofore Local Freight Agent, C.P.R., Lethbridge, Alta., has been appointed Joint Agent, C.G.R. and Algoma Central and Hudson Bay Ry., Hearst, Ont.

J. B. KELLY has been appointed Inspector, Sleeping and Dining Car Department and News Service, Western Lines, C.N.R., vice W. C. Potts, resigned. Office, Winnipeg.

F. BRADLEY, heretofore Equipment Inspector, has been appointed Platform Inspector, Sleeping and Dining Car Department and News Service, Western Lines, C.N.R., vice E. H. Drew, resigned. Office, Winnipeg.

A. E. McALLAN has been appointed Equipment Inspector, Sleeping and Dining Car Department and News Service, Western Lines, C.N.R., vice F. Bradley, promoted. Office, Winnipeg.

W. B. STEEVES, heretofore Assistant Master Mechanic, C.N.R., Saskatoon, Sask., has been appointed Locomotive Foreman, C.N.R., there, vice A. Mallinson, transferred.

A. MALLINSON, heretofore Locomotive Foreman, C.N.R., Saskatoon, Sask., has been appointed Locomotive Foreman, Calgary, Alta., vice F. Clark, who has left the service.

Canadian Pacific Ry.—GRANT HALL, Vice President, has been elected a director and member of the executive committee, vice Sir George Bury, resigned. Office, Montreal.

O. PEPIN has been appointed Chief Dispatcher, Farnham, Que., vice A. E. Gough, deceased.

R. WALTON, heretofore relieving Master Mechanic, Ontario District, Toronto, has been appointed Division Master Mechanic, Farnham Division, Quebec District, vice W. Wells, transferred. Office, Farnham, Que.

W. A. BLACK has been appointed Locomotive Foreman, Farnham, Que., vice D. W. Watson, transferred.

D. W. WATSON, heretofore Locomotive Foreman, Farnham, Que., has been appointed Locomotive Foreman, Sortin, Montreal.

T. H. HAMILTON, heretofore Assistant Superintendent, Trenton Division, Ontario District, Trenton, Ont., has been appointed Assistant Superintendent, Smiths Falls Division, Quebec District, vice J. A. Cook, resigned. Office, Smiths Falls, Ont.

C. CONNORS, heretofore Division Master Mechanic, Bruce Division, Ontario District, Toronto, has been appointed Road Foreman of Locomotives, Havelock, Ont.

J. A. TOBIN, heretofore Assistant Superintendent, Bruce Division, Ontario District, Toronto, has been appointed Assistant Superintendent, Trenton Division, Ontario District, vice T. H. Hamilton, transferred. Office, Trenton, Ont.

H. C. TAYLOR has been appointed Car Service Agent, Ontario District, vice G. T. Coleman, transferred. Office, Toronto.

A. A. SMITH has been appointed Trainmaster, Ignace, Ont., vice J. L. Jamieson, promoted.

J. L. JAMIESON, heretofore Trainmaster, Ignace, Ont., has been appointed Superintendent, Kenora Division, Manitoba District, vice J. M. MacArthur. Office, Kenora, Ont.

E. C. P. CUSHING, formerly Secretary to the President (Lord Shaughnessy), and latterly Assistant to the General Purchasing Agent at Montreal, has been appointed Assistant Purchasing Agent at Winnipeg, not Purchasing Agent, as stated in our last issue. F. E. GAUTIER is still Purchasing Agent at Winnipeg. The mistake was not ours, but was caused by incorrect information sent us from Montreal.

R. ARMSTRONG, heretofore Superintendent, Souris Division, Manitoba District, Souris, Man., has been appointed Superintendent, Brandon Division, Manitoba District, vice C. S. Maharg, whose appointment as Superintendent, Cran-



Frank P. Brady,
General Manager, Eastern Lines, Canadian North-eastern Ry. System, Canadian Government Rys.

brook Division, British Columbia District, was announced in our last issue. Office, Brandon, Man.

A. C. HARSHAW, heretofore Superintendent, Cranbrook Division, British Columbia District, Cranbrook, B.C., has been appointed Superintendent, Souris Division, Manitoba District, vice R. Armstrong, transferred. Office, Souris, Man.

A. S. McDONALD, formerly Locomotive Foreman, Regina, Sask., who was mentioned in our last issue, as having been transferred, has been superannuated.

A. T. SHORTT having resumed his duties as Superintendent of Shops, Ogden, Alta., W. H. WORTMAN has returned to his position as Division Master Mechanic, Cranbrook, B.C.

W. H. WORTMAN, Division Master Mechanic, Cranbrook Division, British Columbia District, Cranbrook, having returned after leave of absence, J. W. JACKSON has resumed his position as Locomotive Foreman, Kamloops, B.C.

RICHARD MARPOLE'S title of General Executive Assistant has been changed to Executive Agent. Office, Vancouver.

N. J. KER, C.E., Townsite Agent and Engineer, Vancouver, has also been appointed Assistant Executive Agent in British Columbia. Office, Vancouver.

J. M. MacARTHUR, heretofore Superintendent, Kenora Division, Manitoba District, Kenora, Ont., has been appointed Superintendent, Medicine Hat Division, Alberta District, vice C. A. Cotterell, whose appointment as Assistant General Superintendent, British Columbia District, Vancouver, was announced in our last issue.

Canadian Pacific Ocean Services, Ltd.—Major H. MAITLAND KERSEY, D.S.O., London, Eng., has resigned the position of Managing Director.

C. E. BENJAMIN, General Passenger Agent, Trans-Pacific Lines, Montreal, is reported to have been appointed Passenger Traffic Manager in full charge of the services both on the Atlantic and Pacific Oceans. Office, Montreal.

Grand Trunk Ry.—W. A. BOOTH, heretofore assistant chief draftsman, Motive Power Department, has been appointed chief draftsman, Motive Power Department, Montreal, vice Jas. Powell.

W. J. HYMAN, heretofore assistant chief draftsman, Car Department, Montreal, has been appointed chief draftsman, Car Department, there.

W. A. WAUGH has been appointed foreman, iron machine shop, Montreal, vice W. A. Pitt.

T. MORTON has been appointed foreman, passenger car shop, Montreal, vice J. Brooks.

H. H. HAMILL, heretofore Commercial Agent, Detroit, Mich., has been appointed General Agent, Freight Department, Lines in Canada. Office, Detroit, Mich.

E. F. FLINN has been appointed General Western Freight Agent, Lines in Canada. Office, Chicago, Ill.

Grand Trunk Pacific Ry.—F. HOLLAND, heretofore foreman boilermaker, Melville, Sask., has been appointed Travelling Boiler Inspector, Transcona, Man.

R. MARSHALL has been appointed foreman boilermaker, Melville, Sask., vice F. Holland, promoted.

H. SAUNDERS has been appointed Car Foreman, Biggar, Sask., vice T. E. Annesly, transferred.

W. E. BELL has been appointed acting Division Superintendent of Telegraphs, Lines in Alberta and British Columbia, with jurisdiction over all matters pertaining to construction and maintenance of telegraph and telephone lines and operation of railway and commercial telegraphs, vice W. J. Rooney, on leave of absence. Office, Edmonton, Alta.

E. WARNING has been appointed Roadmaster, Edmonton to Obed, Districts 7 and 8, vice O. H. Anderson, transferred. Office, Edson, Alta.

O. H. ANDERSON, heretofore Roadmaster, Edmonton to Obed, Districts 7 and 8, has been appointed Roadmaster, Alberta Coal and Mountain Branches. Office, Edson, Alta.

J. A. M. BROWN has been appointed Roadmaster, McBride, B.C., vice J. Carlson, transferred.

J. CARLSON, heretofore Roadmaster, McBride, B.C., has been appointed Roadmaster, Endako, B.C.

C. E. JENNEY, General Agent, Passenger Department, G.T.P.R., Vancouver, B.C., has had his jurisdiction extended to cover the G.T.P. Coast Steamship Co. in British Columbia, south of Rivers Inlet,

Vancouver Island, the States of Idaho, Oregon and Washington, and Utah as far south as Ogden and Salt Lake City, and the portion of Montana west of and including Shelby Jct. to Helena and Butte.

T. E. ANNESLY, heretofore Car Foreman, Biggar, Sask., has been appointed Car Foreman, Prince Rupert, B.C., vice F. E. Dymend, who has left the service.

Michigan Central Rd.—J. M. CAMPBELL has been appointed Assistant Division Engineer, St. Thomas, Ont., vice W. J. Shaw, promoted.

Pere Marquette Ry.—P. M. BOYLE, Trainmaster, Detroit, Mich., is reported to have been appointed Trainmaster, Canadian Division, St. Thomas, Ont.

United States Railroad Administration, Eastern Region, comprising Pere Marquette Ry., Ann Arbor Rd., Detroit & Toledo Shore Line Rd., Port Huron Union Depot Rd., Lake Michigan Car Ferry Association, Grand Trunk Western Lines Rd., Detroit & Mackinac Rd., Detroit, Bay City & Western Rd., Port Huron Southern Rd., and Port Huron & Detroit Rd. The following appointments have been made: Assistant General Passenger Agents, J. D. McDonald, Chicago, Ill.; John Dunphy, Detroit, Mich.; General Baggage Agent, A. E. Plumer, Detroit, Mich.; Division Passenger Agents, O. L. Kinney, Chicago, Ill.; J. W. Kearns, Detroit, Mich.; N. De Young, Grand Rapids, Mich.; F. A. Young, Saginaw, Mich.; J. K. Cooper, Toledo, Ohio; R. W. Youngs, London, Ont.; Travelling Passenger Agent, G. W. Norman, Detroit, Mich.

Edward Fitzgerald's New Appointment.

Edward Fitzgerald, formerly Assistant General Purchasing Agent, C.P.R., Montreal, and since early in the war Purchasing Agent, and subsequently Assistant to the Chairman, Imperial Munitions Board, Ottawa, has been appointed Vice Chairman of the Hudson's Bay Co.'s Canadian Advisory Board, with office at Winnipeg. Sir Augustus Nanton, of Winnipeg, who is one of the C.P.R. directors, and Vice President of the Winnipeg Electric Ry. is chairman of the H.B.C. Canadian Advisory Board, among the other members being G. W. Allan, K.C., M.P., and G. F. Galt, Winnipeg.

As Mr. Fitzgerald will devote his whole time to H.B.C. affairs, it is safe to assume that he will be its chief active executive officer in Canada, with jurisdiction over its vast fur and other trading, ocean and inland navigation and its large land interests. Mr. Fitzgerald left Ottawa for London, Eng., towards the end of November, to consult with the H.B.C. directors, expecting to return to Ottawa in January to clear up some Imperial Munitions Board work and take up his new duties in Winnipeg in February.

He was born at Ottawa, Ont., Nov. 9, 1874, and educated at the Model School there. He entered C.P.R. service in July, 1892, as junior clerk in the Purchasing Department, and was from Oct., 1898, to May, 1905, Commissary Agent; May, 1905, to Mar., 1910, Assistant to Purchasing Agent; Mar., 1910, to May, 1915, Assistant General Purchasing Agent. In May, 1915, he was assigned to the British Government as officer in charge of the War Office Purchasing Agency in Canada, and in Dec., 1915, was appointed Purchasing Agent, Imperial Munitions Board, and June, 1916, Assistant to the Chairman, I.M.B. He was made a Commander of the Order of the British Empire in Jan., 1918.

Steel Rails and Rolling Stock Orders and Railway Betterments and Extensions Now to Proceed.

Ottawa press dispatch, Nov. 12.—Action is being taken promptly by the Dominion Government along the lines set forth recently by the Finance Minister to keep the wheels of industry turning in Canada during the period of transition from war to peace conditions, and to absorb labor which will be released by the cessation of production of munitions of war. Already orders have been placed for 200,000 gross tons of 85-lb. steel rails, which will be used in the making of required betterments and extensions on Canadian railways. The Dominion Iron & Steel Co., of Sydney, N.S., has been given an order for 125,000 gross tons, and the Algoma Steel Corporation, Sault Ste. Marie, an order for 75,000 tons. The rolling of these

companies of the country, and will keep them busy for a year to come. At present the Canadian Government Railways and the Canadian Northern are much below their requirements of rolling stock. The Grand Trunk will also require some cars. The Canadian Pacific is engaged upon a car building programme which will keep its shops busy at least nine months. When materials become available in larger quantities the company will, it is said, have additional work for its plant. At present car building plants, with one exception, are all engaged upon orders which will not be completed before the end of the year.

With respect to betterments and extensions over Canadian railways, it is pointed out that the Canadian Northern has certain uncompleted sections to be put into condition for operation. There are also certain projected lines, construction of which may be undertaken if economic conditions warrant. The railways are now suffering from a shortage of labor. They are in a position to employ a considerable number of workers. Next spring they will require more men for betterments and maintenance of way, and a still larger number if new construction is undertaken. Hence those who attended the conference separated with a feeling of optimism.

Ottawa press dispatch, Nov. 27.—Presidents of the big Canadian railway companies are in conference with the government today, respecting their plans for after war developments. There was a general discussion on the question of extension and equipment. It is the intention of all the companies to go ahead with their construction programme on such lines as are considered necessary. All the roads will do more or less replacement work and also proceed with numerous branch feeders, especially in the west, that have been suspended since the war began. They also intend to place heavy orders for equipment in locomotives, freight and passenger cars. Their programme will absorb a great deal of the floating labor of the country.



E. C. P. Cushing,
Assistant Purchasing Agent, C.P.R., Winnipeg.

rails is to begin very shortly, and deliveries are to be made at the rate of about 20,000 tons a month by each company. The price to be paid is to be determined later and is to be based on the cost of production. These orders will be followed by orders to various companies for accessories, angle bars, bolts, spikes, and tie plates to the extent of 65,000 tons. Their production will give employment to a considerable number of workmen, and the laying of the rails next spring will also call for many laborers. It is stated that these orders will be succeeded by others which will keep the rail mills engaged for a year or more.

At the conclusion of a conference today (Nov. 12) between Hon. A. K. Maclean and other members of the Dominion Government's Reconstruction and Development Committee and representatives of the Canadian Government Railways, Canadian Northern, Canadian Pacific and Grand Trunk, it was announced that big orders for rolling stock for the Canadian Northern and Canadian Government Railways will be placed shortly by the government with the several car building

Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co.'s operators have been placed on the same wage basis as C.P.R. telegraphers, increases to date from Sept. 1, by an award of the Canadian Railway War Board's committee.

The Western Union and Postal Telegraph services are consolidated, from Dec. 1, under U.S. Government control. It is announced that the U.S. Postmaster General has fixed the compensation to be paid annually, but the amount has not been made public. The Postal Telegraph Co. asked for \$3,800,000 a year and interest, but the Post Office Department is reported to have stated that as the company had been unable to furnish any approximate valuation of its property, an award had been made on the best information available, on the same principles used in making the award for the Western Union agreement. No physical consolidation of the two companies is contemplated. The Postal Telegraph Co. states that it will fight the award in the U.S. Court of Claims.

Electric Railway Department

Increases in Electric Railway Freight and Passenger Rates.

British Columbia Electric Ry.—The Board of Railway Commissioners passed order 27868, Nov. 19, as follows:—Re application of British Columbia Electric Ry. for permission to increase commutation fares for carriage of passengers between points on Vancouver, Fraser Valley and Southern Railway: Upon hearing the application at Ottawa, Aug. 27, in the presence of counsel for the company and the Municipality of Burnaby, and upon reading the further written submissions filed, it is ordered that the company be authorized to charge the increased commutation fares as published in its tariff C.R.C. 7 filed with the board, and that the said tariff become effective Dec. 1.

Judgment was delivered in Vancouver recently by Justice Macdonald in the action brought by the City of Vancouver against the British Columbia Electric Ry., for an alleged breach of the 1901 agreement in collecting a fare in excess of 5c. The city council in July passed a bylaw authorizing the company to charge a fare of 6c, which the mayor refused to sign. The company nevertheless proceeded to put the bylaw in force. Other factors were brought into the conflict, and on the bylaw being put to a vote of the rate-payers it was defeated. The hearing of arguments was concluded Oct. 29 and judgment was reserved. A Vancouver paper gives the following summary of the judgment:—

Referring to the refusal of the mayor to sign the bylaw, the judge says: "It was the duty of the mayor, under sec. 226 of the Vancouver Incorporation Act, as head of the council to sign such bylaw." He follows this statement with a quotation from the act covering the provision, and adds: "There is no power of veto vested in the mayor, nor can he, as it were, reconsider a bylaw, once it has passed the council."

In referring to the contention that while it might have been the mayor's duty, as a ministerial act, to sign the bylaw, he should not be called upon to do so, in view of the fact that the vote of the electors took place subsequently, which resulted in a decision adverse to the bylaw, the judge says that this fact does not affect the company's legal position in the slightest, if the bylaw were properly passed at the council meeting of July 8.

"In other words," he says, "if such bylaw became effectual so as to support the amending agreement and induced the company to incur a liability the council could not subsequently reconsider or virtually repeal such bylaw through the assistance of an adverse vote of the electors."

Continuing, the judgment points out that the agreement of 1901, in which the street car rates were fixed, contains a provision to the effect that if these are found inadequate, the company may apply to the council for a revision, and it could, if it saw fit, agree to an adjustment. It was contended that this discretionary power was taken away from the council by later amendments, but the judge did not hold with that contention, and quoted voluminous authorities in support of his position.

"In my opinion it was not necessary," he states, "then, nor since, through subsequent legislation, for the city council to submit a bylaw authorizing an agreement with respect to fares, chargeable by the company, to the city electors entitled to vote on money bylaws, for their approval."

The minutes of the council, the judge says, show clearly that the bylaw was given its several readings and passed and signed by the clerk, and that it was doubtless taken for granted by all parties that the procedure bylaw would be complied with. "The company, acting on this reasonable presumption, proceeds to carry out on its part the intention of all parties, that it should agree to pay the increased wages asked by its employees. From the sequence of events, resulting in the apparent passage of the bylaw, I have no reason to doubt that the council was, at the time, acting in good faith. Even apart from the dangers of a threatened sympathetic strike, the council was doubtless very anxious that the then existing disruption of business should speedily terminate.

"Even although the council was acting within its powers in passing the bylaw authorizing the passing of the agreement, and intended it to be effective, can their intention be destroyed by the action of the mayor in withholding his signature?" the judge asks. In reply to this, he states that no authority was submitted to him which, in his opinion, supported an affirmative reply to the question.

As to the power of the council to reconsider such a bylaw, the judgment states that "over a month after it had been passed it could not be reconsidered," and concludes with the statement that if he is right in that conclusion, the mayor has no discretion, but owes a public duty which should be performed by his signing both the bylaw and the agreement and thus render them fully effective, and the company as a party interested has a right to call for the execution of this ministerial act on the part of the mayor. "A time can be limited by the formal order for judgment, within which the mayor should sign the bylaw and agreement."

Fort William Municipal Ry.—The Fort William Utilities Committee and the Port Arthur Utilities Commission, sitting jointly, recently decided that for the present there will be no change in the operation or administration of the lines, and that full consideration will be given to the question of fares early in 1920.

The Montreal Tramways Co.'s new franchise gives the Montreal Tramways Commission power to fix rates for school children and apprentices lower than the regular tariff, for use on week days only, between certain specified hours. In the new schedule of fares fixed by the Quebec Public Utilities Commission provision was made for the issue of school children's tickets, but nothing was said about tickets for apprentices. The Montreal Tramways Commission directed, Oct. 10, that children's tickets should be useable by apprentices between 6 a.m. and 7 p.m. The commission administering the city's affairs passed a resolution, Oct. 23, setting out that in its opinion the Montreal Tramways Commission has not the right to

amend the contract between the city and the M.T. Co. as it did, and such a precedent would allow the Tramways Commission in future to modify the contract on other points, without the city's consent. The resolution was rescinded subsequently, and the matter was discussed by the city commissioners Oct. 31, when a resolution was passed asking the Tramways Commission to provide that school children's tickets should be made available for use between 7 a.m. and 7 p.m., instead of between 8 a.m. and 6 p.m. as at present, and that these tickets be made available for use by apprentices between 6 and 8 a.m., and between 5 and 7 p.m.

Moose Jaw Electric Ry.—The Moose Jaw, Sask., City Council passed a resolution recently outlining concessions which the city might make to the company to secure better service, and the repair of the South Hill bridge. At a meeting of the city council, Nov. 4, a letter was read from A. H. Dion, General Superintendent, M.J.E. Ry., which said, in part:—"The resolution was submitted to the directors, who instruct me to state that the proposed relief is unsatisfactory and quite inadequate. It appeared that your resolution was passed under a misapprehension as to the conditions. The directors were unanimous in the decision that they could not go on with the operation of the railway under existing conditions, as that would only mean the piling up of constantly increasing losses to the company. The company has borne the burden as cheerfully as possible, always hoping for better conditions, but now the load is too heavy, and the future offers no encouragement. The interests of the shareholders would be served by immediately ceasing the operation of the railway." The letter concluded by stating that a memorial was being prepared by the company for submission to the council at an early date.

The Moose Jaw Board of Trade passed a resolution recently favoring the appointment of a commission to investigate the company's affairs. In the course of the discussion it was suggested that the city council would be justified in offering financial support to the company, in addition to granting a new franchise. (Nov., pg. 505.)

The Ottawa Electric Ry. on Oct. 26 filed with the Board of Railway Commissioners the following special passenger tariff, to become effective Nov. 18:—

Zone 1: Within the municipal limits of the City of Ottawa, and beyond to the Experimental Farm, and to Cloverdale Ave. on the Rockcliffe line. Zone 2: West of zone 1, and including McKellar. Zone 3: East of Cloverdale Ave. to and including Rockcliffe Rifle Range. Zone 4: West of McKellar, to and including Britannia-on-the-Bay.

Cash fares, between 6 a.m. and 12 midnight:—

| | Adults | Children under 10 |
|--------------------------------|---------|-------------------|
| Within zone 1, 2, 3 or 4..... | 5 cents | 3 cents |
| Between zone 1 and zone 2 or 3 | 10 " | 6 " |
| Between zone 1 and zone 4... | 15 " | 9 " |
| Between zone 2 and zone 3... | 15 " | 9 " |
| Between zone 2 and zone 4... | 10 " | 6 " |
| Between zone 3 and zone 4... | 20 " | 12 " |

Between 12 midnight and 5.30 a.m., double the above fares.

Special tickets—Between zone 1 and

zone 2 or 3, 3 tickets 25c; between zone 1 and zone 4, 2 tickets 25c.

Workmen's tickets—Good only within zone 1 from first morning trip until 7.30 a.m., and between 5 and 6.30 p.m.:—33 tickets \$1, 8 tickets 25c.

School children, under 14—Good only between 7 and 9.30 a.m., 11.30 a.m. and 1.30 p.m., and 3.30 and 5 p.m.:—40 tickets \$1. One ticket for each zone travelled.

Sunday—7 tickets 25c. One ticket for each zone travelled.

Objections to the tariff having been made by Westboro' Village and Nepean Township, the matter was heard by the Board of Railway Commissioners at Ottawa Nov. 18, when, after argument, the hearing was adjourned for two weeks, the tariff being suspended in the meantime.

Pictou County Electric Ry.—The Nova Scotia Board of Commissioners of Public Utilities has issued an order authorizing the company to charge increased fares on its electric railway, and increased rates for electric power, heat and light, from Dec. 1. The first four parts of the order deal with rates for light, heat and power, and the last paragraph deals with fares on the electric railway, as follows:—Cash fare 7c, in each zone. Strips of 8 tickets, 50c; one ticket good for a single fare in each zone. Strips of 10 tickets, 50c; one ticket good for a single fare in each zone on week days only until 8 a.m., and between 5 and 6.30 p.m.

Port Arthur Civic Ry.—See Fort William Municipal Ry.

Regina Municipal Ry.—Receipts for the 10 months ended Oct. 31, \$194,169.30; passengers carried, 4,164,156, against \$193,740.75 and 4,129,143 for the corresponding 10 months of 1917. The monthly figures for the current year are reported as follows:—

| | Passengers carried. | Passenger receipts. |
|-----------|---------------------|---------------------|
| January | 521,269 | \$21,606.70 |
| February | 448,551 | 19,433.05 |
| March | 453,592 | 21,008.80 |
| April | 379,641 | 18,020.70 |
| May | 401,984 | 19,182.65 |
| June | 406,332 | 19,881.75 |
| July | 488,742 | 23,626.20 |
| August | 443,122 | 21,461.00 |
| September | 323,920 | 15,613.35 |
| October | 297,003 | 14,334.60 |

Commenting on these figures, a local paper says: "The increase to a straight 5c fare is responsible for an increase in revenue of \$20,000 on the 10 months. . . , the average increase per month is actually higher, as the increased fare was not put into effect until February. . . . Due to the influenza epidemic, the traffic for October fell off 114,121 passengers, a decrease of 27.76% compared with the passenger traffic for Oct., 1917. In October the total passenger revenue was \$14,334.60, compared with \$17,288.75 in Oct., 1917, a decrease of \$2,954.15, or 17.09%."

Sherbrooke Ry. & Power Co.—A press report states that the company applied to the Sherbrooke, Que., City Council Nov. 5 for authority to charge increased fares, and giving notice that in the event of the application being refused it would have to discontinue the electric car service after Nov. 30. An alternative proposition was made that the city acquire the railway at a price to be fixed by arbitration.

The Winnipeg Electric Ry.'s application of Oct. 18 to the city council for authority to charge increased fares was published in full in Canadian Railway and Marine World for November. The necessity for applying for relief had been evident for some time, and the public had been educated to this point by advertising, and by the company's bulletin, which is dis-

tributed on the cars every fortnight. The application for relief, however, was hastened by the award of the board of conciliation which investigated demands for increased wages from motormen and conductors, and granted increases representing an addition to the company's pay roll of \$362,000 annually. The company's application to the city council asked for a 6c fare, and 7 children's tickets for 25c, all other fares to be abolished. The council debated the application for three days and the friendly spirit which pervaded the discussion was very marked. The company's General Manager, A. W. McLimont, attended all the sessions and discussed the company's difficulties very frankly. Practically each member of the council admitted the company had established a prima facie case for increased revenue, and expressed the opinion that immediate assistance must be given. Upon the advice of the City Solicitor, however, a motion, which was favorably spoken to, granting a temporary increase of fares, was not put, but another motion was passed, the intent of which, it was explained, would compel the company to immediately apply to the Manitoba Public Utilities Commission for relief, and a committee of five members of the council, together with the City Solicitor, was appointed to appear with the company's representatives before the commissioner and support the application for an interim order as outlined above, pending investigation of the application for permanent relief. The commissioner expressed pleasure at the fact that the city and the company had got together and had agreed as to the nature of the order, which he promulgated forthwith, authorizing the following fares temporarily, effective Nov. 1:—

| | |
|--|-----------|
| Cash fare | 5c |
| Tickets (white), good at all times | 5 for 25c |
| Tickets (red), good from 6 to 8 a.m., 5 to 6.30 p.m., week days, all day Sundays, and at all times for soldiers in uniform | 6 for 25c |
| Tickets (green), for children under 16 years of age—good at all times | 7 for 25c |

The old rates prior to Nov. 1 were:—
Six unlimited tickets for 25c.
Eight workmen's tickets for 25c.
Ten children's tickets for 25c.

In announcing the new fares, Traffic Superintendent Knox notified conductors as follows:—"All of the above tickets will be designated by a heavy black irregular saw-tooth impression across the face of the ticket. Until Sunday, Nov. 3, at midnight, outstanding tickets will be accepted for passage on our cars; after that time they will not be good for transportation. Passengers offering old tickets after above date should be requested to purchase new tickets and to present the old tickets for redemption at one of the company's offices. If passengers insist on using the old tickets you may permit them to do so, but 1c must be deposited by the passenger in fare box with the old ticket. This applies to all classes of old tickets."

A complete investigation of the company's affairs is now in progress before the Public Utilities Commission, in order to decide on what fares shall be authorized for the future.

The Winnipeg Board of Trade, which has some 2,000 members, has voted in favor of the company being allowed to increase its fares. The vote was taken by mail, owing to the influenza ban prohibiting meetings in the city. Some time ago the board's executive considered it a matter of policy to declare itself on the company's application for an increase, and in a questionnaire asked the opinions of the members. The result of the vote

was, 645 for an increase and 49 against. The city newspapers have supported the company's application.

Dismantling of London and Lake Erie Ry. and Transportation Co's Line.

Failing in attempts to dispose of its electric railway from London to Port Stanley, Ont., as a going concern, either as a whole or in part, at prices fixed by the company, the line is being scrapped. It was finally closed for traffic Oct. 15, and the work of scrapping it was put in hand at once, the removal of the rails being commenced Oct. 21. The rails and other material, rolling stock, etc., are to be sold as early as possible.

The final offer for the purchase of the line was made by the City of London, Sept. 28, the price named being \$300,000. The company, E. B. Woods, President, is reported to have informed the mayor that more than that sum could be realized by scrapping the line. In connection with the scrapping of the line, a proposition came before the London Board of Control, Oct. 18, for the purchase of the bridge across the Thames, south of the city, in order that it might be turned into a general traffic bridge for the benefit of that section of the city. It was subsequently reported that the bridge would be suitable only for pedestrian traffic, and that its remodelling for vehicular traffic would make it nearly as expensive as the construction of a new bridge at Richmond St.

The city of London's interest in the line centered in the section from London to Lambeth, which it was thought at one time might be acquired. As the line is now being taken up, a proposition for establishing a bus line between the two points—one vehicle to carry passengers and another to carry freight—was endorsed by residents of Lambeth, Nov. 6. It is proposed to operate motor busses with a return fare of 25c.

Among the company's liabilities is a considerable sum due to the city of St. Thomas for taxes, rental, etc. The company's tracks connect with those of the St. Thomas St. Ry., which is owned by the city, and run over them for a short distance. \$2,400 was reported to have been paid over Nov. 6, leaving about \$5,000 due the city, which it demanded should be paid at once, or the track connection would be cut. G. B. Woods, President, had an interview with the city authorities Nov. 6, when he asked that the company's cars, with the rails and other materials, be allowed to run over the city's tracks to the steam railway yards for shipment. The city authorities refused to agree to the request, and it is reported that the connection was severed the same day.

Winnipeg and Zone Fares.—In addressing the Winnipeg City Council recently, A. W. McLimont, General Manager, Winnipeg Electric Ry., said:—"The company has no objection to putting into effect the zone system if the people want it. It is immaterial to us what system we have in operation so long as it will yield us sufficient revenue. My own opinion, however, is that the zone system would not be permitted by the people of Winnipeg. It would create a hardship for many of the poorer people living in the suburbs, and I do not think it will be at all popular. But we are willing to try it if you say so."

Hull Electric Co's Snow Sweeper and Locomotive.

The Hull Electric Co. has added to its equipment a combined snow sweeper and locomotive, built by the Ottawa Car Manufacturing Co., with the following dimensions:—

| | |
|---------------------------------------|--------------|
| Length over all as sweeper..... | 39 ft. 0 in. |
| Length over all as locomotive..... | 24 ft. 0 in. |
| Width over all..... | 8 ft. 8 in. |
| Width of cab outside..... | 8 ft. 1 in. |
| Length of cab outside..... | 12 ft. 4 in. |
| Distance between bolster centers..... | 12 ft. 6 in. |

The underframe is of steel construction, built as one unit. Side sills are 10 in. channel reinforced with a 14 x ½ in. plate. All center and cross sills are of 10 in. channel. The underframe is tied together with lateral bracing, and large gussets and corner plate. At the ends of the underframe there is a specially constructed frame, which carry the brooms and are made removable when used as a locomotive.

The cab is of wood construction with 16 steel panels, 4 windows on each side and 3 at each end. A sliding window on each side is provided for look out, and there

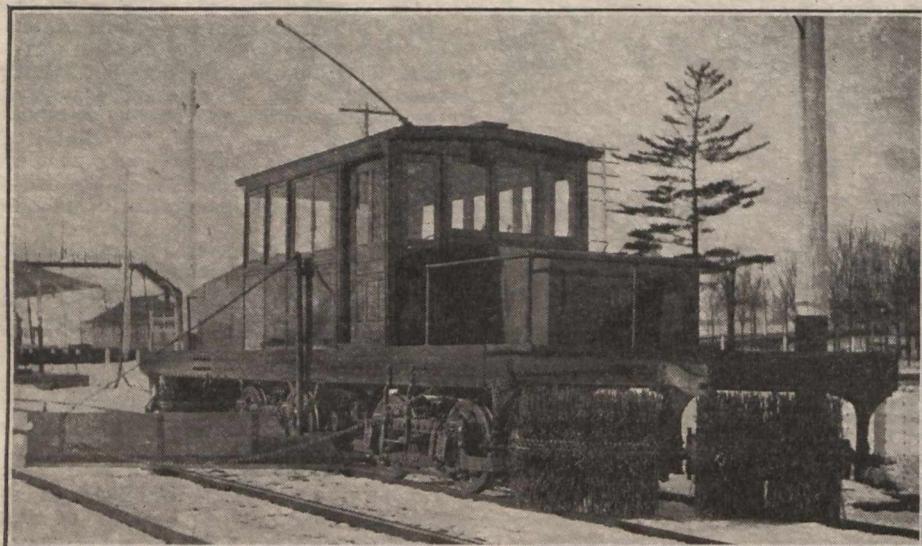
broom drive shaft, air compressor, motor resistance, air tanks, etc. This housing is made of sheet steel in 2 sections, so that it can be made shorter when the car is used as a locomotive.

The brooms are driven by a Westinghouse 101-B motor. The trucks are equipped with Westinghouse 101-B motors, 4 motors, double end equipment, with Westinghouse 402 controllers. The sweeper is equipped with Ohio Brass Co. pneumatic sanders. The lights are in one circuit of 5 lights, arranged at center of cab. The air brakes are Westinghouse, type S.M.E.; the trucks wheelbase is 4¾ ft.

The body is painted antique brown with gold numbers.

Answers to Questions on Electric Railway Topics.

The following answers to questions sent to the American Electric Railway Association's question box, have been supplied by R. M. Reade, Superintendent, Quebec Ry., Light, Heat & Power Co., Quebec, Que.:—



Combined Snow Sweeper and Locomotive, Hull Electric Co.

is a large sliding door on one side. The roof is of the turtle back type, supported on steel carlines. The interior of body is finished in ash, natural finish.

The special machine is designed so that the motorman can operate all the apparatus used for lowering and raising the brooms, also the plough, without leaving his controller. The brooms and plough are lowered and raised by a chain device wound on to a cast iron drum, worked by a worm and gear on a 1 13/16 inch c.r. shaft, connected by miter gears to the winding machine shaft inside of cab operated by motorman.

The brooms are mounted on a heavy shaft and supported by 3 heavy malleable iron pedestals with bronze bearings. They are driven by heavy chain and sprocket drive, from main driving shaft, which is directly connected to the motors by gear and pinion drive, having the same gear ratio as the truck motors. The broom drive shaft is of cold rolled steel and supported by 2 heavy cast iron pedestals with babbitted bearings. A heavy sprocket is fitted and keyed on one end of shaft, from which power is transmitted to the broom shaft sprocket.

Motor housing is provided at each end, to enclose broom driving motors for

Route Accounting Methods.—What method should be pursued in allocating expenses and earnings, as between different lines and routes of the same system?

We have always allocated expenses on a mileage basis of the different lines and routes. We have a car hour basis, but it is not so satisfactory. Earnings for each line or route are kept separate.

Track Maintenance Economies.—In view of the necessity of economizing in the use of both labor and materials, what economies in track maintenance can be put into effect with the least inconvenience to the public and the least permanent injury to the company's property?

Due chiefly to the high cost, besides prices and delivery on rails not guaranteed by factories, we have been using for the past two or three years, a welding motor generator set. It has played a very important part in our railway track repairs, and by this means we are obtaining renewed life in the track on many parts of the system. After metal has been welded, the finished work is ground off to a smooth surface by means of the Atlas rail grinder. Built up welds are being made at cupped joints, at chipped intersecting flangeways and at other badly worn parts. In fact, many pieces of

track have been restored which otherwise would have required renewal at the time repair was made. Even if the percentage of unsuccessful repairs is large, the cost of them is so small that as a whole the work undoubtedly figures as an economy. All this work is being done at night between 12 midnight and 5 a.m., when cars have stopped running.

Concrete vs. Wooden Ties.—Taking into consideration the difficulty of securing, and the increased cost of, wooden ties, what is your opinion as to the desirability of substituting concrete ties therefor?

So far, we have had no difficulty in getting suitable ties, costing us 75c each. We have had no experience with concrete ties.

Movable Snow Breaker.—What is a good and cheap type of movable snow breaker for use on an interurban line, where they can be placed in the fields, only after the crop has been harvested, and must be removed in the spring?

We have used with good success rough wooden fences 12 ft. by 8 ft. high as a snow break. They are inexpensive, and easily put together by any track gang. Material required: 3 rough scantlings 3 x 4 in. x 8 ft., 8 rough boards 4 x 1 in. x 12 ft., 3 short scantlings 3 x 4 in. x 4½ ft., 3 machine bolts 7 x ½ in. To make—the three long scantlings are laid parallel on the ground 6 ft. apart, and 7 of the rough boards are nailed at right angles to the scantlings, leaving 6 in. between each board; the 3 short scantlings are bolted to the center of the long scantlings acting as hinges; the 8 board is now nailed to the 3 short scantlings about a foot from the ends of same, enabling the fences to be folded and easily carried, when not in use.

Repairs in Asphalt Pavement.—What is the best method of temporarily patching holes in asphalt pavement between tracks? Can asphalt block or concrete be used for this purpose with good results?

All our pavement between tracks is either scoria, asphalt blocks or macadam. We have had no experience with asphalt pavement between tracks. I see no reason why asphalt blocks could not be used for patching asphalt between tracks.

Women as Conductors.—Can women conductors be effectively used in the smaller cities, say those having populations between 20,000 and 50,000? If not, why?

No experience. I see no reason whatever why women conductors could not make good in the smaller, as well as the larger, cities.

Emergency Motormen.—Will companies whose lines serve munitions plants or other centers of war or government activities, give their experience in the employment of employes of those plants in the operation of cars for single trips to the plants in the morning and away from the plants at night? Am informed that this method of making up the shortage in labor has proved successful in a number of instances.

Before the Ross rifle factory closed down 18 months ago, situated on the upper town, we ran single trip cars from the lower level of the city (two miles from the factory) in the morning, to the factory, and from the factory in the evening. The employes of the factory living on the lower level soon got to know of this convenience, patronizing these cars well, due to our announcing the fact in the press that they would be carried without transferring morning and evening.

Sale of Tickets.—Do you consider the sale of tickets—not at reduced rates, in connection with 6c, 7c or 8c fare, to be essential to the convenience of either the public or the company? What are the relative advantages or disadvantages?

Yes. An essential convenience to the public, because it enables them to always have the exact fare ready, while the company has the benefit of the credit thus obtained in its unredeemed ticket account.

Traffic Right of Way.—Do the traffic laws or ordinances of your state or city, give the right of way to vehicles or street

cars, proceeding in any particular direction, or upon any particular street? Do you not consider that some such provision of law would be desirable?

Our traffic law, 23-a, clause 12, reads: "All vehicles going east and west have the right of way over those vehicles going north and south." I consider that a general law should be in force making all tramway streets, main streets, giving the traffic on these main streets the right of way over all traffic coming along intersecting streets. This would cut down all classes of accidents to a minimum.

The American Electric Railway Association's Action on the Electric Railway Industry's Condition.

A New York press dispatch of Nov. 4, which was widely published in both the United States and Canada, stated that the American Electric Railway Association, at a meeting attended by some 1,000 delegates, representing electric railway interests in all parts of America, had adopted a resolution recommending public ownership of all city and interurban electric railways. This was not correct. At the meeting referred to, which was held Nov. 1, J. D. Mortimer, President, Milwaukee Electric Railway & Light Co., moved a resolution reciting the industry's present condition, and its inability to continue service without substantial relief being afforded it, and recommending member companies to afford every facility to cities and municipalities for acquiring existing transportation facilities. On a further motion by Mr. Mortimer, the resolution was referred to the association's executive committee, for such action as it might see fit to take.

The following resolution was adopted unanimously at the same meeting:—"The whole structure of the franchise relationship between electric railways and the various communities has broken down under the strain of the war. The rapid increase in the cost of all material, the extraordinary demands of labor made necessary by the rise in the cost of living, the alarming decrease in the purchasing power of the nickel, have brought the electric railways of this country face to face with bankruptcy. Practically every other industry except public utilities, whose rates are regulated by law, has been able readily to adjust its methods of doing business to meet the war demands, and the radical increases in the cost of operations and of manufacture have been promptly reflected in the selling price, and so passed on to the consumer. In all other departments of our commercial and industrial life, where the economic laws of supply and demand have been unhampered and allowed free play, the inevitable increase in the cost of production has been taken care of in the perfectly normal way of increased cost to the consumer. It is only in those industries where the public has attempted to fix a just and fair price for service rendered, and where the artificial standard has been substituted for the natural one, that we find this complete breakdown under war conditions. Industry generally was never so prosperous, notwithstanding the increase in the cost of labor and material. The public utilities, and especially the electric railways, present practically the only exception to this rule of prosperity. They, on the contrary, are steadily being destroyed by the war.

"A tabulation of 388 electric railways, representing over 63% of the electric

mileage of the United States, shows a falling off in income of 82% for the first six months of 1918, compared with the corresponding period of last year. Many of the companies are facing an actual operating deficit, in spite of the increase in gross receipts. The scale of wages established by the National War Labor Board in cases already decided, when applied to the industry generally, will add over \$100,000,000 to its already greatly increased operating expenses. As a consequence of the rapidly mounting costs of operation and the steadily declining net income, the financial standing of the electric railways has been seriously affected, and it is no longer possible to attract new capital for the efficient operation of the properties in the interest of the public.

"These facts lead inevitably to the conclusion that the present relationship between the companies and the public, as evidenced by existing franchises with fixed rates of fare, is economically unsound; that the present system of regulating fares by franchises or commissions is admittedly not sufficiently responsive to violent and radical changes in operating conditions. Under the present system, before the company can justify an increase of its fare, it must first show that for a longer or shorter period it has suffered loss under the existing fare, which loss cannot be compensated for by the new rate. In any other business, the prudent manager is able to provide against increases in cost by promptly advancing his selling price. The electric railway must stagger along under the 5c fare for months until its credit is destroyed, its service impaired, its equipment deteriorated, and it has become obvious to the community that it is on the brink of destruction, before its case has been sufficiently made out to justify an increase in its rate.

"The declaration of war found the electric railways thoroughly unprepared for the problems thrust upon them. Without in any way lessening our efforts to win the war by supplying this essential service to the public, it would seem to be the part of wisdom for us to take up for serious consideration the problems of peace. Of all the problems of re-adjustment which this nation will have to meet and solve after the war, none will be more serious or more difficult than that of the electric railway industry. In the light of our experience, as emphasized by war conditions, it is manifest that to insure the efficient operation of the electric railways of the country after the war, there must be a recasting of the entire basis of the relationship existing between the electric railways and the communities they serve. In many cases, electric railway franchises, which had come to be

considered as valuable assets, in the light of recent experience have been proved to be liabilities. Already there is a growing recognition of this fact in different parts of the country, as evidenced by the operation at cost plans adopted recently in Boston, Chicago, and Cincinnati. In the past, the sole interest of the community has been thought to be in the service rendered, but with a broader conception of the underlying problems involved, there is a growing tendency to recognize a community of interest in the problems of profit and loss, as having a direct and immediate bearing upon the rate of fare.

"Now, therefore, be it resolved by the American Electric Railway Association: That it is the deliberate judgment of this association, that, in the light of the experience of the industry during the war, the entire subject of the relationship between electric railway companies and the public should have, now and during the reconstruction period following the war, the most earnest consideration of the representatives of both the public and the companies; that among other things, a radical revision of electric railway local franchises should be made, if the industry is to continue to render efficient service to the public, and that a committee be appointed by the President of the association, whose duty it shall be to make a study of reconstruction problems, particularly those relating to local franchises, and report their recommendations at an early date."

Commercial Development of Quebec.—R. M. Reade, Superintendent, City and Quebec County Division, Quebec Ry., Light & Power Co., wrote a local paper recently on this subject, advocating the formation of a foreign trade committee of the Quebec Board of Trade, for the purpose of increasing the import and export trade of the port. Mr. Reade points out how the great ports of Europe and in other parts of the world have been built up by the extension of foreign trade. With the number of railways centering on Quebec, and the opening of the Quebec Bridge, Mr. Reade considers it time for Quebec people to awake to the realization of their opportunities and to take advantage of the natural and other advantages of the port, and of the great trade opportunities that will be within reach of those who seek for them on the coming of peace.

Toronto Ry. Wage Conciliation Board.—On the application of the Toronto Street Railway Employes Union, a board of conciliation is to enquire into the men's demand for a revision of the wage scale, to bring the rate of pay to 43c an hour for the first 3 months, 46c for the next 9 months, and 48c for the second year. The company opposed the application for a board on the ground that a wage agreement was already in force, and had a considerable time to run, but has now nominated F. H. Phippen, K.C., ex-General Counsel, Canadian Northern Ry., to represent it on the board. H. W. Harper will represent the men, and County Judge Barron, of Stratford, Ont., will be chairman.

The New Brunswick Power Co. has applied to the New Brunswick Public Utilities Commission for authority to abandon its street car service along Rodney wharf, St. John, and to remove the trestle. The St. John City Council has made application for an order directing the continuation of the service. The commission decided to hear both applications together at an early date.

Mainly About Electric Railway People.

Wilson Phillips, formerly Superintendent, Winnipeg Electric Ry., has removed to Toronto.

E. Patterson has been appointed Roadmaster, Montreal & Southern Counties Ry., vice W. H. Maxwell, resigned.

City Commissioner Thornton, Regina, Sask., who acted as Chairman of the City Committee in charge of the Victory Loan, was reported to be suffering from influenza recently.

Herbert C. Howard, who was appointed Publicity Agent, Winnipeg Electric Ry., in February, and who resigned in May, on joining the Vancouver Daily Sun's staff, has returned to W.E.R. service as Publicity Agent, vice F. H. Williams, resigned.

J. B. Leitch, heretofore chief clerk to General Superintendent, Winnipeg Electric Ry., Winnipeg, has been appointed Assistant to General Superintendent. He has been in the company's service for 9 years, 6 of which were spent as chief investigator in the accident and claims department.

Electric Railway Notes.

The Calgary Municipal Ry. put in operation Nov. 6, an augmented service during the rush hours.

A motion to commit R. J. Fleming, General Manager, Toronto Ry., to jail, for contempt of court, in not conforming to the court's order to supply the city with certain information as to the company's equipment, was dismissed at Toronto, Nov. 6, after a conference between the parties, when it was arranged that additional information be supplied.

The Hamilton & Dundas Ry. service is being checked by the Dundas, Ont., Town Council, on account of complaints of inadequate service. The council proposes, in the event of the complaints being found to be reasonable, to apply to the Ontario Railway and Municipal Board for an order setting out the number of cars which should be operated for the convenience of passengers at certain hours.

In consequence of the influenza epidemic, the operation of electric railways throughout Canada was considerably interfered with from the middle of October to the end of November. In Saskatchewan and Alberta, in particular, the service appears to have suffered most, not only on account of some cutting down of the service, but owing to the fact that the provincial boards of health in those provinces made the wearing of masks by all passengers compulsory.

The Ontario Appeal Court reserved judgment, Nov. 6, in the matter of the rights of certain bondholders in the Grand Valley Ry. Co. This is an issue to decide the rights of certain different classes of bondholders to rank on the purchase money of the road, which had been paid into court. At the trial it was decided that the holders of the 1902 bonds, who had not exchanged, were entitled to their money, and this has been appealed by the other bondholders, who claim to share.

Suits entered by L. Dubois with respect to the Montreal Tramways Co.'s new franchise were finally disposed of by Justice Ducloux, Oct. 31. The injunction proceedings were disposed of prior to the hearing of the fares question by the Quebec Public Utilities Commission, but the

last action was one to quash the contract. This was met by the company entering an inscription of law, which was maintained by the judge, and the action was dismissed with costs, Dubois being declared to have no status in the case.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and subsidiary companies.—

| | 3 months to Sept. 30, 1918 | | 3 months to Sept. 30, 1917 | |
|----------|----------------------------|-----------|----------------------------|-------------|
| Gross... | \$575,476 | \$457,709 | \$1,533,783 | \$1,350,512 |
| Expenses | 444,928 | 381,591 | 1,295,634 | 1,157,813 |
| Net | 130,548 | 76,118 | 238,149 | 192,699 |

Cape Breton Electric Company.—

| | 12 months to Sept. 30, 1918 | | 12 months to Sept. 30, 1917 | |
|-------|-----------------------------|-------------|-----------------------------|--------------|
| Gross | \$46,026.98 | \$39,805.36 | \$501,334.17 | \$443,606.05 |
| Exp. | 35,161.83 | 25,623.29 | 365,570.16 | 274,100.50 |
| Net | 10,865.15 | 14,177.07 | 135,764.01 | 169,505.54 |

Levis Tramways Co.—Application will be made to the Quebec Legislature to incorporate a company with this title with the powers generally granted to a railway company, and with power to acquire the Levis County Ry.'s property, rights and franchises. The applicants are Senator R. Dandurand, S. H. Ewing, J. A. Ewing, Montreal; E. A. MacNutt, Westmount, Que.; J. C. Blouin, Levis, Que.

London Street Railway.—

| | Oct. 1918. | Oct. 1917. |
|----------|------------|-------------|
| Gross | 29,848.73 | \$34,206.31 |
| Expenses | 28,075.09 | 27,624.76 |
| Net | 1,773.64 | 6,581.55 |

New Brunswick Power Co.—Under acts passed by the New Brunswick Legislature relative to the taking over of the St. John Ry. Co. by the New Brunswick Power Co., the holders of St. J. Ry. bonds, maturing 1925 and 1827, can surrender them and receive therefor Dominion War Loan bonds, par for par, with adjustment of interest. The N.B.P. Co. has deposited with the Secretary-Treasurer of New Brunswick, Dominion War Loan bonds maturing 1925, of a face value equal to the St. J. Ry. outstanding bonds, together with a cash deposit for the equalization of the interest. The Montreal Trust Co. and the Royal Bank of Canada, Fredericton, N.B., are receiving the St. J. Ry. bonds for exchange.

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

| | 9 months to Sept. 30, 1918 | | 9 months to Sept. 30, 1917 | |
|----------|----------------------------|-------------|----------------------------|-------------|
| Gross | \$1,119,925 | \$1,023,517 | \$9,596,597 | \$8,891,112 |
| Expenses | 565,069 | 559,590 | 5,201,953 | 4,732,305 |
| Net | 554,856 | 463,927 | 4,394,644 | 4,158,807 |

Winnipeg Electric Ry. and subsidiary companies.—

| | 9 months to Sept. 30, 1918 | | 9 months to Sept. 30, 1917 | |
|----------|----------------------------|-----------|----------------------------|-------------|
| Gross | \$285,670 | \$267,170 | \$2,674,137 | \$2,431,794 |
| Expenses | 207,477 | 203,744 | 2,028,450 | 1,861,667 |
| Net | 78,193 | 63,426 | 645,687 | 570,127 |

The surplus, after deducting fixed charges, for September is \$22,254.58.

New Brunswick Power Co.—

J. A. Sullivan, of Boston, Mass., legal adviser of the city council of St. John, N.B., in connection with street railway matters, is reported to have stated, Nov. 10, that after the thorough investigation of the company's status, then going on, had been completed an application would be made to the arbitrators for dates of hearing. He was working with a view to have everything in shape to have the necessary legislation ready for consideration at the next session of the New Brunswick Legislature.

On the Way to France.

By Ralph M. Reade,

Superintendent City and Quebec Railway Division, Quebec Railway, Light & Power Company.

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1. "Cheer up, my friends!" said Uncle Sam,
"I've just received your telegram—
A million Yanks are now in France
To lead the Huns a merry dance:
Ten million strong are coming 'cross the sea,
To do the right and keep the jubilee—
Then, here's to our uncle and here's to his gal-
lant sons;
They will teach that right is might with Yankee
guns!

Chorus

"Steaming, steaming, over the ocean blue,
Chasing the Kaiser's submarines
And sinking quite a few:
Steaming, steaming, taking a sporting
chance,
Sinking the Huns with Yankee guns—
On the way to France.

2. "Our soldier boys across the sea,
Will fight the fight for liberty,
While you and I must do our share
With plow and hoe to keep them there:
In Berlin town upon the River Spree,
Our flag shall wave, the symbol of the free—
Then, here's to our uncle and here's to his gal-
lant sons;
They will teach that right is might with Yankee
guns."

London St. Ry. Difficulties.—

For some time past complaints as to the service given by the London St. Ry. have been considered by committees of the London, Ont., City Council, and have been discussed with C. B. King, Manager, and other officials of the company. Among other matters about which there is a difference of opinion are increased fares, and fines for alleged infractions of a city bylaw affecting time and speed of cars. The fare question was under consideration during the summer, and on the city council failing to come to terms, the company reduced its car schedule to endeavor to meet the increasing cost of operation by effecting a reduction in running expenses. The reduced schedule was put into effect July 1, and this was met by the council calling for the continuance of the old schedule, and passing a bylaw fixing the speed of cars, etc. The penalty fixed for breach of this bylaw is \$10 a day. A bill for \$210, for alleged violations during October, has been sent to the company. It is said that the whole matter will be taken up by the city council before the Ontario Railway and Municipal Board, a motion to that effect having been given notice of, for consideration by the council's no. 1 committee.

Influenza Among Winnipeg Electric Railway Employees.—

Winnipeg, in common with other cities, has suffered severely from Spanish influenza, and the Winnipeg Electric Ry.'s staff has not escaped. As soon as the influenza reached the city, the company's medical officer began inoculating the employees, and while this had a very beneficial effect, yet at one time nearly 50% of the office staff were suffering. Early in November, A. W. McLimont, General Manager, established a relief committee, upon which each of the 16 departments in the whole organization was represented. This committee investigates each case in the home of the employe, and then reports back to Mr. McLimont, with recommendations as to the nature of relief which should be given. The various cases receive Mr. McLimont's personal consideration, and relief, either financial or otherwise, was immediately extended.

Notes on Electric Railway Service at Cost.

That the condition of electric railway companies is decidedly precarious, and that immediate relief is necessary to save the roads from utter collapse, is reflected in the action of the President of the United States, who issued a statement recently in which he laid particular emphasis upon the situation that confronts the companies all over the country. The special purpose of his review of the situation was to impress upon the governing bodies in all municipalities where electric railway service is provided, the necessity for treating the roads liberally, and with the consideration that their condition justifies. He said in part that the roads are confronted with unusual burdens and that they should be permitted to earn sufficient revenue to pay operating expenses and show a fair return upon invested capital. This recommendation comes at a most opportune time, for with very few exceptions electric railways are not earning enough to pay their constantly increasing cost of operation. More than 90% of the electric railways in the United States are financially shaky, while many have collapsed under the strain. The same condition exists in Canada, for there are very few lines anywhere in the Dominion that are securing enough revenue to meet the cost of operation. So many factors have combined to make this condition possible that the wonder is that many of the roads are able to operate at all, for while expenses have increased in some instances 400%, and while nearly everything has about doubled in cost in the past four years, yet the railways in most instances are compelled to operate for the same rate of fare that prevailed when expenses were but a small fraction of what they are now.

The wages of employes are being constantly advanced to help to meet the rising cost of living; the price of equipment is continually soaring to new high levels; requests for more and better service, made necessary in great part by war activities, are making demands upon the companies that are taxing their every resource, improvements are insisted upon, and yet the companies find that they cannot secure additional revenue to meet these demands. Increased fares are denied them, so that their revenue is constantly below the cost of operation, and when this condition arrives the credit of the companies is destroyed, for investors fight shy of an enterprise that is not making enough to pay expenses. In view of this condition, President Wilson's remarks are most timely, and should be carefully considered by those who, while expecting a continuation of street railway service, are loth to admit that the companies are entitled to more revenue to meet the conditions that everyone knows to exist.

The main trouble with the electric railways is that they are selling 1918 service on the basis of 1898 costs. Investigators differ slightly as to the comparative cost of running an electric railway today and 20 years ago, but there is little doubt that in the past four or five years operating costs have increased in the neighborhood of 100%, with the prospect of still further increases. Many of those who use electric cars today can recall the first service of its kind that was installed in the various cities. Horse cars, with their short hauls, cheap equipment and limited service, were the forerunners of our present transportation facilities.

When electric power was substituted for the horse driven vehicles, it was believed that unlimited service could be provided almost anywhere, at almost any time, for the same rate of fare that had prevailed during the days of the horse cars. For a time this theory seemed to be practical; but, with the installation of electric power, the demands made upon the companies by cities in which they operated should have indicated that it would only be a question of time before there would be a limit to the service that could be given at the old fare.

At first, electric cars were small, and light, and covered comparatively short distances, but an ever increasing population drove homeseekers farther from the business centers, and the electric railway companies, in order to keep pace with this growth, extended their tracks, purchased new equipment and added constantly to their working forces. In time the car designers had to make their product larger and larger. Lines were continually lengthened, until interurban companies joined their tracks to city property; gradually old equipment became obsolete and had to be replaced with heavier rails, more expensive road beds, costly poles carrying more and larger feed wires, great power houses and substations became necessities, and within these were installed heavy modern electrical machinery. So quickly did these changes come about that equipment had to be junked before it had outlived its usefulness, and here entered the question of obsolescence, which is such an important factor in modern electric railway operation. One item alone will suffice to show how operating conditions have changed: Cars of the type used when horses were the motive power cost about \$1,000; the modern electric cars cost anywhere from \$15,000 to \$18,000; other items of equipment have been similarly affected, and yet, in the face of the tremendous increase in the cost of operation, the rate of fare has remained practically where it was when street railway transportation was first introduced. When we add to these conditions the farther complication caused by labor shortage, and the inability to procure, at any price, some types of necessary equipment, it is not difficult to realize that the tramway companies are confronted by the most critical period in the history of the industry.

The "service at cost" plan of electric railway operation which is now being advocated in Ontario is, in reality, a co-operative plan under which electric railways must be conducted at the maximum of efficiency and at the minimum of cost. There are co-operative banks and co-operative stores, and it is proposed to operate the electric railways on the same plan. In any co-operative enterprise, the main idea is to do the business without profit and to maintain the lowest possible selling price. As a co-operative bank loans money on the basis of actual cost of doing business, and as the co-operative store sells its commodities at actual cost, so a co-operative street railway plan would provide for the selling of transportation at exactly what it costs to give the service. Co-operative street railway operation has been in force in Cleveland, Ohio, for eight years, and it has given the utmost satisfaction to everyone. The same idea has been applied to the electric railways in Montreal, Boston, Cincinnati, Kansas City, Des Moines, Chicago, Dallas,

Toledo and the entire State of Massachusetts, while a number of other cities, as well as the State of Rhode Island, are about ready to adopt the plan. The complete success of co-operative or service at cost plan, wherever it has been tried, encourages the growing belief that it is just what Ontario needs, because it offers a prompt improvement of service, a more complete public control over the management of the railways, the immediate extension of service where needed, and all at a rate of fare just sufficient to pay the actual cost of good service. One of the most desirable features of the service at cost plan is the fact that it invariably enlists the co-operation of the public and re-establishes confidence in the operation of the railway.

Electric Railway Projects, Construction, Betterments, Etc.

Levis County Ry.—We are officially advised that work on the reconstruction of the company's tracks in Levis, Que., was suspended Nov. 15 on account of winter conditions. It is expected to restart the work next May. (Sept., pg. 403.)

Quebec Ry., Light & Power Co.—Considerable damage was done to the Montmorency Division's track by a high tide in the St. Lawrence River, Nov. 19. Damage was done to some extent all along the line, and between Limoilu and Station Monument, the north track was lifted by the tide and landed in the ditch, while the south track was lifted and deposited approximately in the place of the north track.

A press report stated, Nov. 21, that instructions had been given to the City Solicitor of Quebec to take proceedings against the company to compel it to construct additional tracks in the Limoilu district. (Sept., pg. 403.)

Since the foregoing was written we have been officially advised that, under an agreement with the Quebec City Council in 1916, the company agreed, among other things, to extend the line on Beauport Rd. to the end of the city limits, a little over a mile, the work to be completed by Dec. 31, 1917. Owing to the high cost of labor and materials, the work was not started. The district through which the extension would run is not built up, and for at least two years the extension would not be a paying one. The position taken by the company is that the city council should not press for the carrying out of the work until such time as the cost of material, labor, etc., is reduced.

Toronto & York Radial Ry.—We are officially advised that plans are being prepared for a car barn on the Kingston Road, Toronto, for the Scarborough Division. It was expected to have everything ready to start work on the building of the barn by Nov. 30. (Nov., pg. 505.)

Chatham, Wallaceburg & Lake Erie Ry. Traffic.—Owing to a cave in at its power house smoke stack at Chatham, Ont., Oct. 29, there was a shortage of power and freight traffic was reported to have been suspended for several days. Power to run the passenger cars was temporarily obtained from the Chatham Gas Co., and the local Hydro-Electric Committee. (Feb., pg. 77.)

Marine Department

Steel Cargo Building for Dominion Governments.

Launchings of Vessels.—The first of the vessels to be built under the Dominion Government's programme, one of 4,300 tons, was launched by Canadian Vickers, Ltd., at Montreal, Nov. 23, and the second one, of 8,100 tons, will be launched at the same yard Dec. 3. Their names are Canadian Voyager and Canadian Pioneer, respectively.

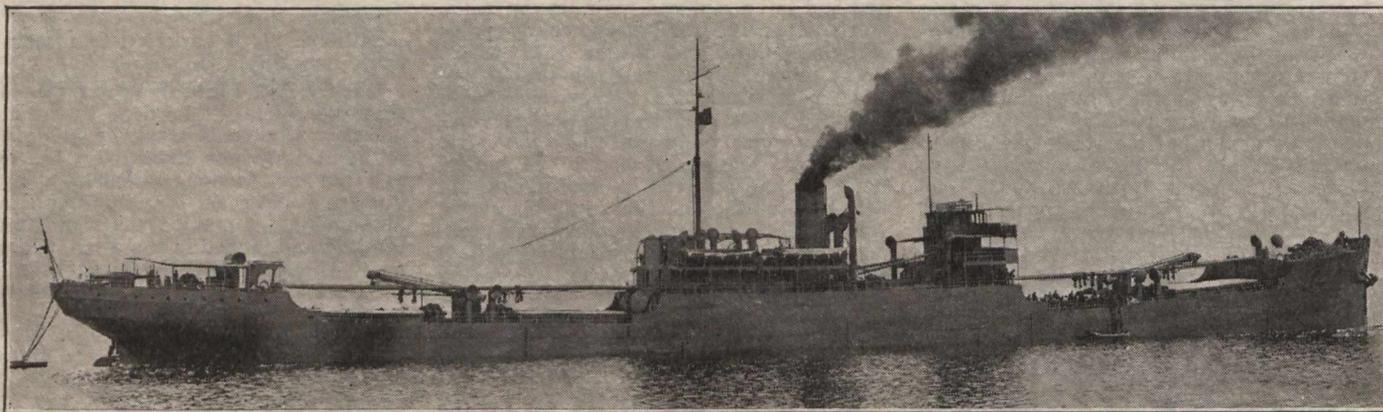
Operation of Vessels.—The Minister of Marine has announced that all the vessels ordered, and to be ordered, by his department will be operated under the control of D. B. Hanna, President, Canadian Northern Ry., whose jurisdiction has now been extended over the Canadian Government Rys. The Canadian National Steamships, Ltd., is about to be incorporated, under the Dominion Companies Act, and all its stock will be held on behalf of the Dominion Government. It will be a sub-

| | | | |
|---|----|-------|---------|
| Collingwood Shipbuilding Co., Kingston, Ont. | 1 | 3,750 | 3,750 |
| J. Coughlan & Sons, Ltd., Vancouver, B.C. | 4 | 8,100 | 32,400 |
| Davie Shipbuilding & Repairing Co., Lauzon, Que. | 2 | 5,100 | 10,200 |
| Halifax Shipyards, Ltd., Halifax, N.S. | 2 | 8,100 | 16,200 |
| Port Arthur Shipbuilding Co., Port Arthur, Ont. | 4 | 3,400 | 13,600 |
| Port Arthur Shipbuilding Co. | 2 | 4,300 | 8,600 |
| Tidewater Shipbuilders, Ltd., Three Rivers, Que. | 4 | 5,100 | 20,400 |
| Victoria Machinery Depot, Victoria, B.C. | 2 | 8,100 | 16,200 |
| Wallace Shipyards, Ltd., Vancouver, B.C. | 2 | 4,300 | 8,600 |
| Wallace Shipyards, Ltd. | 2 | 5,100 | 10,200 |
| Total | 37 | | 212,350 |

The 3,400 and 3,750 ton vessels are of the lake type, with single deck, poop,

to provide vessels suitable for certain trade, it was decided to add an additional deck, and make the vessels of the 3-deck type. For the additional deck an extra price of \$2.50 a ton was fixed.

Prices for Steamships.—The Toronto Globe attacked the Minister of Marine recently, for having given orders to J. Coughlan & Sons, of Vancouver, for 4 steel cargo, twin deck steamships of 8,100 tons d.w., at \$198 a ton, and to the Halifax Shipyards, Ltd., Halifax, N.S., for two 8,100-ton vessels at \$197 a ton. The Globe stated that the best previous price paid was reported to have been \$165 a ton, that the placing of contracts at nearly \$200 a ton was gross extravagance and that when the vessels were completed they would not be worth much more than half their cost. The Globe's information as to previous prices was incorrect, the



Steel Cargo Steamship, War Camp, 8,800 tons d.w., for British Government, built by J. Coughlan & Sons, Vancouver.

subsidiary of the Canadian National Railways, which, it is said, will be the name under which both the Canadian Northern Ry. and the Canadian Government Rys. will be operated, when the necessary legislation has been obtained. Separate subsidiary companies will also be incorporated for the ownership of each steamship.

R. C. Vaughan, Assistant to President, C.N.R. and C.G.R., has general charge of the arrangements for the operation, etc., of the steamships, one of which was launched by Canadian Vickers, Ltd., at Montreal, Oct. 23, and the second of which will be launched at the same yard on Dec. 3. It is probable that the appointment of a separate official to take direct charge of the operating of the steamships will be made in the near future. H. Milburne, formerly Wharf Superintendent, Canadian Northern Steamships, Ltd., Montreal, and latterly in charge of the Canadian Red Cross overseas shipments at Montreal, has been appointed Superintendent there for the Canadian National Steamships, Ltd.

Orders for Steamships.—We are officially advised that the following orders had been placed by the Dominion Department of Marine, up to Nov. 22:—

| | No. | Deadweight tons each | Total d.w. tons |
|--|-----|----------------------|-----------------|
| Canadian Vickers, Ltd., Montreal | 2 | 4,300 | 8,600 |
| Canadian Vickers, Ltd. | 6 | 8,100 | 48,600 |
| Collingwood Shipbuilding Co., Collingwood, Ont. | 4 | 3,750 | 15,000 |

bridge and forecastle; the 4,300 and 5,100 ton vessels are of the single deck type, with poop, bridge and forecastle; and the 8,100 ton vessels are of the two deck type, with poop, bridge and forecastle.

Previous lists published mentioned 2 steamships of 4,300 tons, which we were advised on Aug. 15 had been ordered from the British American Shipbuilding Co., Welland, Ont. This contract is not being gone on with, and it is said that the company may be given a contract for smaller vessels, on account of the difficulty of taking the larger vessels through the Welland and St. Lawrence Canals in two sections to tide water.

An Ottawa press dispatch of Nov. 22 stated that an order in council had been passed authorizing the Minister of Marine to enter into a contract with Halifax Shipyards, Ltd., for the construction of 2 steel cargo steamships, 3-deck type, of approximately 10,500 tons dead weight each, at \$197.50 a ton. The dispatch quoted the order as stating that the company offered last May to build the vessels at \$195 a ton, but that the increased cost of labor and materials had caused an advance of \$2.50 a ton in the price.

Since the above was put in type we have been officially advised that an order in council has been passed as stated. When the first negotiations between the Marine Department and the company took place, and a promise was given of an order for several vessels, the price agreed on was \$195 a ton. As a result of further consideration given the matter, in order

“best,” or highest previous price, was not \$165 a ton. That price was paid for two vessels, ordered from J. Coughlan & Sons, by the Imperial Munitions Board, for the British Government, in the spring of 1917, since when both labor and materials have greatly increased. Subsequent contracts were placed by the board at much higher rates, and J. Coughlan & Sons were given orders by the board for 4 more vessels at \$200 a ton. While the prices for all the Marine Department's contracts have not been made public, it is stated that the first two contracts given Canadian Vickers, Limited, were at \$207 a ton for a 4,300-ton steamship, and at \$165 a ton for an 8,100-ton steamship. The Collingwood Shipbuilding Co. is to get \$205 a ton for two 3,750-ton steamships. The Wallace Shipyards, Ltd., Vancouver, has contracts from the department for four vessels of 5,100 tons each at \$210 a ton.

According to figures submitted officially some time ago, it appears that the Imperial Munitions Board ordered 43 steel steamships, aggregating 211,300 tons, for about \$40,000,000, or an average of \$191.42 a ton. These wooden steamships are, of course, inferior in every way to the steel steamships being built for the Marine Department, and it is said that the steel steamships ordered by the Imperial Munitions Board are not of the same standard as those being ordered by the Marine Department. It must also be borne in mind that the Imperial Munitions Board orders were placed early in the war and that conditions have changed

very much since then.

Canadian Railway and Marine World believes that the contracts placed by the Marine Department recently are at the lowest prices at which shipbuilders will undertake the work. Apparently the To-

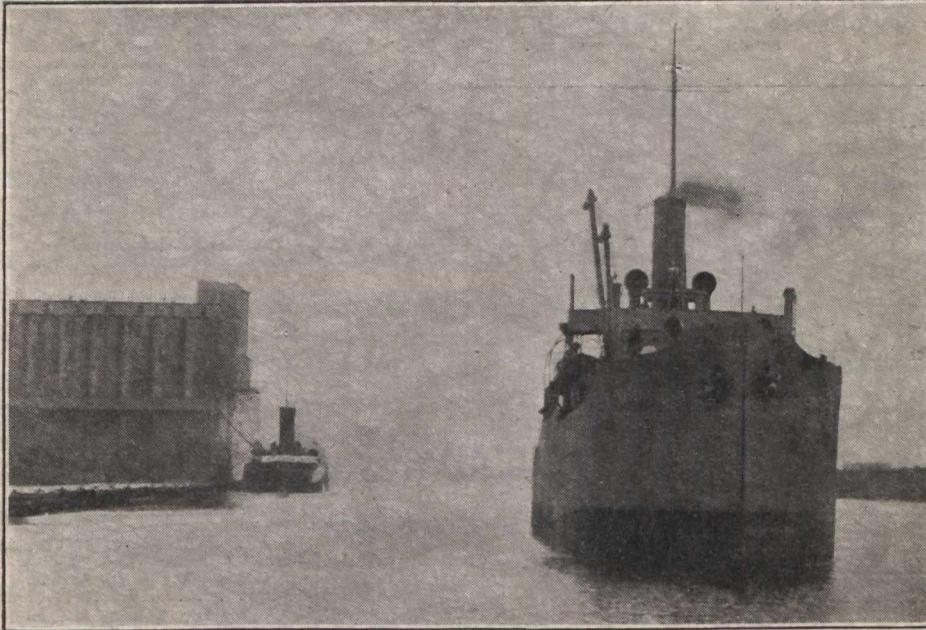
ernment's decision to engage in shipbuilding, private firms for which ships were being built in Canadian yards were paying prices for plates ranging from \$100 to \$180 a ton, and several small lots had to be purchased for upwards of \$200 a

tion in Sydney of a plate mill and the purchase therefrom of 250,000 tons of ship material at a basic price of \$83 a ton. The contract with the Steel Corporation provides that the price of plates will be reduced proportionate with any reduction that may hereafter occur in the cost of producing steel ingots. This cost will be determined at the end of every six months period by auditors selected by the Government for that purpose. While the fixed price seems high, it is from 50 to 100%—and more in many cases—lower than the prices then obtaining in the open market. It was necessary to provide assured supplies of plates for Canadian shipyards and other Canadian industries."

Halifax Shipyards, Ltd., Halifax, N.S.—Arrangements are reported to have been made with the city council for the temporary use of the city market building, as a moulding loft, in connection with the preparations for building the 8,100 ton steamships for the Dominion Government. It is expected that the keel of the first vessel will be laid during December.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—Having completed its orders for the British Government, received through the Imperial Munitions Board, has commenced work on 2 steel steamships of 3,400 d.w. tons for the Dominion Government.

What is Low Water Mark?—The Dominion Iron & Wrecking Co.'s appeal from the judgment against it on a contract for the removal of a part of the wrecked s.s. Bavarian, which has been lying at Indian Cove, Que., for several years, was dismissed by the Supreme Court, Nov. 26. The contract called for the placing of the wreck "high and dry



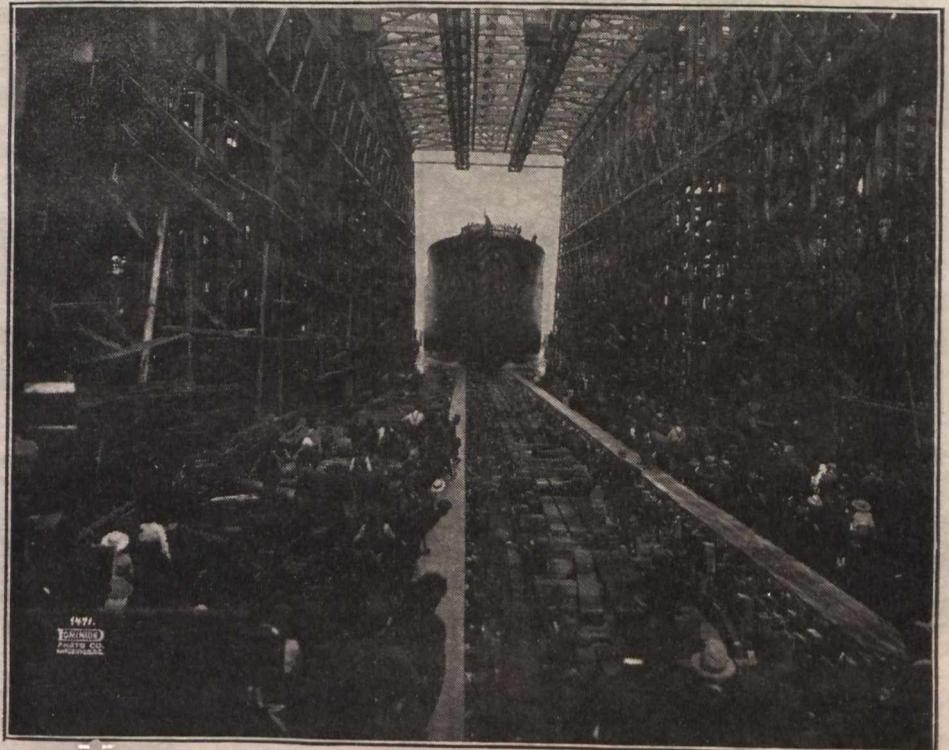
Steel cargo steamship, War Horus, for British Government, built by Port Arthur Shipbuilding Co., Port Arthur, Ont., leaving the head of the lakes for Montreal.

ronto Globe thinks it would be better for no orders to be placed now. But there is urgent need of shipping, and the Dominion Government would be derelict in its duty if it did not continue to place orders to keep all the steel shipbuilding plants in Canada going to their fullest capacity. Foreign governments and private owners are anxious to place orders in Canada at higher prices than the Dominion Government is paying, and as a matter of fact Canadian shipbuilders would be better off if they were allowed to take those orders instead of being confined to Dominion Government work. We have reason to believe that the orders given for the French Government recently, for building 70 wooden steamships in Canada, full particulars of which were published in Canadian Railway and Marine World for November, are at considerably higher prices than the Marine Department is paying for infinitely superior steel vessels.

The Toronto Globe also refers to the price of steel ship plates contracted for by the Dominion Government. The contract which the government has with the Dominion Steel Corporation, Sydney, N. S., for steel ship plates for 5 years is at a base price \$4.15, on a sliding scale; that is to say, the price was fixed on the price of steel ingots at the time the contract was signed, and in no event can it be higher than \$4.25. As the price of steel ingots declines, so will the price of the ships plates for the government during the five years of the contract. Every 6 months the government will send auditors to the Dominion Steel Corporation, to ascertain the costs. It is therefore self evident that the price of \$4.15 is only a base price and that as the cost of steel ingots declines so will the cost of the plates to the Dominion Government decline.

In connection with this matter, the Minister of Marine stated in an interview recently as follows:—"In January last and for some months previous to the gov-

ton. Through the courtesy of the U.S. Government, the department was enabled to obtain an assurance that sufficient plates to meet the requirements up to July or August next would be available from U.S. sources, at the rate fixed by



Launching of steel cargo steamship War Noble, for British Government, by J. Coughlan & Sons, Vancouver.

the U.S. Government, viz., \$65 a ton. It was in these circumstances and in pursuance of a policy to make Canada self contained in the matter of shipbuilding that the arrangement was concluded with the Dominion Steel Corporation for the erec-

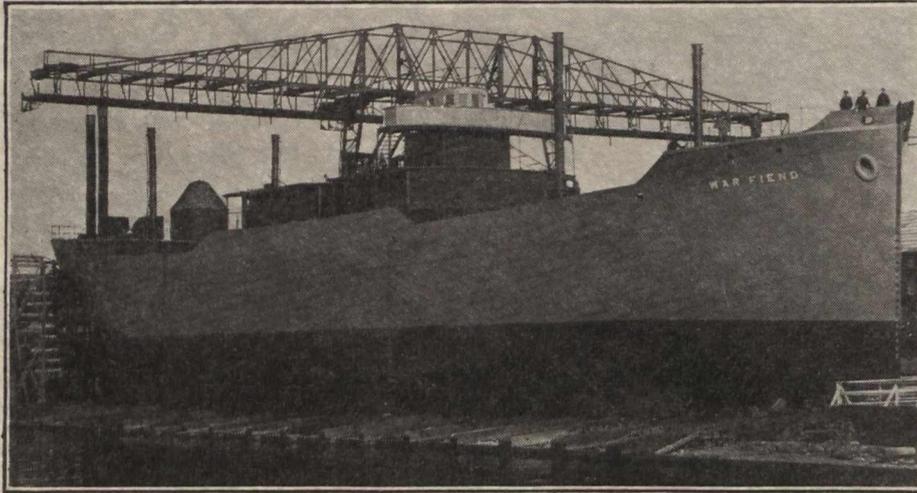
at low water mark," and the work was to be completed by June 25. The company claimed that that meant low water mark at the time the contract was concluded, but it was held that it meant ordinary low water mark.

Cargo Steamship Building in Canada for British Government.

Launchings of Steamships.—Following are particulars of steamships ordered by the Imperial Munitions Board for the British Government, and which had been launched up to Nov. 15, giving in each case the date of the launching, the name

Jan. 24, 1918—War Yukon, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C. 3,080
 Feb. 16, 1918—War Puget, Wm. Lyall Shipbuilding Co., Vancouver, B.C. 3,080
 Mar. 6, 1918—War Selkirk, Western Canada Shipyards, Vancouver, B.C. 3,080
 Apr. 10, 1918—War Caribou, Wm. Lyall Shipbuilding Co., Vancouver, B.C. 3,080

June 24, 1918—War Nicola, Wm. Lyall Shipbuilding Co., Vancouver, B.C. 3,080
 June 28, 1918—War Quebec, Quebec Shipbuilding & Repairing Co., Quebec, Que. 3,080
 June 29, 1918—War Ontario, Toronto Shipbuilding Co., Toronto 3,080
 July 5, 1918—War Huron, Fraser, Brace & Co., Montreal 3,080
 July 5, 1918—War Erie, Fraser, Brace & Co., Montreal 3,080
 July 6, 1918—War Casco, Western Canada Shipyards, Ltd., Vancouver, B.C. 3,080
 July 12, 1918—War Sumas, Pacific Construction Co., Port Coquitlam, B.C. 3,080
 July 24, 1918—War Suquash, Wm. Lyall Shipbuilding Co., Vancouver, B.C. 3,080
 July 27, 1918—War Gaspé, Quinlan & Robertson, Quebec, Que. 3,080
 July 27, 1918—War Ottawa, Fraser, Brace & Co., Montreal 3,080
 Aug. 5, 1918—War Chiklat, Western Canada Shipyards, Vancouver, B.C. 3,080
 July 29, 1918—War Stikine, Cameron-Genoa Mills Shipbuilders, Victoria, B.C. 3,080
 Aug. 31, 1918—War Camchin, Foundation Co., Victoria, B.C. 3,080
 Sept. 7, 1918—War Sorel, Quebec Shipbuilding & Repair Co., Quebec 3,080
 Sept. 8, 1918—War Nanoose, Foundation Co., Victoria, B.C. 3,080
 Sept. 19, 1918—War Niagara, Fraser, Brace & Co., Montreal 3,080
 Sept. 21, 1918—War Halifax, Southern Salvage Co., Liverpool, N.S. 3,080
 Sept. 22, 1918—War Nipigon, Great Lakes Dredging Co., Port Arthur, Ont. 3,080
 Sept. 23, 1918—War Matane, Quinlan & Robertson, Quebec, Que. 3,080
 Sept. 26, 1918—War Ewen, New Westminster Construction & Engineering Co., New Westminster, B.C. 3,080
 Oct. 15, 1918—War Mingan, Three Rivers Shipyards, Ltd., Three Rivers, Que. 3,080
 Oct. 26, 1918—War Toronto, Toronto Shipbuilding Co., Toronto 3,080
 Nov. 2, 1918—War Radnor, Three Rivers Shipyards, Ltd., Three Rivers, Que. 3,080
 Total, 45 wooden steamships.....138,600



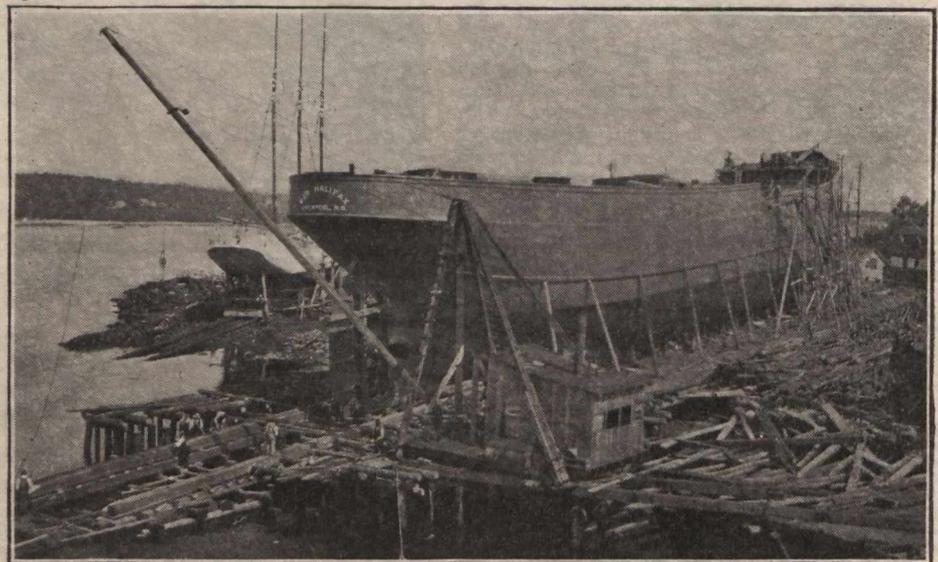
Steel cargo steamship War Fiend, 3,400 tons deadweight, for British Government, just prior to launching by Midland Shipbuilding Co., Midland, Ont.

of the steamship, the name of the builder and the deadweight tonnage:—

Steel Steamships.
 May 18, 1917—War Dog, Wallace Shipyards North Vancouver, B.C. 4,500
 July 9, 1917—War Wasp, Nova Scotia Steel & Coal Co., New Glasgow, N.S. 1,800
 Aug. 19, 1917—War Fish, Port Arthur Shipbuilding Co., Port Arthur, Ont. 4,300
 Nov. 3, 1917—War Dance, Port Arthur Shipbuilding Co., Port Arthur, Ont. 3,400
 Mar. 16, 1918—War Camp, J. Coughlan & Sons, Vancouver, B.C. 8,800
 Mar. 23, 1918—War Power, Wallace Shipyards, North Vancouver, B.C. 4,600
 Apr. 3, 1918—War Isis, Port Arthur Shipbuilding Co., Port Arthur, Ont. 3,400
 May 8, 1918—War Wizard, Collingwood Shipbuilding Co., Collingwood, Ont. 2,900
 May 21, 1918—War Bee, Nova Scotia Steel & Coal Co., New Glasgow, N.S. 2,400
 May 27, 1918—War Osiris, Port Arthur Shipbuilding Co., Port Arthur, Ont. 3,400
 June 8, 1918—War Earl, Canadian Vickers Ltd., Montreal 7,000
 June 29, 1918—War Duchess, Canadian Vickers Ltd., Montreal 7,000
 July 20, 1918—War Hathor, Port Arthur Shipbuilding Co., Port Arthur, Ont. 3,400
 July 29, 1918—War Charger, J. Coughlan & Sons, Vancouver, B.C. 8,800
 Aug. 19, 1918—War Chief, J. Coughlan and Sons, Vancouver, B.C. 8,800
 Aug. 21, 1918—War Weasel, British-American Shipbuilding Co., Welland, Ont. 3,500
 Sept. 6, 1918—War Witch, Collingwood Shipbuilding Co., Collingwood, Ont. 2,900
 Sept. 19, 1918—War Taurus, Polson Iron Works, Ltd., Toronto 3,500
 Sept. 28, 1918—War Faith, Canadian Vickers Ltd., Montreal 7,000
 Sept. 28, 1918—War Noble, J. Coughlan & Sons, Vancouver, B.C. 8,800
 Sept. 28, 1918—War Storm, Wallace Shipyards, Ltd., Vancouver, B.C. 4,600
 Oct. 5, 1918—War Horus, Port Arthur Shipbuilding Co., Port Arthur, Ont. 3,400
 Oct. 15, 1918—War Hydra, Polson Iron Works, Ltd., Toronto 3,500
 Oct. 24, 1918—War Fiend, Midland Shipbuilding Co., Midland, Ont. 3,400
 Oct. 26, 1918—War Karma, Port Arthur Shipbuilding Co., Port Arthur, Ont. 3,400
 Oct. 29, 1918—War Joy, Canadian Vickers Ltd., Montreal 7,000
 Total, 25 steel steamships.....125,500

Wooden Steamships.
 Dec. 28, 1917—War Songhee, Foundation Co., Victoria, B.C. 3,080
 Jan. 4, 1918—War Nootka, Western Canada Shipyards, Vancouver, B.C. 3,080

Apr. 11, 1918—War Comox, New Westminster Construction & Engineering Co., New Westminster, B.C. 3,080
 Apr. 11, 1918—War Masset, Foundation Co., Victoria, B.C. 3,080
 Apr. 13, 1918—War Tye, Pacific Construction Co., Coquitlam, B.C. 3,080
 Apr. 25, 1918—War Haida, Cameron-Genoa Mills, Victoria, B.C. 3,080
 Apr. 27, 1918—War Cayuse, Wm. Lyall Shipbuilding Co., Vancouver, B.C. 3,080
 May 11, 1918—War Mohawk, Quinlan & Robertson, Ltd., Quebec, Que. 3,080



Wooden cargo steamship War Halifax, 2,800 tons deadweight, for British Government. Laying the launch ways at the Southern Salvage Co.'s yard, Liverpool, N.S., Sept. 19, 1918.

May 11, 1918—War Sioux, Port Arthur Dredging Co., Port Arthur, Ont. 3,080
 May 21, 1918—War Atlin, Wm. Lyall Shipbuilding Co., Vancouver, B.C. 3,080
 May 23, 1918—War Tatla, Western Canada Shipyards, Ltd., Vancouver, B.C. 3,080
 June 12, 1918—War Skeena, Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C. 3,080
 June 14, 1918—War Edensaw, New Westminster Construction & Engineering Co., B.C. 3,080
 June 15, 1918—War Babine, Foundation Co., Victoria, B.C. 3,080

Aggregate deadweight tonnage of 26 steel and 45 wooden steamships launched, 264,100 tons.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—With the sailing of the s.s. War Karma from Port Arthur, Nov. 24, for delivery to the Imperial Munitions Board, at Montreal, this company has completed its orders for building steel steamships for the British Government. In all, seven vessels have been built for British service, 6 of 3,400 d.w. tons under direct order from the Imperial Munitions

Board, and one of 4,300 d.w. tons which was under construction for foreign interests and taken over by the board.

Quinlan & Robertson, Ltd., Quebec, Que.—The s.s. War Seneca, one of the steamships built by this firm for the British Government, had her trial trip in the St. Lawrence River, Nov. 23, but had only gone a short distance when a break occur-

Steamships Required for Merchant Service.

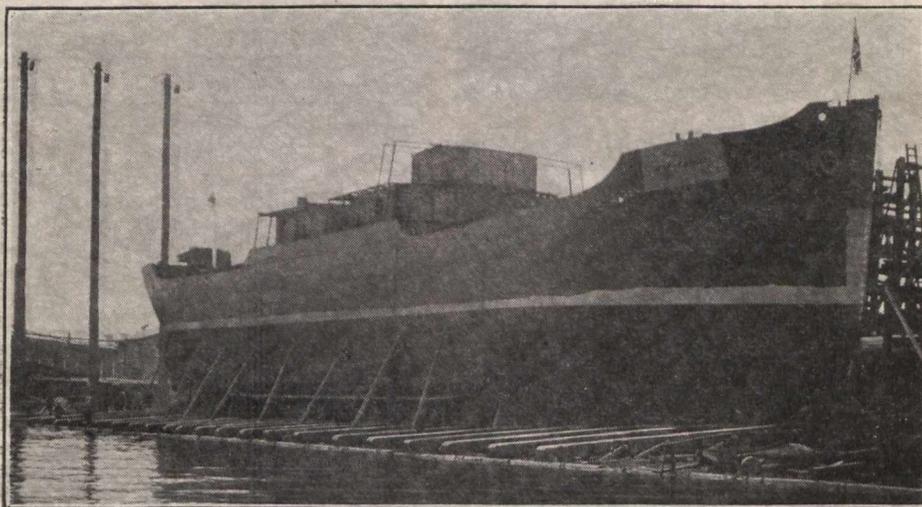
Ottawa press dispatch, Nov. 15:—In a discussion with the government's reconstruction committee today, representatives of the leading steamship companies of Canada, of the Montreal, Quebec, St.

This year there was only one boat to South Africa, and the trans-Pacific service has been entirely cut out. The steamship companies recognize the prior calls of the nations overseas for carrying food, and the necessity of having some sort of regulation to see that those needs are filled, but they asked that the ships should go back into private company management as soon as possible. They would be willing to observe all regulations as to cargoes and voyages. The government was asked to request the British Admiralty to send to Canada enough ships to meet her demands.

Wotan-Montreal Collision.

An enquiry was held at Montreal recently into the cause of the collision between the s.s. Wotan and the barge Montreal in tow of the tug Weaver, in the Soulanges Canal, July 16. The s.s. David Mills was cited as a contributory cause. The court consisted of Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. F. Nash and C. Lapierre as nautical assessors.

The judgment delivered, Nov. 25, declared that the court could come to no other conclusion than that the s.s. Wotan was placed in a peculiar situation by the actions of the tug Weaver and the barge Montreal, as well as the s.s. David Mills, and therefore exonerated the s.s. Wotan from all blame, and found that the other vessels named waived aside all rules of prudence in attempting such evolutions as they did, while the Wotan, which had the right of way, was close at hand, in such a narrow channel. The certificate of Joseph Seguin, master of the tug Weaver, was suspended for one month



Steel cargo steamship Karma, built by Port Arthur Shipbuilding Co., for British Government.

red in her machinery and she was compelled to put back.

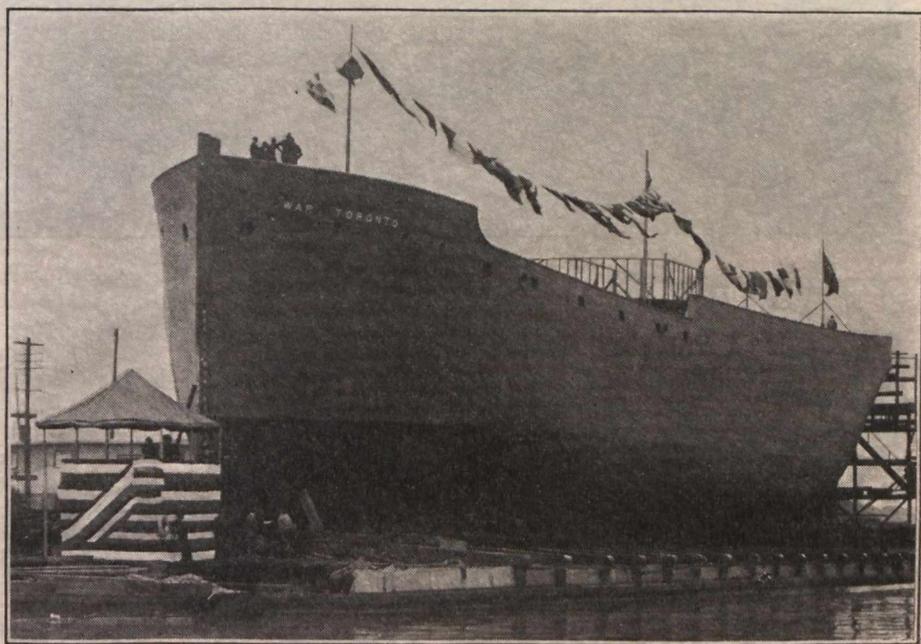
Lock Gate Accident on Welland Canal.

The Montreal Transportation Co.'s s.s. A. McVittie, while upbound, light, Nov. 15, struck the tow path head gate of lock 12, and carried out both upper gates. The heel path lower gate was damaged somewhat and unstepped, but was not carried out into the level below. It was, however, necessary to replace it with a spare gate. The banks on both sides of the canal at the head of lock 11, were badly washed out by the water released, the estimate of the damage done being \$7,500. The gates were stepped and navigation resumed after a day of about 22 hours. The same three gates were carried out by the s.s. Pawnee, in August, and the filling at the head of lock 11 was practically completed when it was washed out again. The vessel, A. McVittie, was undamaged, and the master and mate seem unable to explain the reason for the accident. The master stated that he gave the signal to reverse, and the engineer stated that he reversed, but the master is convinced that the vessel did not have the usual vibration at the reverse. The mooring wire was making sparks in the compressor, and witnesses agree that the vessel was moving at a moderate speed. We are indebted to L. D. Hara, Superintending Engineer, Welland Canal, for the details of the accident.

Capt. J. D. S. Phillips, master of the s.s. Makura, which has been in the mail service between Canada and Australasia for some time, is reported to have been appointed Assistant Marine Superintendent, Union Steamship Co. of New Zealand, at Sydney, N.S.W.

The Right Hon. Andrew Bonar Law stated in the British House of Commons recently that the Government did not contemplate the nationalization of British shipbuilding.

John and Halifax boards of trade, and of the Canadian Manufacturers' Association urged on the government the necessity of getting merchant ships released from carrying war supplies of various kinds, in order to renew the trade with South Africa, Australia, New Zealand, the West Indies, China, Japan, Manila and South American ports. Goods ordered for these points are already awaiting shipment,



Wooden cargo steamship War Toronto, built by Toronto Shipbuilding Co., for British Government.

and a brisk traffic would open up immediately if the ships were available. Only about one-sixth of the trade which Canada formerly did has been transacted with Australia and South Africa because of the lack of tonnage in the last two years. The shippers insisted on the necessity of shipping from Canadian ports, saying that the U.S. war trade regulations caused delays because of the necessity of furnishing full information.

from the date of its receipt by the court, for lack of judgment in obeying the orders of the master of the barge Montreal, of which he was the servant. The masters of the barge Montreal and of the s.s. David Mills, having no certificates which could be dealt with by the court, were severely reprimanded for their recklessness in attempting to pass a vessel when she had precedence, and for violating the rules of the road.

General Shipbuilding Notes Throughout Canada.

Acadia Shipbuilding Co., Saulnierville, N.S., expected to launch the schooner Merriam H. during November. The dimensions are: length 157 ft. overall, 126 ft. keel, 33.4 ft. beam and 12½ ft. depth; tonnage 422 gross, 359 net. She has been sold to A. S. Randell & Co., St. John's, Nfld.

The Anglo-Newfoundland Development Co. launched the schooner Bella Scott at Botwood, Nfld., towards the end of October. A sister vessel is under construction and is expected to be launched shortly. The report of the launching of the Bella Scott, in a St. John's paper, says:—"The whole proceedings were run through without a hitch. The vessel moved slowly, but persistently and steadily, for about an hour, finally taking her plunge into the bay."

Canadian Car & Foundry Co., Fort William, Ont.—The twelfth, and last, of the mine sweepers which this company has been building for the French Government, left Fort William, Nov. 14, for the seaboard.

Dominion Shipbuilding Co., Toronto.—A full canal size steel freight steamship for lake and ocean service was launched

fifth by July 31, and the remaining three by Aug. 30, 1910.

Fraser Brace Shipyards, Ltd., has been incorporated under the Dominion Companies Act, with \$750,000 capital, and office at Montreal, to carry on a general transportation and navigation and towing and wrecking business, and to build and deal in steam and other vessels, marine and railway terminals, wharves, docks, power houses, etc.

Foundation Co., Victoria, B.C.—At the commencement of November, 4 of the keels of the 20 wooden steamships ordered by the French Government, were laid in each of the company's two yards, and 2 more of the vessels were being framed in each yard. The launching of the first 2 vessels of the order is expected to take place during Feb., 1919.

L. E. & A. Graham, Port Greville, N.S., launched the tern schooner Milorene, Nov. 18. She has been sold to A. Moulton & Co., Halifax, N.S., for Newfoundland interests.

Halifax Shipyards, Ltd., has established its head office at 286 St. James Street, Montreal.

D. A. Huntley, Parrsboro, N.S.,

is building for the French Government, as mentioned in our last issue, will be of the following general dimensions: length over all 204 ft. 8 in., length between perpendiculars 195 ft., beam moulded 39 ft. 8 in., beam extreme 40½ ft., depth moulded 17 ft., depth of hold 15 ft., draft loaded 16 ft. They will each be equipped with a Scott water tube boiler having 2,000 sq. ft. of heating surface. It is expected that launchings will take place in December, January, February and March.

Wm. Lyall Shipbuilding Co., Vancouver, B.C.—The six auxiliary powered schooners, which we mentioned some time ago, as under construction by this firm, on its own account, are reported to have been sold to French interests for \$3,000,000. They have a deadweight capacity of 3,000 tons, and as soon as they are completed, it is stated that they are to be handed over to Trenholme & Thorndyke, Inc., Seattle, Wash., operating agents for French Government.

Marine Construction Co., St. John, N.B.—The auxiliary powered schooner Randfontein, under construction at this yard, is expected to be ready for launching early in January. She is reported to have been sold, subject to inspection after completion.

National Shipbuilding Corporation, Three Rivers, Que.—Keels are being laid for all of the 10 full powered steam wooden coal barges, which this company is building for the French Government, and it is expected that the whole of them will be launched within a year. The capacity of the yards has been doubled.

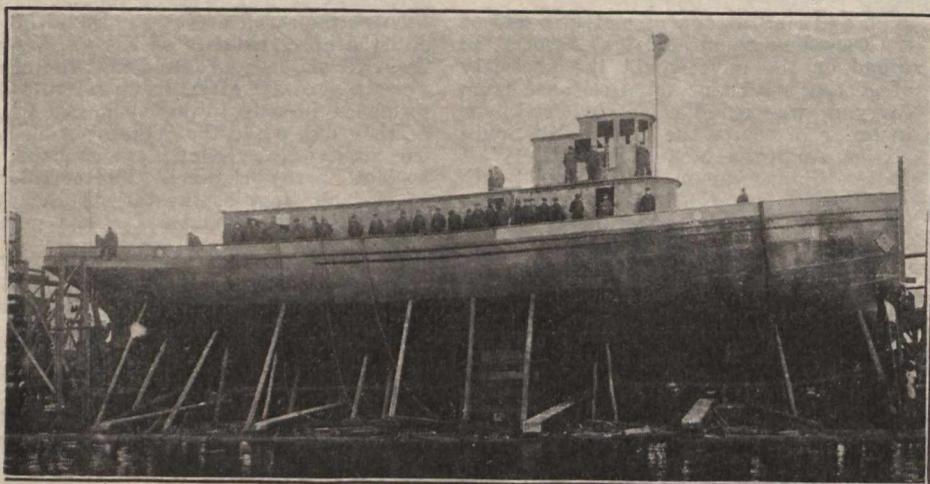
Port Arthur Shipbuilding Co., Port Arthur, Ont., launched an ocean going steam tug, Nov. 8, which was christened Victoria by Mrs. J. T. Emmerson. The Victoria is an all steel ocean going tug, built to Lloyd's classification. The general dimensions are: length between perpendiculars 119 ft., breadth moulded 26 ft., depth moulded 26½ ft. The propelling machinery consists of triple expansion, surface condensing engine with three cylinders 15, 29 and 47 in. diam. by 36 in. stroke, developing 800 h.p., and supplied with steam by 2 Scotch boilers 11 ft. long by 11 ft. diam. at 180 lb. working pressure. The vessel is to be delivered before the close of lake navigation.

Port Arthur Shipbuilding Co., Port Arthur, Ont.—The seagoing steam tug Murray Stewart, similar to the tug Victoria, illustrated in this issue, is expected to be delivered before navigation closes.

St. John Dry Dock & Shipbuilding Co., Ltd., St. John, N.B.—The New Brunswick Government is being asked, jointly with the City of St. John, to assist in financing the company to the extent of \$500,000, in view of the large amount of money the company will have to spend owing to the increased cost of machinery. The company does not ask that any portion of any subsidy granted, be paid until the keels of at least two 8,000 ton steel steamships have been laid.

W. D. Sweeny, Yarmouth, N.S.—The wooden steamship mentioned in our last issue as being under construction at this yard, is for the St. John Steamship Co., St. John, N.B. She will have a carrying capacity of about 450 tons.

Taylor Engineering Co., Vancouver, B. C.—The motor ship, designed by this company, and built at the Vancouver Shipyards, and of which some preliminary



Ocean going tug Victoria, just prior to launching by Port Arthur Shipbuilding Co., Port Arthur, Ont., Nov. 8, 1918.

at this yard, Nov. 23, and christened Le Quesnoy, by Mrs. Campbell Reaves, wife of the Secretary-Treasurer of the John Inglis Co., Toronto. The vessel, as with previous ones built by this company, is for class 100 A1 at Lloyd's, for trans-Atlantic service, and has been built on the company's own account. Her dimensions are: length over all 261 ft., breadth moulded 43½ ft., depth moulded 28 ft. 2 in.; deadweight capacity 4,300 tons. She is equipped with triple expansion engines, 1,400 i.h.p., and 2 Scotch boilers, built by John Inglis Co.

Fraser, Brace & Co., Ltd., Montreal.—The 8 wooden steamships which this company has on order for the French Government, as mentioned in our last issue, will be of the following dimensions:—length between perpendiculars 195 ft., beam moulded 39 ft. 8 in., beam extreme 40½ ft., depth moulded 17 ft., depth of hold 15 ft., draft loaded 18 ft., deadweight carrying capacity 1,500 tons of 2,240 lbs. They will be coal burning steam twin screw vessels, and it is anticipated that they will be launched approximately as follows:—first by May 31, second and third by June 30, fourth and

launched the schooner Huntley, Nov. 18. She is 612 tons gross and 480 tons net, class for 13 years with Bureau Veritas. She is to be equipped with auxiliary power, and when ready for sea, will take on cargo for Italy. She is owned in Newfoundland.

W. R. Huntley & Son, Parrsboro, N.S., launched the 4 masted schooner Governor Parr, Nov. 20. Her dimensions are: length 218 ft., breadth 39 ft., depth 18 ft., registered tonnage 912. She is classed for 12 years with Bureau Veritas, and is equipped with a Fairbanks-Morse engine of 15 h.p. for hoisting power. She has been towed to St. John, N.B., to take cargo for South America. Her owners are C. T. White & Son, Sussex, N.B. The same firm is having 2 schooners built at the same yards, of the 3 masted type and about 400 tons each.

The Kingston Shipbuilding Co., Kingston, Ont., which has been owned by the Collingwood Shipbuilding Co., for some time, has changed its name to Collingwood Shipbuilding Co., Ltd.

William Lyall Shipbuilding Co., North Vancouver, B.C.—The 8 wooden steam coal carrying vessels, which this company

details were given in Canadian Railway and Marine World for May, underwent a series of trials Nov. 18. The vessel, which has been named Teco temporarily, has a deadweight capacity of 300 tons, and is to be operated between Seattle, Wash., and northern B.C. ports. She is arranged with a large hatch so that gasoline and distillate tanks can be put in and the vessel converted into a 1,200 barrel oil tank vessel. Her dimensions are: length 125 ft., beam 23 ft., and she is equipped with Bolinder heavy oil engine of 160 h.p. for a speed of 8½ knots an hour when loaded. The hull is designed with a straight bow and towboat stern with raised forecandle and accommodation for the crew aft. The keel is 10¼ in. sided and 11¼ in. moulded, with scarphs 5¼ ft. long fastened with 7/8 in. galvanized bolts. There is a false keel of fir 2¼ x 10¼ in. and the keelson is 11¼ x 11¼ in., with 5¼ ft. scarphs. The mast is 65 ft. with two 37 ft. booms and a 23 ft. boom for handling cargo. A power winch is also supplied, capable of lighting 2,400 lb. The vessel is owned by W. M. Rooke, Vancouver.

Three Rivers Shipyards, Ltd. (National Shipbuilding Corporation), Three Rivers, Que., has deposited with the Public Works Department, Ottawa, description of site and plans of the piers to be built in the St. Lawrence River at Three Rivers in front of Lot 9.

Three Rivers Shipyards, Ltd., Three Rivers, Que.—As mentioned previously, the National Shipbuilding Corporation, 42 Broadway, New York, has purchased the entire capital stock of this company, and the plant is being operated as the company's Three Rivers Shipyard Limited Division. Arrangements have been made to double the size of the plant, in order to handle the French Government's contract for 10 wooden steamships of 1,500 tons each.

Yarmouth Shipbuilding Co., Yarmouth, N.S., launched the 3-masted schooner *Marah* Nov. 21. As soon as she is ready for sea, she will load a cargo for Havana, where she will take on another cargo for the west coast of Africa.

Atlantic and Pacific Ocean Marine.

The Hudson's Bay Co.'s s.s. *Discovery*, it is announced, is to be drydocked at St. John's, Nfld., during the winter, for a general overhaul. The report that she is to be sold is denied.

The s.s. *Afghan Prince*, which was wrecked on the Forchu shoal off the Nova Scotia coast, early in the year, broke up during a storm in November, and the wreckage disappeared. No lives were lost in the casualty, and a portion of the cargo was salvaged.

The Minister of Marine is reported to have stated at Ottawa, Nov. 25, that the British Admiralty will shortly release the Canadian Pacific Ocean Services' ocean steamships *Empress of Asia* and *Empress of Russia*, when they will be overhauled and returned to their usual service.

The Canadian Pacific Ocean Services' s.s. *Lake Manitoba*, which was very badly damaged by fire at Montreal some little time ago, has been purchased by Halifax Shipyards, Ltd., and taken to Halifax, N.S., where she will be examined and repaired. It is stated that a large sum will be spent in overhauling her and making her again fit for ocean service.

Robert Dollar, of the Canadian Robert Dollar Steamship Co., while in Ottawa recently, is reported to have stated that

his company intended to continue the operation of steamships from Vancouver to the Far East, and if business warranted it, to place additional vessels in the service. It is also reported in Vancouver that the company intends placing a through steamship service to India in operation shortly, provided certain arrangements can be made with the Dominion Government regarding a mail service, and that, should such arrangement be made, it would be desirous of entering into a working agreement with a trans-continental railway.

The report is again revived that Canadian Pacific Ocean Services, Ltd., is negotiating for the acquirement of a large steamship company operating between Great Britain and the Orient, and owning about 60 steamships. As we have pointed out before, there is a tendency just now toward a centralization of steamship operation, and control of British steamships, but any statements made at present, may be regarded as mere speculation. It was stated some time ago, that the British Government intended to assume complete control of its steamship lines, but this has been semi-officially denied. From the general trend of events, it would appear that the C.P.R. steamship lines will maintain their independence, but in the present state of political unrest, it is not safe to prognosticate as to how far any government may go in the nationalization of transportation services. The formation of an "all red" line encircling the world has been before the public for years, and as the largest transportation system in the world, it seems to be a settled thing that the C.P.R. lines should be the main constituent. There has, however, of late, been a strengthening of other interests, by amalgamation and otherwise, which would, under independent managements, lead to a duplication of services.

Maritime Provinces and Newfoundland.

Capt. H. T. LeBlanc, Yarmouth, N.S., is reported to have sold the s.s. *Vera B. Collins* to VanHamelryck & Co., Belgium.

The s.s. *Cascapedia*, owned by Nova Scotia Steamships, Ltd., was wrecked during a severe storm along the Atlantic coast, Nov. 17, whilst en route from Halifax, N.S., to St. John's, Nfld. She was subsequently set on fire and abandoned. The crew were all rescued by a British s.s. *Bellerophon* and landed at Falmouth, England. The *Cascapedia* was built at Dundee, Scotland, in 1895, and named *Fastnet*. Her dimensions were: length 245.2 ft., breadth 35.2 ft., depth 22.5 ft.; tonnage 1,849 gross, 1,185 register, and she was equipped with engine of 260 n.h.p. driving a screw. She was owned formerly by Canada Steamship Lines, Ltd.

Province of Quebec Marine.

The s.s. *St. Croix*, running between Lotbiniere and Quebec, broke her propeller during a storm, Nov. 19, and was beached at St. Antoine de Tilly.

The St. Charles River at Quebec was closed to navigation Nov. 10, owing to the replacement of the railway swing bridge near the mouth.

The Quebec & Levis Ferry Co.'s s.s. *John S. Thom* is reported to have been sold to New York parties for \$180,000. She was built at Detroit, Mich., in 1890,

and named Henry R. James. Her dimensions are: length 240 ft., breadth 40 ft., depth 14¼ ft.; tonnage 1,440 gross, 911 net, and she is equipped with engine of 110 n.h.p., driving a screw. The company is stated to have declared a bonus of 50% on the stock holding.

Dredging has been completed and the areas swept by the Public Works Department, in the main channel in Lake St. Louis, as follows:—the shoal area north of the axis of the main channel about half a mile above Dixie front range light, to a depth of 16 ft. for a distance of 115 ft. from the axis of the channel, and for 220 ft. a little above red gas buoy 76S; a width of 105 ft. has been dredged off the north extreme of the shoal which extended from the southward to within 35 ft. of the Dixie range lights, and this has been swept to 16 ft. and gives a channel width of 140 ft. south of the axis of the range. The removal of portions of these three shoals gives a clear channel on the alignment of the Dixie lights, with nothing nearer the alignment than 140 ft. on the south and 115 ft. on the north. The department from the alignment at gas buoy 77S, formerly necessary, is not now required.

Ontario and the Great Lakes.

The Toronto City Council is suing Canada Steamship Lines for income tax for 1917 and 1918, amounting to \$37,406.25, on assessments made in 1916 and 1917.

James Playfair, President and General Manager, Great Lakes Transportation Co., Midland, has denied the report that he had purchased the C.P.R. steamships *Alberta*, *Athabasca* and *Manitoba*.

Insurance in general for vessels on the Great Lakes expired at midnight Nov. 30, but it was stated that arrangements had been made for some extension of time, and that a number of vessels would sail after that time.

The U.S. Lake Survey has given notice that the barge no. 1, formerly a Lake Michigan car ferry, loaded with lumber and in tow of the s.s. *Mathew Wilson*, broke in two during a storm on Nov. 8, and sank near North Point, Thunder Bay, Lake Huron.

The Minister of Public Works was reported to have stated at Ottawa, Nov. 16, that next year's estimates would include a sum sufficient to complete the turning basin in Ashbridge Bay, and the concreting of the crib work on the Sunnyside section of the Toronto harbor. The amount involved is said to be about \$500,000, of which \$150,000 will be a revote.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level for October, as follows: Superior, 602.49; Michigan and Huron, 581.18; St. Clair, 575.50; Erie, 572.29; Ontario, 246. Compared with the average October levels for the past 10 years, Superior, 0.14 ft. below; Michigan and Huron, 0.77 ft. above; Erie, 0.21 ft. above, and Ontario 0.18 ft. above.

The s.s. *Chester A. Congdon*, owned in Duluth, Minn., while en route from Fort William to Port McNicoll, ran ashore at Canoe Rocks, near Passage Island, at the head of Lake Superior, Nov. 6, and became a total loss. The crew were all safely removed before the vessel broke during heavy weather following a strong southeast gale on Nov. 8. The cargo consisted of 380,000 bush. of wheat for the Wheat Export Co., and together with the hull, is valued at \$1,500,000, which is said

to be the largest individual loss on the Great Lakes.

British Columbia and Pacific Coast.

The C.P.R. s.s. Island Princess was withdrawn from the Gulf Islands service Nov. 19, for general overhaul. The ser-

vice is being performed by the company's s.s. Otter.

The C.P.R. resumed its Alaska steamship service, Nov. 17, with the sailing of the s.s. Princess Mary from Vancouver. This is the first of the company's vessels to be placed on that route since the loss of the s.s. Princess Sophia at Vanderbilt Reef.

The Naval Service Department's patrol steamship Galiano, foundered off the Danger Rocks, Queen Charlotte Islands, during a gale, about Nov. 18, all hands being lost. She was built at Dublin, Ireland, in 1913, and was screw driven by engine of 161 n.h.p. Her dimensions were: length 162.3 ft., breadth 27.1 ft., depth 13.1 ft.; tonnage, 393 gross, 129 register.

The Harbor of St. John, New Brunswick.

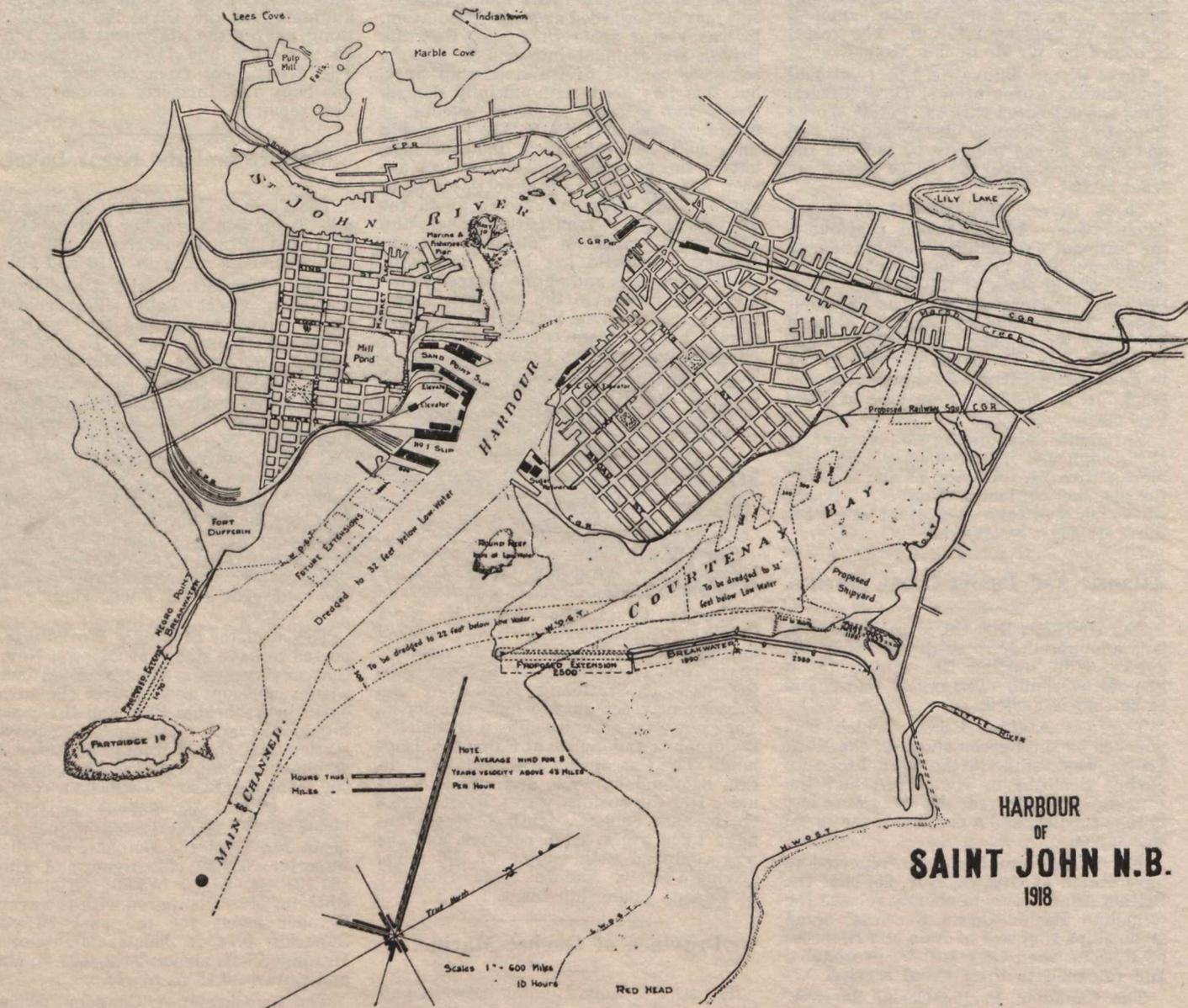
By Alex. Gray, Harbor Engineer, Dominion Public Works Department, St. John, N.B.

St. John harbor is situated at the estuary of the River St. John, which is about 460 miles long, with a drainage area of 26,000 square miles, and an average flow of about 20,000 c.f.s. Numerous articles have been published on the tidal phenomena in the Bay of Fundy, and St. John River, but it is unnecessary to deal with these in this paper, further than in

the water surface of the river is 15.0 ft. above low water datum of harbor, and the tidal range in the harbor is 13 to 30 ft. The variation of the sea level, therefore, at high water is from 2 to 14 ft. higher than the river, thus forming at every tide the Reversing Falls. The extreme high water of the river during spring freshet rises from 10 to 18 ft.

later than high and low water in the harbor. The average tidal rise at Indian-town, about half a mile above the falls, is about 1.3 ft.

The gorge at the head of the harbor, with its merged reef, forms a slack water reach, which is navigable for small craft from St. John to Fredericton, about 84 miles, and for a total of about 90 miles



so far as they affect the engineering features of harbor development.

The river discharges into the head of the harbor, through a rock gorge about 1,200 ft. long and 400 ft. wide. The small cross sectional area of the channel does not admit the flood as fast as it rises, or discharge the ebb as fast as it falls into the bay. The minimum summer level of

above the minimum. Navigation between the harbor and the river is only possible for a period of from half an hour to an hour, occurring before and after high water—the time generally being about 2½ hours ebb and 3½ hours flood. At Indian town, about a mile above the falls, high water occurs about 1 hour 6 minutes, and low water occurs 2 hours 20 minutes,

on several tributaries of the river. This slack water reach acts as a settling basin, in which the heavier silt is precipitated.

The exposure of the harbor is from the southeast to the southwest. The prevailing winds are from the northwest, from which quarter the severe storms generally originate, and afterwards change to the south, causing considerable inconvenience

in the harbor. The height of the maximum waves during these storms is about 10 ft.

The Negro Point Breakwater, 2,250 ft. long, is of the rubble mound type, with stones placed at random on the outer slope, weighing 2 to 8 tons, with concrete superstructure for about 940 ft. It was originally designed with a cribwork core, commenced in the spring of 1875 and completed in Sept., 1877. A heavy storm, however, on Feb. 11 and 12, 1879, carried away 1,300 ft. of the cribwork, to from 10 to 19 ft. below high water. From that date to about 1887, work was carried on annually in placing stone to bring the seaward side to a uniform slope of 3 to 1. There is now a concrete superstructure 15 ft. wide for a length of 946 ft. The seaward slope at concrete superstructure is 2 to 1. The portion of breakwater, without concrete superstructure, has been raked down by storms to a slope of about 6 to 1, and the crest has been moved towards the harbor about 35 ft. off center line. Around the lighthouse, are placed concrete blocks, weighing 60 to 80 tons each; they are founded a little above low water level. Mr. Shewen, who designed these blocks and the method of construction, arranged the work so that the pouring of concrete was begun as soon as the foundation was dry, and proceeded with at such speed so as to keep the top of the block above the rising tide, the covering of the casing being pressed down upon a cushion of jute, stuffed with oakum, before the tide rose to the top of the block. After extreme storms, marks on the stones, the disappearance of seaweed from the surface, and the displacement of the larger stones indicate the considerable forces exerted. The concrete work in the breakwater is in first class condition, and offers encouragement for concrete in salt water, providing sufficient care is exercised in mixing and placing.

Observations with a marine dynamometer give the force of waves at breakwater a pressure of upwards of 4,000 lb. per sq. ft. Part of the concrete work and the dynamometer observations were carried out under the direction of Major E. T. P. Shewen, who was for a number of years District Engineer for the Public Works Department.

Through the opening of about 1,500 ft. between the end of the breakwater and Partridge Island, heavy southerly waves break and expand, following the ragged face inside the shore, and continue to roll toward the harbor, causing such extensive erosion of the coast line that protective measures had to be taken in building a revetment wall along the foot of Fort Dufferin.

The principal development in the harbor to date has been on the west side, on which there are 10 berths, with 32 ft. draft, and room for 15 additional berths as soon as Negro Point breakwater is extended to Partridge Island, and railway facilities re-arranged. On account of the limited frontage, and the railway terminal situation, however, the harbor is being developed from both sides.

The entrance channel is 12,000 ft. long, 600 ft. wide, and 32 ft. clear depth at low water is maintained by annual dredging. The annual siltation varies, but generally amounts to about 2 ft.

When the Negro Point Breakwater is extended to Partridge Island (about 1,500 ft.) the littoral drift from the southwest will be arrested and the flow, more concentrated in the channel, will increase the scour and assist in maintaining the channel depth.

The materials dredged in the harbor are principally clay, sand, gravel and silt.

There is a considerable quantity of submarine rock to be removed in order to straighten the channel, but on account of the extreme cost, this work is being delayed.

During the year, there are generally only 2 to 8 tides below zero, forty 0.5 tides, and 60 tides 1.5 ft. above zero, the remainder of the tides range from 2.3 to 6.7 ft. above zero. Boats generally prefer to berth at slack water; it is, therefore, evident that the channel is navigable for the largest steamships.

The wharves are built to provide 32 ft. at low water. The harbor fortunately is free from the teredo, limnora and other sea worms. The type of construction has been timber cribwork and concrete with cribwork substructure. On account of the scarcity and high cost of timber and the necessary extreme height of the wharves, about 65 ft., other types of structure are being investigated.

The outstanding features in St. John harbor are the extreme range of tide and the consequent currents. The inward mean tidal flow is about 20,000 c.f.s. and the outward is about 40,000 c.f.s. The maximum surface current velocity at the minimum section in the harbor is about four miles an hour.

Unfortunately, no systematic meterings have been made of the river, and consequently its flow is only an estimate. A series of float observations have been taken at various stages of the tide, and at various depths below surface. These show very erratic current conditions. The fresh water from the river flows out while underneath the tide rises and falls regularly.

The principal wharves are of cribwork, with concrete superstructure, the cribs being placed on a prepared dredged bed, covered to an average depth of 5 ft. with broken rock. Behind the cribs, selected dredged material is filled in, on which the necessary railway sidings and sheds are built. The sheds are one story, of timber construction. At a number of the wharves, grain conveyors are built, from which boats can be loaded with grain at any stage of the tide. In addition to vertical fenders of 12 x 12 in. hard pine, floating fenders about 36 in. diameter and 33 ft. long, are placed about 80 ft. centers. In berths 15 and 16, which are more exposed to wave action, the life of these floating fenders does not exceed two years.

The Courtenay Bay development, on the east side of the harbor, comprises the building of a dry dock 1,150 ft. long and 125 ft. wide, with 40 ft. of water on sill at high water, ordinary spring tides, and elevation of sill 14 ft. below low water, spring tides; the building of a breakwater 7,070 ft. long, of which 4,570 ft. has been completed; the dredging of a basin 32 ft. below zero, and channel 22 ft. below zero (zero being extreme mean low water). The details and layout of the wharves have not been decided. The breakwater is of the rubble mound type, top width 20 ft., seaward slope varying from 2 to 1 to 3 to 1, according to location.

The breakwater does not have the exposure of Negro Point breakwater and it is therefore not expected that the slopes will suffer the raking down experienced at the latter place. The stones at the outer end, weighing upwards of 10 tons, were lifted from their beds and moved about 50 ft. during a storm in October, 1917. The rock from the breakwater is obtained from the dry dock site, loaded by steam shovels and hauled by a locomotive on standard track on trestle, and dumped in the work. At the outer end of the breakwater, where the embankment is wide on account of the slopes and depth,

two trestles will be used to ensure the larger stones being placed outside.

St. John, on account of geographic situation and consequent long railway haul, is principally a winter port. The traffic in 1895 amounted to \$3,333,000 imports, and \$3,000,000 exports, whereas during 1917, it was \$16,750,000 imports, and \$200,000,000 exports.

Mainly About Marine People.

Sir H. Montagu Allan, formerly of the Allan Line Steamships, who has been in England for some time in connection with war work, has resigned the Royal Trust Co.'s vice presidency, in Montreal, but remains on the board.

Frank McDonnell, heretofore Assistant to Chairman, Board of Steamship Inspection, Marine Department, Ottawa, who has been appointed Chairman, Board of Steamship Inspection, to succeed T. R. Ferguson, deceased, was born Oct. 18, 1878, and first entered government service Mar. 6, 1905, receiving a permanent appointment Sept. 1, 1908, and being appointed Assistant to Chairman, Board of Steamship Inspection, April 1, 1917.

J. W. Norcross, Vice President and Managing Director; F. S. Isard, Comptroller, and M. J. Haney, another of the directors, Canada Steamship Lines, Ltd., left Montreal, Nov. 22, for London, Eng., for consultation with the company's advisory board there, concerning the company's future policy respecting ocean trade.

E. W. Holton, whose appointment as General Freight Agent, Northern Navigation Co., Sarnia, Ont., was announced in our last issue, was born at Belleville, Ont., Dec. 15, 1872, and entered transportation service as junior clerk in the local freight office at Belleville, Ont., and, until Mar., 1904, was chief clerk to General Freight and Passenger Agent, Bay of Quinte Ry., Deseronto, Ont.; Mar., 1904, to Feb. 1, 1910, chief clerk to Traffic Manager, Northern Navigation Co., Sarnia, Ont.; Feb. 1, 1910, to Mar. 12, 1913, Eastern Passenger Agent, same company, Sarnia, Ont.; Mar. 12, 1913, to Oct., 1918, General Passenger Agent, same company, Sarnia, Ont.

Alfred Erwin McMaster was presented with a set of gold cuff links and a diamond stick pin, at Port Arthur, Ont., Oct. 16, on his resigning the position of Secretary-Treasurer, Port Arthur Shipbuilding Co., having been appointed Treasurer, Whalen Pulp & Paper Mills, Ltd., Vancouver, B.C. He was born at Perth, Ont., Oct. 22, 1885, and entered transportation service in 1902, since when he has been, to May, 1903, clerk in Freight Department, C.P.R., Keewatin, Ont.; May, 1903, to 1905, clerk, C.P.R., Port Arthur, Ont.; 1905 to Aug., 1907, chief clerk, C.P.R., Port Arthur, Ont.; Aug., 1907, to Aug., 1908, agent and chief clerk to Superintendent, Grand Trunk Pacific Ry., Fort William, Ont.; Aug., 1908, to July 15, 1913, agent and General Agent, G.T.R., G.T.P.R. and G.T.P. Coast Steamship Co., Prince Rupert, B.C.; July 15, 1913, to Sept. 30, 1916, Commercial Agent, G.T.P.R., Regina, Sask.; Sept. 30 to Dec. 21, 1916, Division Freight Agent, G.T.P.R., Edmonton, Alta.; on Dec. 21, 1916, he was appointed Assistant Secretary for British Columbia, Canadian Manufacturers' Association, with office at Vancouver, and resigned in Aug., 1917, on his appointment as Secretary-Treasurer, Port Arthur Shipbuilding Co., Port Arthur, Ont.

Wooden Steamship Building in Canada for French Government.

Canadian Railway and Marine World for November contained information, with some details, as to the twenty 3,000 ton and fifty 1,500 ton wooden steamships which have been ordered in Canada for the French Government.

The 3,000 Ton Wooden Steamships.

Following are the general dimensions, etc., of the twenty 3,000 ton d.w. wooden steamships:—

| | |
|-------------------------------------|------------|
| Length over all | 293 ft. |
| Length between perpendiculars | 276 ft. |
| Beam extreme, about | 47½ ft. |
| Beam moulded, about | 46½ ft. |
| Depth moulded | 23½ ft. |
| Draft over keel, about | 21¾ ft. |
| Deadweight carrying capacity | 3,000 tons |
| Tons displacement | 5655.5 |
| Block co-efficient used | 718 |

The vessel to be of single deck cargo type, built principally of Oregon and Washington pine, with hold beams, wood deck houses and rails. The vessel to have a cruiser or elliptical stern, with long poop deck aft and raised forecastle forward. The vessel to have 5 hatches, to have 4 watertight bulkheads, 1 bunker bulkhead which is to be non-watertight, and 1 screen bulkhead. One watertight door between engine and shaft tunnel to be furnished. Accommodations for officers will be in deck houses erected in the poop deck. Accommodations for the crews will be located in the forecastle. A bridge and bridge house will be erected at the forward end of the poop. Accommodations for gun crew of men to be arranged in the wheel house aft. Eight cargo winches, one of which is to be a warping winch, are to be installed. The windlass on forecastle head suited to handle anchors and full scope of chain, and also arranged for warping as usual practice.

Feed water tanks of full capacity to be located aft of engine room, top of tanks to be on level with all of deck forming shaft tunnels. Culinary water will be distributed from two separate steel tanks. The vessel is to be driven by twin screws, with engines located abaft amidships.

The vessel is to be built to the requirements of the Bureau Veritas for highest classification, as far as necessary for a cargo steamer. All lumber used in the construction of the vessel to be of Oregon or Washington pine and fir, unless otherwise specified. All materials to be to the satisfaction of the Bureau Veritas for highest classification. As long lengths as practically can be obtained without delay for the completion of the vessel are to be used in the keel keelsons, planking and ceilings, to be clear of shakes, loose knots and other defects and faults, and as far as possible free from sap. All decking to be edge grain, fastenings to be treenails, screw and drift bolts of galvanized and black iron as per best practice.

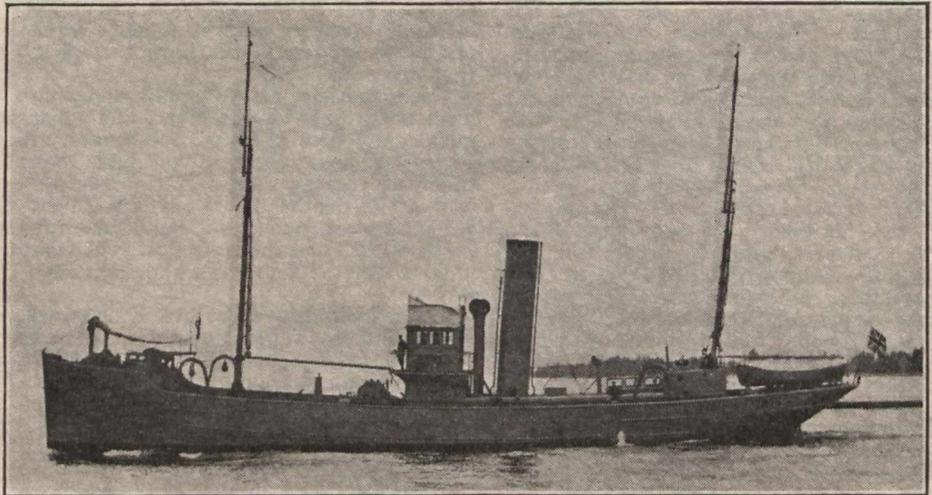
It is the intent of these outline specifications to describe the vessel complete and ready for sea, except for water, fuel and stores. Detail specification will be furnished later giving full description of materials and machinery entering into the construction of the vessel. The contractors are to supply the owner with vessel constructed in a workmanlike manner, satisfactory for ocean service except for water, fuel and stores. The work to be to the satisfaction of the owner, his representative, or Bureau Veritas inspectors and surveyors. The contractors are to furnish all necessary lines, offsets, construction drawings and all detail plans for the successful construction and completion of the vessel.

When completed and ready for trial, the owner will fill the bunkers with coal and water tanks with fresh water. Then a series of progressive trials will be run on a measured mile course, at which a speed of 11 knots is to be obtained. The vessels are to be delivered by the contractors at the yard at Victoria, B.C., or if the owner decides on delivery elsewhere, the contractors are to be compensated for any such delivery as per arrangement agreed upon. The contractors are to keep the vessel, including all outfit and material entering into the construction of the vessel, fully insured, both ashore and afloat, until delivered to the owner.

All scantlings to be shown in midship section and as approved by Bureau Veritas. Should any difficulty be found in obtaining the size of scantlings as shown on drawings, and as specified in detail specifications to be submitted when signing contract, it is understood that the

projecting ends of fastenings and visible iron work, including iron work on rider keelson, to be painted with red oxide paint.

The propelling machinery is to be built to conform to and meet with requirements of Bureau Veritas for highest classification. The machinery will consist of two 550 h.p. vertical, inverted, direct-acting, three-crank, triple expansion marine engines, each to develop not less than 550 i.h.p. when working under full boiler pressure. The boilers will consist of two coal-burning Scotch boilers with a heating surface of about 3,500 sq. ft., built for a steam working pressure of 225 lb. a sq. in. There will be one each: main surface condenser, auxiliary condenser with combined air and circulating pump, steam driven centrifugal circulating pump, independent air pump, main feed pump, auxiliary feed pump, fire and bilge pump, sanitary pump, general service pump, bilge pump, fresh water pump, injector, feed



Steel steam trawler 15, built for Naval Service Department, by Polson Iron Works, Toronto.

contractors are to use a different sized scantling, as long as the same is approved by Bureau Veritas for highest classification.

On top of wood keelsons, rider keelson is to be installed, to be of lattice girder construction of approved design, to the satisfaction of Bureau Veritas. All necessary davits, life boats, anchors and cable, steering engine, ladders, storerooms, and wireless apparatus are to be furnished and installed. Heating, plumbing to be furnished and installed to the approval of Bureau Veritas.

Electric lighting plant is to be installed, consisting of two 7½ k.w. engine or turbine driven generator sets complete, all wiring to be furnished and installed; one switchboard with double pole switches, ammeter, voltmeter and short circuit indicator. Entire installation to conform to the requirements of Bureau Veritas. Complete pumping arrangements to be fitted. Hand pump scuppers, fire service, etc., to be installed to the satisfaction of Bureau Veritas.

Outside planking below load waterline to be painted with 2 coats of copper paint. All above to have 3 coats of lead and finished with color as selected by owner. All interior work to have 3 coats of lead paint. Interior accommodations to be finished with color as selected by owner. All deck work, fittings, etc., to be finished in color as selected by owner. Inside of decks, clamps, etc., to be oiled and all

water heater, evaporator feed pump, oil filter, induced draft fan, electric generating set and switchboard, ice machine, and evaporators, distiller, waste and soda tanks, engineer's storeroom, workshop, together with such other machinery and outfit as is necessary for the proper operation of the ship.

The Foundation Co. of British Columbia, Ltd., has the contract for these vessels and has commenced building them at Victoria, where it has two yards, the one at which it built five 2,800 ton wooden steamship hulls ordered by the Imperial Munitions Board for the British Government, the other yard adjoining, which it has leased from the Cameron-Genoa Shipbuilders, Ltd. These two yards have 8 ways. It is expected to launch the first 8 hulls before April 1, 1919; the second 8 before Aug. 1, 1919, and the last 4 before Nov. 1, 1919. The contract calls for the delivery of the 20 completed steamships before Jan. 1, 1920. The vessels have been designed by Cox & Stevens, New York, N.Y.

The 1,500 Ton Wooden Steamships.

The vessels, which are described as first class full powered barges, will have the following general dimensions:—

| | |
|-------------------------------------|---------------|
| Length over all | 204 ft. 6 in. |
| Length between perpendiculars | 195 ft. |
| Beam, moulded | 39 ft. 8 in. |
| Beam, extreme | 40 ft. 6 in. |
| Depth, moulded | 17 ft. |
| Depth of hold | 15 ft. |
| Draft, loaded | 16 ft. |

They are to be built of Douglas fir, all timber in keel, keelsons, stem, apron, stern post, frames, deadwoods, ceiling, deck beams, stanchions, pointers, breast hooks, etc., to be no. 1 merchantable; planking, bulwarks, rails and rail stringers, waterways, coamings and all timber above deck, to be no. 1 select, and the deck is to be clear vertical grain, no. 2 grade. The ceiling from floor to clamps to average 40 ft. lengths, also the clamps, planking above the bilge to deck, and waterways, while the rail is to be in lengths of not less than 40 ft, and the planking and bottom on bilges to average 35 ft. Keel, sided 18 in., moulded 12 in. net; shoe, sided 12 in., moulded 3 in. net; frames, half sided 8 in., moulded 20 in. at keel, 14 in. at bilge, 8 in. at head, spaced 27 in. centers. From the break of the bridge deck aft, and the fore-castle deck forward, the frames to run up to rail double, and between these points the frames to be single from deck to rail. Stem, sided 18 in., moulded about 24 in., and connected to keel with a natural crook fir knee, or in other approved manner. Apron, sided 18 in., moulded 18 in.; deadwood, sided 18 in.; stern post, sided 18 in. at keel, moulded 24 in., and connected to keel with fir knee. Rudder trunk to be bolted securely to stern post. The main and sister keelsons to be sided 16 in. and moulded 14 in.; first and second rider keelsons to be sided 16 in. and moulded 14 in.; first and second rider sister keelsons to be sided 14 in. and moulded 14 in. From sister keelsons to main deckhouse, the ceiling to be 8 by 11 in.; the 'tween deck ceiling to be 4 in. thick, butted and spike fastened; main ceiling to be scarphed from the turn of the bilge to the main deck beams, and edge bolted in each frame space. No scarphs allowed on the same frame without at least 3 strakes between. Beams at the hatches to be moulded 12 in. and sided 14 in.; sided 12 in. and crowned 6 in. Chocks to be fitted between deck beams, securely fastened to frames, leaving proper air space, and beams to be spaced 36 in. center to center. There is to be one 12 x 14

in. beam in the lower hold, placed directly over every other main deck beam; these, however, to be omitted in the way of machinery, and compensating fore and aft members added. There are to be 3 sets of pointers at each end of vessel, to be sided 12 in. and moulded 10 in. at top and at least 14 in. at bottom, and run diagonally from the center of deadwoods, aprons, etc., well up to the upper deck beams. These pointers to be connected at the lower ends across the deadwood with fir knees 12 in. thick and at least 4 ft. arms. There are to be stanchions 12 x 12 in. under every beam and under the hatch corners, and at each side of the stanchion heads there is to be a 5 x 10 in. plate; chocks to be fitted between the stanchions on top of rider keelson, and top of stanchion to have hardwood cap; rods 1½ in. upset to 2 in. turnbuckle to be placed between the beams, with ¾ x 6 in. plate washer on the outer ends let into the frame. The rudder stock to be in one piece of iron bark, 18 in. diam., the balance of the rudder to be fir. The bulkheads, as may be required in peaks and forward and aft machinery spaces, to be of two thicknesses of 3 x 6 in. tongued and grooved stock, finished down to about 2¼ x 5¼ in. face laid diagonally in opposite directions, and canvas laid in white lead paint to be laid between the two thicknesses. Beams so arranged that one m.d. and one t.d. beam are secured to face of bulkhead.

The 2 masts and 6 cargo booms are to be of Oregon pine, of suitable diameter and strength for handling cargo equal to about a 3 ton lift. The general accommodation and quarters, include wheel house and chart room, berths, mess rooms, pantry, galley, store rooms and ice house, lavatories, etc. Each vessel is to be equipped with two lifeboats 20 x 6 x 2½ ft., with swinging davits. All anchors to be of the stockless type.

The propelling machinery to consist of 2 vertical inverted direct acting compound surface condensing engines, with cylinders 12 x 24 in. diam. by about 16 in. stroke, turning outboard when going

ahead, capable of developing 275 i.h.p. with no live steam in the receivers, at not more than 175 r.p.m. Steam is to be supplied by either one return tube, 3 furnace, single ended Scotch boiler, with a total heating surface of 1,800 sq. ft., or one water tube boiler with heating surface of not less than 2,000 sq. ft. The propellers are to be solid, 3 bladed cast iron. There is to be one main condenser independent of the main engine, one main circulating pump of centrifugal pump with 6 in. suction and discharge; main air pump, vertical single acting beam type, 7½ x 14 x 10 in.; 2 main and auxiliary feed pumps of vertical simplex type, 7½ x 4 x 10 in.; general service pump, horizontal duplex type, 7½ x 4½ x 10 in.; fire, bilge and general service pump, horizontal duplex type, 7½ x 4½ x 10 in.; sanitary pump, 5¼ x 4¾ x 5 in., and evaporator feed pump or centrifugal pump with 6 in. suction ejector is to be provided, operated by water from fire, bilge and general service pump. Feed water heater of approved type to be of sufficient capacity to heat 12,000 lb. feed water an hour from 80 to 212 deg., using exhaust steam at 5 lb. a sq. in. Feed and filter tank of 325 gall. to be placed in convenient location in the engine room.

The deck machinery is to include a spur geared windlass with horizontal engine and 2 gypsy heads aft, 12 in. diam.; vertical steam winches; steam and hand steering gear of approved type with about 6 x 6 in. double cylinder engine; steam capstan with engine in the base. The electric lighting system to consist of 10 k.w. marine type generating set, driven by vertical self oiling engine of approved make for 150 lb. steam pressure; dynamo to be compound wound of the multipolar type. There are also to be provided, mechanical telegraphs, water tanks, donkey boiler, etc.

When completed, the vessels are to have endurance trials, under conditions and with results satisfactory to the owners. The propelling machinery and auxiliaries are to be designed for a speed of 9½ knots under light load.

The Deputy Minister of Marine's Report on Shipbuilding, Etc.

The Deputy Minister of Marine, Alex. Johnston, in his report to the minister for the year ended Mar. 31, 1918, issued recently, says that "the question of supreme moment, not only in the shipbuilding world, but in the world at large, is the relation of shipbuilding to ship sinking, for on this may hinge the issue of the war." Considerable space is devoted to weekly particulars of British sinkings, sailings and arrivals, from April 1, 1917, to April 1, 1918, the totals being as follows:—

| | |
|--------------------------------|---------|
| Sinkings over 1,600 tons..... | 896 |
| Sinkings under 1,600 tons..... | 334 |
| Sailings and arrivals..... | 289,127 |

The total number of ships sailing to and from British ports during the fiscal year 1917-1918, exclusive of fishing vessels, was, as above stated, 289,127, and the total losses due to war causes were 2,230, or 1.425%.

Details are given of the losses and building of allied and neutral shipping from Aug., 1914, to June 1, 1918, but as these are, of course, now out of date, it would not be of interest to reproduce them. Following are extracts from the report:—

Canada and Sea Transport.—Prior to the war, and for sometime after, there

were 10 large ship companies operating between Canadian and British and continental ports; owing, however, to the increasing toll of British, Allied and neutral shipping taken by mine and submarine and the shortage resulting, the demand for ships grew more insistent, and a number of vessels were taken from the Canadian and transferred to the Mediterranean and other routes wherever the need was most pressing; so that the conditions facing Canada today are, that whereas a few years ago there were 10 companies operating at full capacity between Canadian and British and foreign ports, there are now only about half that number, with less than half the previous number of ships, operating intermittently.

In the reconstruction period after the war there will be an increased demand for Canadian raw material and foodstuffs, and very possibly for manufactured articles as well, Canada being now a very much better known and more widely advertised country, and as British shipping to this country has been cut down by half and is not likely to be re-established for some years, owing to the lack of shipping everywhere and the need of shipping on all routes, it is apparent that if Canada is to have the required transportation,

she must acquire the necessary ships.

Government Shipbuilding Programme.—There are three ways of establishing a merchant marine: by purchase outright, by placing orders with foreign shipyards for delivery at a stated time, or by building in home shipyards. Australia during the first years of the war, feeling the pinch of lack of transport, bought 16 cargo steamships, which not only relieved the congestion of her own export trade, but were of service in the general carrying trade of the Empire.

The great advantage of outright purchase is that the earning power of the ships, and payment of dividends on their outlay, begin at once; the deadweight price of freighters just now for immediate or prompt delivery is abnormally high, about \$200 a ton, and indeed it is doubtful if any considerable number could now be obtainable at that or almost any price, as shipyards all over the world, including the Japanese, are being worked to their full capacity to supply ships for their own merchant marine, in anticipation of the tremendous demands that will be made on ocean tonnage in the period following the war. Taking these factors into account, the Canadian Government has decided to build annually 200,000 tons

of merchant shipping at an estimated cost of between \$40,000,000 and \$50,000,000. The annual output of 200,000 tons contemplated is only the beginning of the Canadian merchant marine fleet, and the probability is that in 1919 or thereabouts the government project will be considerably extended. The ships will be at the disposal of the British Admiralty during the war period, and at its close will revert to Canada to be operated either by the government itself or by Canadian shipowners under charter from the government. (Editorial note.—Since the report was written it has been decided that the vessels will be operated by the Canadian National Railways.)

Merits of Plan.—There are a number of advantages accruing from the plan adopted by the government for the building of a merchant fleet. In the first place the cost per ton deadweight will be less than if the contracts were given to foreign yards for prompt delivery. The money involved, instead of going out of, will be spent in the country in aiding an industry the growth of which is important to the future welfare and development of Canadian trade and commerce. It will be the means of providing, when its scope is extended, for a number of munition workers who will be thrown out of employment after the war, particularly if rolling mills on a more or less extended scale are started in connection with the Canadian shipbuilding industry; and finally, it will mean the augmenting of a class of men invaluable to any country—the merchant mariners.

In order to hasten the construction of the vessels, it was deemed advisable to utilize to the utmost the present Canadian yards, and to work at full pressure, rather than to multiply the number of shipyards, some of which would in all probability be undermined for some time owing to lack of skilled workmen.

Standardizing the Ships.—Three principal types of vessels will be built under the government plan. The first type will consist of vessels of about 3,750 tons d.w. capacity, length over all 260 ft., speed 9 knots; these vessels will be of the tramp type, and will be built principally in the Great Lakes shipyards, to avoid difficulty with canal locks. An intermediate type will include ships of 4,300 tons deadweight capacity, length b.p. 320 ft., speed 12 knots. The second type will comprise vessels of 5,000 to 7,000 tons d.w., cargo liners, length over all 331 ft., speed 11½ knots. The third will consist of combination liners, as provision will be made for carrying passengers as well as cargo; they will be of 8,000 to 10,000 tons d.w. capacity, length over all 400 ft., speed 12 knots.

These ships will be all built to a standard set of plans and specifications prepared for each type by the department's Chief Naval Constructor and his staff to ensure uniformity and speed in construction, and the work of supervising the vessels while actually under construction in the different Canadian shipyards will also be undertaken by this body.

It is found by actual experience that the cargo vessel which gives the best return on outlay is one ranging between 7,000 and 10,000 tons d.w. capacity; below 7,000 tons and over 10,000 the ratio of wage-earning capacity to the cost of building is not so favorable. This last type will fulfil this very essential condition, and will be the one which will perform the bulk of the work of Canadian sea transport.

Personnel.—The work of providing

suitable crews for the new Canadian merchant marine fleet will be of the first importance. The Marine Department issues all certificates for masters, mates, and engineers of sea going vessels, and is keeping an exact monthly register of all the men who are qualified for these positions, and of their whereabouts in order that their services may be requisitioned when required. Every encouragement is also being given to seamen to induce them to attend the navigation schools at Halifax, Yarmouth, St. John, N.B., Kingston, North Sydney, and Vancouver, to take courses in navigation before qualifying for their certificates. The Canadian Naval League is aiding in the formation of naval brigades for the training of the young, and is carrying on an educational campaign emphasizing the importance to Canada of the building up of a merchant marine. It is important that the personnel of the officers and crews of Canadian merchant ships should be confined as far as possible to Canadians, failing these to British or Americans, to ensure a common language. The employment of alien crews should be avoided at all costs.

The principal shipyards for the building of steel cargo vessels in Canada are as follows:—

| | Berths |
|--|--------|
| British American Shipbuilding Co., Welland, Ont.; shipyard only..... | 3 |
| Canadian Vickers, Ltd., Montreal; shipyard, engine and boiler shops and floating dock... | 5 |
| Canadian Allis Chalmers, Ltd., Bridgeburg, Ont.; shipyard, engine and boiler shops.... | 3 |
| Collingwood Shipbuilding Co., Collingwood, Ont.; shipyard, engine and boiler shops... | 4 |
| Davie Shipbuilding & Repairing Co., Lauzon, Que.; shipyard and drydock..... | 4 |
| Midland Shipbuilding Co., Midland, Ont.; shipyard only..... | 2 |
| Nova Scotia Steel & Coal Co., New Glasgow, N.S.; shipyard only..... | 2 |
| Polson Iron Works, Ltd.; shipyard, engine and boiler shops..... | 4 |
| Port Arthur Shipbuilding Co., Port Arthur, Ont.; shipyard, engine and boiler shops.... | 4 |
| Thor Iron Works, Ltd., Toronto; shipyard only | 5 |
| Tidewater Shipbuilders, Ltd., Three Rivers, Que.; shipyard only..... | 2 |
| Wallace Shipyards, Ltd., Vancouver, B.C.; shipyard, engine and boiler shops..... | 3 |

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Canadian Shipbuilding Disabilities.—In last year's report allusion was made to certain drawbacks attending the initial stages of Canadian shipbuilding; there is no reason why these should not be overcome in the course of a few years, with the exception of that of the climate, which in certain localities will not permit the launching of ships at all seasons. At present the greatest obstacle to the rapid and cheap production of steel ships in Canada is the lack of rolling mills capable of making steel plates and structural steel shapes for the larger cargo ships, in quantity; all the other parts of the ships, including the engines, can be made in Canada, but in order to carry its programme of building merchant ships to a successful completion, it was necessary for the government to enter into negotiations with United States firms for the supply of the needed plates and shapes; although the Americans at present are very much occupied with their own shipbuilding problems, these negotiations have fortunately been successful, and the necessary supplies for the Canadian merchant fleet have been assured. It will, however, be of great advantage to the industry if, after the war, every effort is made to establish rolling mills on an extensive scale in suitable localities, in order that all the demands made on Canadian shipbuilding may be met by Canadian firms.

Insurance Rates and the St. Lawrence

Route.—The formation of a Canadian merchant marine brings into greater prominence the question of the restrictions placed on the trade of this route by insurance underwriters, as compared with Atlantic port routes; restrictions which, in the opinion of a number of men qualified to judge, are somewhat unfair. This high rate of insurance means an additional overhead charge on all vessels using this route. The discrimination against the St. Lawrence route has been carried out despite the constant work of improvement done in the widening and deepening, and the lighting and buoying of the ship channel between Montreal and Father Point. The expenditure on this work has exceeded \$1,000,000 annually for the last three years, and the total cost of the channel since its inception in 1851 to the end of the fiscal year 1917 has been \$21,520,371.

From Montreal to Quebec is 160 statute miles, and from Quebec to Father Point 181, and it is doubtful if any other waterway in the world of equal extent is more thoroughly safeguarded. In the department's report for 1916-17, the Superintendent Engineer of the St. Lawrence ship channel drew attention to a communication received from Henry Fry & Co., Lloyds agents at Quebec, emphasizing the fact that no accident had occurred to any sea-going vessel between Father Point and Quebec in the course of the year, and he attributes this not only to the improved lighting and buoying of the channel, but also to the increased efficiency of the Pilotage Service. If the continued improvement and additional safety of this route from year to year have not the desired effect of inducing Lloyds to lower the insurance rates for vessels trading on it, it may be necessary, in the interests of Canadian shipping, for the government itself to take some steps to equalize the difference between the rates to Quebec and Montreal and those to the Atlantic ports.

British Merchant Vessel Losses.—It was announced in the British House of Commons, Nov. 6, that 8,946,000 tons of British merchant ships had been lost during the war, to Sept. 30, through enemy action. Of this tonnage, 5,443,000 tons had been replaced by new construction, by the purchase of vessels abroad, and by utilizing captured enemy vessels. The output of tonnage throughout the world for three months ended Sept. 30, exceeded the losses from all causes during the same period, by nearly 500,000 gross tons. During this period, the United Kingdom's new construction was 411,395 tons, and that for allied and neutral countries, 972,735 tons. For October, the tonnage of merchant vessels completed in the United Kingdom, and entered into service, was 136,100 tons.

The St. John Dry Dock & Shipbuilding Co., the general contractor for the harbor improvements being carried out in Courtenay Bay, St. John, N.B., advises that work has been commenced on the 2,500 ft. breakwater extension, by placing the rock excavated from the dry dock site. This will be continued for about two years, and the construction of the dry dock will be commenced in about 18 months, when sufficient progress has been made with the excavation. Dredging will not be started until next year. The subcontractor on this work is the Bedford Construction Co., and the engineer in charge for the contractors is E. G. Cameron, formerly engineer in charge of sec. 3, Welland Ship Canal, for the Railways and Canals Department.

The Halifax Drydock's Expropriation Criticised by the Halifax Graving Dock Company's Chairman.

S. M. Brookfield, Chairman, Halifax Graving Dock Co., Ltd., Halifax, N.S., wrote Canadian Railway and Marine World, Nov. 6, as follows:—"Your August issue, which I have only just seen, contains an article upon the expropriation of the Halifax drydock and the establishment of a shipbuilding plant, which is not only misleading, but contains statements which are at variance with the truth. If this confiscation can be legalized, it will be a disgrace and a blot upon the escutcheon of Canada forever.

"The Minister of Public Works is reported as saying he had informed the Privy Council on May 24, 1918, that the drydock was badly damaged and practically destroyed. He mentions the importance of the dock, and says an agreement was entered into whereby the dock company was to furnish \$111,000 of insurance and the Dominion Government was to reconstruct the dock. He also says, at this late date, that the progress made by the drydock company had not been satisfactory and from reliable information he valued the dock at \$1,100,000, and recommended that this offer be made to the company. Then on June 4 he reported to the Privy Council that, according to the order in council of May 27, the drydock had been expropriated, and recommended that it be leased to the Halifax Shipyards, Ltd., for one year for \$62,500, that company to have an option on the property for one year at \$1,250,000. The article further states that after the dock was wrecked by the explosion on Dec. 6, 1917, the Public Works Department, under its superintendence, took over the work of reconstructing it, but as soon as arrangements were made to expropriate the property it discontinued the work.

"You will note the Minister says we did not make sufficient progress, and the article states that the work was done by the Public Works Department. The explosion was a terrible calamity for us, chiefly on account of the loss of life, which was irreparable, and was quite sufficient to knock us all down for a time; in fact, some of the men have not yet recovered. However, we could not forget that the war was on, and that transports, the hire of each amounting to several thousand dollars a day, were waiting for repairs, and to have guns mounted upon them. We did not ask any government assistance, but lost no time in getting our Dartmouth shop in commission for work, and started the dock two days after the explosion, working continuously night and day and Sundays, putting up temporary buildings, installing boilers and pumps, building flues, chimneys, etc., so that we were able to begin repairs to the ship in the dock on Jan. 11. Considering our difficulties and the weather we had to contend with, it was something to do.

"You will notice that the Minister reported to the Privy Council on May 24—169 days after the explosion—that we did not make sufficient progress. Surely if he had the slightest fault to find with us, it was up to him to state it long before that date. I now call upon him to publish wherein we failed to make progress, because it is not true, and until refuted or proved it is a reflection upon our management. We can easily prove that every energy was made to get the dock and plant ready; in fact, before the explosion we had ordered extra machinery to ex-

pedite transport work, never thinking for a moment that it would be for the benefit of other people who had never put one dollar into the company and who had done nothing for the benefit of our port. We had great difficulty in getting this machinery, but succeeded.

"On Dec. 29 the Minister agreed to reinstate the dock, which would add \$400,000 to \$500,000 to its value to the company. It was a national loss, so why should not the Government reinstate it, especially as the Government was reinstating our citizens who had suffered by the explosion. We were to give the Government the benefit of our insurance. On Feb. 8, the Deputy Minister and two men from the department came and told us how they wanted the accounts kept. Bills were to be rendered monthly, but up to date, 11 months, the Minister has declined to authorize payment of one cent expended on account of the contract he made with us to reinstate the dock, which has cost us approximately \$185,000, so his agreement is simply a 'scrap of paper.' We then asked for a payment of account of the purchase price of the dock, but this also was declined, on account of the title not having been reported upon. We have had the property for over 33 years, and the title was not sufficiently good for the government to pay an installment upon, but was quite good enough to hand over to another company to continue our business.

"In order to improve the dock and its plant we employed the best engineers we knew, consulted them as to electrifying our plant and followed their recommendations. In connection with this account, which we call 'improvement,' we have spent over \$35,000 in equipment, which the new company has installed. On Sept. 25, we wrote the Halifax Shipyards, Ltd., asking it to pay this account, but so far we have received nothing but an acknowledgment of our letter. So you see that the drydock property which has been taken away from us is being operated with our machinery.

"Our dock was the pioneer dock in Canada, and look what a benefit it has been to the nation, especially since the war. We went through hard times, but some time ago we turned the corner and it was paying well. It certainly was not the time for the Government to deprive us of it. The Minister states the rental is to be \$62,500 (about half of what it should have been), which is 5% upon \$1,250,000, and ½% less than the government is paying for money today. Upon this valuation the dock would easily pay 30%. On May 18 in Ottawa the Minister offered us \$1,250,000, and the same offer was made on June 12 when he was in Halifax, but we refused it. He now offers us \$1,100,000, which, less our expenditure of \$220,000, would only net us \$880,000, which is simply absurd, as it is not more than sufficient to buy the real estate, build the shops and furnish the plant today, leaving the dock itself entirely out of the question.

"No Canadian came forward to put one dollar into this undertaking, but when they find out it is a paying venture, having an up to date shipbuilding plant and a profitable business, they do not hesitate to ask the Government to expropriate it under the guise of a shipbuilding scheme, which saves them asking for provincial

and city subsidies which they might not have been able to obtain. The last offer our shipbuilding committee had was in July, 1917, from an English company, which wanted \$400,000 from the province of Nova Scotia, \$200,000 from Halifax, and \$200,000 from Dartmouth. St. John, N.B., is asking \$500,000, so anyone can see the value of the Halifax drydock to the new company, and yet the Minister of Marine is reported as saying that the Halifax Shipyards, Ltd., is getting no financial assistance from the government.

"There is no precedent for such a high handed act, that is, for a minister of the crown to commandeer a property and business, and lease it to another company for one year, with the option of purchasing it at his fixed price any time within that period. It may be German practice, but certainly not the English method of doing things. Compare what we did with what the government accomplished, as regards erecting buildings after the explosion and getting the dock ready. We took the west side of the dock, where practically the work is, and proceeded to erect temporary pumps, boilers, roof over pump house and boiler house, iron stack for chimney, large ironworkers' shop, offices and stores, as well as repairing flues and putting the plant in order, all of which was done in two months. The government undertook to do the east side. One month was lost waiting for the Railways Department and the Public Works Department to decide which was to do this work, which delay was a serious matter to us. On Feb. 11 the government undertook the building of the wharf and the erection of the large emergency shop. It made such slow headway that I repeatedly wired Ottawa to see if it would expedite the work. Finally, when its representative would not carry out the plans, I was obliged to call in an architect and two surveyors, who met the resident government engineer, with the result that all the work done by the department was condemned. I wired Ottawa and it sent the Assistant Deputy Minister and government engineer down, and they also condemned the work, and on May 23, three and a half months afterwards, the wharf was not ready to take a vessel, whereas, if the government had not interfered with us, we would have had it ready for transports on April 10. Consequently we were obliged to repair transports in the harbor and basin, using motor boats, which was a delay to the transports and a great loss to us, so you will see that although the government stated this was important work it gave it no attention and utterly failed to be of any assistance to us whatever; so it must invent some other excuse for taking away our property. The wharf has since settled and the only building put up by the government has been taken down, and yet the minister complains of our lack of progress.

"A further reason advanced by the Government for taking the dock away is that it is a war measure. This excuse will not stand either, as the Halifax Shipyards, Ltd., is doing no more work than we did, although we have provided it with machinery, which we had ordered before the explosion, in order to expedite transport work. This shows that there was no delay on our part to meet emergencies. We had a large stock of plates, angles, etc.,

so that we were able to repair any ship expeditiously, and we had no complaints; on the contrary, the Admiralty gave us great praise for the expeditious manner in which we got the dock and plant ready to do repair work. The building of a few ships in the future will not affect the war in the slightest degree. The war will be over long before the keels are laid, and yet our company, of over 30 years standing, is to be sacrificed, to take the place of large cash subsidies for starting ship-building, and given to Montreal men.

"The dock received from the Dominion Government only \$10,000 a year subsidy for 20 years, a total of \$200,000. St. John, N.B., is to receive \$247,500 a year for 35 years, or \$8,662,520. Our dock is a fine one, cut out of the solid rock, and can compare with any dock, but the subsidy given us will not compare in any particular with the largely increased subsidies now given by the government.

"As regards shipbuilding, our citizens have all looked forward for years with the idea that the government would do something in the way of a policy to have this industry located here. At the request of the mayor, I went to England to see what I could do in the way of getting a large firm to locate here. A representative from one of the largest firms in Britain came here and selected the site. The citizens paid for it and it is standing idle today.

"When the government stopped the reinstatement of the dock, on account of some difficulty I would like the Minister of Public Works to explain, I went to Ottawa with one of our directors from London. We saw the minister, and he informed us that the government was going to expropriate the dock. We asked him to kindly tell us what it was going to do with it, as we thought our company should know. He declined to inform us. Had he been frank, and told us the government was framing a policy for building ships, and would give \$190 a ton and supply plates from a subsidized mill at a low rate, I think he need not have gone out of Halifax for the capital. Our men are away from their homes, fighting for fair play and for the protection of small nations, and yet our patriotic government is treating this progressive English company according to the doctrine of might being right, which has been the German practice. Surely our citizens will be interested in seeing that a precedent of this kind is not made; otherwise private property would never be safe if speculators wanted it. This matter will probably go to England, where contracts are held sacred and where justice will be dispensed."

The P. Q. Towing Co., Ltd., has been incorporated under the Dominion Companies Act, with \$50,000 authorized capital and office at Dalhousie, N.B., to carry on a general towing, wrecking and salvage business, and to own and operate G. C. Scott, Boston, Mass.; C. J. Paine, steam and other vessels, ferry boats, etc. Weston, Mass.; F. Rackemann, Milton, Mass.; P. R. Hussey, Dalhousie, N.B., and F. J. Allard, Carleton, Que., are the incorporators.

The St. John Steamship Co., Ltd., the incorporation of which, with office at St. John, N.B., was mentioned in our last issue, is having a wooden steamship built at Yarmouth, N.S., by W. D. Sweeny, for service between St. John and Bay of Fundy ports. The company intends to put other steamships in this service as the business develops. A. L. Fowler, President, Fowler Milling Co., Ltd., St. John West, N.B., is Secretary-Treasurer.

St. Lawrence River Navigation and Power Development.

Ottawa press dispatch, Nov. 14:—With the return to a peace basis, the Dominion Government will, it is said, take up the question of joint development with the U.S. of St. Lawrence water powers. A large scheme has been tentatively submitted in its broad outlines. While regarding increased navigation facilities as paramount in the St. Lawrence, the scheme, it is estimated, would result in the development of enormous additional water power. Surplus power generated under the scheme, and not needed in Canada, it is suggested, could be exported to the U.S. under treaty arrangements which would permit of its return when required on this side of the international boundary. One phase of the scheme would entail the practical abandonment of the present canal system of the St. Lawrence, as the result of the creation of a deeper waterway by means of dams.

International development of St. Lawrence waterpowers was urged on the U.S. Government when the application of the St. Lawrence Power Co. was before the International Waterways Commission. It was represented to Washington that the endeavor should be to design at the outset a complete scheme into which successive developments might be fitted from time to time, when occasion might demand. But in such a scheme, it was pointed out, there always was present the great danger that the ultimate possibilities of St. Lawrence navigation might be neglected or irreparably injured. "On the other hand," reads an order in council passed at the time, "it is certain that the subordinate and incidental, but important, use of these international boundary waters for power purposes can never be rendered as efficient and productive through a policy of simply permitting a haphazard series of unrelated private enterprises as through a carefully considered and comprehensive scheme of development carried out under public auspices by the two countries, and obviously it is only by agreement and concerted action between the two countries that such development can be undertaken."

Reconstructed U.S. Ships Being Finished in Canada

Seven of the 12 vessels under reconstruction on the Great Lakes for the United States Shipping Board, have been sent to Montreal to be rejoined for coast-wise service. They were cut in two for passage through the Welland Canal locks. Work on the remaining 5 vessels in the Great Lakes yards is being rushed, and they will be taken to Montreal before the St. Lawrence River freezes. Men have been sent to Montreal, from the lakes, for work on vessels to be rejoined.

About 3,500,000 rivets were driven in the vessels under reconstruction on the lakes, and there was keen competition between the different yards in rivet work. The reconstructed vessels are practically new throughout, the hull being the only part of the original ship. When the vessels are rejoined and completed at Montreal, they are turned over to the U.S. Navy by the Shipping Board. The Navy then takes the vessels to the Atlantic Coast, where they are put into service.

Swedish Steamship Confiscated.—Judgment was delivered in the Admiralty Court at Halifax, N.S., Nov. 22, against the Swedish s.s. Svithold, which was seized in the early days of the war and taken to Halifax. The judgment confiscated the vessel and her cargo of rubber, and it was held that the master of the vessel acted in collusion with people in Pernambuco, in attempting to smuggle the third officer of a German interned steamship to Germany, that he lied when he protested that he was unaware he had the man on board, and that this alone was justification for the confiscation of the vessel and cargo. Permission to appeal to the Imperial Privy Council has been asked.

Halifax Shipyards, Ltd., has increased its authorized capital from \$6,000,000 to \$10,000,000, and the number of its directors from seven to nine, the additional two being selected by the present board from among the qualified shareholders, for the balance of the term of the existing board.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie canals during October, 1918.

| ARTICLES. | Eastbound. | | Total. |
|--|-------------|--------------|------------|
| | Can. Canal. | U. S. Canal. | |
| Lumberm. ft. b. m. | 580 | 30,101 | 30,681 |
| FlourBarrels | 224,390 | 847,940 | 1,072,330 |
| WheatBushels | 13,205,291 | 15,943,689 | 29,148,980 |
| Grain, other than wheatBushels | 1,121,931 | 3,157,985 | 4,279,916 |
| CopperShort tons | 913 | 8,385 | 9,298 |
| Iron OreShort tons | 1,675,217 | 6,753,426 | 8,428,643 |
| Pig IronShort tons | | | |
| StoneShort tons | 750 | | 750 |
| General MerchandiseShort tons | 2,558 | 6,208 | 8,766 |
| PassengersNumber | 212 | 31 | 243 |
| Westbound. | | | |
| Coal, softShort tons | 105,650 | 3,087,728 | 3,193,378 |
| Coal, hardShort tons | | 403,510 | 403,510 |
| Iron OreShort tons | | 30,898 | 30,898 |
| Mfgd. Iron and SteelShort tons | 293 | 1,352 | 5,762 |
| SaltShort tons | 3,200 | 2,562 | 5,762 |
| OilShort tons | | 53,412 | 53,412 |
| StoneShort tons | | 32,033 | 32,033 |
| General MerchandiseShort tons | 21,023 | 31,321 | 52,344 |
| PassengersNumber | 222 | 10 | 232 |
| Summary. | | | |
| Vessel passagesNumber | 737 | 2,271 | 3,008 |
| Registered tonnageNet | 1,512,967 | 7,327,899 | 8,840,866 |
| Freight— | | | |
| EastboundShort tons | 2,127,867 | 7,462,438 | 9,590,305 |
| WestboundShort tons | 130,166 | 3,642,816 | 3,772,982 |
| Total FreightShort tons | 2,258,033 | 11,105,254 | 13,363,287 |

Loss of Auxiliary Powered Schooner Dornfontein.

Judgment was delivered recently, following an investigation into the loss of the auxiliary powered schooner Dornfontein off Brier Island, Bay of Fundy, Aug. 2. The enquiry was held at St. John, N.B., by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. A. J. Mulcahy and Jas. Hayes, nautical assessors.

The master, Capt. C. E. Dagwell, testified that he left St. John, N.B., July 26, with a crew of mixed nationalities, Norwegian, Swedish, Danish and Russian Finn, and with a cargo of lumber for Durban, South Africa. He had received clearance from the customs, and secret instructions from the transport officer, the day before. He did not know any of the crew and had no reason to suspect anyone on board. After anchoring off Partridge Island, for the adjustment of compasses, etc., he again sailed, July 31, but the flood tide carried him back, and on Aug. 2 he was off Brier Island, steering west. On that day, the man at the wheel reported a vessel to the south, but he could not make her out after scanning her with the glass. He knew that there were submarines in the vicinity, but kept on his course. He kept looking at the vessel, but she did not appear to be coming any closer. He had seen submarines before, but could not detect anything strange about the construction of the vessel in sight. He looked occasionally until dinner time, when the vessel had been in sight about an hour and still approaching, and at noon he did not detect anything suspicious, but while at dinner a shot was fired. He then knew that there was a submarine and came on deck and ordered the helm up. Another shot was fired and a piece of shell pierced the spanker. His vessel was then hoisted up, and signals were hoisted on the submarine, which came up fast after the first shot was fired. After the boats were lowered he went below to get the papers which were in a tin box. The letter of instructions had not been opened. He had all his papers in his pocket when clearing at St. John, also his certificate, later placing everything in the box, except his certificate. He did not remember that instructions were given to him to destroy the secret orders in case of meeting with the enemy. He later saw the papers in the hands of the commander of the submarine. About four hours later, the schooner was in flames. He noticed that the submarine had two guns, but did not notice any other matters. The crew were very decent with him. The Dornfontein was burning when they left the submarine to row ashore, where they landed the following morning. There was no special lookout kept on his vessel. He kept his certificate in his pocket, not as a matter of precaution, but merely because he forgot to take it out. This was his second vessel lost through enemy action. He knew the papers given him by the naval authorities were to be destroyed, but he forgot to do so. He had conferred with the transport officer and had read the document in his office, but did not remember signing it. This was later disproved by the production of a copy duly signed by the master and acknowledged by him. When his other vessel, the Sunlight, was torpedoed, he saved his certificate, all other papers being lost.

The mate, C. Olsen, a Dane, stated he had been three years in Canada, and held a Danish certificate, and in general, cor-

roborated the master's evidence.

The judgment was as follows:—The court finds in the master's evidence some contradiction with respect to his knowledge of the contents of the documents containing the sailing orders, he saying at one time that he was not aware that his instructions were to destroy such instructions upon the appearance of an enemy ship, or when capture was imminent, and his subsequent admission of having read such instructions, and signed the form upon which they were printed and written, the original being before the court; thereby giving the impression that he considered those papers of secondary importance. He had placed these instructions in a box which held other ship's papers, but retained in his pocket his certificate, for which, after clearing at St. John, he had no further use until he again reached a British port. His plea is that his certificate was forgotten in his pocket, while he locked away in a box the document of great importance, which the court assumes he was obliged to consult frequently. However, on his own admission, he did not remember what those instructions were, therefore showing that he made light of his duties to his country and his flag, and of his responsibility to his owners, by handing over his orders to the enemy, although he claims that he was cool and collected. An interval of five minutes elapsed from the time he obeyed the submarine's signals to bring his papers, and rowing away from the ship's side. In military and naval circles, during war time, such neglect would bring upon the individual the odium of disloyalty, with a possible verdict advising capital punishment. In civil life, since war has begun, many persons have received long terms of imprisonment, with heavy fines, for utterances made on the spur of the moment, and which did not carry with them the importance of this unheard of neglect, to follow and execute such peremptory orders as Capt. Dagwell had received. He had been torpedoed before, he had heard that submarines were frequenting, and had created havoc, on the coast, and yet in the face of his former experience, and his knowledge of existing conditions, that danger was lurking in the western Atlantic, where many victims had already been sacrificed, he did not even give special orders to his officers or crew to be vigilant in keeping extraordinary lookout. An object was seen by him at 11 a.m. on Aug. 2. With the glasses he watched the object, but could not define it. It was still in sight at noon. He nevertheless went to his lunch, and according to the mate's evidence, did not whilst both were at table, mention what he had seen. A shot was fired which drew his attention, on the hearing of which he came on deck. A second shot was fired, at an interval of a couple of minutes, and yet on hearing and seeing this second shot, no thought was given to the secret orders he possessed. Before the second shot was fired he had ordered the helm up, with the intention of running away; but brought his ship to the wind when the second shot struck the water a few yards from him.

The court is of opinion that the master had ample time to reflect, and to destroy the document had he attached any importance to it, and the only conclusion which can be arrived at is, that he was gravely negligent; but not with criminal intent. Whilst it has been ascertained

that the crew was of mixed nationalities and that two of its members spoke German, the court has failed to connect this disaster with any preconceived, prearranged signals, or notification to the enemy. In view of the fact that no evidence has been obtained pointing to criminal intent on the part of the master, or his crew; but finding only a total disregard of the importance of his instructions, the court feels that in this instance a suspension of certificate will be a fit punishment to meet this neglect. Therefore, it suspends Capt. Charles Ephraim Dagwell, Board of Trade Certificate 99236, for the duration of the war, until such a time when ships will be permitted to sail from any port or ports without special admiralty or governmental restrictions, other than those which regulate the departure of ships in normal times, and trusts that this finding will prove a deterrent to such masters in whose minds may lurk an idea that orders and instructions, issued by established authority, are of no, or little, importance, and that the non fulfillment of such orders cannot be overlooked with impunity.

Navigation Aids on the Great Lakes and St. Lawrence River.

All Canadian lights and fog alarms on Lake Superior will be kept in operation this autumn until the close of navigation, with the exception of Caribou Island, Quebec harbor, Davieaux Island and Michipicoten Island east end, which will be closed Dec. 15, and with the exception of Gargantua, Michipicoten harbor, Corbeil Point and Ile Parisienne, which will be closed Dec. 20; also Slate Island, Battle Island, Lamb Island, Shaganash, Point Porphyry, Thunder Cape, Welcome Island, Pie Island and Victoria Island, which will be closed after the last sailing to or from Port Arthur and Fort William.

All Canadian lights and fog alarms on Lake Huron, Georgian Bay, Lake St. Chair, Lake Erie, Lake Ontario and connecting waters, will be maintained in operation until the close of navigation, excepting the Southeast Shoal lightship, Lake Erie, which may be removed after Dec. 1, and also Lonely Island light, Georgian Bay, which may be closed before the general close of navigation.

All Canadian lights on the River St. Lawrence will be maintained in operation until the close of navigation. All gas buoys and other floating aids to navigation will be maintained in position as long as ice conditions will permit, and in cases where it is necessary to remove gas buoys before the close of navigation, the more important points will be marked by spars.

Engines for War Time Vessels.—The U.S. shipbuilding programme is being interfered with to some extent, owing to the fact that hulls have been launched rather faster than engines can be supplied for them. It is stated that about one-third of the hulls launched since the U.S. Shipping Board took hold of the situation in Aug., 1917, have not been completed owing to the non-delivery of the necessary engines. A similar condition arose in Canada in connection with the vessels being built for Great Britain under Imperial Munitions Board orders, and is one of the effects of an abnormal situation. In the U.S., naval demands on engine production have been dealt with first, and it is announced that with the general increase in production, recently launched vessels will be engined speedily.

Wooden Shipbuilding in Canada for Foreign Countries.

Following is a complete list of licenses granted by the Dominion Marine Depart-

ment up to Nov. 16 for building wooden steamships for export:—

| Date. | Builder. | Vessels. | D.W. Tons. | For |
|-----------|---|------------------|------------|---------|
| Mar. 14— | British American Shipbuilding & Engineering Co., Vancouver, B.C. | 20 steamships | 3,000 | Norway |
| June 3— | LeClaire Shipbuilding Co., Sorel, Que. | 4 aux. schooners | 1,200 | Norway |
| July 18— | Three Rivers Shipyards, Ltd., Three Rivers, Que. | 25 vessels | 3,000 | France |
| July 18— | LeClaire Shipbuilding Co., Sorel, Que. | 3 motor vessels | 1,000 | Norway |
| Sept. 6— | LeClaire Shipbuilding Co., Sorel, Que. | 2 aux. schooners | 1,200 | Norway |
| Sept. 12— | Davie Shipbuilding & Repairing Co., Lauzon, Que. | 12 steam barges | 1,500 | France |
| Sept. 12— | Fraser, Brace & Co., Montreal. | 8 steam barges | 1,500 | France |
| Sept. 12— | New Westminster Engineering & Construction Co., New Westminster, B.C. | 5 steam barges | 1,500 | France |
| Sept. 12— | Wm. Lyall Shipbuilding Co., Vancouver, B.C. | 8 steam barges | 1,500 | France |
| Sept. 12— | Pacific Construction Co., Port Coquitlam, B.C. | 2 steam barges | 1,500 | France |
| Sept. 12— | Northern Construction Co., Vancouver, B.C. | 5 steam barges | 1,500 | France |
| Sept. 12— | National Shipbuilding Corporation, Three Rivers, Que. | 10 steam barges | 1,500 | France |
| Oct. 12— | Foundation Co., Victoria, B.C. | 20 steamships | 3,000 | France |
| Oct. 12— | Davie Shipbuilding & Repairing Co., Lauzon, Que. | 1 steamship | 1,500 | Greece |
| Nov. 2— | New Westminster Engineering & Construction Co., New Westminster, B.C. | 3 steamships | 3,200 | Belgium |
| Nov. 2— | Northern Construction Co., Vancouver, B.C. | 4 steamships | 3,200 | Belgium |
| Nov. 2— | Pacific Construction Co., Port Coquitlam, B.C. | 3 steamships | 3,200 | Belgium |

Total, 135 vessels; 313,700 tons d.w. capacity.

Increase in Express Rates in the United States.

The Interstate Commerce Commission, in its decision announced recently with reference to proposed increase in express rates, indicates that the plan proposed constitutes a justifiable method of dealing with the necessities of the situation unless the Director General of U. S. Railroads should reduce the percentage basis of compensation which the express company is to pay the Director General or unless he should make what is in effect a similar change in the contract by providing that only half of the proposed increase in rates shall be made and that the entire increase thus made shall inure to the benefit of the American Railroad Express Co. These alternatives had already been carefully considered by the Director General, and the conclusion was reached that neither alternative was justifiable in the circumstances.

The contract between the Director General and the express company provides that the company shall pay to the government for the express privileges accorded to it by the Director General 50.25% of the gross revenues from the express business. This percentage represents the average which has been paid for 10 years by the express companies to the railways, and it is fair to assume that this percentage represents what is required for the performance of that part of the total service which has been performed by railways in the past. Moreover, the heavy increases in operating costs on the railways have necessitated substantial increases in freight and passenger rates averaging probably 25% or more, and averaging in the case of many passenger rates as much as 50%. In such circumstances it is clearly unwise to make an actual reduction in the basis of the government's compensation for the express privileges accorded to the express company for services on passenger trains. By the preservation of the present established basis of compensation for the express privileges, the increase in revenue of the U. S. Railroad Adminis-

tration from the carrying of express business on passenger trains will be no greater than the increased revenue paid for transportation of passengers and their baggage, and such increase from the express business is just as appropriate and necessary as the increase from the passenger business.

Another consideration of first importance is that the relatively low rates for freight rates. The result of this undue transportation of express matter have had the effect of transferring to passenger trains the transportation, as express, of many article and commodities which ought normally to go by freight. This tendency has been accentuated by the substantial increases recently made in transfer of freight matter to passenger trains has been to congest and delay the passenger train service. The proposed increase in express rates will probably fall short of establishing a proper relation between express rates and freight rates, and certainly on this account no less increase in express rates than is proposed would be advisable.

The entire amount of this increase which will inure to the express company is to be used for making necessary increases in wages of express employees. The portion of the increase which will inure to the U.S. Railroad Administration will be no more than is needed to provide for heavy increases in operating cost fairly chargeable to the express business.

Among the Express Companies.

P. H. Findlay has been appointed Agent, Dominion Ex. Co., Cobalt, Ont., vice A. F. Robertson, transferred.

A. F. Robertson, heretofore Agent, Dominion Ex. Co., Cobalt, Ont., has been appointed Agent, Sault Ste. Marie, Ont., vice J. M. Boivin, resigned.

J. W. Proulx, heretofore in General Agent's office, Canadian Ex. Co., Montreal, has been appointed route agent, vice W. G. Everett, who was appointed agent at St. John, N.B., in June.

The U.S. Railroad Administration has

announced that the American Railway Ex. Co., under a new agreement, will receive 49% of all express operating revenue, the railways receiving the balance.

Edward Allen, Superintendent, Canadian Ex. Co., Toronto, whose death was announced in our last issue, left an estate of \$16,091, including \$5,000 insurance, which, with the residue of the estate, was left to his widow, the rest being divided equally between three daughters.

The Express Traffic Association of Canada, as representing the Canadian express companies, has applied to the Board of Railway Commissioners for permission to increase express rates by 25% over the present rates per 100 lb. for points west of Sudbury, Ont., and by 37% for points east thereof.

The litigation between the British Columbia Express Co., and the Grand Trunk Pacific Ry., in connection with the construction of certain bridges across the Fraser River by the latter, and which the express company claims interfere with its business, has been ended, with the decision of the judicial committee of the Imperial Privy Council, in favor of the G.T.P.R. This matter has been before the courts for over four years, the judgment in the original trial being against the B.C. Ex. Co.'s contentions. This was reversed on appeal, and a further appeal restored the original judgment, which has been upheld in the final judgment. The bridges in question are all across the Fraser River, one just below the junction of the Nechaco River, and one each at mileage 142 and 189 on the G.T.P.R.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Independent Pneumatic Tool Co., Chicago, Ill., has issued circular 28 describing and illustrating the Thor pneumatic and electric tools in detail, with complete specifications.

Independent Pneumatic Tool Co., Chicago.—Roger C. Sullivan has been elected a director, chairman of the board, and also a member of the executive committee, to fill vacancies caused by the death of John P. Hopkins.

Prest-O-Lite Co. of Canada, Ltd.—The storage battery and compressed acetylene gas manufacturing business, carried on hitherto in Canada by Prest-O-Lite Co., Inc., has been transferred to Prest-O-Lite Co. of Canada, Ltd., which has been incorporated under Canadian law, with an authorized capital of \$800,000. The company's headquarters is in its own building, Elm St. and Centre Ave., Toronto, where its welding and cutting equipment is made and marketed. It has plants for manufacturing Prest-O-Lite compound acetylene at Shawinigan Falls, Que., Merriton, Ont., and St. Boniface, Man., and has an office and warehouse in Montreal and a sales office in Winnipeg. R. H. Combs, who has been with the Prest-O-Lite Co., Inc., since 1908, in various capacities, has been appointed Manager of the new Canadian company.