

# Canadian Railway and Marine World

December, 1917.

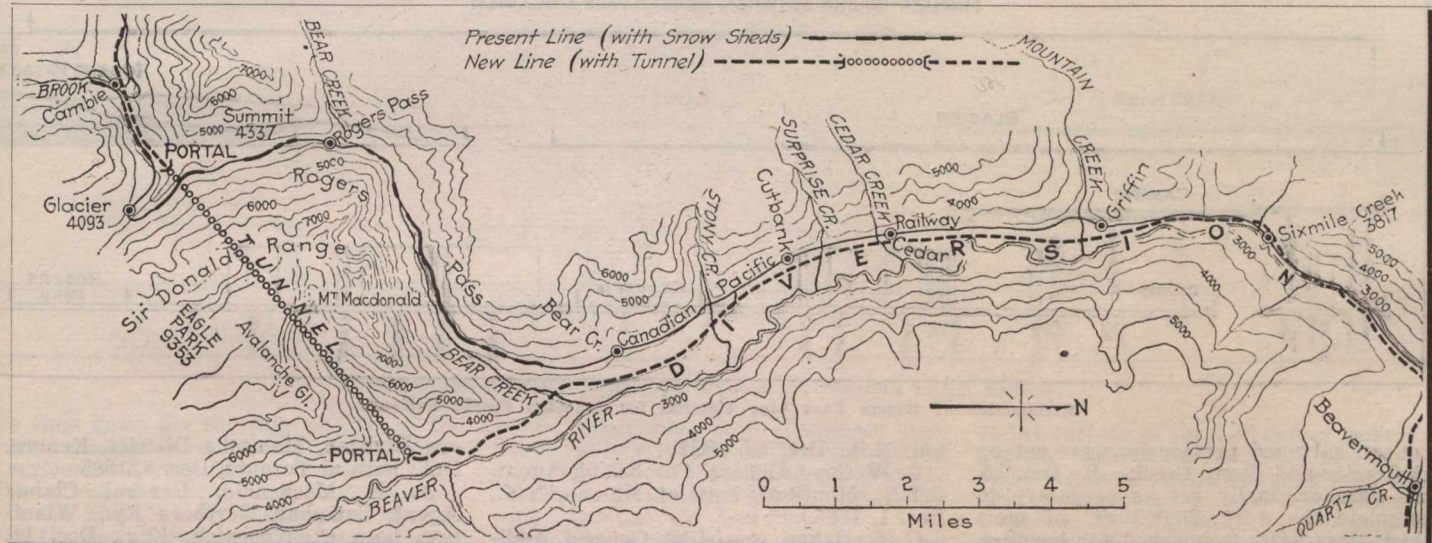
## Salvaging the Canadian Pacific Railway's Old Line at Rogers Pass.

The five-mile Connaught tunnel, on the C.P.R. main line through the Selkirk Mountains in British Columbia, was opened for operation in Dec. 1916. Its use made possible the abandoning of the old main line over the Rogers Pass, with a consequent reduction in elevation of more than 500 ft. A large amount of curvature was also taken out and the distance considerably shortened. The old main line left the present line about three-quarters of a mile from the new tunnel's western portal, crossed the Illecillewaet River and Eagle Creek, followed the contour around the Cambie and Glacier loops, rising steadily on heavy grades through about two miles of snow sheds until the summit was reached at Rogers Pass. From Rogers Pass the line dropped to the east

to certain specified points on the line, was to be taken to Donald, B.C., in the Columbia River valley, as this was the nearest place having space enough available to store the amount of material which it was estimated was to be saved. The turning point of the work was the necessity of finishing it before the first snow fell, as there was every chance that if part of the line was left unprotected through the winter, with long stretches of snow shed taken out, slides would make it impossible to go in again in the spring of 1918 and bring out the rest of the line. Before work began, in fact, three small slides, one of them about 250 ft. long, were found to have already occurred and had to be cleared before the line could be used for work trains.

part to 3 and 4 in. planks and 12, 14 and 16 in. square timbers from 20 to 30 ft. long. The timber was delivered on flat cars at Donald, the cars being picked up daily at the various points where the derricks were working, by C.P.R. work trains operating over the hill until the track was broken, and afterward on the west slope, down over the Cambie loop and through the tunnel to Donald.

Final decision to salvage the line was made by the C.P.R. late in July, and the last few days of the month were spent in repairing and refurbishing outfit cars, arranging for board and commissary matters and getting equipment ready for the work. It was estimated that snow enough to shut down the work might be expected any time after Oct. 15, and that there



Old and New Lines, Canadian Pacific Railway, at Rogers Pass, B.C.

sharply, and from one mile east of Rogers Pass to Bear Creek ran through practically continuous snow sheds for three miles and joined the new main line just east of Stony Creek.

The abandoned line comprised some 20 miles of track and sidings; 25,000 lin. ft. of snow sheds, and a considerable amount of miscellaneous property, including water and oil lines, telegraph lines, tool houses, water tanks, station buildings and locomotive house equipment at Rogers Pass. Due to the abnormal conditions created by the war, the C.P.R. desired to salvage everything that would justify the expense of recovery. The general plan for the work was, first, the salvaging of snow sheds on each side of the summit, working down the hill both ways from Rogers Pass. The cribbing was to be left, as it was too firmly embedded in the side of the hill to be pulled loose without breaking, in addition to the probability that if taken out it would bring down the hill with it. Track was to be taken up, when the snow sheds were far enough ahead, so that the track gangs would not overtake the snow shed gangs. Miscellaneous structures were to be taken out as most convenient. All material, except such as might be loaded and sent direct

The question of equipment was of first importance, due to the need for rapid work. It quickly developed that practically all the equipment would have to be improvised, as no standard equipment was available in the way of locomotive cranes or other rigs that might be used for wrecking the sheds. It was therefore decided to rely principally on skid derricks, working on top of or alongside the sheds. Eight of these were built, together with a derrick car, which was put together in Vancouver and shipped to the work. Overhead cable ways were considered, but believed to be too slow, particularly as it soon developed that the cribbing would stand if the sheds were removed, so that there was no immediate danger of slides and no need of keeping equipment up out of the way. A track laying machine was also considered for taking up track, but it was thought there was not sufficient work to justify its use.

At the unloading and storage yard at Donald, a small, quick handling, movable derrick, of about 2 tons capacity, was installed, and one larger stationary derrick, with an 80 ft. boom. Two reciprocating steam saws, with boilers, were set up for working the salvaged timber into shape. The sizes of the timber ran for the most

were, therefore, not more than 75 working days which could be safely counted upon. By the first week in August camps had been established at Cambie, Donald and Rogers Pass, and work had begun on the snow sheds at several points on the west slope. Labor, although none too good, appeared plentiful, but it was difficult to get prompt deliveries on much needed equipment. By the second week in August, however, work was well under way on the sheds and some track and locomotive house material had been shipped from Rogers Pass yards. By the third week, 3,700 lin. ft. of snow shed were either partly or wholly wrecked, but it was becoming very difficult to hold labor, due to the higher rates that were being paid in the harvest fields. Men would ship to Rogers Pass, work for a few days and then drift on to the east. Instead of 300 or more men estimated as necessary for progress, the number dropped to 150, and several times to not more than 100. By the end of August, however, 6,500 lin. ft. of sheds were wholly or partially down, two miles of track were up and a considerable amount of miscellaneous material had been loaded. Work was pushed with the small force available and by mid September seven



derricks were at work, and all of the snow sheds on the west slope had been salvaged, except one shed above the old Glacier station, which, on examination, was found to be worthless, and was marked for burning. Meanwhile the labor situation was slowly improving, as the harvest season advanced and more men drifted westward. During the next two weeks this improvement was reflected by increased progress, and by Oct. 1, 16,000 ft. of snow sheds had been partly or wholly salvaged.

The main line track was broken at Rogers Pass on Sept. 18, and by the end of the month 11½ miles of track were up, and the west slope was practically clear of material. Outfits were then shipped promptly to the east slope, and every effort concentrated upon getting down the hill ahead of the snow. Derricks were placed as close together as they could be economically operated, and the track gangs followed immediately after the derricks. During the next week four miles of track were taken up, about half a mile of snow sheds were wrecked, and a large amount of piping and miscellaneous material were saved. Small portable

## Birthdays of Transportation Men in December.

Many happy returns of the day to:—  
E. T. Agate, M.Can.Soc.C.E., 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, M.Can.Soc.C.E., Engineer, double track, C.P.R., Toronto, born at Cobourg, Ont., Dec. 20, 1856.

N. E. Brooks, M.Can.Soc.C.E., ex-Engineer of 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 Mon-

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, 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.

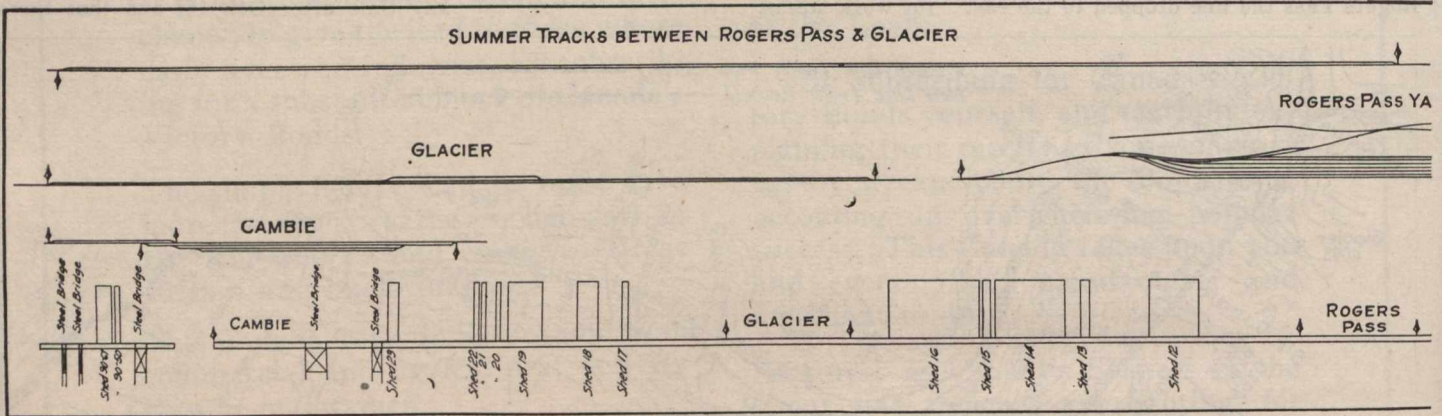
L. S. Landers, Assistant Engineer, Canadian Government Railways, Levis, Que., born at Farnham, Que., Dec. 15, 1888.

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, Ken-



Reclamation of Rogers Pass Line Material for Canadian Pacific Railway.

houses, salvaged previously, were set up at Glacier and Stony Creek. By Oct. 15, the date originally set as necessary to complete the work, 25,000 ft. of snow sheds, less 5,000 ft. marked for burning, had been salvaged; 18 out of 20 miles of track were up and all miscellaneous work done except a little grubbing and burning. Equipment was loaded during the next few days, camps struck and forces reduced. On Oct. 18, the first snow fell at the pass.

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

The accompanying chart will give an idea of the general layout of the work. The bridges will be taken out by another contractor, probably during this year.

**U. S. Shipment of Licensed Articles to Canada.**—To facilitate shipment of certain commodities from the U. S. to Canada and Newfoundland, there has heretofore been issued through the U. S. customs service, a special license whereby goods have been permitted to leave without an individual license for each shipment, except in the case of commodities which it has been found necessary to conserve, and for the exportation of which individual licenses have been required as announced from time to time. Several additions have been made to the list, for which individual licenses will be required for each shipment, as from Oct. 20.

ton, N.B., Dec. 12, 1882.

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

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 with Algoma Steel Corporation, Sault Ste. Marie, Ont., 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, M.Can.Soc.C.E., Vice President and General Manager, Delaware & Hudson Co., 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, Third Vice President, Canadian Northern Ry., Toronto, born at

ora Division, Manitoba District, Kenora, Ont., 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, General Manager, Eastern Lines, C.P.R., Montreal, born at Blairgowrie, Scotland, Dec. 27, 1867.

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

S. R. Payne, Manager, Ottawa Division, New York Central Rd., Ottawa, Ont., born at Jefferson, Ohio, Dec. 21, 1865.

Alfred Price, Assistant 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, Export Freight Agent, C.P.R., Montreal, born at St. John, N.B., Dec. 7, 1877.

Sir Collingwood Schreiber, K.C.M.G., Hon. Mem. Can.Soc.C.E., General Consulting Engineer to Dominion Government, Ottawa, Ont., born at Bradwell, Essex, Eng., Dec. 14, 1831.

W. Tansley, Superintendent, Laurentian Division, Quebec District, Montreal, born at Shelburne, Ont., Dec. 27, 1872.

M. F. Tompkins, Division Freight Agent, Intercolonial Division Canadian



Government Railways, Halifax, N.S., born at Margaree, N.S., Dec. 6, 1878.

H. H. Vaughan, M.Can.Soc.C.E., Consulting Engineer, C.P.R., Montreal, Vice President, Dominion Bridge Co. and Vice President and Managing Director Domin-

ion Copper Products Co., born at Forest Hill, Essex, Eng., Dec. 26, 1868.

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

A. P. Walker, M.Can.Soc.C.E., Assist-

ant 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.

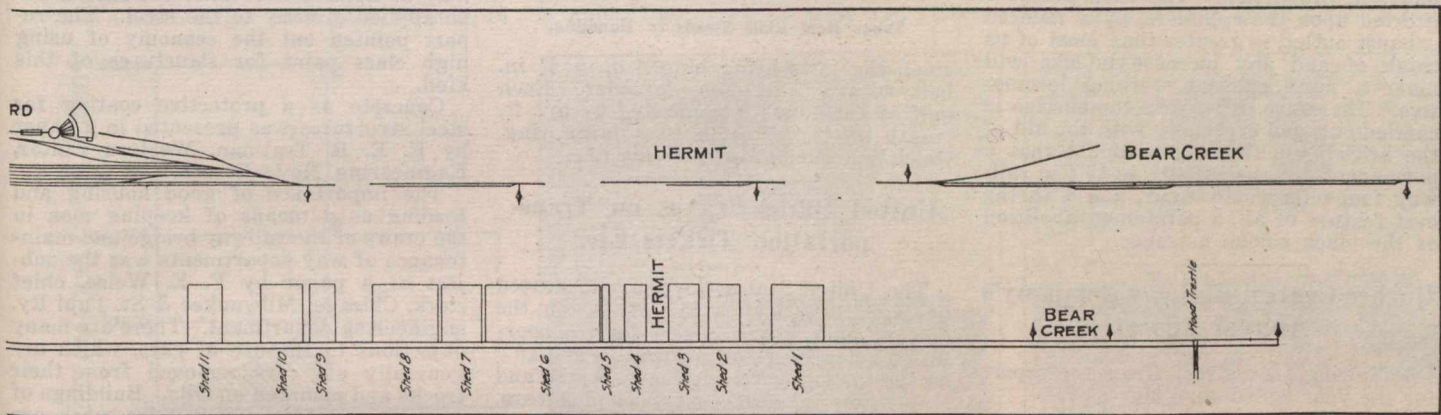
## Fuel Economy as Related to its use in Steam Boilers and Locomotives.

By S. H. Pudney, Fuel Inspector, Eastern Lines, Canadian Pacific Railway.

In the first two articles on this subject the losses of fuel during its combustion were shown by relating to various tests that have been made, also to actual practice in the use of fuel. There is no doubt that such losses do occur because it has been shown that by the use of certain devices a saving of even up to 25% has been made, and no saving could have been made if there was no loss before. Now the question arises, what can be done to overcome these losses and enable us to get the greatest possible efficiency from the fuel we use, and thereby not only save money but conserve our fuel and also reduce the car shortage. There never was

bed, takes up more carbon and at the surface has a large proportion of CO. A large proportion of the flame that is given off at the surface of the fuel bed is also unsaturated gas. The second process, or reaction, is the combination of the CO with oxygen to form CO<sup>2</sup> with an increase of 10,000 b.t.u.'s for every pound of carbon that undergoes such reaction, also the breaking down or reaction of the gases or flame into their individual elements to combine with oxygen, so that in this term they evidently mean that as nearly all these gases where this reaction has to take place are at the surface of the fuel bed, the best results can only be ob-

tion is correct and will eliminate smoke. No doubt many have seen a fireman take his coal scoop and open the fire door, then put his scoop in the fire door hole bottom up, turning it from side to side, deflecting the incoming air down over his fire. He does this so that he may be able to see the condition of his fire and can in this way see any banks or holes that may be forming in his fire box and remedy them at the next time of firing. He naturally considers that in doing this the air rushing in blows the smoke and gases away so that he can see his fire. But what really does occur is that the air, going in through the door, is being deflected down



Reclamation of Rogers Pass Line Material for Canadian Pacific Railway.

a time when the shortage of cars of the class that is used to carry coal was so serious, and very few of us realize what the effect of a saving of fuel would mean in this line. If a 10% saving was effected in the use of fuel on Canadian railways alone, it would mean that 18,000 cars could be released for one trip, or that about 2,000 cars could be released from this service altogether. This one item alone should make us go to greater lengths to get better efficiency, to say nothing of the six or seven millions of dollars that would be saved. To make this saving we have only to do, as was said before, viz., to follow out the rules that govern the perfect combustion of fuel.

There are a great many authorities on this subject and they all say the same thing as regards the better use of fuel. The University of Illinois, through Professors Parr and Olin, have made some important researches on the coking of fuel at low temperatures, and in a bulletin, in speaking of the combustion of coal, they quote Prof. Bone, who is recognized as one of the highest authorities on this subject, as follows: "Other conditions, such as accelerating the reaction by introducing the principle of surface combustion, may at some time be added to the mechanical and physical conditions now in vogue in the use of fuel."

In the burning of fuel there are two distinct processes. The first action, or process, is the burning of the fuel on the grates, which, in passing through the fuel

bed, takes up more carbon and in other words, oxygen of the air must be administered to the gases independently of that which comes through the fuel bed.

Mr. Fox, a well known writer and specialist on black smoke in Chicago, says that air admitted through the fire door and allowed to pass over the surface of the fuel is the best remedy for smoke. An investigation was carried out by the United States Geological Survey, under the charge of D. T. Randell and H. H. Weeks, who, after making a considerable number of tests with different classes of boilers and furnaces, said that they found that air admitted through the fire door freely, at the time of firing and for a short period thereafter, was productive of a more perfect combustion of the gases and less smoke. These statements, made by men who had only one object in view, viz., to find out the truth, cannot be doubted. I have made some considerable experiments in this line myself and have found their statements to be correct.

Most locomotive men have had enough experience in this line to know the results. For instance, at terminal points and stations, the rule is invariably to open the fire door enough to consume the smoke. Of course, it is not possible to open a fire box door while the locomotive is running under load or trouble would soon occur, due to leaking flues. But there is one thing which a fireman does that proves to all who understand locomotive practice that the idea of surface combus-

tion is correct and will eliminate smoke. No doubt many have seen a fireman take his coal scoop and open the fire door, then put his scoop in the fire door hole bottom up, turning it from side to side, deflecting the incoming air down over his fire. He does this so that he may be able to see the condition of his fire and can in this way see any banks or holes that may be forming in his fire box and remedy them at the next time of firing. He naturally considers that in doing this the air rushing in blows the smoke and gases away so that he can see his fire. But what really does occur is that the air, going in through the door, is being deflected down

to the surface of the fuel and is performing the process of surface combustion, and the gases are all combining with oxygen at that point, so that combustion is complete. As the perfect combustion of fuel is without smoke or color at the spot where it is going on, he can see through the products of perfect combustion and note the condition of his fire. This proves again that surface combustion is the right remedy for smokeless and perfect combustion and the proper thing for fuel economy.

The proper way to admit air in a locomotive fire box for surface combustion is so that it may have the best possible chance to mix with the gases that are being liberated from the fuel, and where they may have the longest possible travel before reaching the flues. This means that it must be admitted at the door. The air going in must be deflected down in such a manner that it will come in contact with the gases at the moment they are liberated from the surface of the fuel, because at moment they are practically in their nascent condition, and in that condition all chemical action, or reaction, is more rapid and complete. That this can be done in our locomotives has been demonstrated fully, and it is quite possible to so equip them that we should be able at a trifling expense to save at least 10% of the fuel used at present.

In the article I mentioned that I considered much better results could be obtained in the combustion of fuel and that this could be done with a larger exhaust



outlet than is at present in use, which in turn would give a greater working capacity to our locomotives. The exhaust outlet's function is to produce sufficient draft to consume enough fuel to raise the necessary steam sufficient to haul the train over the road. Under present conditions this draft, or air, has to be produced through the fuel bed, which offers a great resistance to the incoming air and consequently a greater force has to be exerted than would have to be if the resistance was less. If we consume the gases that are being wasted, both as smoke and CO, with air that is, or can be, let in through the door, when there is absolutely no resistance, we will get this extra efficiency without any effort on the part of our drafting appliance, and will release that much work from our exhaust outlet. Another feature is that if we increase the efficiency of our fuel 10% by this means, we shall not need to consume so much by that amount. This again reduces the amount of work needed to be performed by our exhaust outlet. Consequently if we can reduce the amount of work done under existing conditions, we can naturally increase the size of the exhaust in proportion. The back pressure exerted upon the cylinders, by a reduced exhaust outlet, is greater than most of us think of and any increase in size will make a more efficient working locomotive. Therefore, if surface combustion is carried out, and especially with the aid of the brick arch, there is no doubt that a permanent decrease of 10% to 15% in railway fuel bills would occur, and with the best feature of all, a permanent abolition of the black smoke nuisance.

### Quebec Central Railway Company's Annual Report.

Following are extracts from the report for the year ended June 30:

Freight revenue .....	\$1,215,001.08
Passenger revenue .....	445,919.44
Mails .....	28,285.64
Express, miscellaneous, etc. ....	36,821.56
	\$1,726,027.72
Maintenance of way and structures ..	\$243,224.51
Maintenance of equipment .....	172,066.87
Traffic expenses .....	28,678.94
Transportation expenses .....	672,661.39
General expenses .....	59,926.06
Taxes .....	15,046.24
Expenses outside operations .....	15,797.03
Total operating expenses .....	\$1,207,401.04
Balance carried to net revenue account .....	518,626.68
	\$1,726,027.72

To the \$518,626.68 transferred from revenue account to net revenue account was added \$15,427.18, making a total of \$534,053.86. Out of this was paid \$255,560.94 for interest on debenture stock and 3rd mortgage bonds, leaving \$276,492.92 to be transferred to surplus income account, which, added to \$85,132.23 balance from 1915-1916, made a total of \$361,625.15. From this was paid 5% interest on share capital, \$169,080.16, leaving a surplus of \$192,544.99.

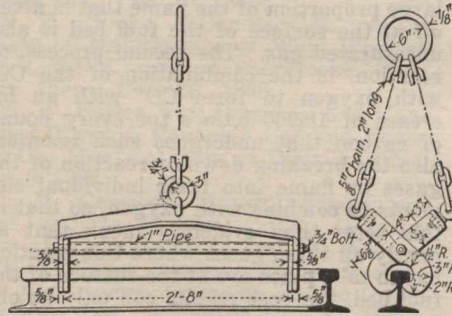
The directors are: Sir George Bury, President; I. G. Ogden, Vice President; E. W. Beatty, Montreal; J. H. Walsh, General Manager, Sherbrooke, Que.; T. Lindley and C. D. Brassey, London, Eng. L. A. Carrier, Levis, represents the Quebec Government on the board.

Under an agreement dated Oct. 2, 1912, the company's property was leased to the C.P.R. for 999 years at a guaranteed rental based upon interest on the mortgage bonds, and 4% dividend on the outstanding stock for five years from July 1, 1912, and 5% after.

### Special Tongs Prevent Rails from Seesawing While Being Handled.

The accompanying sketch shows some simple rail tongs which have been developed on the Atchison, Topeka & Santa Fe Ry., and which have given good service, according to W. Barnes, Supervisor of Work Equipment at Topeka, Kan.

The length of these tongs, 2 ft. 8 in. between grips, is found sufficient to prevent rails from seesawing while being handled by a crane. The main part of the tongs is made from  $\frac{5}{8}$  x 3 in. soft



Tongs Hold Rails Steady in Handling.

steel, the jaws being hinged on a  $\frac{3}{4}$  in. bolt with a 1 in. pipe spreader. Each half of the tongs is connected by a 2 ft. length of  $\frac{5}{8}$  in. chain to a large ring, which is hooked to the hoisting line.

### United States Taxes on Transportation Tickets Etc.

The United States Government started on Nov. 1 to levy a tax of 8% on the amount paid by passengers for transportation on railways or steamships and 10% on the amount paid for seats, berths and staterooms in parlor cars, sleeping cars, or on vessels. The tax does not apply on commutation tickets for trips less than 30 miles, nor on passage tickets where the fare is 35c or less. The tax applies on tickets sold in the United States to points in that country, Canada or Mexico, and is assessed upon the total amount paid for transportation to destination and not on the amount paid for passage within the United States only. The tax is collected by ticket agents, who are required under the law to decline to issue tickets to persons who refuse to pay the tax. This tax does not apply on tickets issued in Canada to points in the United States, only the Canadian tax of 5c up to 15c and 1% over that being collected on passage tickets, with tax of 10c per berth on sleeping car tickets, and 5c on parlor car fares.

A tax of 3% is levied on all amounts for carriage of milk, skim milk, butter-milk, pot cheese, cream, condensed milk and evaporated milk in baggage car service, also newspapers carried in baggage cars, wholly in the U. S., or from one point in the U. S. to another point in the U. S. through Canada or Mexico.

A tax of 8% is levied on amounts paid for excess baggage.

Lt. Col. Blair Ripley, M.Can.Soc.C.E., formerly Engineer of Track Elevation, C. P.R., North Toronto, now officer commanding, 1st Battalion, Canadian Railway Troops, in Belgium, writes: "I am always pleased to open Canadian Railway and Marine World when it reaches me. It keeps me in touch with things at home, in a matter of fact way, and is passed around to the boys, all of whom appreciate it."

### Railway Bridge and Building Men's Convention.

The American Railway Bridge and Building Association's convention held at Chicago recently, was largely attended.

The placing of new plate girder spans with the minimum interruption to traffic was dealt with in a committee report presented by Lee Jutton, Division Engineer, Chicago & Northwestern Ry. Two general methods are practicable: Piecemeal removal of the old and construction of the new spans, or the replacing of an entire span at one operation. Mentioned in the discussion that followed was the erection of concrete slab spans alongside the old work, with ballast and track complete. In this way the track could be connected up as soon as the new span had been moved into place.

Paint for steel and other structures was covered in a report presented by C. Ettinger, Illinois Central Rd. For steel work, he considered that the primer or first coat should be a rust-inhibitive coating with lead base. Carbon paints may be applied over this, but should not be applied directly to the steel. The report pointed out the economy of using high class paint for structures of this kind.

Concrete as a protective coating for steel structures was presented in a paper by E. E. R. Tratman, Western Editor, Engineering News-Record.

The importance of good housing and feeding as a means of keeping men in the crews of the railway bridge and maintenance of way departments was the subject of a paper by F. E. Weise, chief clerk, Chicago, Milwaukee & St. Paul Ry. engineering department. There are many objections to the use of cars, which are generally old cars removed from their trucks and mounted on sills. Buildings of concrete or of stucco on wire mesh are used in a few cases. Some railways and construction companies are introducing portable sectional knock-down houses. Most of these are of wood, but sectional steel structures for similar purposes are available.

Another subject discussed in regard to labor was the introduction of differential rates of pay for employes; that is, paying higher rates to men having the greater skill or experience.

A considerable number of women are employed by the C.P.R. on its Western Lines. Clerical positions in the general offices, freight offices and yard offices, vacated by men, have been filled by women. It was thought that women could not be used to advantage in yard offices, owing to the possibility that they might have to listen to objectionable language on the part of some men. No difficulty whatever has been found in this respect, the women having invariably been treated with every courtesy and respect. A number of women are being employed at Winnipeg, as passenger car cleaners, and are giving complete satisfaction. At Regina nine women were employed cutting grass and weeds in the yards, for about two weeks, and gave good satisfaction, but the management is not convinced, however, that women can be successfully used as ordinary track maintainers.

The Canadian Society of Civil Engineers', Regina branch has petitioned the Saskatchewan Government to restrict the practice of civil engineering to members of the Society.



# Draft Gears on Railway Rolling Stock.

By Louis E. Endsley, Professor, University of Pittsburg, Pa.

Draft gears have been much discussed by railway people for a great many years, and there are many phases of this subject. The attempt will be made in this paper to give a few points that appeal to me in regard to this subject. There are three things that draft gears may do in the handling of railway cars. These may be divided in general as follows: (1) Produce slack in starting trains. (2) Control slack in the movement of trains. (3) Reduce the impact force in the switching of cars. In all of these the principle involved is the same, viz., producing the same speed in two cars that may be coming together, or going apart, because of differences of speed. The draft gear, to be effective in doing this, must have a capacity that is relative to the difference in speed. What I mean by this is that for a difference of speed of, say, one mile an hour, a draft gear of small capacity will suffice, but if the difference in speed is four miles an hour, it will take a much larger draft gear, namely, 16

and should we want to get four times as much area as we had in ABC and still have the same travel, we will have to increase the pressure to 600,000 lb., and then the area of AGC will be four times ABC, or area AGC will equal AEF, and the capacity of these two gears will be the same. The 2 in. travel gear will have twice the final force that the one with the 4 in. travel will have. This final force is what a great many people have called the capacity of a draft gear. The comparison shown in fig 1 is ideal. I think it would be almost impossible to construct a draft gear that has a slope equal to line AG. But this figure was merely given to illustrate the advantage of long travel gears.

As I said before, if we have a draft gear that has a capacity equal to one fourth the difference of energy of two cars in impact, the cars will not receive a shock above the maximum force necessary to close the gear. That is, if a car is going four miles an hour and strikes

gy between the two cars coming together in impact, or the coupler or some other part of the car will have to do it. If the coupler is stronger than the other part of the underframe, the underframe will have to do it.

In order to illustrate what energy is necessary to be absorbed for different speeds of cars in switching service, table 1 is given. Column 1 of this table gives

**Table 1—Comparison of car, total weight 15,000 lb.**

Speed in miles per hour	Approximate energy in foot-pounds	Capacity of gear in foot-pounds just close	Approx. height of drop of 9,000 lb hammer to shear nine 19/32 rivets
1	5,000	1,250	4.7 in.
2	20,000	5,000	9.7 in.
3	45,000	11,250	18.0 in.
4	80,000	20,000	28.7 in.
5	125,000	31,250	44.7 in.
6	180,000	45,000	63.0 in.

the speed in miles per hour; column 2 gives the foot-pounds of energy in the moving car at the speed given in column

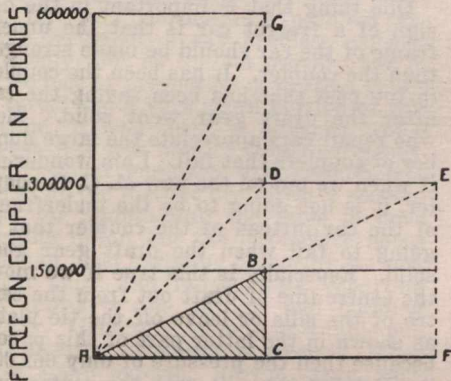


Fig. 1. Travel of draft gear.

times as large, to prevent a shock, for the energy of a moving body is proportional to the square of its velocity.

Draft gear capacity is the number of foot-pounds of work required to just close the draft gear, that is, it can be represented by an area, as shown in Fig. 1. The lower line of the chart in fig 1 represents the travel of the draft gear and the upper distance represents the force on the coupler until the draft gear closes and the horn strikes. This is the force on the draft gear. Now, if we assume a draft gear with a travel of 2 in., or from A to C in this figure, a final pressure of 150,000 lb., or from C to B, and that the pressure necessary to close the gear under discussion was directly proportional to the movement, the line of action of the gear would be a straight line, and would be represented by AB. The capacity of the gear then would be represented by area ABC. If we wish to increase the capacity without increasing the slope of the line AB, we must increase the travel, and if we should increase the travel to double that shown in the shaded area, we would have four times as much capacity as we had before. That is, if AC equal half of AF, the area ABC is one fourth of AEF. If we wish to increase the capacity of the gear and not the travel, we will have to increase the slope of line AB to AD, in order to keep this pressure 300,000 lb. or below, and will only get an area represented by ADC, which is only twice that of ABC. The slope of the line AD is much greater than of the line AB,

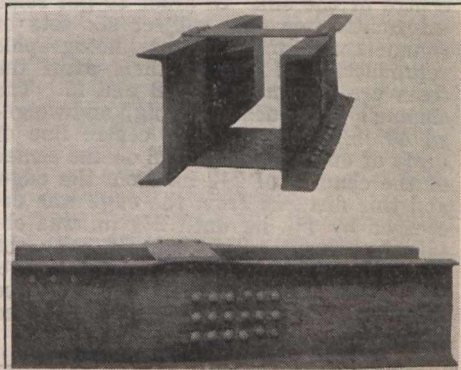


Fig. 2.

a car standing still, it will produce in the standing car approximately half of the speed of the moving car, or, in other words, put into the standing car one fourth of the energy that was originally in the rolling car. The rolling car will retain approximately one fourth, and coast down with the second car, but half the energy is gone and it must be absorbed in the draft gear or some part of the underframe. Of course, some of this energy may be absorbed, due to the shifting of the load, but it must be destroyed in some manner. If it is not done in the draft gear, it is bound to be done on the underframe or the coupler.

This shifting of the load amounts to considerable, in some kinds of freight, such as coal and ore. If the load should shift 1 in., this would be equal to increasing the draft gear travel 1 in.; also, any give in the underframe would be equal to increasing the travel of the draft gear. There is considerable difference in the give of cars. Steel cars only give half as much as wooden cars below the elastic limit, assuming that both have the same ultimate strength. This is one thing that has been entering into wooden car construction. There has been considerable give in the bolt holes, between the draft timbers and sills. Thus the car itself has been absorbing the shock and there has not been as much need for a draft gear of a large capacity. But when we are now using all steel cars, with no give in the rivets, the draft gear must do all the work of absorbing the difference in ener-

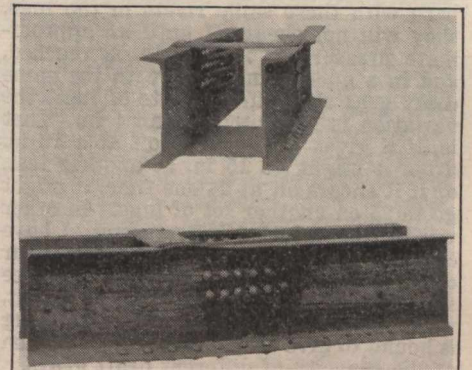


Fig. 3.

1; column 3 gives the capacity of the draft gear that should be used in each car for the speed represented in column 1 for two cars weighing loaded 150,000 lb.; column 4 gives the height of drop that the 9,000 lb. hammer should fall before it shears off 19/32 in. rivets to have the capacity given in column 3. This column was obtained by multiplying the values in column 3 by 12 and dividing by 9,000 and adding 3. The first part of this deduction is to obtain the height of drop to close the draft gear. The 3 added at the end is the added height in inches that it will take to shear off the rivets after the full capacity of the draft gear has been taken up.

It will be seen that a very small capacity is necessary for one mile an hour, namely, a drop of 4.7 in. of the hammer, but a draft gear that is many times as large is required for a difference in speed of 6 miles an hour, or 63 in. This height should be the total fall of the hammer to just touch the dummy coupler used, plus the travel of the draft gear. That is, if the fall of the hammer was 15 in. before it started to close the gear, and the travel of the gear was 3 in., the total capacity of the gear would be represented by 18 in. I, personally, think that we should take care of four miles an hour switching speed in the draft gear design. If we should do this, that is, if the draft gear would just close under a speed of four miles an hour and never close under a speed of less than that, it is certain that the coupler or any part of the car would



never be damaged in an impact between two cars at a speed of four miles an hour. There is not a coupler on the market but that will stand a greater impact force than the force necessary to close any draft gear on the market today. I have given some heights of drop that a 9,000 lb. hammer should fall before it shears off one or both lugs with nine rivets 19-32 in. in diameter. This method of testing draft gears was first used, I think, in Sept. 1908, by the Westinghouse Airbrake Co., but there 9/16 in. rivets were used. To my mind, this is the best method of determining the capacity of a draft gear. In this method of testing, the draft gear is mounted on two lugs, that are riveted to two short pieces of channels and held upright between posts. Each lug has nine rivets, each 19/32 in. in diameter, each lug carries half of the load, and the test is made by dropping the 9,000 lb. hammer from 1 in., 2 in., 3 in., and so on, until one lug is sheared off. This shearing of these rivets occurs at a pressure of about 275,000 lb. I say about 275,000 lb. for that is the average pressure that I obtained on several sets of lugs.

Now, when the 9,000 lb. hammer drops vertically on a draft gear that is supported on these two lugs that rest on a solid base with these same rivets in the lugs, they will not shear off until an approximate pressure of 275,000 lb. is reached, and in a good many tests with the same draft gear and different sets of lugs, the variation is never more than 1 in. That is, if a given gear shears off at a 16 in. drop, it might go 15 in. at another test, or if it shears off at 24 one time, it might go to 25 on another set of lugs. In other words, the variation is very small. I have conducted a test of a certain draft gear of a given make that sheared off three sets of lugs at exactly the same height, which means that this method of testing is bound to give very accurate comparison of the capacity of different draft gears.

Up to this time, in this paper, I have been talking of draft gear capacity and have not mentioned the absorbing capacity. I wish to distinguish between these two at this point. In the first part of this paper, I defined draft gear capacity as the foot-pound of work necessary to close the gear. The absorbing capacity is that which is not given back when the draft gear is released after being closed. This feature of a draft gear can be very easily obtained from the drop of the 9,000 lb. hammer by putting a recording pencil on the hammer and causing it to mark on a revolving drum. If the hammer falls 20 in., and rebounds, say 10 in., it is evident that the absorption has been half the capacity. This feature of the draft gear comes into play in the controlling of the slack of a long train in going up and down grades and in the starting and stopping of trains. If the slack should run in, and is not absorbed by the draft gear, it would run out under almost the same speed minus only that absorbed in the journal and rail.

This brings me to a point that I have often made, and that is, that we cannot expect a draft gear to last the life of the car, any more than we can expect a brake shoe to last the life of the car. They both are put on a car for the same purpose, viz., to stop it and if we expect to get any value from our brake shoes, we must expect wear. No one has discovered a metal that has any absorption of work by sliding on some other material that does not wear. Of course, some metal wears more than others under the same absorption. Some years ago I made some tests for the

M. C. B. A. brake shoe committee and I found some shoes with the same coefficient of friction that varied as much as 300% in the loss of weight in doing a given amount of work. Here is a very good field for the draft gear companies. In my brake shoe committee work, we found that the loss of metal decreased very fast, as the pressure increased and the coefficient of friction decreased as the pressure increased. If we want to increase the life of a brake shoe we must increase its area. Now we are putting two shoes on a wheel and getting a saving in both. There is the same field in draft gears. We should keep the pressure between the wearing surface as low as possible and this can be done by making it as large as possible. But in no case would it pay to put enough brake shoes on a car to last as long as the car, and I think the same can be said about the draft gear.

Another thing which may be of interest is the results of some tests which I have just made in regard to the centre line of draft. Some time ago the committee on car construction made some recommendations with regard to the centre line of draft. These recommendations, when applied to most cars, fixed the centre line of draft within 2 or 3 in. of the centre of the sill. In order to get some information on this subject six sets of channels were made up. A photographic reproduction of two of them after the tests are shown in figs 2 and 3. The channels were each 15 in. high and weighed 40 lb. per foot. The centre line of draft of one set was placed on the centre of the channel of 7½ in. from the edge, and this distance from the edge was decreased by 1¼ in. until 2½ in. was obtained. Two sets of channels, with the centre line of draft 6¼ in. from the edge, were made, one set of which did not have any tie plate. The results obtained are given in table 2.

Table 2—Maximum pressure obtained in impact test made on 15 inch 40 lb. channel with 15,000 pendulum hammer with different centre line of draft.

Distance from edge of channel.	Maximum pressure obtained before the channel failed.
7½ in.	1,155,000 lbs.
6¼ in.	1,125,000 lbs.
5 in.	960,000 lbs.
3¾ in.	723,000 lbs.
2½ in.	662,000 lbs.
6¼ in. without tie plate	744,000 lbs.

It is evident from this table that the centre line of draft should be for maximum strength within 2 in. of the centre line of the sills, and that the tie plates are of great value in strengthening the sills. By looking at fig 2 it will be seen that when the line of draft is on the centre, both upper and lower flanges are bending, while with the line of draft 3¾ in. from the edge, as shown in fig 3, nearly all of the bending is at a place in the edge of the channel closest to the line of draft. This is nothing extraordinary, for if you eccentrically load any two pieces of steel, the one close to the load is going to take most of the work and the ultimate strength of the system is reduced.

I have attempted in this paper to bring forward two or three very important things in the selection of draft gears and the design of freight cars. One of the most important things is, we will have to increase the travel of the draft gear above that thought sufficient some years ago when it was felt that 2 or 2¼ in. was as much travel as we should have. But I am ready today to say that we should have at least 4 in. of travel, or possibly more, in any draft gear. It is

evident from the first of my paper that this arrangement is going to allow us to materially increase the capacity of the draft gear when we design it under four or more inch travel.

Another thing that is of importance to railway men today is, how are they going to know what capacity of draft gear they are getting. I am confident that the best method for them to use is the rivet shearing test, as already described. Whether it be nine rivets 9/16, ten rivets of 9/16, or any other number of rivets, does not enter into the subject. What they should have is a set of lugs that will shear just above the force which is necessary to close the gear under test. I can conceive how a gear can be designed for a final pressure of 350,000 lb., then a test of rivets shearing off at 275,000 lb. would not be fair. But in any design of a lug, the lug should be made much stronger than the rivets, in order that the lugs will not bend down and the gear show a false capacity. I can see how a lug may be built and give false capacity of draft gear, but the lugs should be designed stronger than the rivets. I have not found a draft gear today but that will close before it shears off nine 19/32 in. rivets. There may be some, however, on the market.

One thing that is important in the design of a freight car is that the underframe of the car should be made stronger than the coupler. It has been the coupler in the past that has been saving the car after the draft gear went solid. Men who repair cars appreciate the large number of couplers that fail. I am wondering if when we put on the new M. C. B. coupler, it is not going to be the underframe of the car instead of the coupler that is going to fail when the draft gear goes solid. Especially is this true if we move the centre line of draft out from the centre of the sills or leave off the tie plate, as shown in the latter part of this paper, because then the pressure of only 662,000 lb. destroys the sills with the centre line of draft 2½ in. from edge of channel. The new coupler will stand this and more in compression, which means that it will not be the coupler, but the underframe, and if the underframe, it will cost considerably more to replace than the coupler. I assume that everybody here knows that a friction draft gear is superior to a spring gear, but I do not believe that all of you know how much this difference is. The highest capacity spring gear in use, made of two M. C. B. class G springs will fully protect your 100,000 lb. car and lading, at a switching speed of a little less than two miles an hour. There are friction draft gears in general use on thousands of cars that will protect this same car and lading at 4.5 miles an hour. Also, there are many gears on the market that will fall between these two extremes and each of these gears has a definite speed at which it will protect the car. But if you should attempt to switch your cars at four miles an hour while equipped with a spring draft gear, that only protects the car at a little less than two miles an hour, the coupler, underframe and lading are bound to suffer. Either the coupler or underframe will fall if this speed of switching is kept up, while, should this same car be equipped with the highest capacity gear, spoken of above, it could be switched at four miles an hour without any damage to underframe or coupler.

Unless we put a draft gear of sufficient capacity to keep it from going solid, the force is going to the strength of the weakest part. If this is the coupler it will be from 400,000 to 700,000 lb. on



most couplers in service, or if the car be equipped with the new M. C. B. coupler type D, this force will be from 600,000 to 1,000,000 lb. If it be the underframe that is weakest, and this may occur if the design is not correct, this pressure will be a little less than that given above for the strength of the coupler. But in any case, this force may be 600,000 lb. If the impact force and shock is 600,000 lb. and the weight of the car 150,000 lb., the end pressure per pound of car weight and lading will be 4 lb per pound of weight,

or will be equivalent to standing a car on end that has four times as much load in it as the car in question contained. This is what has been knocking out ends of cars, damaging roofs, side walls, and racking the car in general because of insufficient draft gear protection. If the travel and capacity of the draft gear is enough to keep this end force down to 300,000 lb. the force per pound of weight on the car and lading will only be 2 lb., which would result in practically no damage to the car.

More care must be given draft gear, in the manner of inspection and repairs, in order that it may do the work which it was put on for, and which it will do if kept in repair. It may mean new gears or parts of gears, and there will be some expense attached to this inspection and upkeep, but the saving in repairs to other parts of the car is bound to more than make up for this expense.

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

## The Maintenance of Railway Turntables.

By G. C. Lightner, Formerly Assistant Engineer, Canadian Government Railways, Moncton, N.B.

The turntable is one of the most important and at the same time one of the most neglected of terminal facilities. When the table is in good working order locomotives are moved in and out of the locomotive house with ease. On the other hand, when the table works hard, or is put out of commission, movements are delayed; and one delay usually causes another, continuing from the terminal out on to the line, until altogether many hours are lost and considerable needless expense incurred. I say needless expense advisedly, for, as the old proverb has it, "An ounce of prevention is worth a pound of cure," and a very small portion of this amount, if well spent in advance, would prevent the loss both of time and money. The resident engineer and maintenance forces of the district are directly responsible for maintaining the table in good working order, but the locomotive house foreman must assist by observing its condition daily and immediately reporting any faults to the bridge and building master. Generally, so long as a table will turn at all, no attention is given it. Then when small defects, grown large, seriously interfere with efficient operation, it may prove an expensive matter to correct; whereas, if taken at the start, repairs could probably have been cheaply and quickly made. The maintenance department should not, however, depend on the locomotive house men for advice regarding a table, but should examine it periodically. The resident engineer ought to examine each table on his district in the spring and autumn; the bridge and building master and his foremen whenever they are in the vicinity.

The care and adjustment of a table may be divided into several headings: Centre bearing; elevation of tracks and clearances; levels and twists; foundations, drainage, etc.; steel; deck; snow, ice, etc.; tractor. The centre bearing consists of a set of conical rollers or balls, running in oil between two castings. If the table is jacked up, and the balls or rollers taken out, and thoroughly cleaned, and put back in fresh lubricant twice a year, and proper oil is added from time to time, the bearing should need no further attention. In a few of the older tables the balls are rather too small to successfully carry our present heavy locomotives. These centres are, however, being gradually changed to the roller type, and in the meantime they require more attention and some replacing of broken balls.

The most common fault with our turntables is improper adjustment as to elevation of tracks. A table will deflect when fully loaded from one half to three quarters of an inch at each end. The tracks leading to the table should all be at absolutely the same elevation all around the pit wall. The table should then be high

enough so that when balanced with load the rails on the table will be 1 in. to 1 1/4 in. above the rails on the pit walls at each end. The circle rail must be at the elevation to give exactly as much clearance under the end rollers as the rails on the table are higher than those on the pit walls, or from 1 in. to 1 1/4 in. That is, the difference in level between the circle rail and the rail on the pit wall must be exactly the same as the depth of the table end from top of rail to underside of end roller. This is important. If these dimensions match, the rail on the table wall will be flush on top with the rail on the pit wall when a locomotive is going on or off. If these dimensions do not agree, one rail will be higher than the other, which causes damage to the rails and makes possible a derailment.

Unfortunately frost will interfere with the most nicely adjusted table by heaving the pit walls. But when it does, do not adze down the circle rail ties as is usually done, for that only makes matters worse. It is very much easier to jack up the table a few inches (block under one end and jack up the other) and put a steel shim on the centre casting under the loading girder. Remember, when a pit wall heaves, it carries the track on top of the pit wall up as well as the circle rail, and their difference in elevation is not altered by the frost action. Lowering the circle rail does alter it and spoils the job. Shimming up the table restores the lost clearance under the end wheels and leaves the table in correct adjustment. If heaving is unequal, the table must be shimmed high enough to clear the circle rail at its highest points. Do not monkey with the ties with an adze. The effects of frost can be largely avoided by proper drainage. Often putting a porous filling of coarse cinders or gravel behind the circle wall with a good tile drain will reduce heaving very largely. The pit floor ought to be kept clean and smooth and the drain open to avoid collection of water in the pit.

Light tables sometimes develop a twist or warp. When this happens it can be readily detected even if slight, by noting the clearance under the end wheels, then turning the table exactly end for end and again noting the clearance. If the centre pier is exactly level, the difference in the clearances will be the amount of the twist. If the pier is not level, the difference will be due to both causes. Turn the table at right angles to its former position and repeat. A comparison of results in the four positions will give the amount of twist and the amount and direction of slope to the pier.

If the pier is not level the only remedy is to lift the table, centre and all, and dress the pier top. The twist can be then corrected by putting enough shims be-

tween the end roller boxes and the steel girders to make the bottom of all four corners level and the depth from top of rail on table to bottom of roller the same at both ends. This will throw the deck out of level, and that can be corrected by framing the deck ties properly. When these shims are once put in they must not be altered or removed except by proper authority, and that only when tests show that the amount of warp in the girders has altered.

The steel girders, floor system and bracing require frequent cleaning and painting. On too many of our tables the outside of the girders have been well painted and the less accessible parts inside allowed to become dirty and rusty. Whenever painting is done the cleaning and scraping of the steel must be especially thorough, on account of the large opportunity for the collection of wet dirt and refuse on the steel, and the many corners difficult to clean. Locomotive men can help on this point by not starting their injectors and by leaving all the valves closed while on the table, so as to avoid as far as possible dripping water on to the steelwork.

The deck of a turntable usually requires little or no care, except that when the end heights are not correct, the end ties get pounded to pieces quickly. A number of tables have a walk on the deck, consisting of one or two stout planks; some have the deck entirely covered with light boards. The latter is especially undesirable from a maintenance standpoint. When the deck is covered, the steel underneath is kept almost constantly wet and does not get a chance to dry out and inspection is rendered difficult. If any walk at all is on the table is should be away from the girders or stringers, so that the steel may be readily cleaned. However, the turntable is intended for use in turning locomotives and not as a footbridge across the pit, and if the area around the pit is kept clear and in shape, there is no necessity whatever for anyone walking across the table except to get to the centre for inspection and repairs. Any plank walk is therefore unnecessary, as well as detrimental to the table.

In winter snow and ice collect in the pits and interfere with operation. The duty of cleaning out the pit devolves on the trackmen, but the locomotive house force should give them assistance at all times. Generally in winter, when a table is reported as working hard, the trouble, if not due to heaving of foundations, is found to be caused by an accumulation of ice around the centre. In severe weather this should be watched and ice cleared out as fast as it forms, instead of allowing it to collect until it becomes a nuisance.

Where tables are operated by air mo-



tors, the care of the motor and accessories devolves on the locomotive house staff. They should periodically examine and overhaul all parts of it. If they allow a tractor to get out of repair so that they have to turn locomotives by man power it is their own fault. A tractor generally needs very little attention,

but like all machinery, requires care.

Where several departmental organizations are jointly responsible for anything, as in the case of turntables, they each frequently form the habit of waiting on the others to take action. If the locomotive house and maintenance forces will only form the habit of co-operation, the

turntables will all be kept in much better shape with much less work and will afford the minimum of inconvenience to all concerned. Get together!—Canadian Government Railways Employees Magazine.

The writer of the foregoing paper is now a lieutenant in the United States Expeditionary Force for overseas service.

## 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 207. Oct. 26.—Further amending general order 203, Aug. 11, re transportation of dangerous articles other than explosives.

General order 208. Oct. 25.—Rescinding general order 173, Oct. 26, 1916, in so far as it rescinds general order 152, Nov. 2, 1915; and allowing tolls for use of refrigerator cars for carriage of vegetables, provided by said tariffs re-filed and as authorized by general order 152.

General order 209. Nov. 13.—Approving Supplement 10 to Canadian Freight Classification 16, cancelling and superseding Supplements 1, 3, 4, 5, 6A, 7, 8, and 9, all previously approved.

General order 210. Nov. 13.—Dismissing complaints of Winnipeg, Calgary, Regina and Saskatchewan Boards of Trade and Canadian Manufacturers' Association against tariffs, C.R.C. 3 and 4, effective Sept. 1, on behalf of railway companies providing increased all-rail freight rates from Eastern Canada to Port Arthur and west.

26668. Oct. 18.—Approving location of G.T.R. station at Lyster, Que.; work to be completed by Dec. 15.

26669. Oct. 22.—Authorizing G.T.R. to use bridge 32 over Maitland River at Wingham, Ont.

26670. Oct. 19.—Ordering Edmonton, Dunvegan & British Columbia Ry. to complete station at Donnelly, Alta., by Dec. 15.

26671. Oct. 22.—Disallowing tolls filed by Canadian Northern Ry., C.P.R., and Grand Trunk Pacific Ry. for switching freight on which they respectively have received, or are to receive, a line haul—the tolls being charged because switch movement exceeds 1,000 ft.

26672. Oct. 19.—Authorizing Halifax & South Western Ry. to build spur for Yarmouth Trading Co., Yarmouth, N.S.

26673. Oct. 25.—Authorizing C.P.R. to build connection and extension to spurs for City of Montreal at mileage 4.5, Lachute Subdivision, Montreal Terminals.

26674. Oct. 25.—Authorizing G.T.R. to build spur for British Forgings, Ltd., Toronto.

26675. Oct. 3.—Authorizing Grand Trunk Pacific Ry. to build highway crossing over its track at 2nd Ave. North, Regina, Sask.; and rescinding order 13830, May 22, 1911, authorizing crossing of 1st Ave. North.

26676. Oct. 25.—Authorizing Alberta Public Works Department to make highway over Edmonton, Dunvegan & British Columbia Ry. in Kinoo-sayo Indian Reserve 150 E.

26677. Oct. 25.—Approving agreement between Bell Telephone Co. and Acorn Rural Telephone Association, Renfrew County, Ont.

26678. Oct. 25.—Approving clearances at Ontario Malleable Iron Co. siding, Oshawa, Ont.

26679. Oct. 25.—Authorizing Central Vermont Ry. to rebuild bridge 16, across Richelieu River, between Chambly and Richelieu, Que.

26680. Oct. 26.—Extending to Nov. 15 time within which Canadian Northern Ry. shall erect station building at Mikado, Sask., as required by order 25762, Dec. 27, 1916.

26681. Oct. 25.—Authorizing Nolsy River Telephone Co. to erect wires across G.T.R. in Lot 9, Con. 6, Nottawasaga Tp., Ont.

26682. Oct. 25.—Approving clearance of proposed extension of Laplante siding to A. E. Albert's potato shed at mileage 109 from Riviere du Loup, Que.

26683. Oct. 25.—Authorizing British Columbia Government to make highway over Grand Trunk Pacific Ry. at Ninth Ave., New Hazelton, B.C., at grade, maintenance of crossing to be paid by G.T.P.R.; and rescinding order 16770, June 13, 1912, authorizing another crossing.

26684. Oct. 26.—Authorizing C.P.R. to change location of station at Marysville, B.C., on condition that siding be built there when necessary.

26685. Oct. 26.—Dismissing application of residents of Chatfield, Man., for order directing Canadian Northern Ry. to change location of siding.

26686. Oct. 26.—Amending order 26595, Oct. 2, re right of way fencing by Edmonton, Dunvegan & British Columbia Ry.

26687. Oct. 27.—Ordering G.T.R. within 60 days to install automatic bell at first crossing west of Vars station, Ont., 20 per cent. of cost to be paid out of railway grade crossing fund; siding to be extended, and cars standing there to be kept back 150 ft. from crossing; all switching on siding to be flagged over crossing.

26688. Oct. 29.—Extending to Dec. 31, time within which Canadian Northern Ry. shall erect station at Birdview, Sask., as required by order 26348, July 20.

26689. Oct. 29.—Ordering Canadian Northern Ry. to fence its right of way in Lot 2, Con. 6, Glamorgan Tp., Ont.; work to be completed by Dec. 1, 1917.

26690. Oct. 29.—Authorizing C.P.R. to rebuild overhead bridge at King St., Brockville, Ont.

26691. Oct. 29.—Ordering Canadian Northern Ry. to appoint watchman at crossing of Marmora St., Trenton, Ont., until further order.

26692. Oct. 26.—Amending order 26339, July 18, 1917, re C.P.R. repairs at Benalta, Alta.

26693. Oct. 29.—Authorizing Alberta Public Works Department to make highway over Edmonton, Dunvegan & British Columbia Ry. in Sec. 7, Tp. 78, Range 4, west 6th meridian, Alta.; cost to be paid by Spirit River rural municipality No. 829.

26694. Oct. 29.—Ordering Niagara, St. Catharines & Toronto Ry. to install automatic electric block signals on curve between Winchester Ave. and Queenston St. bridge, St. Catharines, Ont.; the curves at Ball's Crossing and on trestle back of Front St. in Thorold, Ont., to be completed by Dec. 31.

26695. Oct. 29.—Authorizing C.P.R. to build spur for B. B. Rye Flour Mills, Ltd., Winnipeg.

26696. Oct. 30.—Suspending, until further order, part of Supplement 10, to Transcontinental Freight Bureau Tariff 25-C, C.R.C. 350, relating to perishable freight in heated cars from points in Oregon, Washington, Idaho and Montana to points in Western Canada.

26697. Oct. 31.—Approving Canadian Northern Ry. standard plans of 70 ft. through Howe truss, numbered 556-1; and 100 ft. deck Howe truss, dated Mar. 15.

26698. Oct. 31.—Authorizing Canadian Northern Ry. to build spur for Imperial Oil Co., North Battleford, Sask.

26699. Oct. 31.—Relieving Canadian Northern Ry. from providing further protection at highway near milepost 74, between Tilney and Baildon, Sask.

26700. Nov. 2.—Authorizing C.P.R. to build extension to spur for Randall, Gee & Mitchell, Calgary, Alta.

26701. Nov. 2.—Amending order 26574, Sept. 27, re subway under C.P.R. at Bowness, Alta.

26702. Nov. 2.—Authorizing Canadian Northern Ry. to build spur in Pas, Man., mileage 0 to 0.928, crossing Gordon Ave., lane in Block 26, Tenth St., and Halcrow Ave.

26703. Oct. 31.—Approving clearances of platform awning at American Can Co.'s plant in Montreal.

26704. Nov. 5.—Authorizing C.P.R. to remove rails of siding at Page, Man., and loading platform there; the shelter to remain and be treated as flag stop as in the past; and refusing application of ratepayers of Glenwood, Man., for order restraining C.P.R. from removing same.

26705. Nov. 5.—Authorizing Canadian Northern Ry. to build spur for Quaker Oats Co., Neepawa, Man.

26706. Nov. 5.—Authorizing C.P.R. to close, within limits of right of way, public roads between Secs. 13 and 14 and 14 and 15, Tp. 39, Range 7, w. 5 m., at mileage 58.8 and 59.9, C.P.R. Alberta Central Subdivision.

26707. Nov. 5.—Approving plan Feb. 26, showing changes and additions to interlocking plant installed at crossing of Michigan Central Rd. by London & Port Stanley Ry. at St. Thomas, Ont., and authorizing M.C.R. and L. & P. S. Ry. to operate trains over same without first stopping there.

26708. Nov. 5.—Authorizing C.P.R. to build two mining entries under Western Dominion Collieries spur and two mining entries under Manitoba & Saskatchewan Coal Co.'s spur, both on S.E. ¼ Sec. 19-2-6, w.2.M.

26709, 26710. Nov. 5.—Authorizing Hydro Elec. Power Commission of Ontario to build power development canal and construction railway under G.T.R. between Niagara Falls and Merritton and between Port Robinson and Suspension Bridge, Ont., subject to agreement of Aug. 4; and to divert railway temporarily, and also authorizing further canal and railway construction under Niagara, St. Catharines & Toronto Ry. in Lot 90, Stamford Tp., Ont., and to divert same temporarily.

26711. Nov. 5.—Authorizing G.T.R. to take certain lands to carry out order 25652, Nov. 20, 1916, by diverting its line through Campbellford, Ont., necessitated by building Trent Canal.

26712. Nov. 5.—Authorizing G.T.R. to take up siding to Canada Furniture Manufacturers, Ltd., Warton, Ont., and rescinding order 18022, Nov. 15, 1912.

26713. Nov. 5.—Authorizing Sudbury-Copper Cliff Suburban Electric Ry. to operate cars across C.P.R. bridge across Nelson St., Sudbury, Ont., as authorized by order 26639, Oct. 9.

26714. Nov. 6.—Authorizing C.P.R. to build spur for Jacques Perron, Campbell Tp., Que.

26715 to 26717. Nov. 5.—Approving Bell Telephone agreements with St. Maurice and Champlain Telephone Co., Sept. 13; Doe Lake Telephone Co., Oct. 16; and Brougham and Gratton Telephone Co., Oct. 24.

26718. Nov. 7.—Suspending until further order proposed cancellation by Great Northern Ry. of Supplement 9 to C.R.C. 1249, of basing arbitrary of 2½¢ per 100 lb. to be added to rates from Cloverdale, B.C., to make through rates on lumber commodities from Sidney, B.C., to destinations in Western Canada via New Westminster, Hope, Fernie, or Nelson.

26719. Nov. 7.—Ordering Kettle Valley Ry. to enlarge freight shed end of station building at Rock Creek, B.C., 12 ft. so freight shed room will be 14 x 20 ft.; work to be completed by June 1, 1918.

26720. Nov. 8.—Approving G.T.R. standard plan 3, showing combination station building for freight and passenger business at Burgessville, Ont.

26721. Nov. 7.—Authorizing Canadian Northern Quebec Ry. to build track at Garneau Jet., joining Montreal-Quebec line with branch to Riviere a Pierre, Que.

26722. Nov. 7.—Authorizing C.P.R. to build spur for Hydro Electric Power Commission of Ontario, in Toronto.

26723. Nov. 7.—Authorizing G.T.R. to build siding and spur for Palmolive Co. of Canada, Ltd., Toronto.

26724. Nov. 7.—Authorizing Canadian Northern Ry. to build across and divert highway through n.w. ¼ Sec. 16, Tp. 25, Range 25, west 4th meridian, Alta.

26725. Nov. 7.—Authorizing Grand Trunk Pacific Ry. to close crossing at mileage 109.4 in Hudson's Bay Reserve; and in lieu to build highway across railway in south ½ Sec. 24, Tp. 48, Range 26, west 2nd meridian, at mileage 109.3, Prince Albert Branch, Sask.

26726. Nov. 10.—Relieving G.T.R. from providing further protection at Long Crossing, 2½ miles west of St. Marys Jet., Ont.

26727. Nov. 10.—Dismissing application of City of Hamilton, Ont., for order directing G.T.R. to restore passenger train service on its Northern & Northwestern Branch, between Hamilton, Burlington Beach and Burlington.

26728. Nov. 12.—Authorizing C.P.R. to build spur for Reliance Investment & Developing Co., Morden, Man.

26729. Nov. 12.—Relieving G.T.R. from providing further protection at Fourth Concession crossing, Ellice Tp., Ont.

26730. Nov. 12.—Authorizing Canadian Northern Ry. to remove agent at Mowat, Ont.

26731. Nov. 12.—Amending order 20846, Nov. 19, 1913, re express collection and delivery limits at Hamilton, Ont.

26732. Nov. 12.—Dismissing application of New Brunswick Potato Exchange, Ltd., for order requiring C.P.R. to furnish cars suitably equipped for carrying potatoes from New Brunswick to Ontario and Quebec; this order to be without prejudice to any application made to Board in event of improvements made not adequately taking care of the situation.

26733. Nov. 13.—Authorizing British Columbia Public Works Department to make highway over C.P.R. near Moyie.

26734. Nov. 12.—Amending order 24882, April 8th, 1916, re G.T.R. crossing protection at Coteau, Que.

26735. Nov. 13.—Extending, for two months from date, time within which C.P.R. shall complete spur for E. W. Gillett Co., Toronto, Ont.

26736. Nov. 14.—Authorizing C.P.R. to build extensions to wharf in Kaministikwia River, Fort William, Ont.

26737. Nov. 13.—Relieving Edmonton, Dunvegan & British Columbia Ry. from fencing certain portions of line between mileage 0 and 130.8, until any land on either side or in vicinity becomes settled or improved.

26738. Nov. 8.—Dismissing complaint of Bell Telephone Co.'s North Lancaster exchange subscribers that company has not provided telephone service in Lancaster Tp., Ont.



26739. Nov. 14.—Ordering Canadian Northern Quebec Ry. to establish non-agency station at St. Alexis and stop local passenger or mixed trains on flag to pick up or debark passengers; order effective forthwith and rescinding order 25792, Dec. 29, 1916, in so far as it authorized closing of station.

26740 to 26742. Nov. 15.—Ordering Canadian Northern Quebec Ry. to install gates at Darling, Davidson, and Chambly Sts., Montreal, to be operated by day and night watchmen; 20% of cost to be paid out of railway grade crossing fund; 30% of maintenance and operation to be paid by City of Montreal.

26743. Nov. 14.—Ordering Canadian Northern Pacific Ry. to fence its line from mileage 56 to 59, Kamloops Subdivision, B.C., by Dec. 31.

26744. Nov. 14.—Authorizing C.P.R. to build extension to spur for T. Eaton Co., Saskatoon, Sask.

26745. Nov. 14.—Authorizing Local Improvement District 190, Okotoks, Alta., to make highway over C.P.R. MacLeod branch, on boundary line between Secs. 6 and 7.

26746. Nov. 16.—Authorizing C.P.R. to build for Western Elevator Co., Winnipeg, crossing over tracks at Asquith, Sask.

### Gross Railway Earnings January 1 to October 31.

	1917	1916	1915
C. P. R.	\$121,681,000	\$110,855,000	\$80,392,000
G. T. R.	55,152,459	52,700,341	41,568,485
C. N. R.	33,756,800	30,497,200	19,742,700
	\$210,590,259	\$194,052,541	\$141,703,185

### Canadian Northern Railway Earnings, Etc.

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

	Gross Earnings	Expenses	Net Earnings	Increase
July	\$3,844,900	\$2,940,000	\$ 904,900	\$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,800	1,924,000	306,700
	\$10,591,800	\$8,667,800	\$1,924,000	\$1,078,000
Incr		\$ 962,800		
Decr	\$ 115,200		\$1,078,000	

Approximate earnings for October, \$3,941,400, and for three weeks ended Nov. 21, \$2,866,900, against \$3,716,800 and \$2,563,100 for same periods 1916.

### Canadian Pacific Railway Earnings, Etc.

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

	Gross Earnings	Expenses	Net Earnings	Increase
Jan.	10,158,307.86	7,726,829.36	2,431,478.50	341,070.27
Feb.	9,084,276.76	7,098,227.96	1,986,048.80	x308,293.94
Mar.	11,846,542.98	7,909,225.16	3,937,317.82	516,987.46
Apr.	12,355,519.60	8,130,541.98	4,174,979.62	441,241.66
May.	14,355,149.63	9,803,426.84	4,551,719.79	179,436.88
June	13,556,979.69	9,641,073.49	3,915,906.20	226,278.09
July	13,377,850.55	9,617,853.33	3,760,007.22	x257,084.51
Aug	12,414,537.25	8,596,998.76	3,817,538.49	x1,650,248.36
Sept	12,244,341.69	8,497,190.83	3,747,150.86	x1,382,608.30
	\$109,313,516.01	\$77,071,370.71	\$32,222,145.30	x\$1,894,225.76
Inc.	\$ 8,729,726.45	\$10,623,952.21		
Dec.			\$ 1,894,225.76	

x Decrease.  
Approximate earnings for October, \$14,593,000 and for three weeks ended Nov. 21, \$10,344,000, against \$13,102,000 and \$9,071,000 for same periods 1916.

### Grand Trunk Railway Earnings.

Aggregate traffic receipts from Jan. 1 to Oct. 31, 1917 and 1916.

	1917.	1916.	Increase.
G.T.R.	\$43,396,555	\$39,127,270	\$4,269,285
G.T.W.R.	8,004,931	7,781,671	223,260
D.G.H. & M.R.	2,788,994	2,761,787	26,307

Totals . . . \$54,189,580 \$49,670,728 \$4,518,852  
Approximate earnings for October, \$5,844,525 and for three weeks ended Nov. 21, \$3,859,407, against \$5,660,321 and \$3,731,151 for same periods 1916.

### Grand Trunk Pacific Ry. Earnings.

The approximate earnings of the Prairie Section, 916 miles, for October, were \$767,073 against \$566,016 for Oct. 1916, and the aggregate earnings for four months ended Oct. 31, were \$2,282,447 against \$1,622,621 for the same period 1916.

## Double Tracking of C.P.R. between Leaside Junction and North Toronto.

The double tracking of the C. P. R. North Toronto Branch, between Leaside Jct. and North Toronto is well advanced, and every effort is being made to rush it to completion before severe weather sets in. The work consists of grading and grade reduction on two sides of the line, the laying of two miles of new second track, the extension of a number of concrete culverts, and the construction of two reinforced concrete trestles, one across the Toronto Belt Line Ry. ravine at mileage 0.9 from Leaside, and the other across the reservoir ravine, just east of Summerhill Ave., mileage 1.8 from Leaside.

The grading is completed, the new second track is laid over the greater part of the way, ballasting is in progress and the line will be ready for partial operation at an early date.

The new bridge which is being constructed over the Belt Line Ry. ravine is a double track structure, composed of five reinforced concrete towers of two bents each, supported on continuous concrete piers and carrying a total of 44 precast concrete track slabs in the deck, also 90 side walk slabs and 96 concrete handrail posts. This bridge is replacing a single track steel trestle, which has been cut apart and removed. During the construction of the new bridge, traffic is being carried over a temporary timber trestle. The concrete work on the new bridge is well advanced and, weather permitting, will be completed before the end of December. Seven of the ten piers are completed and excavating is in progress on the others. Excavating on the east abutment is also being carried forward. Forms are erected for two of the towers, and concreting is completed on one of them, and is in progress on the other, which is a little more than half completed. About a half a mile east of the bridge, ground was prepared on which the track slabs were cast. These slabs are completed and will be moved to the bridge site and erected in place on the completed towers. Forms for the sidewalk slabs and handrail posts are fabricated and assembled and the casting of them will be commenced at an early date.

The new bridge which is being constructed over the reservoir ravine at mileage 1.8 from Leaside, is a 3-track structure, with sidewalks along each side. The third track on this bridge will be used as a switching lead into North Toronto yard. This bridge like the one over the Toronto Belt Line Ry. ravine is composed of five reinforced concrete towers of two bents each, supported on continuous concrete piers, and carrying a total of 66 precast concrete track slabs in the deck, also 90 sidewalk slabs and 96 concrete handrail posts. This bridge also replaces a single track steel trestle, and during construction traffic is being carried over a temporary timber trestle. The old steel trestle has been cut apart and most of it has been removed. Nine of the 10 new concrete piers are now completed and the excavation for the last pier is completed ready to receive concrete. A large force of carpenters are rushing the form work on the towers, and forms are erected for two complete towers and partly erected for a third tower. The concreting of one tower is finished and is now in progress on the second tower, which is about 75% completed. The track slabs, sidewalk slabs and handrail posts are being cast

on prepared ground, just east of the bridge site. Fifty four track slabs and 40 sidewalk slabs, as well as a number of handrail posts have been completed. The concreting of these units was expected to be completed by the end of November. The contractors on this bridge expect to complete concreting before the New Year.

The contract for the construction of the bridge over the Toronto Belt Line Ry. ravine is being carried out by the Dominion Construction Co., of Toronto, which also erected the temporary trestle at this point. The contractor for the construction of the bridge over the reservoir ravine is Wells & Gray, Ltd., Toronto. The two steel trestles were removed by James Finley, structural contractor, Tweed, Ont. The erection of the temporary trestle over the reservoir ravine was done by C.P.R. forces.

The whole work is being done under the direction of J. M. R. Fairbairn, Assistant Chief Engineer, Eastern Lines; the bridges having been designed by P. B. Motley, Engineer of Bridges. J. H. Barber is Engineer in Charge on the work.

### Canadian Society of Civil Engineers

The Canadian Society of Civil Engineers' Council has unanimously approved of a suggestion by the committee on society affairs, to change the name to the Engineering Institute of Canada, and a ballot of the members is being taken on the proposal.

The following members have been nominated for officers for 1918: For President, H. H. Vaughan; for vice presidents, H. E. T. Haultain, R. F. Hayward, J. G. G. Kerry, C. H. McLeod.

For councillors: District 1, Montreal and District, C. H. Bristol, Ernest Brown, J. McD. Robertson, O. Lefebvre. District 2, Maritime Provinces, W. A. Duff, D. H. McDougall. District 3, Quebec Province, N. E. Brooks, Hon. G. R. Smith. District 4, Eastern Ontario, John Murphy, Alex. Gray. District 5, Western Ontario, L. M. Arkley, Peter Gillespie. District 6, Prairie Provinces, G. D. Mackie, L. A. Thornton. District 7, British Columbia, A. E. Foreman, E. G. Matheson.

### Electric Power Development Plans in British Columbia.

Some of the details of the West Kootenay Power Co.'s power development plans in connection with the opening up of mines in the Copper Mountain district, near Princeton, B.C., have been announced. The power line will be about 100 miles long, with branches to Pentiction and Princeton. In addition to supplying the mines to be opened up at Copper Mountain, and the prospect of those at Camp McKinney being reopened, the company will supply power to the Kettle Valley Ry. shops at Pentiction. Surveys for the power line are reported to be in progress under F. M. Kerby. The project is expected to cost about \$2,000,000. L. A. Campbell is General Manager of the West Kootenay Power Co., and J. J. Warren, President K. V. R., is said to be interested in the project of the Canada Copper Corporation which is opening up the mines at Copper Mountains. This latter point is to be given an outlet to the railway by the building of a branch of the K. V. R.



# Organization and Work of Canadian Railway Association for National Defence.

Canadian Railway and Marine World for November contained full particulars of the organization of the association above mentioned, and of the membership of some of its committees. Towards the end of October, offices were opened at 263 St. James St., Montreal, in charge of W. M. Neal, heretofore acting Superintendent of Car Service, C.P.R., as General Secretary, who has a staff drafted from the various railways, and including C. P. Riddell, for a number of years in the G.T.R. Transportation Department, and latterly in charge of the General Superintendent of Transportation's office on that line.

The association's main work, just now, is to recover from the United States a large number of Canadian owned cars, or an equivalent number of cars of other ownerships, and progress is being made in that direction. Urgent representations have been made to the American Railway Association at Washington, as to the necessity for arranging immediately a general movement of empty cars from the U.S. into Canada to offset the heavily preponderating southbound loaded movement which has existed for several months past, and cars are now being received from the U. S. roads at a number of points. These cars are being loaded at once, those of U. S. ownerships being used generally for handling of pulp, pulpwood, paper, hay and other commodities which are offering in large volume for U. S. destinations. The car supply as regards purely Canadian traffic is steadily improving, as a result of the policy of Canadian railways to devote Canadian owned cars preferably to the handling of goods between Canadian points.

All Canadian lines are now interchanging cars freely among themselves, not only in loaded movement, but in delivery of empty cars from one line to another, regardless of routing or earnings, for instance, it having been brought to the association's notice that the movement of potatoes from Maritime Province stations served by the Canadian Government Railways was being delayed on account of shortage of suitable cars, arrangements were immediately made with another line to deliver some of the latter's specially constructed potato cars to the first mentioned road and the cars are now being used locally on the Canadian Government Railways, the loaning road deriving no freight revenue whatever from the movement. The association is working closely with the Dominion Food Controller's Department, and further arrangements for expediting the transportation of the potato crop will be made as it becomes necessary. Similar car distribution arrangements have been made in Western Canada, with a view to augmenting the deliveries of wheat to the head of the lakes, in order that the demands of the allied governments for movement of grain overseas may be met. Numerous other arrangements have been made at local points, so that, through close co-operation of the various roads, the shipping public is getting better service.

The success that will attend the efforts which the railways themselves are making will depend to a very great extent upon the degree of co-operation extended by their patrons. The public can render assistance in many ways, principal among which are: Loading cars to full capacity in every possible instance; releasing equipment promptly after arrival at destination; refraining from ordering

cars before they are actually needed, or ordering an unnecessarily large number of cars; and loading cars promptly after they are placed.

The existing waste of freight transportation facilities throughout the country is little realized by a large percentage of the shipping public. The principal factor in this waste is light loading. One Canadian road, owning a very large number of cars has an average car capacity of nearly 42 tons, but the average actual load per car is only 32 tons, and a great percentage of the traffic handled on this line is of such a nature as to permit cars to be loaded to full authorized carrying capacity. It is the association's purpose to reduce to the minimum the existing waste of car space, by pointing out to shippers and consignees the methods that may best be followed in loading various commodities to full capacity, and by keeping before them at all times the ways in which they can help the railways, and in so doing, help themselves. Bulletins on the subject of car loading are being prepared for issuance from time to time.

Meetings of passenger transportation committees, composed of operating and passenger traffic representatives of the railways in both Eastern and Western Canada have been held with a view to arranging generally a passenger train service that will fully meet the needs of the travelling public and at the same time permit of conservation of fuel and man power. It is anticipated that the result of the committees' deliberations will be of immense benefit, not only to the railways in discharging their duties to the public, by enabling them to cut off duplicate and unnecessary service, but to the country at large.

Canadian railways, co-operating with the public, have, since war was declared, effected a saving in passenger service equivalent to over 10,000,000 passenger train miles a year, and the work in which they are now engaged points to further reductions of about 2,250,000 passenger train miles a year. In undertaking their work the committee on passenger transportation feel that they will have the whole hearted sympathy and understanding of the travelling public, particularly as the results of their work will have a very great bearing on the conservation of fuel, with the importance of which the association has been impressed by the Dominion Fuel Controller and other Government representatives.

**Personnel of Association's Organization.**  
The following is the organization effected up to date:

**Special Committee on War and National Defence.**—Lord Shaghnessy, President, Canadian Pacific; Sir Wm. Mackenzie, President, Canadian Northern; H. G. Kelley, President, Grand Trunk; A. H. Smith, President, New York Central.

**Administrative Committee.**—U. E. Gillen, Vice President, Grand Trunk, chairman; C. A. Hayes, General Manager, Eastern Lines, Canadian Govt. Rlys.; D. B. Hanna, Third Vice President, Canadian Northern; F. F. Backus, General Manager, Toronto, Hamilton & Buffalo; E. D. Bornner, Vice President & General Manager, Michigan Central; J. H. Walsh, General Manager, Quebec Central; Sir George Bury, Vice President Canadian Pacific.

**Western Sub-Committee of Administrative Committee.**—F. P. Brady, General Manager, Western Lines, Canadian Govt. Rlys.; W. P. Hinton, Vice President &

General Manager, Grand Trunk Pacific; Grant Hall, Vice President & General Manager, Western Lines, Canadian Pacific; M. H. MacLeod, General Manager, Western Lines, Canadian Northern.

All sub-committees in the West report to the Western Sub-Committee of Administrative Committee at Winnipeg, which, in turn, reports to the Administrative Committee at Montreal.

**Maritime Provinces Sub-Committee of Administrative Committee and Maritime Provinces Sub-Committee on Car Service.**—W. R. Devenish, Superintendent, Canadian Govt. Rys.; J. Bain, General Superintendent, Halifax & Southwestern; H. C. Grout, General Superintendent, Canadian Pacific.

**Ontario Sub-Committee of Administrative Committee and Ontario Sub-Committee on Car Service.**—D. Crombie, General Superintendent, Canadian Northern; H. E. Whittenberger, General Superintendent, Grand Trunk; J. T. Arundel, General Superintendent, Canadian Pacific.

The Maritime Provinces and Ontario Sub-Committees report to the Administrative Committee in Montreal.

**Commission on Car Service:** A. Hatton, General Superintendent Car Service, Canadian Pacific, Chairman; W. N. Rippey, Superintendent Car Service, Canadian Govt. Rys.; J. E. Duval, General Superintendent Transportation, Grand Trunk; W. A. Kingsland, General Superintendent, Canadian Northern; W. S. Moy, Car Accountant, Quebec Central; W. A. Griffin, Supt. Traffic, Timiskaming & Northern Ontario; A. E. Locke, Supt. Car Service, Toronto, Hamilton & Buffalo.

**Western Sub-Committee on Car Service.**—J. P. Driscoll, Supt. Car Service, Canadian Northern; T. P. White, Car Service Agent, Grand Trunk Pacific; E. D. Cotterell, Supt. Car Service, Canadian Pacific; P. B. Robb, Car Service Agent, Canadian Govt. Rys.; C. E. Dafoe, General Freight Agent, Midland Ry.

The Commission on Car Service will assume duties of sub-committee for lines in Quebec Province.

**Committee on Passenger Transportation, Eastern Lines.**—C. S. Sims, Resident Vice President, Delaware & Hudson Railroad, Chairman; G. T. Bell, Passenger Traffic Manager, Grand Trunk; J. E. Duval, General Superintendent Transportation, Grand Trunk; H. T. Malcolmson, Superintendent, Toronto, Hamilton & Buffalo; G. C. Martin, Gen. Freight & Pass. Agent, Toronto, Hamilton & Buffalo; H. H. Melanson, Passenger Traffic Manager, Canadian Govt. Rys. A. C. Barker, Asst. to General Supt. Canadian Govt. Rys.; A. Price, Asst. General Manager, Canadian Pacific; C. B. Foster, Asst. Pass. Traffic Mgr., Canadian Pacific; J. Balkwill, Superintendent, Michigan Central; L. W. Landman, General Passenger Agent, Michigan Central; D. Crombie, General Superintendent, Canadian Northern; R. L. Fairbairn, General Passenger Agent, Canadian Northern; J. T. Reid, Superintendent, Quebec Central; E. O. Grundy, General Passenger Agent, Quebec Central.

**Committee on Passenger Transportation, Western Lines.**—H. H. Brewer, General Superintendent, Grand Trunk Pacific; A. E. Rosevear, General Freight Agt., Grand Trunk Pacific; A. E. Warren, Asst. to General Manager, Canadian Northern; R. Creelman, General Passenger Agent, Canadian Northern; F. P. Brady, General Manager, Canadian Govt. Rys.; W. E. Duperow, General Passenger Agent,



Grand Trunk Pacific; D. C. Coleman, Asst. General Manager, Canadian Pacific; G. A. Walton, General Passenger Agent, Canadian Pacific.

**Committee on Tariffs and Statistics.**—Guy Tombs, Asst. Freight Traffic Mgr. Canadian Northern; H. E. Macdonnell, Asst. Freight Traffic Mgr. Canadian Pacific; R. J. Foreman, Asst. to Vice President, Grand Trunk; D. A. Story, Freight Traffic Manager, Canadian Govt. Rys.; G. C. Martin, Gen. Freight & Passenger Agent, Toronto, Hamilton & Buffalo; H. Clark, Gen. Freight Agent, Ottawa and New York; N. J. Ferguson, Gen. Freight Agent, Quebec, Montreal & Southern.

A committee on materials and supplies will be organized later.

**Administrative Committee's Proceedings.**

At a meeting in Montreal, Nov. 2, the relations of the Association with the Board of Railway Commissioners for Canada and the American Railway Association were discussed. The Canadian Association for National Defence will deal with the other bodies mentioned as circumstances may require. The railways having membership in the Canadian Association will deal direct with the Board of Railway Commissioners and the American Railway Association as heretofore, communicating with the Canadian Association with the object of having that association get in touch with the other two bodies mentioned as may be deemed necessary.

Reports from individual railways operating in Canada to the Board of Railway Commissioners as required by the latter will be made as heretofore. As regards reports to American Railway Association's committees principally the Commission on Car Service of that body, the General Secretary after consultation with the Commission on Car Service of the Canadian Association will communicate with the Washington Commission on Car Service as to the feasibility and agreement of latter to having all railways operated in Canada supply the necessary statistics to the Canadian Association, which will compile into one series of reports for all Canadian lines the data presently required from such Canadian lines by the Washington Commission on Car Service and forward all such statements to the latter body. If this suggestion is agreed to by the Washington Commission on Car Service it will relieve the railways of making duplicate reports, namely, one set for the Washington Commission on Car Service and one set for the Commission on Car Service of the Canadian Association.

The Canadian Association to take up at once with the Car Service Commission of American Railway Association the matters of present large volume of hay shipments from Canada to United States, suggesting that arrangements be made whereby hay in machine compressed bales be given preference in ordering and car supply in view of the fact that twice as much machine compressed hay can be placed in a car as that done up in the ordinary hand pressed bales, and that there is urgent necessity for taking advantage of every opportunity of conserving car supply.

The Commission on Car Service was instructed to communicate immediately with the American Railway Association committees at Washington, as to obtaining equalization of freight interchange as between Canada and the United States, on basis of equipment owned, and the making of such arrangements as will ensure maintenance of equalization of such interchange.

As to the operating of excursion and other special trains, it was resolved that it is the sense of the association that special passenger trains be not run during the continuance of the war, except in case of extreme urgency.

It was resolved that sub-committees be appointed to handle matters affecting lines of railway in their respective territories—such sub-committees to report to the Administrative Committee, sub-committees in turn to appoint local committees as the former may consider necessary, which local committees shall report to the respective sub-committees. The personnel of the sub-committees appointed by the Commission on Car Service on Oct. 26 fill the Administrative Committee's requirements in this respect.

The Commission on Car Service will assume duties of sub-committee for lines operating in the Province of Quebec.

Committees to investigate the passenger service on railways in Canada to make recommendations for the elimination of unnecessary services, curtailment of services to meet actual needs of travelling public, are to be appointed at once and to be comprised of representatives of operating and passenger traffic departments of the lines principally interested. Each member of Administrative Committee is to forward to the General Secretary promptly names of representatives of his road to serve on such committees. It was suggested that a committee be appointed for lines operating east of Port Arthur and one for lines west of Port Arthur.

The Administrative Committee expressed its desire that the Commission on Car Service take in hand immediately the investigation of freight service on lines operating in Canada with a view to elimination of "fast" trains, handling of full train tonnage, handling of less than carload freight, bearing in mind the urgent necessity for conserving man power, motive power, and fuel, reports and recommendations to be made promptly to the Administrative Committee.

**Commission on Car Service's Proceedings.**

At a meeting on Nov. 3 in view of the heavy volume of overseas supplies now being handled and prospects of large increase in such tonnage to be handled during the ensuing winter season, it was considered necessary that the commission keep in close touch with the Director of Overseas Transport, or his representative, with a view to the making of arrangements whereby the maximum volume of supplies for the allies may be handled in the most efficient manner. The following resolution was adopted: "That request be made to the Director of Overseas Transport that he call upon this commission for any assistance that he may require in the transportation of overseas supplies and that he arrange for a representative of his department to attend meetings of this commission, of which he will be advised from time to time, with the object of effecting arrangements with a view to expediting movement of traffic, avoiding unnecessary accumulations and similar matters of interest to both bodies."

Having in mind the heavy deficiency in the supply of cars required for the movement of traffic in Canada, which is a direct result of the continued holding of Canadian owned cars in the car pool in effect in the United States and the growing loss of cars to such pool, the opinion of the commission is that pending return of a large number of cars from the U.S. to Canada and in order to avoid aggravation of present serious situation, the for-

warding of Canadian owned cars to U.S. points should be discontinued. The following resolution was, therefore, adopted: "That Canadian owned box cars not to be loaded out of Canada beyond the tracks of the owner until the interchange is more equally balanced between Canada and the United States."

At a meeting of the Commission on Nov. 13 it was decided that before going further into the question of operation of freight trains and freight service generally, information be obtained as to present practices of various lines operating in Canada and the General Secretary was instructed to send circular letter to such lines asking them for complete report to be available for consideration at next meeting of commission, the principal points of enquiry to be as follows.

Are all freight trains, except live stock and perishable freight trains, required to handle tonnage equivalent to full haulage capacity of locomotive, if not, what reductions from 100% tonnage rating are allowed and in what circumstances?

What, if any, tonnage reduction allowed to trains handling live stock and how many cars of live stock required to be in train before such reduction permitted?

What, if any, stipulated speed for trains handling live stock?

What tonnage reduction, if any, allowed for trains handling perishables? How many cars of perishables per train required before such reduction permitted? What minimum speed stipulated, if any, for trains handling perishable freight?

What speed limit, if any in effect covering operation of dead or ordinary freight trains and what in the case of trains handling live stock or perishable freight?

What, if any, tonnage reduction, allowed way freight trains—1st, under agreement with trainmen or enginemen; 2nd, under other circumstances?

What is practice in regard to operation of "fast" or schedule freight trains? Are trains operated according to time table, regardless of tonnage? or is full tonnage insisted upon in every case, failing which, train set back or cancelled?

In handling of less than carload freight are sheds pulled daily for forwarding of cars on various routes, irrespective of amount of tonnage offering, or are lightly loaded cars set back to shed for completion of loading?

What figure is set as minimum weight of contents per car on l.c.l. freight before car allowed to go forward?

Are l.c.l. shipments accepted at sheds daily or only on certain days of week for various territories?

What is practice as regards picking up of less than carload shipments at way stations for movement to consolidation points? Is freight accepted and forwarded from way stations daily, or only on stipulated days of week? and is number of pickup cars for each subdivision or branch line regulated, or allowed to fluctuate according to daily conditions?

In order to provide for a uniform practice in the handling of requests for empty cars to be sent from United States to Canadian roads and thereby avoid possible confusion and misunderstanding, the following motion was passed: "That requests to the U. S. roads for empty cars be made by Canadian roads through the Canadian Railway Association for National Defence, instead of direct to the American Railway Association as in some cases heretofore, and that Canadian roads send to this association copies of their reports to the Washington Commission



on Car Service, giving particulars of empty cars received from U. S. lines and furtherance of such cars to connecting lines. All other empty cars received from American roads for return loading under other arrangements also to be reported to this association."

It is the desire of the Commission on Car Service that it be promptly advised of all arrangements made by or between Canadian roads for the general movement of empty cars from one line to another and the General Secretary was instructed to issue circular notice to all roads concerned accordingly.

The Commission on Car Service desires that in the case of complaints received by the association as to car shortage and similar matters and taken up with the roads concerned, such roads shall advise the association of the action taken by them in each case.

The Commission on Car Service requires that railways, members of this association, report to the association promptly any case of violation of instructions as outlined in circulars issued from time to time by the association, on matters coming within the jurisdiction of the commission.

It being thought probable that member lines not having officers included in the personnel of the Commission on Car Service would desire to personally present certain matters to the commission at its various meetings, the following motion was passed: "That general notice be sent to all members of the Canadian Railway Association for National Defence that at any time they wish to personally present matters to the attention of the Commission on Car Service, if they will so advise the General Secretary he will notify them of the next meeting of the commission, so that they may be present."

A suggestion was made that data be obtained from members of the association for the purpose of compiling information to be circulated amongst shippers and railways, as to standard loads, and that if such data be approved, the association communicate with railways, boards of trade, and similar organizations, with a view to insisting on such standards being observed wherever possible and thereby increase the available supply of cars very materially. The General Secretary requested to make the suggested enquiries forthwith and prepare the data as speedily as possible.

The question of loading cars to actual carrying capacity instead of stencilled capacity, or usual 10% in excess of stencilled capacity, was introduced by the chairman with the suggestion that Canadian lines undertake to adopt full capacity loading as the general practice in movement of traffic between Canadian points. After full discussion the following resolution was adopted: "That in the case of shipments between Canadian points, cars of 30 ton capacity, or under, will continue to be loaded when practicable to 10% in excess of stencilled capacity, that all cars of over 30 ton capacity to be loaded, when practicable, in accordance with their axle carrying capacity, and that in future when cars are restencilled, they shall be marked to show 'limit load' capacity instead of nominal capacity."

It was explained that under the proposed system the limit load for a 40 ton box car equipped with standard M.C.B. axles would be 132,000 lb., tare weight of car 38,000 lb., actual freight carrying capacity of car 94,000 lb., instead of 88,000 lb., as in present general practice.

The General Secretary was instructed to draft a form of circular to be issued by all roads operating in Canada containing instructions as to the above mentioned revised loading methods.

#### Committee on Passenger Transportation, Eastern Lines.

At a meeting on Nov. 13, C. S. Sims, Resident Vice President, Delaware and Hudson, was elected chairman.

After discussing the procedure to be followed by the Committee in discharging the duties assigned to it by the Administrative Committee, a working committee to analyze existing services in Eastern Canada, obtain suggestions and recommendations from the various railways and report thereon, was appointed as follows: H. H. Melanson, Passenger Traffic Manager, Canadian Govt. Rys.; R. L. Fairbairn, General Passenger Agent, Canadian Northern; Alfred Price, Assistant General Manager, Canadian Pacific; L. W. Landman, General Passenger Agent, Michigan Central; H. T. Malcolmson, General Superintendent, Toronto, Hamilton, and Buffalo; J. T. Reid, General Superintendent, Quebec Central; and J. E. Duval, General Superintendent Transportation, Grand Trunk.

In order to carry out the Administrative Committee's instructions to investigate the passenger service, and to make recommendations for elimination of unnecessary services and curtailment of services to meet the actual needs of the travelling public, the following subjects were suggested for consideration: Pooling competitive services and earnings. Increasing loading of sleeping cars and reduction in number of such cars per train, as practicable, railways to agree not to add extra sleepers to trains, until all berths in cars already allotted to train are sold. Elimination of club, observation and similar special cars. Reduction in speed of trains, especially local trains. Handling of express and delays to trains incident to heavy express traffic.

The General Secretary was instructed to ask all railways in Eastern Canada to submit immediately suggestions and information on the following points:

Total average daily regular passenger train mileage operated under existing working timetable, and similar figures for service in effect at this time last year.

Total average daily mixed train mileage operated under existing working timetable and similar figures for service in effect at this time last year.

Recommendation as to reduction or elimination of special services, such as club cars, observation cars and all other such services as might be termed unnecessary, giving specific information as to trains in which such cars now operated, points between which run and car mileage that would be saved by dispensing with such unnecessary services.

Explain practice as regards the supplying of extra sleeping cars, i.e., what percentage of lower and upper berths in regular cars required to be sold before additional cars requested or furnished.

What changes can be made in the way of converting straight passenger service to mixed service, i.e., where local passenger trains and freight trains being operated on certain branch lines, it might be possible to consolidate both services into a mixed service without seriously inconveniencing the travelling public, or to run mixed service three days a week and straight passenger service on the alternate days. It is felt that the public can be brought to see the importance of conserving rail transportation facilities by the adoption of a win-the-war policy of

eliminating unnecessary train service.

What, if any, passenger train reductions will be made effective Dec. 2, and what, if any, reductions effective Jan. 6, or on other than the dates mentioned? Reductions should be as great as possible, consistent with actual needs, so that the greatest degree of economy in fuel consumption and use of motive power and man power may be accomplished. Send list of proposed reductions showing points between which trains operated and mileage in each case, also class and frequency of service. If you cannot recommend reductions, give list of services on your line which might be dispensed with with least inconvenience, total of reductions recommended or suggested to be equal to at least 10% of present total average daily passenger and mixed train mileage.

The working committee met on Nov. 19, when statistics which had been prepared showing the existing passenger services and pointing to territories in which it appeared that reductions might be made without inconvenience to the public were read. After discussion of various competitive routes, such as Montreal-Quebec, Montreal-Ottawa, Montreal-Toronto, Ottawa-Toronto, etc., in which the two roads most interested are the Canadian Pacific and Grand Trunk, it was suggested by way of saving time, that those two lines jointly go over their respective services and prepare definite recommendations for presentation at next meeting. The replies of various member lines to the association's letter, calling for information, were placed before the meeting and the information embodied therein filed for further consideration and action.

In answer to enquiries as to reductions in service which will be made effective Dec. 2, 1917, and Jan. 6, the following replies were made: Effective, Dec. 2—nil; effective Jan. 6, as follows:

Canadian Pacific will reduce to about same basis as that of Jan. 1917.

Canadian Government Railways expect to make reductions similar to those effective Jan., 1917.

Grand Trunk will make approximately same reductions as were made in Jan., 1917.

Canadian Northern will make some reduction, but not in position to say definitely to what extent.

Toronto, Hamilton & Buffalo. No further reductions can be made.

Michigan Central. Reductions being made effective Nov. 25, equal to 8,640 passenger train miles a month. No further reductions contemplated at present.

St. Lawrence & Adirondack and Ottawa & New York do not anticipate making any further reduction, unless compelled to do so by shortage of fuel, owing to very serious inconvenience that would be caused public by interfering with present service.

Quebec, Montreal & Southern do not contemplate making any reduction, but mention the two trains which could be taken off causing least public inconvenience. If these two trains are taken off it would mean a reduction of 46% in the present passenger train mileage and a reduction of 28% in the total mileage of passenger and mixed trains, or 4,104 miles monthly—and would be a reduction of 53% as compared with Nov. 1916.

Maine Central. No further reduction recommended.

Algoma Central & Hudson Bay. Only one passenger train operated, no further reduction possible. This line has made



reduction of 60% in passenger service since 1913 and 84% reduction in mixed train service in same period.

Central Vermont. No further reduction can be made.

Quebec Central. Present conditions do not permit of any reduction being made, but if conditions change, will make such reductions as may be possible.

#### Western Sub-Committee on Car Service.

This sub-committee met in Winnipeg, Nov. 19, and elected J. P. Driscoll, Superintendent, Car Service, Canadian Northern, as chairman. The following local committees were recommended, subject to the sub-administrative committee's approval.

Committee 1, headquarters, Winnipeg, embracing territory from Port Arthur and Fort William to Manitoba's western boundary: R. C. Morgan, acting General Superintendent, Canadian Pacific; A. Wilcox, General Superintendent, Canadian Northern; H. H. Brewer, General Superintendent, Grand Trunk Pacific; W. A. Cowan, General Superintendent, Canadian Govt. Rys.; C. E. Dafeo, General Superintendent, Midland Railway; M. B. Murphy, Manager, Winnipeg Joint Terminals.

Committee 2, headquarters, Calgary, embracing Saskatchewan and Alberta; W. A. Brown, General Superintendent, Canadian Northern; J. M. Cameron, General Superintendent, Canadian Pacific; H. H. Brewer, General Superintendent, Grand Trunk Pacific.

Committee 3, headquarters, Vancouver, embracing British Columbia: D. R. Campbell, Assistant General Manager, Canadian Northern; W. A. Mather, Assistant General Superintendent, Canadian Pacific; H. McCall, General Superintendent, Grand Trunk Pacific.

It was decided to advise the local committees of their appointment, and in what matters they would report to the sub-committee, and that from time to time they will be advised of any special matters on which the sub-committee expects special investigation and report.

The question of the appointment of a secretary for the sub-committee was discussed as, no doubt, a large amount of statistics and correspondence will have to be handled; but the matter was left over for a future meeting.

It was decided that the sub-committee hold weekly meetings on Thursdays at 2.30 p.m.

#### Canada's Splendid Railway Service.

A statement issued from the Association's office, Nov. 22, says: "Certainly no reduction in freight and passenger rates are being looked for as the result of railway economies now being effected by the Canadian Railway Association for National Defence. Canada is today getting the best and cheapest railway service in the western world. In spite of the car shortage created by the abnormal balance south bound over north bound traffic, in spite of war requirements, higher labor charges, the necessity of importing coal for locomotives, and the low efficiency of the coal due to lower winter temperatures in Canada, there is a greater degree of efficiency reached in the operation of Canadian railways than anywhere else in the new world. Car shortage is being reduced day by day. The percentage of freight cars out of service for repairs in Canada is lower than the percentage on U.S. roads and the average cost to the Canadian traveller or shipper is less.

"For the year ended June 30, 1916, the charge for moving an average ton of

freight one mile in the United States was 0.716 of a cent. In Canada it was 0.653 of a cent. In the U. S. the average passenger mile cost the passenger 2.006c. In Canada it cost him 1.954c. At the same time the Canadian railways were hauling their coal from foreign mines and paying duty on it. They were getting less work from the same coal because of the lower winter temperatures in Canada. They paid more for labor and yet charged the public less for their services than any of the other roads on this continent."

In connection with the statement made at Washington that the U. S. railways have curtailed passenger service by over 20,000,000 passenger train miles per annum, the Canadian railways point to a reduction of over 10,000,000 passenger miles per annum in Canada, which, in view of the lower total mileage in the Dominion as compared to the U. S. is a vastly greater pro rata reduction.

### Railway Finance, Meetings, Etc.

**Atlantic, Quebec and Western Ry.**—A supplemental mortgage dated June 30 has been filed with the Secretary of State, modifying the first mortgage trust deeds of June 26, 1905 and July 3, 1906. There are \$2,548,675 of the 1st mortgage debentures outstanding, covering the road in operation from Paspébiac, on the old Atlantic and Lake Superior Ry., to Gaspé, Que., 102½ miles. Under the agreement adopted by the bondholders, interest payments will only be made in so far as they are earned.

**Canadian Northern Ry.**—An extension agreement dated Aug. 17, between the Canadian Northern Ry., the Mount Royal Tunnel and Terminal Co., the Canadian Northern Ontario Ry., the Canadian Northern Quebec Ry., and the Central Trust Co. of New York, as trustee and holders of the one year 5% secured gold notes of the C. N. R., issued under a trust agreement of Sept. 1, 1916, has been deposited with the Secretary of State, at Ottawa.

There has been deposited with the Secretary of State at Ottawa duplicate of an extension agreement dated Oct. 31, between the C.N.R. Co. and the Central Trust Co. of New York, as trustee and holders of one year 5% gold bonds issued under an agreement of Sept. 1, 1916.

**Canadian Pacific Ry.**—The directors have declared a dividend for the quarter ended Sept. 30, of 2½% on the common stock, being at the rate of 7% per annum from revenue and 3% per annum from special income account, payable Dec. 31 to shareholders of record Dec. 1.

**Grand Trunk Ry.**—An agreement of conditional sale, made between Blair and Co., and the G.T.R., and the Equitable Trust Co. of New York, respecting Series D equipment bonds, has been filed with the Secretary of State at Ottawa.

**The Grand Trunk Ry.** paid off its \$4,000,000 two year notes at 5%, Nov. 1, through Blair & Co., New York.

**Grand Trunk Pacific Ry.**—There has been deposited with the Secretary of State at Ottawa a mortgage agreement dated Oct. 18, between the company and the Crown, represented by the Minister of Finance, securing a loan to the company not exceeding \$7,500,000. This is the loan authorized by the Dominion Parliament at its recent session.

**Guelph Junction Ry.**—A dividend at the rate of 7½% for the quarter ended Sept. 30, was declared at a meeting of direc-

tors in Guelph, Ont., Nov. 23. This dividend will bring up the total received by the City Council, which owns nearly all the stock, for the year to \$43,350.

**Ottawa and New York Ry.**—There has been deposited with the Secretary of State at Ottawa, a discharge of mortgage dated April 1, 1899, made between the O. and N. Y. Ry., and the State Trust Co. of New York, for the purpose of securing \$500,000 bridge sec. 1, mortgage 4% gold bonds of the company.

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

**Temiscouata Ry.**—The bondholders' committee in London, Eng., has been advised that owing to the decreased revenue during the past year, there is not sufficient net revenue to pay a dividend on the consolidated mortgage income bonds, and that the balance, after paying the prior lien bond interest and redemption fund, is being applied to strengthen the company's resources. Consequently, no dividend will be paid this year on the provisional certificates issued by the committee. For the previous year, 1% was paid on the certificates.

**Timiskaming and Northern Ontario Ry.**—Passenger earnings for September, \$65,253.67; freight earnings, \$122,299.62; total earnings, \$187,553.29 against \$66,762.03 passenger earnings; \$95,895.19 freight earnings; \$162,657.22 total earnings for Sept. 1916.

**Appeal to G.T.R. Employees in United States.**—H. G. Kelley, President, G.T.R., has issued the following circular to employees in the U.S.: In the interest of conserving the foodstuffs of the country by the elimination of waste, it is urgently requested that employees of the carriers engaged in the transportation of foodstuffs, exercise such care and diligence as will minimize the damage to this class of freight when in carrier's custody for transportation and lessen the economic loss. I appeal to all Grand Trunk employees, particularly those engaged in station, yard and train service, as a patriotic duty to the nation, to exercise such precaution in providing proper refrigeration, ventilation, protection from the weather, and care in loading, switch and train handling of carload and less than carload shipments of food products, as will eliminate waste. Observe the slogan "Efficient, maximum service," and in so doing you will render an enduring service to your country. The Nation is counting on you."

**Coupler Repairs.**—In a paragraph on this subject in Canadian Railway and Marine World for November, page 432, it was stated, in reference to an investigation undertaken recently by one of the larger railways in the U.S., that the expense of coupler repairs for 1916 was \$197 a car. The amount per car should have been given as \$1.97.

Winnipeg jitney men whose licenses have been suspended for non-compliance with the bonding bylaw have made application to the city council's licensing committee for a refund of the license fee proportioned to the period of suspension. A report as to the number of licenses affected, with the amount involved, is being prepared for the committee's consideration.



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

**Alberta and Great Waterways Ry.**—Track is reported to have been laid to beyond mileage 274, about 18 miles from McMurray, Alta. A contractors' freight and passenger train service was put in operation from Lac la Biche, the terminating point of the permanent train service, Oct. 27. It is expected to have track laid to McMurray by the end of the year.

J. D. McArthur, President, is reported to have said in Winnipeg, Nov. 18, that steel had been laid to McMurray, on the Athabasca River, that the line would be finished up and a full train service put in operation next year, and that it is expected to arrange for a regular steam boat service from McMurray to the Arctic Ocean when financial conditions become easier.

The line starts from the Edmonton, Dunvegan and British Columbia Ry. at Carbondale, 143 miles from Edmonton, and runs northerly and easterly to McMurray, 290 miles. Track was laid to mileage 174.5 at the end of 1915, and was resumed in Dec. 1916, it being estimated that 40 miles additional had been laid to the end of that year. The point to which traffic is now being operated is on the river, and connection with McMurray is made by means of scows. (July, pg. 273.)

**Alma and Jonquiere Ry.**—The Quebec Legislature is being asked to extend the time within which the company may build its projected railway from LaBarre or St. Gedeon, on the Quebec and Lake St. John Ry., to Little Discharge, to Alma Island, and through Signal, La Barre, Kenogami and Jonquiere Tps. to Jonquiere station on the Q. and St. J. Ry. The company was incorporated originally in 1913, and in 1915 secured an extension of time to build its line. (Sept., 1915, pg. 351.)

**Burrard Inlet Tunnel and Bridge Co.**—With only one dissentient, and one representative not voting, it was decided at a meeting of shareholders held Oct. 25, to apply to the Dominion Parliament for a renewal of the company's charter. The company, which consists of the municipalities surrounding Burrard Inlet, Vancouver, has power to build a bridge across the Second Narrows of Burrard Inlet, and a tunnel in the same vicinity, with railway lines to connect with all railways in Vancouver. The company's charter powers expire in Feb. 1918. The shareholders felt that while there was very little prospect that the company would ever build the bridge, it possessed valuable assets in the shape of data collected by engineers, and plans, which would be entirely lost if the company went into voluntary liquidation. (Nov. pg. 433.)

**Canadian Northern Ry.**—A press report dated Nov. 12 stated that the track laid beyond Sanguedo, Alta., on the line heading from Peace River, was being finished up and got ready for traffic.

Application has been made to Vancouver City Council for a permit for the erection of train sheds at the False Creek station, now nearing completion. The estimated cost of the train sheds is \$170,000.

In connection with the False Creek reclamation works at Vancouver, the Supreme Court of Canada has given judgment in favor of Champion and White, in their suit against the city. The firm owns 300 ft. of water frontage on False Creek, and claimed that the construction of the sea wall by the C.N.R. under the agree-

ment with the corporation, would materially injure their property. The trial judge decided in favor of the plaintiffs, the B.C. Court of Appeal reversed the decision, and the original decision has now been affirmed by three out of five judges of the Supreme Court. It is expected that the case will be taken to the Imperial Privy Council. These proceedings are delaying the progress of the reclamation works.

The British Columbia Minister of Railways has sent a lengthened communication to the Dominion Government with regard to the obligations entered into between the B.C. Government and the Canadian Northern Pacific Ry., pointing out that the province must look to the Dominion Government to carry out the company's contractual obligations now that the company's affairs are being taken over. The letter concludes: "The province claims for a restoration to the trust funds of the amounts improperly paid over to the company for specific performance over the company's various undertakings and for a specific release in respect of its guarantee of the company's bonds.

We are officially advised that no arrangements have been entered into with regard to the building of a union station at Victoria, B.C., by the Canadian Northern Ry. and the Esquimalt & Nanaimo Ry. It is not likely that there will be any move made in regard to a new passenger station for Victoria until after the war. (Nov., pg. 433.)

**Canadian Pacific Ry.**—We are officially advised that the company has no present intention of building a new station at Lethbridge, Alta., as stated in a recent press report.

We are officially advised that neither the C. P. R. nor its subsidiary the Esquimalt & Nanaimo Ry., has in contemplation the building of a dock at Victoria, B.C., in connection with the Songhees Indian Reserve development plans, as stated in a recent press report. All the harbor development work at present in progress at Victoria is being carried on by the Dominion Public Works Department. (Nov., pg. 433.)

**Cavalier County Ry.**—A recent decision of the Board of Railway Commissioners granted the Cavalier County Ry. permission to construct a siding at Windygates, Man., the company to pay the costs. The Cavalier County Ry., we are advised, is a United States corporation, having its office at Langdon, N.D., and the following officers: President, G. Grimson; Secretary, R. Robertson, Stillwell, N.D.

Windygates is the terminus of the extension of the C.P.R. Snowflake branch, and is situated at the International Boundary between Manitoba and North Dakota. There are two branch lines in Cavalier County extending toward the boundary, one a Great Northern Ry. line, extends across the boundary to Morden, the title of the Manitoba end of the line being the Midland Ry. of Manitoba, and the second, a Northern Pacific branch, points rather more westerly than Windygates.

**Central Canada Ry.**—During the recent summer four piers of the substructure of the bridge across the Peace River have been completed, and three more are yet to be finished. These three piers are in deep water, work on them was started last winter and will be completed during the coming winter. All the other substructure work and the approaches have been completed. The east approach to the

bridge is 700 ft. long, running to 50 ft. high. This took 250,000 cubic yards of material for the fill, all of which was moved this year. Provision is made on both approaches for a 20 ft. highway in addition to the railway tracks. J. E. Young, of the Canadian Bridge Co., is reported to have arrived at the bridge site for the purpose of arranging for the erection of the superstructure which it is expected to have in position by the fall of 1918. (June, pg. 224.)

**Dolly Varden Mines Ry.**—The railway which the British Columbia Legislature has authorized the company to build will extend from the company's wharf at Arctic Arm to the Dolly Varden and Wolf claims in the Kitgault Valley of Northern British Columbia. A considerable amount of construction work is reported to have been done during the present season by R. B. McGinnis, Superintendent for the company, who was in Victoria, B.C., Nov. 14. He stated that work would be suspended before the end of December but would be resumed in April, and would be completed by the end of 1918. (June, pg. 224.)

**Edmonton, Dunvegan & British Columbia Ry.**—The Edmonton, Alta., City Council on Nov. 7, adopted the following report from a special committee which had under consideration the company's application respecting its entrance into the centre of the city: "That the E. D. & B. C. R. be granted the right to use 30 ft. of 121st St. adjoining the existing G.T.P. right of way, but with respect to Mackenzie Ave. (104th Avenue) the committee is of the opinion that the portion of the street not granted to the G.T.P.R. is too narrow to warrant any grant of that avenue. It is, however, recommended that until the G.T.P. is ready to use the north 40 ft. of Mockenzie Ave. the E. D. & B.C. Ry. be granted a license to use 15 ft. thereof." (Nov. pg. 433.)

**Grand Trunk Pacific Ry.**—The question of the completion of the company's hotel at Regina, Sask., was discussed at the meeting of the city council, Nov. 5. A deputation from the council subsequently waited upon one of the company's officers at Winnipeg, and the council was advised Nov. 15, that the company's architects had been instructed to prepare estimates for the completion of part of the building during 1918.

The projected spur line from the company's railway to the market place in Calgary, will not be built this year, according to a letter received by Commissioner Graves, Nov. 4. It is expected, however, that the council will consent to the postponement of construction until the spring.

Traffic on the G.T.P.R. main line was suspended for a couple of days by a land slide near Kwinitza, 54 miles east of Prince Rupert, B.C., on Nov. 1. The line was buried 35 ft. deep with debris for a distance of over 100 yards. (Nov., pg. 433.)

**The Grand Trunk Ry.** is being asked to remove its siding on Bathurst St., London, Ont., between Waterloo and Wellington Sts., on the ground that it interferes with the operation of the London & Port Stanley Ry.

We are officially advised that the company has installed the absolute permisiss block signalling system on its single track line between Shelburne, N.H., and Bethel, Me., 16 miles. The installation was done by the company's own forces, the material



being purchased from the General Railway Signal Co., Rochester, N.Y. The signals are bottom post, d.c. low voltage type 2A.

In connection with an application to the Windsor, Ont., City Council for the granting of patents for water lots at the foot of Brock St., provided that the property is used for a competitive ferry line, Alderman Howell explained that a number of people represented by C. Miller, barrister, Toronto, were working in conjunction with the G.T.R., with a view to erecting an hotel, and a new station with covered tracks on the land between Brock and Goyeau Sts., and that, in connection with the station and hotel, it was proposed to operate a ferry service from Brock St. to Brush St., Detroit, Mich., at which point the G.T.R. has a slip dock and a station. A motion to postpone action until plans of the proposed project were submitted resulted in a tie, six aldermen voting each way. The mayor gave a casting vote in favor of the postponement, stating that the promoters would not be deterred thereby. O. E. Fleming, K.C., Windsor, is said to be looking after the matter for the promoters. (Nov., pg. 433.)

**Hydro Electric Power Commission of Ontario.**—The Board of Railway Commissioners has ordered the G.T.R., the Michigan Central Rd., and the Niagara, St. Catharines and Toronto Ry. to execute their agreements with the commission, which have to do with the building of a power development canal and construction railway, crossing the railways named.

**Intercolonial Ry.**—Tenders are under consideration for the erection of an extension to the freight sheds at Halifax, N.S. (Nov. pg. 433.)

**The Kettle Valley Ry.** is making surveys for railway from Princeton South to Copper Mountain, approximately 14 miles, to reach a copper mine being developed by the Canada Copper Corporation, Ltd. The track will leave the main line in Princeton yard, cross the Similkameen River to the east side, and follow fairly close to the river, almost due south all the way. In addition to 14 miles of main track, there will be, probably, 2 miles of sidings and loading tracks at the mine and at the proposed concentrator. The main working tunnel at the mine is about 1,100 ft. higher than Princeton yard. The maximum gradients will be 2.2% from Princeton to the mine with all down grade in the other direction, or with the heavy traffic. The maximum curvature will be 14 degrees, or 410 ft. radius. It is the intention to build a standard gauge line on which heavy traffic may be handled, using 80-lb. and 85-lb. rails, good ties, and K.V.R. standard bridges and trestles. The location is not completed, but surveys so far show heavy work. For 4 miles on the south end, the material to be moved is nearly all solid rock; for the balance the material is mixed—solid rock, loose rock, hardpan, etc. Approximate estimates show the material to be moved in grading, as 720,000 cubic yards, 40% of which will be solid rock. Tunnels in solid rock, 1,200 lin. ft. Timber in trestles, 2,000,000 ft. b.m. A bridge across the Similkameen River 250 ft. long, kind of bridge not yet decided upon. It is the intention to ask for tenders for the grading early in December, to get part of the work done during the winter, and have the line completed in about a year. A. McCulloch, Chief Engineer K. V. R., is in charge of surveys and will have charge of construction.

**Pere Marquette Ry.**—The President of the P. M. R., accompanied by a number of the company's officers, visited Sarnia, Ont., recently and inspected the company's property there. A deputation from the Sarnia City Council saw the officers in connection with the erection of the projected new railway station. (Sept., pg. 351.)

**National Transcontinental Ry.**—A press report states that negotiations are in progress between the Railways Department and the Quebec Ry., Light & Power Co., for the electrification of the government railway between Sillery Cove, and the terminal station at Champlain market, Quebec. (Oct., pg. 393.)

**Quebec and Saguenay Ry.**—A press report states that the completion of the line as far as Baie St. Paul, Que., was expected to be completed by Dec. 1, and that the rest of the line to Murray Bay will be ready for operation by next summer. (Nov., pg. 394.)

**Northern New Brunswick and Seaboard Ry.**—We are officially advised that while negotiations have taken place between the New Brunswick Government and the St. John and Quebec Ry. in connection with the act providing for the taking up of the rails on the N. N. B. and S. Ry. and relaying them on the St. J. and Q. Ry., it was decided not to remove the rails, and it is said that the St. J. and Q. Ry. will be able to obtain the rails required from another source. (Nov. pg. 433.)

**Quebec and Atlantic Ry.**—The Quebec Legislature is being asked to incorporate a company with this title to build a railway from Quebec City to Chicoutimi, thence to the provincial boundary near Cape St. Charles on the Labrador coast, with branch lines northerly and southerly from the main line, and to make connection in the City of Quebec with the National Transcontinental Ry. L. Cannon, Quebec, is solicitor for the applicants.

**Standard Chemical, Iron and Lumber Co.**—We are officially advised that this company is building a logging railway in connection with its factory at South River, Ont., to get out cordwood. The line is standard gauge, and is to be laid with 56 lb. steel rails. It is expected to complete seven miles of the line, with about a mile of sidings by the end of this year. The contractors are Chambers, McQuigge and McCaffrey. This line will be extended from time to time as the company's lumbering operations render it necessary. The company has bought a 50-ton climax geared locomotive and sixteen 34 ft. flat cars.

The company proposes to build a logging railway in connection with its plant at Donald, Haliburton County, during 1918.

**St. John and Quebec Ry.**—We are officially advised that track has been laid from Gagetown to Queenstown, N.B., 8.5 miles, on the Gagetown-Westfield extension, and that it is expected to have the remaining 29.3 miles of the extension completed in 1918. The Nova Scotia Construction Co., Sydney, N.S., has the contract. C. O. Foss, Fredericton, N.B., is Chief Engineer. (Nov., pg. 434.)

**Timiskaming & Northern Ontario Ry.**—We are officially advised that work is in progress on the revision of the line between mileage 63 and 66.5. This is a part of the line built to the original plans and specifications, and the revision is being made to bring the portion of the line up to the standard finally adopted. The revision is 35 miles long and will reduce the distance 866 ft.; North bound gradients from 1% to 0.4% and southbound

from 1% to level, number of curves 6, and maximum curvature from 7° to 3° and the total curvature by 309° 15'. The work is being done by the Port Arthur Construction Co., Toronto. (June, pg. 225.)

**Toronto, Hamilton & Buffalo Ry.**—We are officially advised that the plans for new yards at Bracebridge, Ont., which have been somewhat modified from those originally made, have not yet been filed with the Board of Railway Commissioners. Arrangements have been made, however, with the municipal authorities interested for the diversion of roads, building of railways, etc. The plans involve the diversion of the Michigan Central Rd.'s Niagara branch, the rearrangement of the Canadian Niagara Power Co. power line spans and the diversion of gas mains and telephone lines.

The question of the extension of the company's tracks at Kinnear yard in the southeastern part of Hamilton, came before the Board of Railway Commissioners, Oct. 22, and on subsequent days. One of the company's arguments in support of its plans was that it is going to spend \$600,000 upon the improvement of its yards at Bridgeburg, and that the extension of the Kinnear yards, by the acquisition of part of the park property, is essential for car working to make possible a 10-hour freight movement to Toronto.

Application is being made to the Board of Railway Commissioners for permission to build three spur lines crossing New York St., Brantford, Ont. (Nov. pg., 434.)

**Toronto Terminals Ry. Co.**—The progress made during the summer with the new union station at Toronto is such that it is expected that the whole of the outside work on the main building will be completed by the end of the year. Owing to difficulties of getting stone and other materials, partly due to the state of traffic on the railways, the delivery of material has not been as free as it might have been. As a consequence the progress on the interior work has not been what was expected. The offices and the platforms are not expected to be completed for another year. (Jan., pg. 19.)

**War Features in Victory Loan Parade.**—The principal features in the Victory Loan parade at Montreal, Nov. 19, were a British tank, and a section of a captured German submarine. These two exhibits were used previously through the courtesy of the British Government, in connection with the Liberty Loan campaign in New York City. The tank was taken to Montreal at the expense of Lord Shaughnessy, and the cost of carrying the submarine to Montreal was borne by Jas. Carruthers, President, Canada Steamship Lines. The submarine reached Montreal, via St. John, N.B., Nov. 16, and the work of transferring it from the waterfront to Victoria Square, where it was an exhibition, was looked after by J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, and by the staff of Canadian Vickers, Ltd. The tank was subsequently conveyed to Toronto and was on exhibition in the Victory Loan parade on Nov. 21.

The Canadian Tie and Lumber Co., Ltd. has been incorporated under the Dominion Companies Act, with \$150,000 authorized capital and office at Toronto, to carry on a general tie and timber business, and to carry into effect an agreement between J. H. Durham, Louisville, Ky., and S. F. McCandless, Toronto, in connection with a contract made with the G.T.R.



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

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

### 1st Battalion, Canadian Railway Troops.

—Several weeks ago, the Commander in Chief, Sir Douglas Haig, called at this battalion's headquarters in Belgium, and as the officer commanding, Lt. Col. Blair Ripley, formerly Engineer of Track Elevation, C.P.R., North Toronto, was absent, Sir Douglas wrote him a letter of appreciation of the work the battalion had done since reaching the front.

**Canadian Railway Troops and Engineers.**—The Militia Department at Ottawa gave out, on Nov. 1, the composition of the Canadian Expeditionary Force in Belgium and France, including among others the following: Railway troops, 10 battalions; engineers, field companies, 12; base company, 1; army troops companies, 4; tunneling companies, 3; railway operating companies, broad gauge, 1; narrow gauge, 1; railway construction corps, 1; construction company, 1.

The New Brunswick Power Co. which owns and operates the St. John Ry., St. John, N.B., has sent the usual Christmas box to each of its employes at the front, together with a personal letter from the President, L. R. Ross. This is the third year this has been done, the number supplied having been originally 62, but owing to casualties, the number this year is only 33.

### Railway Work in the British Offensive.

—The official report on the recent operations in the Cambrai district of France says: "Much credit is due to the transportation service for the rapidity with which the concentration for the operations of the last few days was effected. Roads and railways, both broad gauge and light, have been developed, and, since the advance, have been extended in a manner which has contributed largely to the success of our preparations and subsequent operations."

The Timiskaming and Northern Ontario Railwaymen's Patriotic Association, up to July 31, contributed \$15,223.67 to the Red Cross and \$18,216.26 to the Canadian Patriotic Association. In addition to these amounts, \$13,660.91 has been donated to enlisted employes direct, and the T. & N. O. R. Commission has subscribed \$5,000 and \$10,000 to the Red Cross and Patriotic Associations respectively.

### PERSONAL NOTES.

Lieut. J. M. Blake, Devon Regiment, killed in action in France, Oct. 4, was a grandson of Hon. John Ross, at one time Attorney General for Upper Canada, and from 1852 to 1862, one of the directors and the first President of the G.T.R.

Lieut. L. H. Biggar, son of W. H. Biggar, K.C., Vice President and General Counsel, Grand Trunk & Grand Trunk Pacific Railways, Montreal, was reported early in November as having been wounded. We were advised on Nov. 14 that he was not seriously injured, but was suffering from concussion, due presumably to a shell having exploded very near him. He cabled that he hoped to be all right again very soon. He is in the 42nd Bat-

talion, one of those sent over by the 5th Royal Highlanders of Montreal. He left Canada in Oct. 1916 and has been in France since April 1 last.

Major G. A. E. Bury, son of Sir George Bury, Vice President, Canadian Pacific Ry., arrived in Montreal, Oct. 28, on two months sick leave. He went overseas with the 26th Battalion as Captain and after being promoted to Major, was appointed Deputy Assistant Quartermaster General of the Canadian Training Division.

F. T. Caldwell, Division Superintendent of Telegraphs, Grand Trunk Pacific Ry. & G.T.P. Telegraph Co. (lines in Ontario, Manitoba and Saskatchewan) and Superintendent of Time Service, G.T.P.R., Winnipeg, has been granted extended leave of absence, consequent on entering military service with the U.S. Army Signal Corps, as Lieutenant.

Lieut. J. H. Cardew, M.C., who died of wounds in October, was educated at McGill University, Montreal, and held the degree of M.Sc. of the University. He was for some time Electrical Engineer of the Indian State Railways.

Lt. Col. E. E. Clarke, Assistant Director of Transport & Supplies at Militia Headquarters, Ottawa, is reported to have been appointed Director General of Supplies and Transportation, to succeed Brig. Gen. J. L. Biggar, who has been appointed acting Quartermaster General.

Lt. Col. J. J. Creelman, son of the late A. R. Creelman, General Counsel, C.P.R., has retired from his candidature to represent Montreal's St. Antoine Division in the House of Commons, and announces that he is ready to return to the front.

A son of H. J. Cowie, European Agent, Canada Steamship Lines, Liverpool, Eng., has been promoted to Captain and given the Military Cross for services performed at Lens on Aug. 14.

Provisional Lt. Col. J. S. Dennis, Calgary Battalion, Reserve Militia, Chief Commissioner of Colonization and Development, C.P.R., Montreal, has been granted from Sept. 20 temporary rank of Colonel in the Canadian Militia, while performing the duties of Officer Commanding the Western Division, British Canadian Recruiting Mission in the United States.

James Duff, formerly Superintendent of Townsites, Natural Resources Department, C.P.R., Calgary, who went overseas as Captain in the 239th Battalion, has been promoted to Major.

Major Kenneth Lock Duggan, B.Sc., who was reported killed in action recently, was a son of G. H. Duggan, M.Can.Soc. C.E., of the Dominion Bridge Co. He graduated in mechanical engineering from McGill University in 1914, and during summer vacations had been engaged in 1911 on irrigation works for C.P.R. Natural Resources Department in the neighborhood of Calgary, Alta.; in 1912 with Abitibi Pulp & Paper Co., and in 1913, in the Dominion Bridge Co.'s drafting office. At the time of enlisting, he was on the Montreal Harbor Commission's engineering staff. He went overseas with the 5th Mounted Rifles, C.E.F., was appointed a major in 1916, and was mentioned several times in Field Marshal Sir Douglas Haig's dispatches. His only brother was killed at Loos, about two years ago.

Lieut. S. M. Goodeve, of the Royal Flying Corps, son of A. S. Goodeve, one of the Board of Railway Commissioners at Ottawa, was killed in action during the

recent allied drive on Cambrai. Another son, Lieut. Arthur Goodeve, was killed near Courcellette in September, 1917.

Lieut. C. S. Hall, of Montreal, nephew of Grant Hall, Vice President & General Manager, Western Lines, C.P.R., is reported wounded and missing.

Lieut. J. J. Hanna, of the 3rd Tunneling Company, Canadian Engineers, now in France, and at one time in C.P.R. service, has been elected an associate member of the Canadian Society of Civil Engineers.

Lieut. J. J. Harold, reported wounded in the arm by gun shot, in action in France, is son of L. Harold, Superintendent Transportation, Eastern Lines, G. T. R., Montreal. He went overseas July, 1915, with the 5th Canadian Mounted Rifles, and was wounded at Ypres. He won his commission on the field. Prior to enlistment he was in his third year in arts at McGill University.

Lieut. Gerald Hiam, who was reported early in November as having been wounded, was District Passenger Agent, C.P.R., at Fort William, Ont., until the summer of 1915, when he went into the 73rd Battalion, Montreal, as a lieutenant, and then transferred to the 198th Battalion (Bufs) Toronto, as captain. In order to get overseas quickly he reverted to lieutenant, went to England in Sept., 1916, and to France in Oct., 1916, with the 14th Battalion (Royal Montreal) in which he was promoted to second in command of A Company. His brother, T. A. Hiam, formerly private secretary to Sir Donald Mann, is Captain and Adjutant of the 198th Battalion.

Lt. Col. Thos. C. Irving, Jr., D.S.O., of Toronto, was reported in the casualty list of Nov. 5, as having died of wounds. Subsequently it was learned that he was killed almost instantly by a bomb from a German aeroplane while sitting in his dugout at the divisional headquarters. He was born in Toronto in 1879 and took a civil engineering course at Toronto and McGill Universities. For some time he was on the Lake Superior Corporation's staff at Sault Ste. Marie, and in 1905 was one of the incorporators of the Standard Inspection Bureau of Canada, Ltd., Toronto, of which he was Sec.-Treas. until its absorption by Robert W. Hunt & Co., Ltd., in 1910, when he became Vice President of the latter company. In 1898 he received a commission in the 2nd Field Company, Canadian Engineers, Military District 2, becoming captain June 1, 1911. On the outbreak of war he went with his company to Valcartier Camp, Que., and proceeded to England with the 1st Canadian Expeditionary Force in Oct., 1914, being second in command of No. 2 Field Company under Major Lindsay. He went to Belgium in Feb., 1915, in command of the company, as Major Lindsay, owing to an accident, had to remain in England, and he continued in command through the operations at Fleurbaix and the second battle of Ypres, and until just before Festubert, when Major Lindsay again took command. After the company had moved up to Romarin, Major Lindsay was made a lieutenant colonel. Capt. Irving becoming Major and being given command of No. 2 Field Company, in which position he remained while the company was in the Messines district, and after it was moved back to the Ypres salient. In Oct., 1916, Lt. Col. Insksetter, commanding the 4th Canadian Divisional Engineers having died from shrapnel wounds, Major Irving was appointed C.R.E. to



succeed him, was promoted to Lieutenant Colonel and was awarded the D.S.O.

**Capt. B. L. Johnson**, who is reported to have been awarded the Distinguished Service Order for services in submarine operations within the war zone, was associated with the Pacific coast marine service for several years. He was for some time in the service of the Union Steamship Co. of British Columbia, then with the Boscowitz Steamship Co., and was the first master of the Grand Trunk Pacific Steamship Co.'s s.s. Prince Rupert. Some time prior to the war he resigned that service in order to become a pilot at Vancouver, which position he held when he entered the navy.

**Lt. Col. W. B. Kingsmill**, of Saunders, Torrance & Kingsmill, solicitors, Michigan Central Rd., Toronto, who went overseas in command of the 123rd Battalion from Toronto, has been given the Colonial Auxiliary Force's Officers' Decoration.

**Major A. C. Lewis**, formerly Secretary, Toronto Harbor Commission, who was reported wounded, Sept. 1, was reported on Oct. 31 as being in a London hospital to undergo an operation. He was said to be also suffering from nervous trouble. He went overseas as second in command of the 216th Battalion.

**Capt. Donald M. Mathieson**, who has applied for transfer from associate member to member, Canadian Society of Civil Engineers, was born at St. Marys, Ont., Oct. 13, 1884, educated at Upper Canada College, Toronto, 1899 to 1902; graduated Royal Military College, Kingston, 1905, and at McGill University, Montreal, 1907, as B.Sc. (C.E.), since when his record has been as follows: Summers of 1902 to 1907 on C.P.R. and Grand Trunk Pacific Ry. construction; autumn of 1907 in charge of erection of steel of harbor sheds, Montreal, for Dominion Bridge Co.; spring of 1908, in designing office, Dominion Bridge Co.; 1908 to 1909 general contractor; 1909 organizing steel erection department for Peter Lyall & Sons; 1910-11 engineer in charge of installation, hydraulic mining plant, for Cache Creek Mining Co., in Alaska; 1912, general contractor, Vancouver; 1913-14 consulting engineer, Vernon, B.C.; entered Canadian army in 1914 in 2nd Field Co., Canadian Engineers, at Valcartier, Que., and proceeded to England and afterwards to France, where he was wounded, and invalided to Canada, in 1916, since when he has been on headquarters staff, Military District 2, Toronto, and is now officer commanding Spadina Military Hospital, Toronto.

**Lt. Col. L. T. Martin**, of the 7th Railway Battalion, now at the front, will be the union candidate for the representation of South Renfrew, Ont., in the Dominion Parliament. He is closely connected with M. J. O'Brien, railway contractor, etc., Renfrew, Ont.

**Lieut. D. N. McIntyre**, formerly Deputy Minister of Fisheries for British Columbia, reported killed at Passchendaele, Nov. 13, enlisted as a private, and was later given a commission in the British Columbia "Bantam" battalion, and went overseas early in the year. He was a nephew of D. M. McIntyre, K.C., Chairman, Ontario Railway and Municipal Board, and had served on the Montreal Star and the Victoria Colonist.

**Second Lieut. G. W. Murrell**, Royal Fusiliers, who has been awarded the Military Cross for bravery and devotion to duty during an enemy counter attack, was for several years prior to the war, in the Passenger Department, Allan Line Steamship Co., London, Eng. During the action in which he won the cross, he took up reinforcements, and though wounded in

three places, took command of the situation when all other officers were casualties, remaining at his post for 12 hours after the action.

**Engineer Lieut. Commander Jno. Quine**, Second Engineer of H.M.S. Princess Margaret, who has been awarded the Distinguished Service Order, was for a number of years in the British Columbia coastwise trade service, as engineer, on C.P.R. and Grand Trunk Pacific steamships. When war broke out he was Chief Engineer of the G.T.P. s.s. Prince Albert and immediately proceeded to England and offered himself for service. The Princess Margaret is one of the two steel passenger steamships built on the Clyde, for the C.P.R. British Columbia coast service, and was commandeered by the British Admiralty when war broke out, together with her sister ship, Princess Irene which had then just been completed. Shortly after being taken over, the Princess Irene was destroyed by an explosion in the River Thames.

**Col. G. S. Rennie**, C.A.M.C., formerly Chief Surgeon, Dominion Power & Transmission Co. and Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., is among those whose names have been brought to the notice of the Secretary of State for War for distinguished service rendered in connection with the war.

**Lieut. J. B. Rose**, who was reported wounded recently, then wounded and missing, and later a prisoner of war at Limburg, was, prior to the war, in the British Columbia Electric Ry. service at Vancouver. He was a captain in a British Columbia regiment, and reverted in rank to go to France.

**Capt. Shaughnessy**, only surviving son of Lord Shaughnessy, was stated in a London cablegram of Nov. 6 as about to return to Canada for family reasons.

**W. H. Stewart**, formerly Assistant Superintendent, C.P.R., Farnham, Que., and latterly Purchasing Agent, Imperial Munitions Board's Shipbuilding Department, Ottawa, has been transferred to the staff of the British War Mission at Washington, of which Sir Charles Gordon, of ton, of which Sir Charles Gordon is Vice Chairman.

**Bombardier Francis Vivian Morton**, who was killed in action in Belgium, Nov. 10, was son of J. D. Morton, Assistant Comptroller, Canadian Northern Ry., Toronto. He was born Dec. 11, 1895, and was a second year student at Toronto University when he enlisted, Mar. 18, 1915, with the first university unit, C.F.A. He left Canada for overseas Aug. 4, 1915, and arrived in France, Jan. 18, 1916.

**Lieut. C. Wakeford**, R.N.R., whose death by the sinking of H.M.S. Champagne, in the North Sea Oct. 9, was announced recently, was formerly an officer on the C.P.R. s.s. Empress of Ireland, and was on board when she was run down and sunk in the St. Lawrence River, May 29, 1914, when he was instrumental in saving a number of lives, including his father, who was a passenger on the vessel. He was in the naval service from the time war broke out, and was acting as Assistant Paymaster.

**W. H. Watson**, heretofore Assistant City Ticket Agent, Canadian Northern Ry., Regina, Sask., has enlisted for military service, and is now a sergeant, local headquarters staff, Military District 12, A. D. of S. & T.

**Lieut. F. B. Webster**, of the Royal Flying Corps, who died recently of wounds received while flying in the neighborhood of Ypres, France, was a native of New Zealand, and came to Canada about 12 years ago. For some time prior to en-

listing he was in the Dominion Government telegraph service in northern British Columbia.

### The Victory Loan and Transportation Interests.

At the time of writing (Nov. 29) the subscription lists for the Dominion's Victory Loan of \$150,000,000 are still open, but the amount originally asked for has been very considerably oversubscribed. Those responsible for the huge publicity campaign, which probably eclipses anything in the way of advertising hitherto attempted on this continent, set themselves to obtain subscriptions for double that amount, and it seems altogether likely that the total subscriptions, when the lists close Dec. 1, will be at least \$300,000,000. The C.P.R. definitely took \$5,000,000 of the bonds, and Lord Shaughnessy stated that should the \$300,000,000 be reached, the company would take an additional \$5,000,000. The G.T.R. and Canadian Northern Ry., as well as several other of the larger companies completed arrangements whereby their employes were enabled to take up bonds by paying for them on the instalment plan, the companies to look after the payments as they become due, and the employes signing agreements permitting the deduction of such payments from their wages.

Among the transportation companies, and other companies and individuals associated with or interested in such companies, who subscribed to the loan, are: C.P.R., \$5,000,000, and possibly a further \$5,000,000; Canadian General Electric Co., \$3,155,000; Dominion Steel Corporation, \$3,000,000; Steel Co. of Canada, \$1,500,000; Canada Steamship Lines, Ltd., \$1,000,000; Great Lakes Transportation Co., \$365,000; R. W. Leonard, formerly chairman, National Transcontinental Ry. Commission, \$300,000; Sir Herbert Holt, director, C.P.R., \$270,000; Canadian Locomotive Co., \$250,000; Sir Augustus Nanton, director, C.P.R., \$250,000; Dominion Copper Products Co., \$250,000; Dominion Bridge Co., \$250,000; Bell Telephone Co., \$225,000; Canada Foundries & Forgings Co., \$200,000; James Carruthers, President, Canada Steamship Lines, Ltd., \$100,000; J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd., \$100,000; Lord Shaughnessy, President, C.P.R., \$100,000; R. B. Angus, director, C.P.R., \$100,000; Mark Workman, President, Dominion Steel Corporation, \$100,000; Keystone Transportation Co., Montreal, \$100,000; R. M. Wolvin, President, Montreal Transportation Co., \$100,000; Northern Electric Co., Montreal, \$100,000; Lorne C. Webster, President, Canada Shipping Co., Montreal, \$100,000; Hon. F. L. Beique, director, C.P.R., \$70,000; Dominion Wire Rope Co., Montreal, \$50,000; W. G. Ross, President, Montreal Harbor Commission, \$50,000; Farquhar Robertson, member F. H. Hopkins & Co., Montreal, \$50,000; Canada Iron Foundries, Ltd., Montreal, \$50,000; Atlas Construction Co., Montreal, \$40,000; Revillon Freres, Montreal, \$40,000; E. W. Beatty, K.C., Vice President and General Counsel, C.P.R., \$30,000; Wm. Lyall, President, Wm. Lyall Shipbuilding Co., \$25,000; Shedden Forwarding Co., \$25,000; Hugh Paton, President, Shedden Forwarding Co., \$25,000.

**Dearborn Chemical Co. of Canada Ltd.**, has appointed Taylor and Arnold, Ltd., of Montreal, Winnipeg and Vancouver, as its exclusive sales agents in Canada.



# Mainly About Railway People Throughout Canada.

**H. B. Voorhes** has been appointed General Superintendent of Transportation, Baltimore & Ohio Rd., Baltimore, Md.

**G. C. Jones**, who was appointed Assistant to President, G.T.R., at Toronto, recently, has taken up house at Inglewood, Avenue Road Hill, Toronto.

**F. W. Alexander**, Engineer, Alberta District, C.P.R., Calgary, has been transferred from associate member to member Canadian Society of Civil Engineers.

**W. Ord**, who has been Boiler Shop Foreman, G.T.R., at Stratford, Ont., for some 20 years and who is a capital shot, spent his holidays deer shooting, in the Blind River District, recently.

**A. E. Stevens**, General Superintendent, Western District, Canadian Northern Ry., Moose Jaw, Sask., was called to Moncton, N.B., Nov. 16, on account of the death of his mother there.

**Sir Edmund Osler**, one of the C.P.R. directors, who has represented West Toronto in the House of Commons for many years, declined to be a candidate in the pending general elections.

**H. J. Fuller**, President, Canadian Fairbanks-Morse Co., has been appointed to represent the Imperial Munitions Board in New York, in connection with munitions and marine equipment contracts.

**G. H. Patrick**, senior canal superintendent, Department of Natural Resources, C.P.R., Strathmore, Alta., has been elected an associate member of the Canadian Society of Civil Engineers.

**A. D. Ferguson**, draftsman and office assistant to Division Engineer, Hudson Bay Railway, Pas, Man., has been transferred from student to associate member Canadian Society of Civil Engineers.

**Lord Shaughnessy**, R. B. Angus, C. R. Hosmer and E. W. Beatty, directors of the C.P.R., and E. J. Chamberlin, ex President, G.T.R., and G.T.P.R., have been re-elected directors of the Royal Trust Co.

**George C. Conn**, whose resignation as Freight Traffic Manager, Pere Marquette Ry., Detroit, Mich., was announced in our last issue, has been appointed General Traffic Manager, Buick Motor Co., Flint, Mich.

**C. N. Monsarrat**, M. Can. Soc. C. E., Chairman, Quebec Bridge Commission, gave an address on the construction of the bridge, to members of the Canadian Society of Civil Engineers at Montreal, Nov. 22.

**R. W. Leonard**, M. Can. Soc. C. E., St. Catharines, Ont., formerly Commissioner, National Transcontinental Ry., declined to be nominated as a union candidate for Lincoln County, in the pending Dominion elections.

**E. H. Pacey**, in Quebec Bridge Commission service at Montreal, and formerly with the C.P.R., Intercolonial Ry., and G. T. R., has been transferred from junior to associate member, Canadian Society of Civil Engineers.

**R. J. C. Stead**, Publicity Agent, Natural Resources Department, C.P.R., Calgary, Alta., acted as chairman of the publicity committee for the promotion of the sale of victory loan bonds in Southern Alberta recently.

**Chas. A. Cairns**, heretofore General Passenger and Ticket Agent, Chicago & Northwestern Ry., has been appointed Passenger Traffic Manager. **J. L. Ferguson**, heretofore Assistant General Pas-

senger & Ticket Agent, has been appointed General Passenger Agent.

**Miss E. M. Story**, youngest daughter of D. A. Story, Freight Traffic Manager, Canadian Government Railways, Moncton, N.B., was married there, recently, to Capt. J. N. Gibson, of Kingston, Ont., of the Canadian Ordnance Corps.

**E. J. Chamberlin**, formerly President, Grand Trunk and Grand Trunk Pacific Railways, and Mrs. Chamberlin, have, on account of the latter's health, gone to California for the winter, and are staying at the Huntingdon Hotel, Pasadena.

**Lady Mackenzie**, wife of Sir Wm. Mackenzie, President, Canadian Northern Ry., died at Toronto, Nov. 29, after several months illness, following an operation. She was buried at Kirkfield, Ont., the old family home.

**J. T. Gillick**, formerly Assistant General Manager, Chicago, Milwaukee & St. Paul Rd., has been appointed General Manager, succeeding J. C. Hart, assigned to other duties. **Macy Nicholson**, formerly Assistant to Operating Vice President, Great Northern Railway Co., succeeds Mr. Gillick.

**L. J. M. Howard**, formerly with the C.P.R., and in 1916 serving on the valuation staff of the commission of enquiry into railways and transportation, has been elected an associate member, Canadian Society of Civil Engineers. He is at in the Imperial Munitions Board's service in Ottawa.

**Brig. General H. H. McLean**, K.C., of St. John, N.B., formerly President, St. John Ry., has been transferred to the retired list, with honorary rank of Major General. He was member for Queens-Sunbury in the last parliament and is now a candidate for the representation of Royal, N.B.

**H. E. Stevens**, Assistant to District Engineer, British Columbia Public Works Department, Courtenay, has been elected an associate member Canadian Society of Civil Engineers. He was, from 1902 to 1912 in C.P.R. service, and in 1912 was Resident Engineer, Kettle Valley Ry. Penticton, B.C.

**J. Frater Taylor**, President, Algoma Steel Corporation, has announced his retirement at the end of the year, but has stated that he will retain his connection with the company, in an advisory capacity, as Chairman of the Lake Superior Corporation. It is reported that he will be succeeded by W. C. Franz.

**Guy Tombs**, General Freight Agent, Eastern Lines, Canadian Northern Ry., Montreal, is one of the members of the examining board of the Montreal branch of the aerial service, which meets twice a week there to interview and recommend prospective candidates for admission to the Royal Flying Corps.

**W. R. Payne**, who died at Moncton, N.B., Oct. 28, after a short illness, was for 20 years station agent, Intercolonial Ry., at Bathurst, N.B., and for about seven years prior to his retirement in 1915, station agent at Newcastle, N.B. Two of his sons are at present in Canadian Government Railways service, one at Halifax and the other at Moncton.

**A. C. Boyce**, K.C., whose appointment as a member of the Board of Railway Commissioners was announced in our last issue, was presented with a gold mounted walking stick, and a gold mounted umbrella for Mrs. Boyce, by a number of

friends at a farewell gathering, Nov. 8, on leaving Sault Ste. Marie, to take up his residence at Ottawa.

**W. A. Griffin**, Superintendent of Traffic, Timiskaming and Northern Ontario Ry., North Bay, Ont., A. A. Cole, Mining Engineer, and the conductor and locomotive man of the Governor General's train, were each presented with a gold stick pin by the Duke of Devonshire, as an appreciation of their services during his tour of Northern Ontario during November.

**W. P. Kellett**, formerly Manager and Chief Engineer, Lake Erie & Northern Ry., and later, President, Dominion Steel Products Co., Brantford, Ont., is President of the American Steel Products Corporation, which has been organized with an authorized capital of \$1,000,000, and which has contracts for shafting, etc., for vessels being built by the United States Government.

**Joseph Gerard Elzear Giasson**, who has been appointed Auditor of Freight and Passenger Receipts, Quebec Ry. Light & Power Co., Quebec, Que., was born at St. Jean Port Joly, Que., June 4, 1887, and entered the company's service in Nov. 1905 since when he has been, to April 1909, telegraph operator and station agent, Ste. Anne and Beauport; May 1909 to Oct. 31, 1917, Assistant Auditor, Quebec.

**Sir Henry Drayton**, Chief Railway Commissioner for Canada has been appointed controller of the production and distribution of electrical energy by companies generating or distributing electrical energy in Ontario. He will determine preferences and priorities in the supply of such electrical energy, to the end that a sufficient supply shall be furnished to factories and users engaged directly or indirectly in munition work, or work for any of the allied Governments, and also for municipal and public utility requirements.

**O. M. Lavoie**, who has been appointed acting Superintendent, Car Service, Eastern Lines, C.P.R., Montreal, was born at St. Cyrille de Wendover, Que., Oct. 16, 1882, and entered railway service in March 1889, since when he has been, to April 1900, telegraph operator Intercolonial Ry.; Apr. 1900 to Sept. 1902, telegraph operator, Quebec, Montreal and Southern Ry.; Sept. 28, 1902 to July, 1909, operator, C.P.R.; July 19, 1909 to Jan. 15, 1916, dispatcher, C.P.R., Farnham, Que.; Jan. 15, 1916, to Oct. 30, 1917, Chief Dispatcher, Farnham Division, Quebec District, Farnham, Que.

**Ross Garfield Edwards**, who has been appointed Assistant Superintendent, Trenton Division, Ontario District, C.P.R., Havelock, Ont., was born at Maitland, Ont., Oct. 10, 1883, and entered C.P.R. service Dec. 24, 1900, since when he has been, to May 31, 1901, caller; May 31, 1901 to July 1902, checker; July 1902 to Apr. 14, 1904, yard office clerk; Apr. 14, 1904 to Oct. 21, 1906, chief clerk; Oct. 21, 1906, to Apr. 5, 1907, yard man and yard foreman; Apr. 5, 1907, to Feb. 11, 1909, Yardmaster; Feb. 11, 1909 to May 31, 1915, General Yardmaster, all at Smiths Falls, Ont.; May 31, 1915, to Oct. 29, 1917, Assistant Superintendent, Montreal Terminals Division, Quebec District, Montreal.

**William Robert Howard**, who has been appointed Chief Dispatcher, Smiths Falls Division, Quebec District, C.P.R., Smiths Falls, Ont., was born at St. Andrews,



N.B., Sept. 14 1871 and entered railway service in Sept. 1887, since when he has been, to June, 1889, telegraph operator at various points, New Brunswick Ry.; June 1889 to Oct. 1891, baggage man, C.P.R., Megantic, Que., and St. John, N.B.; Oct. 1891 to Oct. 1895, agent and operator, C.P.R., at different points on Atlantic Division; Oct. 1895 to Nov. 1912, dispatcher, C.P.R., Brownville Jct., Me.; Nov. 1912 to Mar. 1913, acting Chief Dispatcher, Brownville Jct., Me.; Mar. 1913 to Oct. 1917, Chief Dispatcher, Brownville Jct., Me.

**Frank Lee**, who has been appointed Engineer Maintenance of Way, Eastern Lines, C.P.R., Montreal, was born at Chicago, Ill., Mar. 7, 1873, and entered railway service in Jan., 1895, as rodman and draftsman on location and construction of extensions to the Government railways in Trinidad, British West Indies. He has been, from May, 1896, to Nov. 1902, on construction and maintenance, Chicago and North Western Ry.; Nov. 1902 to Jan. 1904, Signal Engineer, C.P.R., Montreal; Jan. 1904, to Aug. 1905, Assistant Engineer C.P.R., Winnipeg; Aug. 1905 to Apr. 1912, Division Engineer, C.P.R., Winnipeg; Apr. 1912 to Nov. 20, 1917, Principal Assistant Engineer Western Lines, C.P.R., Winnipeg.

**M. K. Cowan, K.C.**, who died at Toronto, Oct. 28, after three months illness, was, from 1904 to 1910, Solicitor at Toronto for the G.T.R. The funeral took place at Brantford, Ont., Oct. 31, one of the honorary pall bearers being W. W. Pope, Secretary, Hydro Electric Power Commission of Ontario, and a former Solicitor for the G.T.R. Among G.T.R. officials present were W. S. Wilson, Superintendent of Transportation, Toronto; J. Beck, Superintendent, Toronto Union Station; W. H. Farrell, Superintendent Toronto Terminals; G. Mitchell, Superintendent of Buildings; R. H. Fish, Superintendent Stratford Division; P. J. Lynch, Superintendent Barrie Division; J. H. Gordon, Superintendent Hamilton Division; C. Forrester, Superintendent London Division.

**George Collins**, who has been appointed Superintendent, Quinte District, Ontario Division, Canadian Northern Ry., Trenton, Ont., was born at Carrying Place, near Trenton, Ont., July 20, 1860, and entered railway service June 1, 1882, since when he has been, to May 1884, time-keeper, Central Ontario Ry., Trenton, Ont.; May 1884 to May 1890, agent, same road; May 1890 to May 1892, dispatcher, same road; May 1892 to May 1894, Secretary-Treasurer, and Assistant Superintendent, same road; May 1894 to Oct. 1902, Secretary and General Superintendent, same road; Oct. 1902 to Dec. 1906, Receiver and Manager, same road; May 1903 to July 1914, also director, and from Mar. 1910 to July 1914, also General Manager, Iroindale, Bancroft & Ottawa Ry., all at Trenton, Ont.; July, 1914 to Sept. 1, 1915, Superintendent, Ottawa Division, Canadian Northern Ry., Trenton, Ont.; Sept. 1, 1915, to Aug. 1916, Superintendent Branch Lines, Toronto District, Ontario Division, C.N.R., Trenton, Ont.; Aug. 1916 to Oct. 1917, Special Representative, C.N.R.

**Samuel J. Hungerford**, who has been appointed General Manager Eastern lines, Canadian Northern Ry., 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. 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, and from May 1915 to Nov. 1, 1917, same position, Toronto.

**G. A. Hoag**, who has been appointed Superintendent, Superior District, Ontario Division, Canadian Northern Ry., Hornepayne, Ont., was born May 31, 1866, and educated at Kingston, Ont., public schools and business college. He entered railway service June 8, 1884, as switchman, G.T.R., and served at various points until May 3, 1886, when he was appointed night operator, and promoted to day operator and relieving agent, Jan. 1888. From 1889 to 1901, he was agent, same road, Trenton, Ont.; 1901 to 1905, Yardmaster same road, Belleville, Ont.; Oct. 1905 to Mar. 1908, Trainmaster, Central Ontario Ry., Trenton, Ont.; Mar. 1, 1908 to July 1914, Superintendent, same road, Trenton, Ont.; July 1914 appointed Superintendent of Car Service, Eastern Lines, Canadian Northern Ry., Toronto; and later, to Apr. 1916, Assistant Superintendent, same road, Ottawa, Ont.; Apr. to Aug. 1916, Assistant Superintendent, Toronto District, Ontario Division, same

road, Rosedale, Toronto; Aug. 1916 to Apr. 1917, Assistant Superintendent, Toronto District, Ontario Division, same road, Trenton, Ont.; Apr. to Nov. 1, 1917, Assistant Superintendent, Toronto District, Ontario Division, same road, Toronto.

**John Andrew Heaman, B.Sc., A.M.Can. Soc.C.E.**, whose appointment as Assistant Chief Engineer, Grand Trunk Pacific Ry., Winnipeg, was announced in our last issue, was born at Memphis, Tenn., June 3, 1874, and was educated in public school and at Collegiate Institute London, Ont., and McGill University, graduating in 1902. He served as an articulated pupil to Moore and Henry, engineers and surveyors, London, Ont., from 1893 to 1898, and holds diplomas as Dominion and Ontario Land Surveyor. He entered railway service in Apr. 1901, since when he has been, to Sept. 1901, instrument man, G.T.R., St. Catharines and Port Union, Ont.; Apr. to Nov. 1902, Resident Engineer, G.T.R., Oshawa, Ont.; Nov. 1902 to Nov. 1903, Assistant Resident Engineer, G.T.R., Toronto; Nov. 1903 to May 1905, Assistant Engineer in charge of location party east of Winnipeg, Grand Trunk Pacific Ry.; May 1905 to Nov. 1906, Division Engineer in charge of location and construction east of Winnipeg, National Transcontinental Ry.; Nov. 1906 to Oct. 1908, Assistant District Engineer, N.T.R., Ont.; Oct. 1908 to June 1910, Assistant District Engineer, G.T.P.R., Kenora, Ont., and Winnipeg; June 1910 to Apr. 1911, District Engineer, G.T.P.R., Winnipeg; Apr. 1911 to Mar. 1912, Office Engineer, G.T.P.R., Winnipeg; Mar. to Aug. 1912, Division Engineer, G.T.P.R., Jasper, Alta.; Aug. 1912 to Nov. 1, 1917, Assistant to Chief Engineer, G.T.P.R., Winnipeg.

## Agreement for Acquisition of Canadian Northern Railway Stock.

The agreement between the Dominion Government and the holders of Canadian Northern Ry. capital stock has been signed and the following summary of its principal provisions has been given out:

The agreement provides for the naming of the arbitrators, one by the government, and one by the stockholders, the two so named to appoint a third. Should they fail to agree, the third arbitrator is to be appointed by the Chief Justice of the Exchequer Court. No arbitrator is named in the agreement, but the government arbitrator has already been selected, viz., Sir William Meredith, Chief Justice of Ontario, and it is said that Wallace Nesbitt, K.C., will represent the owners of the \$60,000 of stock.

The government already owns 400,000 shares of the stock. This represents 40% of the entire stock holdings and was taken by the government in 1914, on account of the guarantee of the company's bonds then given. The other 600,000 shares are now to become the property of the government and have, it is said, already been transferred. Their par value is \$60,000,000. The agreement fixes the maximum to be paid for these 600,000 shares at \$10,000,000. No greater sum therefore can be paid, no matter what their value may be found to be by the arbitrators. If the value is found to be less than \$10,000,000, then the less sum will be paid. It is said that Mackenzie, Mann & Co. Ltd., own approximately five-sixths of these shares. Consequently the maximum that can be paid to them will be something over \$8,000,000. As, however, these shares are pledged to their bankers as

part security for advances of various kinds, the monies doubtless will be paid to the bank.

The duty of the arbitrators is to take evidence such as may be offered on behalf of the government and of the stockholders. Both parties will be heard in the usual way as before all arbitrations. There has been no previous inquiry into the value of this stock, at which both parties have been heard. After the taking of evidence and the making of any further investigations which the arbitrators may deem useful, it will be for them to decide what the value of the stock really is. The agreement does not call upon the arbitrators to adopt any particular method. They may enquire what the stock could be sold for; they may ascertain the value of the assets and deduct the liabilities. They may take into consideration earning power. They are not restrained in any way but simply required to get at the fair value in the best way possible. It is further specifically provided that if the arbitrators should see fit to take into consideration the reproduction cost of the system, then they must not include therein the increase in value, due to the war, of labor, material, equipment, or of any property whatever. The shareholders will be required to disclose all liabilities of the company of every kind, to the arbitrators. Should, however, it be found later that liabilities exist that were not disclosed, or in excess of those disclosed, then a corresponding deduction will be made from any award given.

The arbitrators must commence work forthwith, and complete the taking of



evidence in such time as to announce their award before Mar. 1, 1918. Pending the award, it is provided that nothing but ordinary operating obligations shall be entailed, and no obligation shall be entered into, not to be completely executed within six months, except with the approval of the Minister of Railways. All costs connected with the arbitration are to be in the discretion of the arbitrators and to be taxed by an officer.

Prior to the Canadian Northern bill coming before the Senate last term, two

of the directors resigned, viz., Senator Frederic Nichols, who had been a director from the formation of the company, and Senator H. W. Richardson, who had been one of the government directors for the past year or so. Graham A. Bell, C.M.G., Assistant to the Minister of Railways and Financial Controller of the Railway Department, has been appointed a director to succeed Senator Richardson. The other director has not been appointed. It is stated, apparently with authority, that Hon. Frank Cochrane, ex Minister of

Railways, will be appointed chairman.

Sir Wilfred Laurier in his pre-election manifesto, issued recently, in referring to the matter, said: "The opposition asked that the report of the arbitration, whatever it be, should be laid before parliament for approval. Though this motion was rejected it is the right of the people to declare that the case should not have been finally closed by the action of a moribund parliament, but that the whole matter should be reported to and adjudicated upon by the new parliament."

## Transportation Appointments Throughout Canada.

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

**Canadian Government Railways.**—F. W. ROBERTSON, heretofore District Passenger Agent, Halifax, N.S., has been appointed Superintendent, Sleeping and Dining Car Service, Eastern Lines, vice L. B. Archibald, retired. Office, Halifax, N.S.

E. CAMERON, heretofore Commissary Agent, Halifax, N.S., has been appointed Assistant Superintendent, Sleeping and Dining Car Service, Eastern Lines. Office, Halifax, N.S.

A. J. TINGLEY, heretofore Special Agent, has been appointed Chief of Railway Police. Office, Moncton, N.B.

Following is a list of Police Inspectors and their districts: T. W. Moore, District 1, Montreal to Mont Joli; O. B. Lawson, District 2, Mont Joli to Moncton; J. J. Dunphy, District 3, St. John to Truro; Wm. Tupper, District 4, Truro to Sydney; E. L. Cantin, District 5, Diamond to Pacific Jct.; E. W. Power, District 6, Truro to Halifax.

H. C. MACFARLANE has been appointed District Passenger Agent, Halifax, N.S., vice F. W. Robertson, transferred to Sleeping and Dining Car Department.

**Canadian Northern Ry.**—S. J. HUNGERFORD, heretofore Superintendent of Rolling Stock, Toronto, has been appointed General Manager, Eastern Lines, vice L. C. Fritch, who resigned some time ago, on his appointment as General Manager, Seaboard Air Line Ry., Norfolk, Va. Office, Toronto.

C. PRICE GREEN, heretofore in the Publicity Department, has been appointed Industrial Commissioner, vice D. F. Coyle, resigned. Office, Toronto.

S. H. SYKES, M.Can.Soc.C.E., of the Engineering Department, has been transferred from Vancouver to Toronto.

GEORGE COLLINS, whose appointment as Superintendent Branch Lines, Toronto District, Ontario Division, Trenton, Ont., was announced in our last issue, has been appointed Superintendent, Quinte District, Ontario Division, comprising, Picton, Maynooth, Irondale, Tweed Kingston, and Brockville Subdivisions, and Trenton Terminals. Office, Trenton, Ont.

W. R. KELLEY, heretofore Superintendent, Lake Superior District, Ontario Division, Capreol, Ont., has been appointed Superintendent, Nipissing District, Ontario Division, comprising Ruel, Sudbury, North Bay and Pembroke Subdivisions, and Foleyet, Sudbury and Parry Sound Terminals. Office, Capreol, Ont.

G. A. HOAG, heretofore Assistant Superintendent, Toronto District, Ontario Division, Toronto, has been appointed Superintendent, Superior District, Ontario

Division, comprising Nipigon, Long Lake and Oba Subdivisions. Office, Hornepayne, Ont.

D. J. MacINTOSH, heretofore chief clerk and Assistant Freight Agent, has been appointed Grain Agent, Port Arthur, Ont.

J. M. GRIEVE, heretofore Assistant Superintendent, has been appointed Superintendent, Sleeping, Dining and Parlor Cars and News Service, Western Lines,



S. J. Hungerford  
General Manager, Eastern Lines, Canadian Northern Railway.

vice O. C. Bishop, resigned. Office, Winnipeg.

H. B. WOLLEN has been appointed Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Western Lines, vice J. M. Grieve promoted. Office, Winnipeg.

C. H. WORBY, heretofore agent, has been appointed District Commissary Agent, Sleeping, Dining and Parlor Cars and News Service, Western Lines, Winnipeg.

G. A. CUNLIFFE, heretofore Superintendent, Division 3, Western District, Edmonton, Alta., has been appointed Superintendent, Division 4, Central District, vice I. L. Boomer transferred. Office, Brandon, Man.

W. L. LOOMIS has been appointed Road Foreman of Locomotives, Brandon, Man. This is a new position.

W. BLACK, heretofore Locomotive Foreman, Saskatoon, Sask., has been appointed Locomotive Foreman, Hudson Bay Jct., Sask., vice A. Clifton, transferred.

S. G. KATHAN, heretofore in Canadian Bank of Commerce service, has been appointed Assistant City Ticket Agent, C.N.R., Regina, Sask., vice W. H. Watson, enlisted for military service.

A. G. DeGUERRE has been appointed City Ticket Agent, Moose Jaw, Sask.

W. F. BROWN, heretofore Locomotive Foreman, Drumheller, Alta., has been appointed Night Locomotive Foreman, Saskatoon, Sask., vice W. Black, transferred.

F. J. MEYERS, heretofore Trainmaster, Division 3, Western District, North Battleford, Sask., has been appointed Trainmaster, Division 2, Western District. Office, North Battleford, Sask.

J. L. CAMERON, heretofore passenger conductor, Edmonton, Alta., has been appointed Trainmaster, Division 3, Western District, vice F. J. Meyers, transferred. Office, North Battleford, Sask.

J. IRWIN, heretofore Superintendent, Branch Lines, Toronto District, Trenton, Ont., has been appointed Superintendent, Division 3, Western District, vice G. A. Cunliffe transferred. Office, Edmonton, Alta.

A. CLIFTON, heretofore Locomotive Foreman, Hudson Bay Jct., Sask., has been appointed Locomotive Foreman, Drumheller, Alta., vice W. F. Brown, transferred.

J. O. CAMERON has been appointed Travelling Freight Agent, Vancouver, V.C., vice S. Patterson resigned.

**Canadian Pacific Ry.**—E. MOORE, of the Financial and Accounting Vice President's office, and from Oct. 1916, when the company set up its own insurance fund, in charge of all insurance matters, has been appointed Insurance Commissioner, in charge of all the company's fire and marine insurance. Office, Windsor St. Station, Montreal.

FRANK LEE, heretofore Principal Assistant Engineer, Western Lines, Winnipeg, has been appointed Engineer Maintenance of Way, Eastern Lines, vice A. C. Mackenzie transferred. Office, Montreal.

O. M. LAVOIE, heretofore Chief Dispatcher, Farnham Division, Quebec District, Farnham, Que., has been appointed acting Superintendent of Car Service, Eastern Lines, vice W. M. Neal, whose appointment as Secretary, Canadian Railway Association for National Defence, was announced in our last issue. Office, Montreal.

F. A. WINTERSON has been appointed Assistant Superintendent, Laurentian Division, Quebec District, vice V. A. Harshaw transferred. Office, Montreal.

R. W. SCOTT, heretofore Assistant Superintendent, Trenton Division, Ontario District, Trenton, has been ap-



pointed Assistant Superintendent, Montreal Terminals Division, Quebec District, vice R. G. Edwards transferred. Office, Montreal.

T. J. McDONAGH, heretofore Assistant Foreman, Freight Car Shop, has been appointed General Foreman, Wood Freight and Steel Car Shop, Angus shops, Montreal.

H. J. MAIN, heretofore Chief Dispatcher, Smiths Falls Division, Quebec District, Smiths Falls, Ont., has been appointed Assistant Superintendent of that division. Office, Smiths Falls, Ont.

H. C. TAYLOR has been appointed Chief Dispatcher, Smiths Falls Division, Quebec District, vice H. J. Main promoted. Office, Smiths Falls, Ont.

R. G. EDWARDS, heretofore Assistant Superintendent, Montreal Terminals Division, Quebec District, Montreal, has been appointed Assistant Superintendent, Trenton Division, Ontario District, vice T. H. Hamilton, acting Assistant Superintendent transferred. Office, Havelock, Ont.

T. H. HAMILTON, heretofore acting Assistant Superintendent Trenton Division, Ontario District, Havelock, Ont., has been appointed Assistant Superintendent, Trenton Division, Ontario District, vice R. W. Scott, transferred. Office, Trenton, Ont.

D. S. SCHOFIELD, heretofore storekeeper, Revelstoke, B.C., has been appointed storekeeper, Fort William, Ont.

A. C. MACKENZIE, heretofore Engineer Maintenance of Way, Eastern Lines, Montreal, has been appointed Engineer Maintenance of Way, Western Lines, vice Frank Lee transferred. Office, Winnipeg.

P. J. SIVERTSON, heretofore Car Foreman, Swift Current, Sask., has been appointed Car Foreman, North Transcona, Man., vice H. K. York, transferred.

H. K. YORK, heretofore Car Foreman, North Transcona, Man., has been appointed Car Foreman, Swift Current, Sask., vice P. J. Sivertson, transferred.

G. PRATT, heretofore Locomotive Foreman, Strathcona, Alta., has been appointed Locomotive Foreman, Medicine Hat, Alta.

G. F. ROSENGREN, heretofore Storekeeper, Lethbridge, Alta., has been appointed Foreman of Stores, Ogden, Alta., vice A. Clark transferred.

G. H. CARTER, heretofore Relieving Paymaster, Winnipeg, has been appointed Paymaster, Calgary, Alta., vice A. Maguire.

J. A. MCGOWN, heretofore Back Shop Foreman, Kamloops, B.C., has been appointed Locomotive Foreman, Red Deer, Alta., vice C. A. Boardman transferred.

C. A. BOARDMAN, heretofore Locomotive Foreman, Red Deer, Alta., has been appointed Locomotive Foreman, Strathcona, Alta., vice G. Pratt transferred.

A. CLARK, heretofore Foreman of Stores, Ogden, Alta., has been appointed Storekeeper, Revelstoke, B.C., vice D. S. Schofield transferred.

J. H. TAYLOR, heretofore of the company's British Columbia Lake and River Service, Nelson, B.C., has been appointed Assistant to the Manager, British Columbia Coast Service, vice Lincoln Smith, resigned to enter private business. Office, Victoria, B.C.

Edmonton, Dunvegan and British Columbia Ry., Central Canada Ry., Alberta and Great Waterways Ry.—R. M. HALPENNY, Superintendent, having resigned, A. G. SUTHERLAND, heretofore Assistant Superintendent, E. D. & B.C. R. and C. C. R., has been appointed Superin-

tendent, E. D. & B.C. R. and C.C.R.; and R. CRAIG, heretofore Assistant Superintendent, A. & G. W. R., has been appointed Superintendent, A. & G. W. R. Offices, Edmonton, Alta.

R. LEE has been appointed Chief Dispatcher, Edmonton, Alta, vice G. Lomas, resigned.

Fredericton and Grand Lake Coal and Ry. Co., New Brunswick Coal and Ry. Co.

—V. A. HARSHAW, heretofore Assistant Superintendent, Laurentian Division, Quebec District, C.P.R., Montreal, has been appointed Manager, vice A. Sherwood resigned. Office, Fredericton, N.B.

Grand Trunk Pacific Ry.—J. A. HEAMAN, heretofore Assistant to Chief Engineer, has been appointed Assistant Chief Engineer, vice H. A. Woods resigned, and his former position has been abolished. Office, Winnipeg.

C. B. MUTCHLER, Signal Engineer, has also been appointed Assistant to General Superintendent, Winnipeg, vice I. A. Macpherson promoted. Office, Winnipeg.

R. M. MACMILLAN, heretofore local manager, G.T.P. Telegraph Co., Edmonton, Alta., has been appointed acting Division Superintendent of Telegraphs, lines in Ontario, Manitoba and Saskatchewan, with jurisdiction over all matters pertaining to construction and maintenance of telegraph and telephone lines, and operation of railway and commercial telegraphs; and also acting Superintendent of Time Service, vice F. T. Caldwell, on extended leave of absence, for military service with the U. S. Army. Office, Winnipeg.

I. A. MACPHERSON, heretofore Assistant to General Superintendent, Winnipeg, Man., has been appointed Superintendent, with jurisdiction Winnipeg, Man. to Watrous, Sask., Melville - Canora Branch, and Regina Division, Sask., vice H. McCall, promoted. Office, Melville, Sask.

H. MCCALL, heretofore Superintendent, Melville, Sask., has been appointed General Superintendent, lines west of, but not including Edmonton, Alta., vice W. C. C. Mehan, granted leave of absence. Office, Prince Rupert, B.C.

The following station agents have been appointed: Semans, Sask., R. M. Sutherland; Venn, Sask., R. R. Dillabough; Asquith, Sask., H. A. Meggs; Reford, Sask., W. W. Barr; Estlin, Sask., C. F. Thomas; Gray, Sask., R. F. Wall; Otthon, Alta., C. Bradley.

Grand Trunk Western Ry. — G. W. DIXON, Chicago, Ill., has been elected a director, succeeding his father, the late Arthur Dixon.

Great Northern Ry.—A. H. HEBB, heretofore ticket clerk, Vancouver, B.C., has been appointed City Passenger Agent Victoria, B.C., vice H. H. Wallace, promoted.

H. H. WALLACE, heretofore City Passenger Agent, Victoria, B.C., has been appointed Assistant Agent, Great Falls, Mont.

Kettle Valley Ry.—E. N. WITTER has been appointed acting Master Mechanic, vice W. J. McLean resigned. Office, Penticton, B.C.

W. J. CALVIN has been appointed General Roadmaster, Penticton, B.C. This is a new position.

Michigan Central Rd.—W. C. DOUGLAS has been appointed Division Freight Agent, Detroit, Mich., vice F. J. Parker promoted.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—B. NEWHOUSE, heretofore Auditor of Traffic Accounts, has been appointed Assistant Comptroller, vice A. R.

Marshall resigned, and his former position has been abolished. Office, Minneapolis, Minn.

R. A. MUELLER has been appointed Freight Auditor, Minneapolis, Minn.

New Brunswick Coal & Ry. Co.—See Fredericton and Grand Lake Coal and Ry. Co.

New York Central Rd.—E. R. BISELL, heretofore Superintendent, Toledo Division, Cleveland, Ohio, has been appointed Superintendent, Detroit Division, Detroit, Mich., vice F. F. Riefel, transferred.

E. THWAITES, heretofore Superintendent, Detroit Division, Detroit, Mich., has been appointed Superintendent, Toledo Division, Cleveland, Ohio, vice E. R. Bissell transferred.

F. F. RIEFEL, heretofore Superintendent, Detroit Division, Detroit, Mich., has been appointed Superintendent, Michigan Division, Toledo, Ohio, vice E. Thwaites transferred.

Roberval-Saguenay Ry.—J. A. VALLERAND, heretofore Auditor of Freight and Passenger Receipts, Quebec Ry., Light, Heat and Power Co., Quebec, Que., has been appointed Superintendent, and General Freight and Passenger Agent, reporting to the General Manager. Office, Chicoutimi, Que.

Union Pacific Rd.—E. ALEXANDER, City Ticket Agent, Chicago, Milwaukee & St. Paul Ry., Vancouver, B.C., is reported to have been appointed ticket agent, U. P. R., there.

### Standard of Practice of Business Papers.

The publisher of a business paper should dedicate his best efforts to the cause of Business and Social Service, and to this end should pledge himself:

1. To consider, first, the interests of the subscriber.

2. To subscribe to and work for truth and honesty in all departments.

3. To eliminate, in so far as possible, his personal opinions from his news columns, but to be a leader of thought in his editorial columns, and to make his criticisms constructive.

4. To refuse to publish "puffs," free reading notices or paid "write-ups"; to keep his reading columns independent of advertising considerations, and to measure all news by this standard: "Is it real news?"

5. To decline any advertisement which has a tendency to mislead or which does not conform to business integrity.

6. To solicit subscriptions and advertising solely upon the merits of the publication.

7. To supply advertisers with full information regarding character and extent of circulation, including detailed circulation statements, subject to proper and authentic verification.

8. To co-operate with all organizations and individuals engaged in creative advertising work.

9. To avoid unfair competition.

10. To determine what is the highest and largest function of the field which he serves, and then to strive in every legitimate way to promote that function.

The papers subscribing to these standards are the publications of the Associated Business Papers, Inc., forming the Business Press Department of the Associated Advertising Clubs—nearly 100 in number—the cream of the technical and trade papers of Canada and the United States. Canadian Railway and Marine World is one of them.



## Locomotive Design and Construction from a Maintenance Standpoint.

The paper on this subject, by W. H. Winterrowd, Assistant to Chief Mechanical Engineer, C.P.R., read before the Canadian Railway Club in Montreal recently, and published in Canadian Railway and Marine World of November, was discussed by a number of the club's members. The following are the most important parts of the discussion:

**W. H. Sample**, Superintendent of Motive Power, G.T.R.: The length of boiler tubes, which Mr. Winterrowd has mentioned, is a very important feature and presents a more modern idea than we have had in the past. It seems to me that with the object of getting more heating surface out of our boilers we have in the past made the tubes too long. I should like to ask Mr. Winterrowd's experience with the modern methods of taking care of tubing. I would also ask him about the welding in of tubes, which I notice he has not touched upon, and which is more or less of an experiment at present, and we have been reluctant about going into it too extensively, as there is a question whether it is going to be the proper method or not.

Also about dump grates—if he thinks this is the best way of handling fires, etc., in the big locomotive of today.

What is his opinion on the merits of Vanadium steel frames, and on the case-hardening of motion parts, pins, etc.? Another question which has been more or less under discussion at our Master Mechanics' meetings is the piston fit in the crosshead. On some of our power we have a method of fitting the rod with a shoulder.

I would also like to ask about the drifting valve and whether or not he considers it a necessity, from his experience with the C.P.R. superheater power.

**Jas. Powell**, Chief Draftsman, Motive Power Dept., G.T.R.: Mr. Winterrowd speaks of the locomotive house foreman feeling that some parts of the locomotive should have been designed differently. I think the designer would be only too glad to receive and consider suggestions from the locomotive foremen.

Mr. Winterrowd also speaks about the many failures due to the crowding of the flues, due to placing them too close to the heel of the flue sheet. In our own practice we are cutting out the top row of tubes and bringing them down three or four inches.

He speaks also of the radius of mud ring corners. We have experienced trouble with the very large corners and have come down to the medium corners. We also had trouble with the small corners. The medium corners give the best satisfaction.

So far as the dome and throttle arrangement is concerned, I am afraid Mr. Winterrowd will have trouble in making these so that the men will have convenient access to these parts.

I agree with him in regard to the valve gear being on the outside, and in making the frames so we can use solid bracing and repair the bracing when it breaks.

I would like to ask Mr. Winterrowd a question in regard to the weakening grooves cut in cylinder covers—whether he would make this applicable to all sizes of cylinders or only the large cylinders.

Piston valves are being reduced, and, as I understand it, will be materially reduced for the future.

I do not think Vanadium steel frames will give satisfaction for some time to come, although some of the other alloy

steels, which are more expensive, might do so.

Some kind of ashpan could be designed which would do away with the swing doors, as the latter are not properly looked after and break off. Some kind of ashpan could be designed that would do away with the swing doors entirely and yet give ample air space.

**W. C. Hunter**, ex-Manager, New Brunswick Coal and Ry. Co.: There is one point that Mr. Winterrowd did not include, and which, if he will excuse me for mentioning it, might have been added in connection with locomotive brake cylinders. I would have suggested that mention be made of the necessity for fastening them to the frame with proper sized bolts. I noticed a locomotive recently with 14 in. brake cylinders held to the frame with  $\frac{3}{4}$  in. bolts. That did not look to me like a job that was going to stay very long. I do not think there is any other point I will raise, but will leave the discussion to those who are more actively engaged in locomotive work than I am at present.

**B. C. Gesner**, salesman and expert, Galena-Signal Oil Co.: Mr. Winterrowd has covered the subject so thoroughly that there is not much room for discussion, but there is one point that I think might possibly be improved upon a little, and that is in relation to the piping. He says that air brake and steam piping should drain properly and contain no traps in which water can accumulate. I think there might also be included the piping from the lubricator to the cylinders, because the water will accumulate and it would be better if the piping could be so arranged that there will be a gradual descent from the lubricator.

**G. M. Wilson**, Master Mechanic, Montreal Shops, G.T.R.: I would like Mr. Winterrowd to give us an expression on the merit of frames, vanadium as against carbon steel frames.

**T. Arnold**, President, Taylor & Arnold, Ltd., Montreal: The lubricator choke plugs should be placed in prone position and as near to the cylinders as possible. I should like to know the exact location which Mr. Winterrowd considers the best. This is considered by the lubricator companies as being a very vital question, and a great deal of trouble has been experienced in deciding on an exact location for these choke plugs. The maintenance of these plugs is one of the biggest propositions that the lubricator companies have.

**W. H. Winterrowd**: The first point Mr. Sample raised had reference to the length of boiler flues. We all know that short flues are easier to maintain than long ones. The proper length of flues has been a question of considerable investigation, and, in 1916, the American Master Mechanics' Association committee on the design and maintenance of locomotive boilers stated in their report that a proportion of flue length to diameter of 100 times the inside diameter seemed most satisfactory. The tendency today is toward short flues, even when this has to be accomplished by means of a combustion chamber. While the evaporative capacity of a boiler may be increased by the use of long flues, the rate of evaporation per square foot of flue surface becomes less the longer the flue. If one couples to this the fact that firebox heating surface has an evaporative value about five or six times greater than flue heating surface, it is not difficult to understand the present day ratios of firebox to flue heating

surface. Advantage is also taken of the higher temperature of flue gases, resulting from the shorter flues to obtain a higher degree of superheat.

I understand that the welding of flues to the back tube sheet is followed on a number of roads. The C.P.R. has not, at present a full set of flues welded to the back sheet. It has welded the large superheater flues, but has not welded other than in an experimental way, any of the small flues. I am unable to say just what results have been obtained in the way of decreased maintenance, resulting from welding full set of flues. Possibly someone present may have some information on the subject.

It would be interesting to know just what is required in the way of labor or special tools when renewing a full set of small flues, and also what steps are taken in the locomotive house to repair a defective weld to the flue sheet. I do know that considerable preparation is necessary prior to welding, one of the essential features being an absolutely clean flue sheet. If there is any oil or dirt on the sheet, the weld is not likely to be sound. I understand that some roads prepare the back sheet by sand blast, others with wire brushes. They all recognize the value of a clean flue sheet.

In connection with dump grates on large locomotives, it has been my experience that the quality of the coal is the governing feature rather than the size of the locomotive. Where coal is used that clinkers badly, a great deal of time can often be saved on the ash pit by means of dump grates. Does that answer your question, Mr. Sample?

**W. H. Sample**: The question is this: We have had at various times a good deal of discussion on the best location for the dump grate and whether or not it was wise to use it at all. After changing it to various locations, from the front to the back, and trying it in the centre, we always found we had a good many failures, and the only trouble we found without it was that which you speak of, when an inferior grade of coal is used it takes longer to clean the fires, but I do not believe we have as many tube failures as we had before. My object was to get the experience of someone else on this subject.

**W. H. Winterrowd**: On the C.P.R. there are not a great number of locomotives equipped with dump grates, but those which are equipped have the dump grate at the back and below the fire door. We have not had any trouble by these grates failing.

On the C.P.R. we have felt that particularly under our large power, where the frame stresses are high, that advantage could be obtained by the use of vanadium cast steel. We have obtained good results from these frames. In this connection, I would like to state that co-operation between the designer and the foundry is desirable. If frames are not designed so that they are free from final internal stresses, there is a possibility of failure.

The case hardening of motion parts is another thing that might have been mentioned in my paper. I tried to make it clear that owing to the large number of features comprising this subject, that those mentioned were but a small proportion of the total. It is our practice on the C.P.R. to case harden all motion parts.

I am really not in a position to say much about the drifting valve, as my ex-



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perience with it is limited. I am pre-  
suming that by drifting valve, you mean  
a valve, which, when the throttle is clos-  
ed, admits a small amount of steam to the  
cylinders. The C.P.R. has some of these  
valves in service, but our experiments  
have not gone far enough for me to say  
anything definite regarding them.

Some roads prosser, others believe in  
rolling the flues. On the C.P.R. most of  
the flue expanding is done by the use of  
the roller.

In regard to the fit of the piston in  
the crosshead. Do you mean a filleted  
shoulder or the bottoming of the piston  
rod in the crosshead itself?

**W. H. Sample:** That is just the trouble.  
The shoulder is often drawn up too tight  
to the crosshead to keep the piston tight,  
and the result is a poorly fitted piston  
rod. It is a question if the shoulder  
should be there and whether we should  
not draw the piston up as far as it will  
go without the key.

**W. H. Winterrowd:** I am inclined to  
agree with you that if the shoulder is  
omitted a better fit could be made and  
easier inspection would be possible.

**Mr. Powell** raised the question regard-  
ing weakening grooves in cylinder covers.  
I believe that it is an advantage to apply  
the weakening groove regardless of the  
size of cylinder. My own experience has  
been that the cylinder covers of the large  
diameter cylinders fail oftener than those  
of the small cylinder. I believe this is  
due to the fact that our large locomotives  
are today doing the majority of the heavy  
work, and the smaller power is in branch  
line service, where the work is lighter.  
In any case, the weakening groove is  
likely to save an entire cylinder. Any-  
thing that will reduce the time and cost  
of repairs is desirable, regardless of the  
size of the locomotive.

**Mr. Powell** also mentioned the ash pan  
with swinging doors. I do not want to  
infer that I was recommending swing  
doors, but where these swing doors do  
exist, they can be so suspended that their  
own weight will tend to keep them closed  
and thus relieve the operating riggings  
of a certain amount of strain.

**Jas. Powell:** I had reference to the side  
doors without going to the opening under-  
neath the foundation ring.

**W. H. Winterrowd:** I thought you were  
referring to the bottom doors. On the  
C.P.R. we do not use the side doors you  
mention, except on very small ash pans,  
where it is difficult to get proper air  
space.

The point that was mentioned regard-  
ing the proper fastening of brake cylin-  
ders is a good one and might well have  
been mentioned in the paper.

The question of traps in lubricator  
pipes was also raised. This is another  
point well taken, as it is extremely im-  
portant that no traps exist in lubricator  
pipes.

The lubricator manufacturers advise  
that the choke plugs should be placed as  
near as possible to the steam chest or cy-  
linder, keeping as short as possible any  
connection between the bottom of the  
choke or steam chest and cylinder. I  
have seen cases where choke plugs have  
been located directly on top of the steam  
chest, and in other cases have seen them  
located not far below the centre line of  
the smokebox. The question of main-  
tenance is also important, as otherwise  
they will not function properly and trou-  
ble will result.

I believe that I have mentioned all of  
the points that have been raised. There  
is another question, however, that might  
have been mentioned in my paper, and

that is the question of standards. It is  
not difficult to appreciate the economy  
that results from the use of standard  
parts. It not only means that less stock  
can be carried in stores, but also facili-  
tates repairs. However, it might be well  
to consider just how far it is advanta-  
geous to carry out such a policy. Some-  
times, where the type and size of loco-  
motives may vary greatly, it may be more  
advantageous to break away from an ex-  
isting standard and create a new one.  
The question of standardization is an  
important one and should be given the  
consideration that it merits.

**W. H. Sample:** In view of the extreme-  
ly high cost of brass and copper today,  
I would like a little information on wheth-  
er any trial has been made of other met-  
als, such as Hunt Spiller metal for cross-  
head slippers, instead of brass. We have  
this question up just now.

**W. H. Winterrowd:** On the C.P.R. we  
used for a long time a brass slipper with  
babbit inserts, but several years ago be-  
gan to experiment with the cast iron slip-  
per with babbit inserts. The cast iron  
with the babbit inserts is practically our  
standard today, and is giving excellent  
service.

**W. E. Barnes,** District Master Mechan-  
ic, I.R.C., Moncton, N.B.: During the past  
year we have obtained a large number of  
heavy locomotives, and have found that  
while they are apparently well designed,  
we can only get from three to six months'  
wear from rod brasses.

**W. H. Winterrowd:** I am not prepared  
to say just what mileage we are getting  
from our rod bushes. The mileage will  
vary with the type and size of locomotive,  
the material from which the bushes are  
made, kind of lubrication and the class  
of service in which the locomotive is run-  
ning. In general, the bearing pressure  
per square inch should be as low as is  
consistent with good practice. The main-  
tenance of shoes and wedges may also  
have a direct bearing on the life of rod  
bushes.

**W. E. Barnes:** I think our lubrication  
is all right, and we have men especially  
assigned to maintenance work to keep  
the wedges properly adjusted, but with  
all that we have had excessive trouble  
with rod brasses. They do not seem to  
wear as well as the brasses on the smal-  
ler power.

**W. H. Winterrowd:** If you have not  
checked up the bearing pressures in  
bushes, it might be well to check them  
over.

**G. M. Wilson:** Coming back to the  
crosshead slipper—I would ask whether  
the slipper used on the C.P.R. is common  
grey iron or gun metal.

**W. H. Winterrowd:** Common grey  
iron.

**Mr. MacNab:** Has the C. P. R. ever  
used bakelite?

**W. H. Winterrowd:** Bakelite is a com-  
position used in the manufacture of some  
switch bases and some switchboards. It  
is a very dense and hard composition.  
Some time ago we made some experi-  
ments with it and we are preparing to  
make some additional experiments.

**W. E. Barnes:** Has Mr. Winterrowd  
made any experiments with Vanadium  
steel rods. Some three years ago we  
obtained a number of them and not one  
has failed yet, while with the ordinary  
rod we have had a number of failures.

**W. H. Winterrowd:** On the C.P.R. we  
have used a number of vanadium steel  
rods and they have given excellent ser-  
vice. Today, however, the question of ob-  
taining such steel is a very difficult mat-  
ter and we have had to revert to the car-



bon steel rod where weight restrictions and other factors would permit.

**Geo. Whiteley**, Assistant Superintendent of Motive Power, C.P.R., Montreal: We had a little trouble with lubricators but we found it was our own fault, as we did not have the lubricator in the right place; also did not maintain the choke plugs. We found as soon as we got them down close to the steam chest and had them standing straight up, that they gave us no further trouble.

**Godwin Shenton**, Engineer, Taylor and Arnold, Ltd., Montreal: A hydrostatic lubricator at the most is only an oil regulator; that is, the lubricator itself feeds a definite amount of oil as regulated or set by the locomotive man, so that the question of locomotive lubrication largely depends upon the oil, or sometimes called "tallow pipes," and more, in fact, most important, the position and condition of the choke plugs. The choke plugs should be placed in an upright position, as close to the steam chest as possible, and be easy of access for inspection. It is most important that the hole in the choke plug should not be greater than 1/32 in. diam.—This is of the greatest importance, and chokes should be inspected regularly and renewed as soon as excessive wear is noticed. Upon the choke plug depends the regular feeding of oil of a lubricator. Oil pipes must have a gradual and even downward slope to the steam chest. It is also essential to have the lubricator in a position in the cab where it can be easily seen and to a certain extent protected from the very severe winter weather.

The question of the amount of oil required for lubrication by a locomotive depends solely upon the work it is called upon to do, and no hard and fast rules can be laid down.

**Suspension of Demurrage at Montreal.** Early in November a press report stated that the Montreal Board of Trade had been advised that the Board of Railway Commissioners would issue an order immediately, giving export freight not covered by through bills of lading, the shipments of which is authorized by railway companies export permits, five days free time at Montreal, and a special demurrage toll of \$1 a car for each day thereafter. We are officially advised that no order has been issued, but it has been arranged that no car demurrage be charged, during the current season of navigation, on South African, Australian and New Zealand traffic not covered by through bills of lading. The board will go into the question before the next navigation season.

**Prince Edward Island Car Ferry.**—The car ferry service between Port Borden, P.E.I., and Cape Tormentine, N.B., which was started Oct. 15, is being operated for the carriage of freight only. The passenger service between Point du Chene, N.B., and Summerside, P.E.I., and between Pictou, N.S., and Charlottetown, P.E.I., is being continued for the season of navigation. Up to the date of writing the time table and conditions for the water service had not been announced. During the week ended Oct. 27, there were transferred to the mainland 174 cars of potatoes and brought in from the mainland 72 cars of mixed freight. (Nov. pg. 447.)

The C.P.R. observation cars, which were placed on the Austrian State Railways, in the Tyrol, in 1913, are said to be now in use as hospital cars in the Austrian service.

## Freight and Passenger Traffic Notes.

The Canadian Northern Ry. opened a down town ticket office in Moose Jaw, Sask., Nov. 5, with A. G. deGuerre as city ticket agent.

The G. T. R. has transferred its General Agent, Passenger Department, in New York from 290 Broadway to 1270 Broadway, corner of 33rd St.

The Canadian Northern Ry. put in operation, Nov. 1, a daily train service, except Sundays, between Moose Jaw and Gravelbourg, Sask., 112 miles, replacing the previous mixed train service operated between Moose Jaw and Avonlea, and Avonlea and Gravelbourg.

The first export shipment of wheat from Vancouver B.C., to Europe via the Panama Canal was made recently. The 100,000 bushels were carried west from the prairie provinces to the Dominion Government elevator at Vancouver, from which it was transferred on shipboard on Nov. 8 and succeeding days.

The C.P.R. closed down on the receipt of freight for shipment via lake and rail route from eastern points as follows: Stations east of Megantic, Que., Nov. 22; stations east of Montreal to Quebec and Megantic, Nov. 26; and from stations Montreal and west to Windsor including branches, Nov. 30.

The Canadian Northern Ry. will have a daily passenger service between Toronto and Winnipeg during December, instead of the usual three days a week service. Train 1 will run daily from Toronto to Winnipeg, from Dec. 3 to Jan. 2; train 2 will run daily from Winnipeg to Toronto from Dec. 1 to Jan. 5.

Women are being engaged for ticket selling in city ticket offices of United States railways. One of the latest points where an appointment has been made is Durand, Mich., where F. N. Simpson, day ticket clerk, has been transferred to the position of night clerk, and has been succeeded as day clerk by his wife.

The Greater Winnipeg Water District railway time table was altered for the winter months, Nov. 16. The train leaves the old Canadian Northern Ry. station at St. Boniface, Man., at 8 a.m., Mondays, Wednesdays and Fridays, and leaves Waugh, for the return trip, at 7 a.m. Tuesdays, Thursdays and Saturdays.

The Board of Railway Commissioners has declined to make an order directing the G.T.R. to restore passenger service between Hamilton and Burlington across Burlington Beach. The line between these two points is a part of the old Hamilton and North Western Ry., and passenger traffic over it was dropped in 1901, owing largely to the opening up of the Hamilton Radial Ry.

The C. P. R. announces that the following time table has been received showing the current service between Yokohama, Japan, and Petrograd, Russia, via Vladivostok: Leave Yokohama via Japanese Ry., Monday 9.51 a.m., reach Maibara, Tuesday, 8.21 a.m., reach Tsuruga, Tuesday, 10.40 a.m.; leave Tsuruga via Russian Volunteer Fleet, Tuesday, 5 p.m., arrive Vladivostok, Thursday, 9 a.m.; leave Vladivostok, via Trans-Siberian Ry., Thursday, 10 p.m., arrive Harbin, Friday, 9.40 p.m., reaching Petrograd on the second Saturday at 9.55 p.m. Sleeping cars run between Yokohama and Trusuga, and there is also a sleeping car service on the Trans-Siberian Ry. Another route which may be followed is to leave Yokohama by Japanese Ry. at 9.08 a.m., Tuesday; arrive Shimonosaki, 9.38 a.m. on Wednesday; leave Shimonosaki by steam-er 10.10 a.m. Wednesday, reach Chosan in

Korea, 9.40 p.m. Wednesday; leave Chosan by railway 10.30 p.m. Wednesday, arrive Antung, Thursday, 6.20 p.m.; leave Antung by South Manchuria Ry., 6.51 p.m., Thursday; arrive Changchun, 9.30 a.m. Friday, leave Changchun by Chinese Eastern Ry. 11.02 a.m. Friday, arrive at Harbin 5.30 p.m., where connection is made with the Trans-Siberian Ry. train first mentioned. Sleeping cars are operated between Yokohama and Shimonosaki and between Chosan and Changchun.

## United States Army Engineers' Work in the War.

The U. S. Engineers railway section has undertaken to transport, install and put into operation overseas a complete railway equipment. The railway problem in the theatre of operations in France involves not only the organization, equipment, and military training of railway troops for the construction, maintenance, and operation of standard and narrow gauge roads necessary for the supply of the U. S. armies, but also the purchase, inspection, and shipment of immense quantities of railway equipment—rails, ties, locomotives, cars, shop tools, etc.—necessary for the development of adequate port facilities, construction of new lines and their successful operation. The estimate of the situation in France was confirmed by the French commission, headed by Marshall Joffre, and the means of meeting it have been carried on with intensity.

Trained officials in various departments of American railways were called upon for the officers, and experienced railway employes for the enlisted men, of the nine railway regiments, each of 33 officers and approximately 1,100 men

The cost of materials ordered to date is approximately \$70,000,000, including some hundreds of locomotives, more than 100,000 tons of steel rails, more than 3,000 complete turnouts, 500,000 ties, 12,000 freight cars, 600 fill and ballast cars, 600 miles of telephone wire and apparatus, as well as vast quantities of construction and repair equipment.

Since the U. S. declared war its enlisted engineering forces have been expanded from 2,100 to 95,000 men.

**St. Paul Belt Line.**—Diversion of through freight traffic around the City of St. Paul, Minn., is to be effected by the Twin City Belt Ry. The purpose is to keep local terminals and the new union station line clear of this traffic. The new line will thus facilitate the handling of passenger traffic and through and local freight traffic and relieve the congestion at this very large railway centre. The company is controlled jointly by the Great Northern, Northern Pacific and Chicago, Burlington & Quincy Railways, and the line will serve a number of the railways centring at St. Paul.

**New Freight Terminal at Chicago.**—A large freight terminal is to be built at Chicago by the Chicago, Burlington and Quincy Rd., as part of the extensive revision of the railway terminal system consequent upon the construction of the new union station. It will be located near Canal St., between Harrison and Polk Sts.

A board of conciliation has been appointed to deal with disputes between the Canadian Northern Ry. and its Western Lines maintenance of way employes. The board consists of Chief Justice Mathers, chairman; John Haig, for the company; and D. Campbell, for the men, all of Winnipeg.



## Traffic Orders by Board of Railway Commissioners.

### Transportation of Dangerous Articles.

General order 207. Oct. 26. Re general order 203, Aug. 11, 1917, authorizing regulations for transportation by freight of dangerous articles other than explosives, as amended by general order 206, Sept. 7, 1917; and the Canadian Manufacturers' Association application for a further order amending general order 203. It is ordered that general order 203 be further amended by striking out all the portion of clause (1) following the words "be struck out" in the fourth line, to the end of the clause.

### Refrigerator Car Rates for Vegetables.

General order 208. Oct. 25. Re general order 152, Nov. 2, 1915, authorizing a scale of tolls chargeable by railway companies for use of refrigerator cars for carriage of vegetables, in carload lots; and general order 173, Oct. 26, 1916, rescinding general order 152, and re applications of railway companies for renewal of tolls authorized by general order 152 by a refiling of tariffs showing the said tolls; and the application of the Toronto Board of Trade that the railway companies be required to justify the said proposed tolls: It is ordered that general order 173 be rescinded in so far as it rescinds general order 152, and that the tolls for the use of refrigerator cars for the carriage of vegetables, provided by the said tariffs refiled and as authorized by general order 152, be allowed.

### Canadian Freight Classification.

General order 209. Nov. 13. Re Supplement 10, consolidating and replacing previous supplements to Canadian Freight Classification 16. The railway companies having published and filed a consolidation of the various supplements to the Canadian Freight Classification, and its appearing to be beneficial to all parties, it is ordered that Supplement 10 to Canadian Freight Classification 16, cancelling and superseding supplements 1, 3, 4, 5, 6A, 7, 8, and 9, all of which were approved by the board, be approved.

### All Rail Freight Rates from Eastern Canada to Western Points.

General order 210. Nov. 13. Re complaints of Winnipeg, Calgary, Regina, and Saskatoon Boards of Trade and Canadian Manufacturers' Association against tariffs C.R.C. 3 and 4, effective Sept. 1, 1917, filed on behalf of the railway companies by G. C. Ransom, agent, providing increased all rail freight rates from Eastern Canada to points west of and including Port Arthur; and applying for an order suspending the said tariffs: Upon hearing the applications at Calgary, Edmonton, Saskatoon, Regina, Winnipeg, and Fort William in October, the Boards of Trade of Calgary, Edmonton, Saskatoon, North Battleford, Regina, Moose Jaw, Winnipeg, and Fort William, the Canadian Pacific, Canadian Northern, Grand Trunk Pacific, and the Edmonton, Dunvegan & British Columbia Railway Companies, the Canadian Manufacturers' Association, the Calgary Board of Trade hardware section, the Retail Merchants' Association of Saskatchewan, the Saskatoon Wholesalers, the Province of Manitoba, and the Canadian Council of Agriculture being represented at the hearings, and upon the report of the Board's Chief Traffic Officer, it is ordered that the complaints be dismissed.

### Switching Charged in Alberta and Saskatchewan.

26671. Oct. 22. Re complaints of Premier

Coal Co., Alberta Block Coal Co. and Midland Collieries, against switching charges made by the Canadian Northern Ry. at Drumheller, Alta.: Upon hearing the complaint at Calgary, July 10, 1916, the Premier Coal Co. the Alberta Block Coal Co. and the Canadian Northern Ry. being represented at the hearing, and upon reading the further submissions filed; and it appearing that similar complaints from other parties at other points in Alberta and Saskatchewan have been made to the board, it is ordered that the tolls published and filed by the Canadian Northern, Canadian Pacific, and the Grand Trunk Pacific Railways for switching freight traffic on which the said companies, respectively, have received, or are to receive, a line haul—the said tolls being charged because the switch movement exceeds in distance 1,000 ft. be disallowed.

### Protection of Perishable Freight by Artificial Heat.

26696. Oct. 30. Re complaints of General Brokerage Co., Regina Wholesalers' Association, Scott Fruit Co., Lloyd's Fruit Co., and the Boards of Trade of Edmonton, Saskatoon, and Weyburn, against clause 1, option 2, Supplement 10, to Transcontinental Freight Bureau Tariff, C.R.C. 350, providing that, owing to extremes in temperature, Canadian carriers will not guarantee protection of carload shipments of perishable freight in Western Canada by the use of artificial heat in transit, or while held on tracks. It is ordered that clauses 'h' and 'i', option 2, pg. 6, Supplement 10 to Transcontinental Freight Bureau Tariff 25-C, C.R.C. 350, relating to perishable freight in heated cars from points in Oregon, Washington, Idaho, and Montana to points in Western Canada, be suspended until further order.

### Rates on Lumber from Sidney, B.C.

26718. Nov. 7. Re complaint of Board of Trade of Sidney, B.C., against increase by Great Northern Ry. of rates on lumber commodities from Sidney to destinations in Western Canada via New Westminster: It is ordered that the proposed cancellation by the Great Northern Ry. Company, by Supplement 9 to its tariff C.R.C. 1249, of the basing arbitrary of 2½c per 100 lb. to be added to its rates from Cloverdale, B.C., to make the through rates on lumber commodities from Sidney, to destinations in Western Canada via New Westminster, Hope, Fernie, or Nelson be suspended until further order.

### Cars for Potatoes from New Brunswick.

26732. Nov. 13. Re application of New Brunswick Potato Exchange, under sec. 284 of the Railway Act, for an order requiring the C.P.R. to furnish cars suitably equipped for carrying potatoes from New Brunswick to Ontario and Quebec. Upon hearing the application at St. John, N.B., Nov. 9, 1916, in the presence of counsel for applicants and the C.P.R. and upon its appearing at the hearing that the railway company was remodelling its 79,000 series cars; and upon its further appearing that the railway company has converted insulated refrigerator cars into vegetable cars, making them available for the carriage of potatoes. It is ordered that the application be dismissed, this order to be without prejudice to any application made to the board in the event of the improvements made not adequately taking care of the situation.

### Joint Rates to Edmonton, Dunvegan and British Columbia Ry. Territory.

26755. Nov. 17. Re application of the F. S. Newman Co., Ltd., of Winnipeg, for joint rates between the Canadian Pacific Grand Trunk Pacific, and Canadian Northern Railway, and stations on the Edmonton, Dunvegan and British Columbia Ry. Upon hearing the application at Winnipeg, Oct. 19, the applicant and the railway companies being represented at the hearing, it is ordered that the application be dismissed.

### Railway Rolling Stock Notes.

The G.T.R. has received 6 Mikado locomotives, out of an order for 10, from Canadian Locomotive Co.

The Timiskaming & Northern Ontario Ry. is having superheater equipment applied to 8 of its 10-wheel locomotives by Canadian Locomotive Co.

The Eastern Car Co. has delivered, since Oct. 17, 300 box cars of 1,200 cu. capacity, for the Russian Government, leaving 2,600 to be delivered on an order of 3,000.

The Northern New Brunswick and Seaboard Ry. has sold a locomotive and 60 ore cars, practically the whole of its rolling stock, to various concerns in Canada and the United States.

Canadian Government Railways have ordered 2,000 steel frame box cars of 40 tons capacity, from Canadian Car and Foundry Co.; and one 5 ton crane from General Equipment Co.

In order to move the grain crop along the Edmonton, Dunvegan & British Columbia Ry. a number of locomotives are said to have been taken from the Hudson Bay Railway under construction by the Dominion Government.

The C.P.R. has received the following additions to rolling stock from its Angus shops, since Oct. 17: 7 express refrigerator cars, 181 freight refrigerator cars, and 5 steel mail cars 60 ft. long; and from its Winnipeg shops, 2 vans.

Canadian Government Railways have received the following additions to rolling stock, since Oct. 17: 25 refrigerator cars from Canadian Car and Foundry Co.; 2 second hand locomotives, 69 second hand coal cars 30 tons capacity, 7 second hand coal cars 35 tons capacity, 6 second hand coal cars 40 tons capacity, and 9 second hand box cars 30 tons capacity, from General Equipment Co.; 1 second hand flat car from Maritime Bridge Co., 1 store car and 6 baggage cars from Hotchkiss Blue and Co.

### Esquimalt & Nanaimo Ry. Land Claims.

—Judgment was given Nov. 1 in a British Columbia court in the action brought by the E. & N. R. to restrain Alexander McLellan and others from prospecting on lands in the Chemainus land district of Vancouver Island. The defendants were prospecting for minerals under the provisions of a crown grant, and the railway claimed that the land on which they were working had already been granted to it. The defendants contended that the action could not be maintained without the intervention of the Attorney General, but the judge in giving judgment for the railway company said that this had not been clearly shown. Looking at the merits of the case the judge said it would appear that the government gave a lease of lands to the defendants which it did not own, such lands having already been granted to the E. & N. R.



### Dismantling Bridges on Old Rogers Pass Line, C.P.R.

In the article on salvaging the C.P.R.'s old line at Rogers Pass, on page 458 of this issue, it is stated that the bridges will be taken out by another contractor, probably during the year. Since that article was printed we have been officially advised that the Hamilton Bridge Co. has been given a contract for dismantling the bridges, all of which are deck plate girders. The mileages mentioned are those on the old and now abandoned line.

Mileage 89.65, first crossing Five Mile Creek (Loop Brook), three 80-ft. and one 30-ft. d.p.g.

Mileage 90, second crossing, Five Mile Creek (Loop Brook), six 90-ft. and one 60-ft. d.p.g.

Mileage 90.45, first crossing Illecillewaet River, two 60-ft. and one 100 ft. d.p.g.

Mileage 90.82, second crossing Illecillewaet River, two 50-ft. and one 80 ft. d.p.g.

Mileage 90.93, third crossing, Five Mile Creek (Loop Brook), one 80-ft. d.p.g.

### Grain Inspection at Western Points.

The following figures, compiled by the Trade and Commerce Department's inspection branch, show the number of cars of grain inspected on railways at Winnipeg and other points on the Western Division, for October, and for two months ended Oct. 31, compared with the same period in 1916.

	Oct.	2 mths. to Oct. 31, '17	2 mths. to Oct. 31, '16
C.P.R., Calgary . . . . .	20,172	29,866	27,122
C.N.R. . . . .	8,402	15,021	15,056
G.N.R., Duluth . . . . .	213	409	410
G.T.P.R. . . . .	5,064	6,961	4,475
Totals . . . . .	33,851	52,357	47,924

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

	Acres.
Canadian Northern Ry. . . . .	18,245
Edmonton, Dunvegan & British Columbia Ry. . . . .	349.74
Grand Trunk Pacific Ry. . . . .	9.74
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co. . . . .	805.00
Total . . . . .	1,182,725

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

Week ended Nov. 9,—	Wheat. bushels.	Oats. bushels.	Barley. bushels.	Flax. bushels.	Totals. bushels.
<b>Fort William—</b>					
C.P.R. . . . .	819,585	316,654	131,817	.....	1,278,056
Consolidated Elevator Co. . . . .	488,276	188,987	37,025	53,545	767,833
Empire Elevator Co. . . . .	328,357	367,728	57,056	9,399	762,540
Ogilvie Flour Mills Co. . . . .	643,656	75,507	32,978	.....	752,141
Western Terminal Elevator Co. . . . .	749,614	119,330	3,068	58,019	930,031
G.T. Pacific . . . . .	841,252	1,293,195	52,625	22,106	2,209,078
Grain Growers' Grain Co. . . . .	372,697	558,600	56,986	.....	988,283
Fort William Elevator Co. . . . .	255,779	286,844	42,322	37,827	622,772
Eastern Terminal Elevator Co. . . . .	349,947	88,707	18,386	.....	457,040
<b>Port Arthur—</b>					
Port Arthur Elevator Co. . . . .	851,866	587,254	377,726	41,779	1,858,625
D. Horn & Co. . . . .	73,072	98,392	15,167	60,553	247,184
Dominion Government Elevator . . . . .	783,431	323,949	51,828	88,866	1,248,074
Thunder Bay . . . . .	371,601	170,072	63,111	24,194	628,878
Davidson & Smith . . . . .	258,980	22,396	58,973	.....	340,349
<b>Total Terminal Elevators . . . . .</b>	<b>7,188,113</b>	<b>4,497,615</b>	<b>1,009,068</b>	<b>396,088</b>	<b>13,090,884</b>
<b>Saskatoon Dom. Govt. Elevator . . . . .</b>	<b>4,324</b>	<b>149,281</b>	<b>.....</b>	<b>.....</b>	<b>153,605</b>
<b>Moose Jaw Dom. Govt. Elevator . . . . .</b>	<b>88,507</b>	<b>74,851</b>	<b>641</b>	<b>1,524</b>	<b>165,523</b>
<b>Calgary Dom. Govt. Elevator . . . . .</b>	<b>131,358</b>	<b>104,629</b>	<b>2,072</b>	<b>516</b>	<b>238,575</b>
<b>Vancouver Dom. Govt. Elevator . . . . .</b>	<b>103,316</b>	<b>4,055</b>	<b>210</b>	<b>.....</b>	<b>107,581</b>
<b>Total Interior Terminal Elevators..</b>	<b>327,505</b>	<b>332,816</b>	<b>2,923</b>	<b>2,040</b>	<b>665,284</b>
<b>Depot Harbor . . . . .</b>	<b>192,347</b>	<b>.....</b>	<b>.....</b>	<b>.....</b>	<b>192,347</b>
<b>Midland—</b>					
Aberdeen Elevator Co. . . . .	756,242	.....	.....	.....	756,242
Midland Elevator Co. . . . .	142,426	42,200	.....	.....	191,626
Tiffin, G.T.P. . . . .	1,156,229	1,430	.....	.....	1,157,659
Port McNicol . . . . .	2,868,249	62,467	.....	.....	2,748,716
Collingwood . . . . .	.....	.....	.....	.....	.....
Goderich Elevator and Transi . . . . .	644,203	121,345	.....	6,938	772,486
Western Canada Flour Mills Co., Ltd. . . . .	440,555	.....	.....	.....	440,555
<b>Kingston—</b>					
Montreal Transportation Co. . . . .	557,477	.....	.....	.....	557,477
Commercial Elevator Co. . . . .	.....	.....	.....	.....	.....
Port Colborne . . . . .	1,096,771	.....	.....	.....	1,096,771
Prescott . . . . .	.....	.....	.....	.....	.....
<b>Montreal—</b>					
Harbor Commissioners No. 1 . . . . .	719,198	77,779	169,065	.....	966,042
Harbor Commissioners No. 2 . . . . .	1,618,149	48,699	57,290	.....	1,724,138
Montreal Warehousing Co. . . . .	1,601,604	62,579	363,319	28,341	1,955,843
Quebec Harbor Commissioners . . . . .	1,855	16,465	.....	.....	18,320
West St. John, N.B. . . . .	554,769	9,706	.....	.....	564,475
Halifax, N.S. . . . .	32,076	.....	.....	.....	32,076
<b>Total Public Elevators . . . . .</b>	<b>12,200,150</b>	<b>449,670</b>	<b>489,674</b>	<b>35,279</b>	<b>13,174,773</b>
<b>Total quantity in store . . . . .</b>	<b>19,715,768</b>	<b>5,280,101</b>	<b>1,501,665</b>	<b>433,407</b>	<b>26,930,941</b>
Receipts and shipments of the different kinds of grain at Fort William and Port Arthur during two months ended Oct. 31, 1917.					
RECEIPTS.					
September . . . . .	12,062,125	414,147	596,291	49,407	13,137,038
October . . . . .	31,401,473	2,933,796	1,207,671	288,637	35,925,431
<b>Total . . . . .</b>	<b>32,463,498</b>	<b>3,347,943</b>	<b>1,843,962</b>	<b>388,044</b>	<b>49,062,469</b>
SHIPMENTS.					
September, Lake . . . . .	6,511,467	396,634	92,793	129,710	7,130,604
Rail . . . . .	686,904	745,595	79,821	34,236	1,546,556
October, Lake . . . . .	33,455,518	556,658	671,052	142,214	34,825,742
Rail . . . . .	585,070	1,257,336	135,412	29,174	2,006,992
<b>Total, Lake . . . . .</b>	<b>39,967,285</b>	<b>953,292</b>	<b>763,845</b>	<b>271,924</b>	<b>41,956,346</b>
Rail . . . . .	1,271,974	2,002,931	215,233	63,410	3,533,548

### The Electric Railway Investigation in British Columbia.

The report of Adam Shortt of Ottawa who was appointed, following the strike of British Columbia Electric Ry. employes in July, to make an investigation into the whole transportation situation in the territory served by the company, was made public Nov. 19. He states that in Victoria and Vancouver, and between Vancouver and New Westminster, jitney traffic should cease to operate on routes where the electric railway operates; recommends that there be no change of fares in the city areas but that transfers be not granted as between city and interurban cars; that one-man cars be operated as far as possible in all outlying districts; that the skip-stop system be worked on interurban lines, and that there be a higher speed limit in the city. The report also deals with the company's electric light and power franchises. The commissioner finally recommends that a Public Utilities Commission be created for the province.

### Quebec Railway, Light, Heat, and Power Co's Appointments.

The following appointments have been made, with offices at Quebec:

E. G. GIASSON has been appointed Auditor of Freight and Passenger Receipts.

J. A. FORGET has been appointed Freight Claim Agent.

All electrical apparatus on locomotives and cars is under the charge of P. QUINN of the City Division.

E. LAPLANTE has been appointed General Locomotive Foreman, in charge of the Montmorency Falls shops, and wherever locomotives and machinery are located.

E. PLAMONDON has been appointed General Car Foreman in charge of the Ste. Anne shops, including stores and material, and of car inspectors wherever located on the Montmorency Division.

**London and Lake Erie Ry. and Transportation Co.'s Position.**—We are advised that up to Nov. 21, nothing definite had resulted from the negotiations for the disposal of this railway, either in whole or in part to the municipalities through which it runs. A London, Ont., press report Nov. 22, says it is realized that it is next to a hopeless proposition to ask the ratepayers of the municipalities concerned to vote the money required to keep the line running, and that the selling of the rails and other materials might be the best way of disposing of the property, considering the present state of the metal market. (Nov., pg. 444.)

**A bonding bylaw for jitneys in Winnipeg** went into operation, Oct. 1. The jitney men finally decided to drop the mutual bonding scheme, which the city had approved on condition that a cash deposit of \$10,000 be maintained, in favor of a surety company's bond at \$130 a year. By Oct. 4 bonds had been taken out by 275 jitney men. It is expected that the bylaw will drive transients and inefficient out of business and bring about an improvement of the service.

The Levis County Ry. is reconstructing 800 ft. of track on Fraser Hill, Levis. It is in the market for 50 tons of 80 or 85 lb. steel rails with angle bars, G. C. R. drilling, for next year, in connection with paving to be done by the city.



# Electric Railway Department

## Engineers' Report on Proposed Hydro Electric Railway from Port Credit to St. Catharines.

Some months ago a committee of Hamilton citizens requested the Canadian Society of Civil Engineers' Toronto branch, to name a board of engineers to report on the Hydro Electric Power Commission of Ontario's proposal for building an electric railway from Port Credit to St. Catharines, towards the cost of which the City of Hamilton was asked to issue debentures for \$5,689,386. The board appointed consisted of five members of the Canadian Society of Civil Engineers, R. W. Leonard, St. Catharines; Sir John Kennedy, Consulting Engineer, Montreal Harbor Commission; W. F. Tye, Consulting Engineer; L. A. Herdt, Professor, Electrical Engineering, McGill University and W. J. Francis, of Montreal. Their report was submitted recently, accompanied by a letter signed by R. W. Leonard, as chairman, and W. J. Francis as secretary, as follows:

"On behalf of the board of engineers appointed by your committee to report upon the proposition of constructing and operating a hydro electric radial railway from Port Credit to St. Catharines, we take pleasure in enclosing herewith the report on the question. The board has been unanimous in its findings in regard to the specific features named in your letter of instructions, and in its conclusion.

"The estimates of capital cost, as given by the Hydro-Electric Power Commission, have been used by the board, in accordance with the letter of instructions, but the board does not endorse the estimates of capital cost in any way, as the Hydro-Electric Power Commission declined to give the information necessary whereby they could be checked.

"For your convenience we are here briefly stating the substance of the report. The first specific feature in the letter is the determination of the public necessity for the proposed Port Credit-St. Catharines line. Your board finds that no public necessity exists for the construction of the proposed line, because the particular district is thoroughly well provided with steam, electric and water transportation facilities; because the province of which the district forms a part is also amply provided with transportation facilities; and because the number of transportation companies already operating in the district makes it quite unnecessary to inaugurate a new and distinct system. This phase of the question is more particularly referred to in the report.

"Operating revenue, fixed charges and operating expenses and extension to the frontier. The second, third and fourth specific features in the letter refer to financial matters. A request is made for the estimated operating revenue based on the conditions in the territory to be served by the proposed lines; the estimated cost as stated by the commission, \$11,360,363; and an estimate of the cost of the construction of a proposed extension from St. Catharines to the Niagara frontier, coupled with an estimate of the earnings probable on through traffic obtainable at the frontier when such an extension shall have been made. Your board estimates that the financial state-

ment of the proposed line under local traffic conditions will be as follows:

"Revenue from operation, 59.6 miles, at \$6,000 a mile ..... \$357,600  
"Operating expenses, 61% of \$357,600.. 218,136

"Net operating revenue ..... \$139,464  
Fixed charges:  
"Interest on \$11,360,363 (as given by Hydro-Electric Power Commission), at 5½% . . . . . \$624,820

"Yearly deficit, exclusive of taxes and sinking fund . . . . . \$485,356  
"(Sinking fund is not chargeable during the first ten years.)

"Your board further estimates that the financial statement of the proposed line under all traffic conditions, will be as follows after 10 years:

"Revenue from operation, 59.6 miles, at \$16,000 a mile ..... \$953,600  
"Operating expenses, 65 % of \$953,600 .. 619,840

"Net operating revenue ..... \$333,760  
Fixed charges:  
"Interest on \$11,360,362 (as given by Hydro-Electric Power Commission), at 5½% . . . . . \$624,820  
"Sinking fund, at 1% ..... 113,604

..... \$738,424  
"Yearly deficit, exclusive of taxes ..... \$404,664

"The cost of an extension to the frontier has been estimated at about \$2,280,000, arrived at from a consideration of the figures given by the commission for the line from Port Credit to St. Catharines. This phase of the question is more particularly referred to in the report.

"The letter of instructions makes the fifth specific feature perfectly general in its nature. It requests the submission of pertinent information developed in the study of the question. The effect of good roads on transportation questions generally is of great importance. Your board finds that it would be much more in the interest of Hamilton if good roads were seriously taken up, rather than the proposed Port Credit-St. Catharines line. The amount proposed to be expended on the proposed line would build at least 800 miles of good roads in the Hamilton district.

"The information regarding terminal facilities is so indeterminate that your board has not been able to satisfy itself regarding the obligation of the City of Hamilton in connection with the essential terminal expenditures and costs. The system of financing and apportionment of losses or profits, being entirely arbitrary, and not within the control of Hamilton, is sure to cause dissatisfaction.

"The proposed bylaw and agreement are vague and indefinite in many particulars. By them the city of Hamilton would become responsible for nearly \$6,000,000 and would start into the railway business from which it would have practically no opportunity to withdraw, and over the operation of which it would have no control. One of the parties to the agreement would have entire control, without any responsibility, financial or otherwise, while the other party would have no control, and would be, at the same time, responsible to the last dollar. The agreement would prevent Hamilton from entering into any arrangement with any transportation company without the consent of the Hydro Electric Power Commission. The

city could be required to give a free right of way over any corporation property. The apportionment of losses or profits has not been definitely stated. The question of assistance in operating the line under avoidable and uncontrollable circumstances is not fairly stated. The agreement would require the city to give the proposed railway practically exclusive interests. The renewal clause makes the agreement virtually a perpetual one. No audit is provided for. The agreement as a whole is indeterminate and obscure, although it is definitely stated that the municipalities shall bear all losses in operation, while the Hydro Electric Power Commission is definitely relieved from any and every responsibility, at the same time having the final and binding decision in all matters. Generally, Hamilton would be placing itself entirely in the hands of the commission over which, by the terms of the proposed agreement, it would have absolutely no control or authority. The board considers this a very important matter, as the city is called upon by the proposed agreement to guarantee over half the cost of the proposed line.

"Your board has reached the unanimous conclusion that it is not in the interest of Hamilton to enter into the proposed agreement. For a full discussion of the project we would respectfully refer you to the text of the report. On behalf of the board we desire to express our sincere appreciation of the many courtesies shown to the board and to its assistants, not only by yourself and the members of the citizens' committee, but also by very many others."

The full report states that the Hydro Electric Power Commission declined to furnish any information to the board of engineers, and that Sir William Hearst, Premier of Ontario, was unsuccessfully appealed to. In his reply, the Premier called attention to the fact that the commission objected to the personnel of the board of engineers, claiming that R. W. Leonard was not an electrical engineer, and that he had strongly expressed himself as being averse to the hydro radial scheme. The commission felt an injustice would be done the cause if data and material were handed over to a board of engineers nominally appointed by E. W. Oliver, Assistant Engineer, Canadian Northern Ry.; E. G. Hewson, Division Engineer, Grand Trunk Ry., and three other members of the executive of the Toronto branch. Later, in reply to a query of the engineers, Sir Adam Beck stated that the board might make an appointment with F. A. Gaby, Chief Engineer of the commission, to inspect the material referred to. This appointment was arranged, but Mr. Gaby declined to permit any inspection, and though numerous letters were written by the board of engineers, they got no satisfaction from the hydro authorities.

The American Electric Railway Association has appointed a war board, on lines similar to those adopted by the steam railways. The headquarters are in Washington, D.C., and the board will work in close connection with the Council of National Defence.



## The Regina Municipal Railway's Operations.

By D. W. Houston, Superintendent.

The Regina Municipal Ry. has been in operation since July, 1911, a period of over six years. During this time the average daily car miles run has increased from 200 to 2,700, and the number of cars operated from 4 to 21. At present a service is given to all parts of the city, the general layout being radial, all lines running on Eleventh Ave., between Scarth and Broad Sts., and from this branching out into the different settled districts of the city. Four lines are being operated, as follows:

Broad and Dewdney (Red Line) serves Camp Exhibition, Grey Nuns' Hospital, Government House and the Mounted Police barracks in the west end, and the General Hospital, Normal School and St. Chad's Hospital in the southeast portion of the city.

Winnipeg and Thirteenth (Blue Line) serves all the portion of the city west of Albert St., between the C.P.R. tracks and Sixteenth Ave., and the northeast portion including the Imperial Oil Co. plant, also the C.P.R. station.

North Broad and Parliament Buildings (White Line) serves the Collegiate Institute, Regina College, G.T.P.R. station, Wascana Park and the Parliament Building in the south end, and the C.P.R. station and wholesale districts contiguous to Broad St. in the north end, including Simpson's warehouse.

Victoria and Fifth (Green-Red Line) serves the northwest portion of the city, including the street railway car barns and office and the G.T.P.R. shops; in the east end service is given to the Earl Grey Hospital, the Children's Home and all the portion of the city contiguous to Eleventh Ave., east of Broad St. and Eleventh Ave., east of Winnipeg St.

During August and September last the average number of passengers carried on each line daily was as follows: Red Line, 3,370; White Line, 2,004; Blue Line, 2,967; Green-Red Line, 3,144; total, 11,485. The average is considerably higher during the winter, but the proportion carried on the different lines is about the same. Taking the corner of Eleventh Ave. and Scarth St. as a centre, the traffic to and from points west of this is much greater than that to and from points east. On account of the large proportion of the city's population living within reasonable walking distance of this centre, there is considerable variation between summer and winter patronage. As in other cities, this is also affected by the largely increased use of automobiles.

Passenger revenue is slightly augmented by that derived from carrying policemen and postal carriers, the former at a flat charge of \$30 a man per year, and the latter at \$35 a man per year. There is also a certain amount of revenue derived from special cars and the sale of advertising spaces in the cars.

In addition to passenger service, the street railway operates a freight service. The main commodities handled are coal and garbage. Coal for the city power house is hauled in steam railway cars about 1 1/5 miles from the C.P.R. Arcola line. The track over which the coal cars are hauled is on Atkinson St. and is used exclusively for this purpose. Garbage is hauled in special steel dump cars from the city transfer station (just east of the car barns) to the city incinerator, a short distance west of the city limits on Wascana Creek. This material is gathered up

throughout the city by wagons and sorted and loaded at the transfer station.

The rolling stock consists of: 18 passenger cars, double truck; 16 passenger cars, single truck; 1 snow sweeper, double truck; 1 snow sweeper, single truck; 1 snow plough, single truck; 1 motor haulage car, double truck; 5 flat cars, single truck; 6 wood dump cars, single truck; 18 steel dump cars, single truck.

## Report of Conciliation Board re Ottawa Electric Railway.

A board of conciliation and investigation was appointed by the Labor Minister recently in connection with differences between the Ottawa Electric Ry. Co. and its employees. Following are extracts from the report:

The matters in dispute were in relation to certain alleged violations by the company of provisions of the agreement entered into with the men on July 10. We found that there was no real difference between the company and the men. Misunderstandings had arisen, as a result of a failure to come together for complete discussion such as we were able to bring about, and as a result the misunderstandings have disappeared and mutual assurances have been given which are practically certain to result in harmonious operation in the future.

The principle was asserted that the men have the right to nominate the members of their grievance committee as they think proper, and this principle is to be recognized by the company. Certain minor difficulties were due to a failure in the past to recognize this principle, but we are satisfied the probability of a recurrence of similar difficulties is slight.

One objection of the men was based upon the fact that an employe had been dismissed without an opportunity being given to the grievance committee to consider his case. This again appeared to have been the result of a misunderstanding and the acting Superintendent has promised to reinstate this employe, in the hope that the difficulty will not occur again.

Another minor difficulty had arisen owing to the company's failure to supply seats for conductors in certain cars. This also appeared to have been an oversight and the company has promised to remedy it within a time satisfactory to the men.

The third minor difficulty was the failure of the company to supply boards in the pits in the sheds as provided by the agreement. It appears that this was because of an objection raised by the insurance underwriters, and the men have recognized the justness of the company's position in this regard and do not intend to press for compliance with that term of the agreement.

Certain instances were mentioned of changes in the shop rules without previous consultation with the grievance committee. These matters were explained to the men's satisfaction and on the board's recommendation care will be taken in the future not to give rise to similar complaints.

The International Transit Co.'s Car men at Sault Ste. Marie, Ont., went on strike for a few hours late in September, demanding an increase of 5c an hour, their wages then being a minimum of 27c an hour, with a maximum of 32 cents. A board of conciliation early in November recommended the following scale: 1st 6 months, 30c; 2nd 6 months, 31c; 2nd year, 32c; 3rd year, 33c; thereafter 35c.

## A Vancouver Paper's Views on Street Railway Necessities.

The Vancouver Daily Sun published a long article recently on the development of street railways, from which the following is reproduced:

"Heavier cars, heavier tracks, more safety devices, more convenient service in rush hours, on holidays and on special occasions—all these have been drawing upon the enterprise and ingenuity of electric railway companies until it seemed as if the end had to come. . . . Together with this increase in the investment in better equipment has come a rise in the cost of operation, due to the increase in the cost of labor and materials. With the fixed 5c fare, street railways have been hit especially hard, and harder, they say, than the purveyor of any other commodity, who has been allowed to increase the price of his produce as the cost requires.

"Unfortunately for many street railways, franchises entered into 20 and 30 years ago did not make provision for changing conditions. Again, being a public institution, street railways have been put under further regulation by public service commissions. So that while on the one hand costs have been increasing, the street railways have had their fares fixed by someone else. A new spirit is springing up in the control of street railways, however, one that may be expected to overcome the difficulties of modern life and again send city transportation forward to meet the needs of the public. Commissions are realizing that it is in the public interest that street railways should have obstacles to their progress removed. In other words, while they have regulated them as regards fares and service for the public good, they have also co-operated with them to enable them to give service to the public. For instance, commissions have agreed throughout to the fundamental necessity from the public's point of view of allowing a company to make a fair return on the investment, because should it be prevented from doing so, the service the public would receive would inevitably deteriorate. They have even taken the same broad minded stand on the question of fares, which have been fixed by franchises. In some cases, street railways have themselves contracted to charge only a certain fare, but a few years later found that they could not maintain the service and pay a fair return on the investment. The commissions have taken the stand that a company cannot be expected to give service below cost, even if it were stipulated in the franchise, and have authorized increases in fares accordingly. The spirit of co-operation has taken the place of antagonism. City transportation is such a vital factor in modern life that it is realized that the shoulder of everyone should be at the wheel if the best results are to be obtained."

**One-Man Cars for Saskatchewan.**—T. H. McCauley, Superintendent Calgary Municipal Ry., while on his way east on business recently visited Regina, Sask., and gave information to the Saskatchewan Government, respecting the operation of one-man cars, supporting a delegation representing Regina, Saskatoon, and Moose Jaw city councils, which asked the government to bring in an amendment to the Railway Act, to authorize the operation of cars with one man in charge instead of two.



## Electric Railway Notes.

The British Columbia Electric Ry. has made claims for exemption of twelve of its employes, under the Military Service Act.

The British Columbia Electric Ry. is said to be considering putting one-man cars in operation on some lines in Vancouver, New Westminster and Victoria.

The Edmonton, Alta., City Council, has let a contract to J. L. Tipp, for supplying 100 overcoats for the employes of the Edmonton Radial Ry. at \$30 each.

The Edmonton, Alta., City Council is reported to have placed an order in the U. S. for 80 new car wheels for Edmonton Radial Ry., at a cost of \$4,060.

The Niagara St. Catharines & Toronto Ry. has, at the Niagara Falls, Ont., City Council's request, put near sidestops into effect on its entire local line there.

The Edmonton, Alta., Radial Ry. has provided a waiting room and shelter for passengers on the low level route, at the north end of the low level bridge.

Toronto Works Commissioner has reported against allowing advertising on the outside of Toronto Civic Ry. cars, contending that the disfigurement of the cars would not be justified by the returns.

One-man cars are being operated on every one of the routes on the Calgary, Alta. Municipal Ry., the Ogden route being the last one upon which these cars were placed.

The British Columbia Electric Ry.'s total taxation for the current year for its entire system, including city, municipal and government taxes and percentages is \$249,056.24.

E. P. Coleman, General Manager, Hamilton St. Ry., is reported as having stated Nov. 9, that the company was considering the desirability of putting a number of p.a.y.e. cars in operation on certain of the city lines.

The Lake Erie and Northern Ry. was notified by the Galt, Ont., City Council recently that it would have to cease operating its cars on Water St., in that city, by Dec. 1, unless in the meantime an agreement as to terms was signed.

Nineteen persons were treated in hospitals and a number of others in an adjoining police station on Nov. 7, as the result of a Montreal Tramways Co. car leaving the rails at the corner of Seigneurs and Notre Dame Sts. and colliding with the Merchants Bank building.

The Kitchener, Ont., Railway Commission has notified its employes that starting from Jan. 1, 1918, an increase of 7½ cents an hour will be made in the pay of motor men and conductors, and that employes of one year standing and upward will be given a week holiday with pay each year.

The Calgary Municipal Ry. is having six cars specially fitted up for use as one-man cars during the rush hours only, and to run on certain routes between terminals without intermediate stops. The door in the rear is being closed, the entrance, as well as the exit, being via the front platform.

The Shawinigan Water and Power Co. is applying to the Quebec Legislature for confirmation of all issues of debenture stock heretofore made by the company, to amend and extend the company's borrowing powers, and its rights to issue bonds, debentures, or other securities, and for other purposes.

At a meeting of the Northside Ratepayers' Association at Regina, Sask., Nov. 2, the Regina Municipal Ry. management was criticized. Alderman England invited the critics to place their charges in writing and pointed out that if this was done a thorough investigation would be made.

The British Columbia Electric Ry. has decided to sell rather than give free use of street car fenders for advertising purposes. In the past, the company has been glad to offer this space freely for patriotic and charitable advertisements, but such have been the increases in the company's expenses that new sources of revenue had to be developed.

The Moose Jaw, Sask., City Council passed a resolution recently stating that no obstacle would be placed in the way of the operation of one-man cars on the Moose Jaw Electric Ry. so long as the company maintained an adequate service. The resolution was opposed by the labor member on the council.

The Ottawa Electric Ry. put the winter car schedule in operation on the Britannia line Nov. 12. A four minute schedule is given from the corner of Elgin and Spark Sts. to the McKellar townsite loop, with a two minute service during the rush hours; while a 10 minute service is given from the McKellar townsite to Britannia.

The hearing of the evidence and arguments in the difference between the Edmonton Radial Ry. and its employes by the Board of Conciliation, were brought to a sudden stop, Oct. 31, when the city obtained an injunction restraining the board from taking further proceedings. On Nov. 2, Justice McCarthy was appointed by the Minister of Labor as Royal Commissioner to act in the matter.

The electrolysis of water pipes in Winnipeg was again brought before the city board of control recently by the Superintendent of the Water Works, who reported that the measures now applied by the Winnipeg Electric Ry. are strictly limited to the districts supplied by their substations only, leaving four others to be dealt with, including the most important of all, namely, Mill St.

Sandwich, Windsor and Amherstburg Ry. employes were out on strike recently for nine hours because a non-union man, who, on the half-yearly distribution of runs, had selected a night run, desired a change to a day run and was refused by the Superintendent; he then went to the Manager, who directed the change to be made. The employes protested and subsequently went out. The mayor intervened, and the matter was adjusted.

The Edmonton, Alta., Municipal Ry. management is considering the question of the transportation of the fire brigade and policemen on the cars and has been getting information from other places. The Lethbridge, Alta., City Council gives municipal employes the privilege of buying 25 street car tickets for \$1; while in Calgary, the fire department pays the municipal railway \$250 a year for members of the fire brigade, and the railway department permits policemen in uniform to ride free, charging them the ordinary fare when out of uniform.

The Saskatchewan labor organizations' executive committee has under consideration the question of the position which should be taken in regard to the proposal to operate one-man cars on electric rail-

ways in the province. When the railway act was passed by the legislature the labor party secured the insertion of a clause providing that there should be a motorman and a conductor on each car. In order to permit the operation of one-man cars the legislature is being asked to repeal this clause. It is expected that the organizations will pass a resolution, of which notice has been given, protesting against repealing the clause.

### Mainly About Electric Railway People.

Wilford Phillips was presented with a gold watch and chain, and Mrs. Phillips with a travelling bag, by Winnipeg Electric Ry. employes on his retirement from the position of General Manager.

A. W. McLimont, the new General Manager of the Winnipeg Electric Ry., has been elected an honorary member of its Old Timers' Association, which is composed of employes who have been in the company's service for 10 years or more.

W. S. Hart, heretofore Secretary-Treasurer, Three Rivers Traction Co., has been appointed Managing Director. James Wilson, heretofore Assistant Secretary-Treasurer, has been appointed Secretary-Treasurer.

A. E. B. Hill, of the British Columbia Electric Ry.'s Signalling Staff, was presented with a silver loving cup by the office staff at Vancouver, Nov. 9, on retiring after ten years service. The presentation was made by G. Kidd, General Manager.

Maurice McCormick, heretofore Assistant General Manager and Purchasing Agent, Bangor Ry. & Electric Co., Bangor, Me., has been appointed Assistant to General Manager, New Brunswick Power Co., St. John, N.B., which owns and operates the St. John Ry.

F. M. Black has resigned his position as a member of the Alberta Public Utilities Commission, on his appointment to a position under the Food Controller. The Alberta Government is reported to have decided to postpone indefinitely the filling of the vacancy.

W. Douse, heretofore of the Hydro Electric Power Commission of Ontario's purchasing office, has been appointed acting Purchasing Agent, Toronto & York Radial Ry., Toronto, G. K. Hyde, Purchasing Agent, having, on account of ill health, been granted six months leave of absence, which he will spend in the south.

W. G. Murrin, Assistant General Manager, British Columbia Electric Ry., Vancouver, B.C., visited Calgary, Alta., Oct. 25, in company with Inspector Rae, of the Department of Railways of British Columbia, to inspect the working of one-man cars on the Calgary Municipal Ry. They were on their way home from visiting a number of United States cities, where one-man cars are being operated.

J. T. Donohue, who was added to the Quebec Railway, Light, Heat and Power Co.'s board at the recent annual meeting is President of the Nairn Falls Power & Pulp Co., Murray Bay, Que. Before the erection of the Quebec bridge commenced he was President of the Eastern Steel Co. of Canada, which was sold to the contractors for that structure. He is also President of the Donohue Construction Co. of Quebec.

Mathew W. Kirkwood, whose appointment as General Manager, Galt, Preston and Hespeler St. Ry., and Lake Erie and Northern Ry., Galt, Ont., together with



his portrait, appeared in our last issue, was born at Cheltenham, Ont., June 8, 1877, and entered G. P. & H. S. R. service in Dec. 1894, since when he has been, to Sept. 1895, general helper in repair shops, Preston, Ont.; Sept. 1895 to Oct. 1907, Master Mechanic and Electrician in charge of rolling stock and equipment,

Preston, Ont.; Sept. 1895 to Oct. 1907, Superintendent and Master Mechanic, Preston, Ont. In addition to the last named position, he was from Feb. 1915, to Feb. 1916, Electrical Engineer, Lake Erie and Northern Ry., in charge of construction and equipment, and from Feb. 1916 to Sept. 1, 1917, Superintendent.

## Electric Locomotives for Hydro Electric Power Commission of Ontario Construction Railway.

The Hydro Electric Power Commission of Ontario is having built twelve 50-electric locomotives for hauling trains on the construction railway which it is building in connection with its power development at Chippewa Creek, near Niagara Falls and which will have 600 volt, d.c. operation. Their general dimensions are as follows:

Length over end sills .....	35 ft.
Length over striking plate .....	36 ft.
Length of truck centres .....	19 ft.
Length of main cab .....	10 ft.
Length of auxiliary cab .....	9½ ft.
Width over side sills of locomotive ..	8 ft. 11 in.
Width over cab door posts .....	9 ft.
Width over all equipment hoods .....	5 ft. 3 in.
Height from rail to bottom of side sills	3 ft. 4 in.
Height from rail to top of floor ....	4 ft. 6¾ in.
Height from rail to top of cab ....	12 ft. 8¼ in.
Truck wheel base .....	7 ft.
Diameter of wheels .....	36 in.
Coupler height (M.C.B.) .....	34½ in.

The locomotives, which are designed for double end operation, for either switching or road service, upon completion, with entire electrical and air brake equipment will weigh approximately 72,000 lb., and the remaining weight of approximately 14 tons, will be made up by ballasting with slag, concrete, or cast iron slabs, securely fastened to sills.

The underframe is made up of members assembled as follows: Six longitudinal sills forming centre, intermediate and side sills of 12 in. I beams, extending from end sill to end sill and securely fastened to end sills with connection angles. End sills consist of 15 in. 33 lb. channels at each end of underframe extending straight for 15 in. on each side of centre line and dropping back 13 in. to corner of underframe. Flanges of end sill are coped out at corner of car, and web is bent around outside of side sill and projects back for sufficient distance to make a good connection. Cross members or separators, of which there are 5 per locomotive consist of 8 in. I beams, securely connected to longitudinal sills by double angle connections at each end, fastened on with ¾ in. rivets. Bolsters are built of 14 x 1 in. plates, extending entirely across car, and riveted to top and bottom of longitudinal sills, with an extra 14 x 1 in. plate extending across the bottom, from the intermediate sill on one side of centre sill to the intermediate sill on the other. Draft sills are 12 in. channels, securely riveted through their flanges to the bottom flanges of centre sills and braced side-ways by heavy forged bars and angle connections to the buffer blocks. Draft gear, is twin spring, and couplers are cast steel, 5 x 7 shank, with M.C.B. butt for keyed draft gear. The uncoupling device is of ordinary freight car type extending across the locomotive at a point just ahead of underframe corner and is let into wood floor flush. Flooring is 2¾ tongued and grooved long leaf yellow pine.

The cab is framed of angles, channels and bars with 1/16 in. steel sheathing, steel angle carlines and wood roof. It has two side doors and two end doors at

diagonal corners, with four drop windows in sides, and two in ends at diagonal corners. The motorman's seat is removable, with two sockets in floor, for driving from either end of locomotive. All control levers and handles are duplicated in diagonal corners, for reversible operation of locomotives. The hoods are framed of angles, channels and bars with 1/16 in. steel sheathing and 1/16 in. steel roofing. Each hood is equipped with one removable steel door, for access to equipment therein. The hood is narrow enough to allow a walkway all around outside of platform at each end, and platform is equipped with pipe railing, mounted on pipe stanchions, at the outside edge, with an inside hand rail around top of cab roof. All grab handles, steps and safety appliances are in accordance with requirements of Board of Railway Commissioners of Canada and Interstate Commerce Commission. At each side of cab, at side door posts, steps are provided for access to the roof and immediately over each side door on roof is mounted one grab handle.

There is one trolley base on each side of locomotive mounted on an extension platform built out from roof on locomotive. Each locomotive is equipped with one bell, one set of chime whistles and one electric head light. At each end of locomotive a large sand box is built into hood—equipped with Ohio Brass Co.'s air sanders and air hose of 2 in. steel pipe for leading right hand wheels on each truck. Trucks are arch bar type, 4 wheel, with 36 in. journals, M.C.B., and journal boxes with contained parts. Each truck bolster is built up of 2, 10 in. 40 lb. I beams, with a cast steel separator at the middle, and flat plate spacers at the outer ends. Transoms are 12 in. 30 lb. channels, mounted on cast steel brackets at arch bars which are riveted to the spring plank. Spring plank is a 13 in. rolled steel channel. Brake is of an equalizer type for inside motor, with double brake levers of ¾ in. thick bars and single hangers of 1 in. thick bars. Brake shoes are cast steel of M.C.B. contour, with M.C.B. steel back brake shoes. Top arch bars are 5 x 1½ and bottom tie bar is 5 x 1½. Bottom arch bar extends out past centre of journal box 2 ft., to where it is joined by tie bar, the two forming a truss to support end frame, which is a 4 x 4 rolled steel angle.

Each locomotive is being equipped with Westinghouse air brake, 14 in. cylinders, with independent reservoirs and two compressors. Extra compressor capacity is provided to supply air dumping mechanism on dump car. Parasite reservoirs and governors are provided and so arranged that when operated in trains, all governors in the train will cut in at the lowest setting pressure in the series.

The locomotives will be equipped with multiple unit control, six having General Electric control, with second-hand motors of G.E. 66 type. The other six locomotives will be equipped with Westinghouse

control and new Westinghouse motors, type 562-A. Each locomotive should develop at starting, a tractive effort of approximately 30,000 lb. on dry rails.

The air brake equipment for the 12 locomotives of the Westinghouse no. 14 EL type. The equipment for each locomotive includes two D-4-P 50 ft. Westinghouse motor-driven compressors, which have a combined capacity sufficient to supply the air for both braking and dumping purposes. The two compressors on each locomotive are started and stopped simultaneously by means of the Westinghouse governor synchronizing system, which also permits simultaneous operation of all compressors in cases where two or more locomotives are operating together. The brake valves are of the K-14-A type, having both the automatic and independent valves mounted in a common structure, with two operating handles readily accessible. The air gauges have illuminated dials for night operation. The air for operating the dump cars attached to these locomotives is taken from a separate parasite reservoir, the air pressure coming from the air brake reservoirs through a parasite governor which is installed to prevent the dumping apparatus from depleting the pressure available for braking below a safe predetermined minimum. An operating valve in the locomotive cab controls the admission of air to the dump line and thus operates the car dumping apparatus. The air equipment on each locomotive includes a clarion whistle.

The Canadian Westinghouse Co.'s contract covers the necessary electrical equipment for use with 6-ton locomotives, with 1,500 volt insulation and for 600 volt operation. Each equipment consists of four no. 562-D-5 railway motors with pinions and gear cases. The motors are rated at 100 h.p. (75 kw. 600 volt). The control equipment is of the unit switch type, each equipment consisting of 1 type 496-H main knife switch complete with two terminals; 1 type 265-D-25 switch group; 1 type 265-D-26 switch group; 1 type 284-L-4 reverser; 1 set of grid resistance; 2 type 494-B control and reset switches S-192486; 2 type 337-D-2 master controllers; 1 type 187-A control resistor S 171769-A; 2 type 651-A junction boxes; 2 type 448-D train line receptacles; 2 type 448-M train line receptacles; 2 type 364-A motor cutout switches; 1 type 449 train line jumper; 1 type 449-G-2 train line jumper.

The order for these locomotives was given by the Hydro Electric Power Commission of Ontario to the C. E. A. Carr Co., Toronto, which contracted to supply 12 locomotive bodies, with steel cabs, trucks, axles and wheels complete, and also to supply six of the locomotive equipments complete, each locomotive with motors, controllers, all wiring for motors, control, light and other circuits, also complete air brake equipment, as per G. E. Co. type l.p. locomotives, air brake equipment with two 25-ft. air compressors per locomotive and enough air tank capacity to furnish air to twelve 20-yard dump cars, or Westinghouse air brake equipment of similar type and capacity, in fact the six locomotives to be complete ready in every detail for operation, less overhead trolley operation mechanism. For the other six locomotives, for which the C. E. A. Carr Co. contracted to supply the bodies, steel cabs, trucks, axles and wheels, the Commission supplied the electrical and air brake equipment. The trucks, bodies and cabs for the whole 12 locomotives are being built by the National Steel Car Co., Hamilton, Ont.



# Steel Tired Wheels on British Columbia Electric Railway.

By W. G. Murrin, Assistant General Manager, B. C. E. Ry.

Steel tired wheels have been in common use on European electric railways for some years, but on this continent, excepting on some interurban lines, this practice is almost unknown. The British Columbia Electric Ry., operating over 250 miles of track, of which 180 miles are interurban, has developed a practice of using on new equipments rolled-steel wheels which are afterwards made into centres and fitted with tires. This procedure has been found economical under local conditions and may be of interest to some other railways since the prices of both chilled iron and steel wheels are mounting skyward.

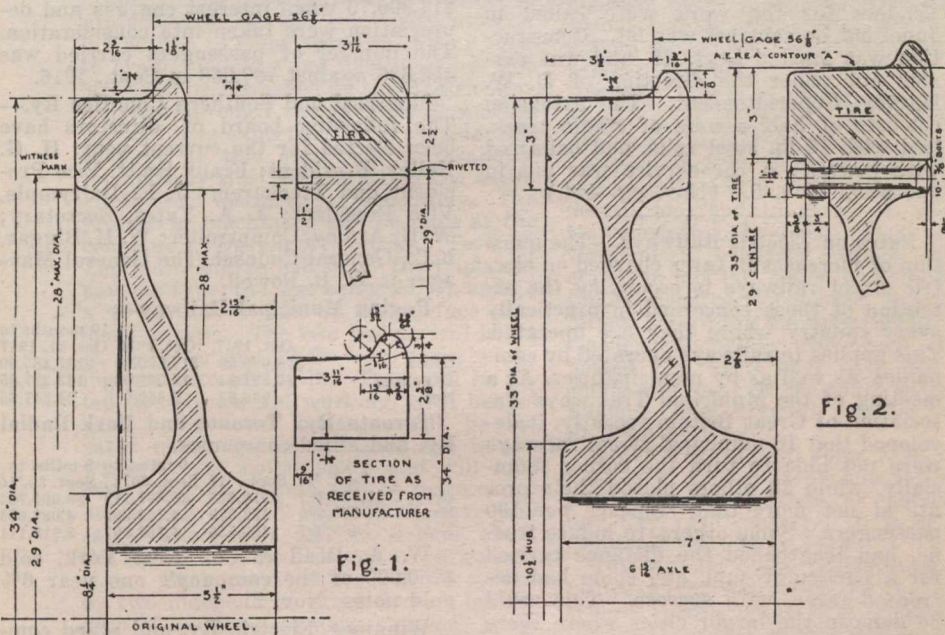
The large amount of interurban equipment on this railway, including 10 heavy locomotives, required suitable machinery in its repair shops, including a 42-in. wheel lathe. This no doubt facilitated

city cars ordered in 1910. The following year, government regulations forced the elimination of iron wheels from all interurban passenger equipments, owing to the danger from broken flanges, etc., and a number of cars were equipped with steel-tired wheels having cast iron centre of the Midvale bolted type. The noticeable reduction of the flat wheel nuisance which followed the use of steel resulted in extending its application to city cars, and consequently the shops were equipped with suitable machinery to care for them.

Then the price of steel wheels began to rise, and the economy of using tires suggested the idea of putting them on the steel wheels. For both city and interurban equipments, rolled steel wheels are selected of suitable dimensions so that at their final turning they can be made into centres. The English method of tire fast-

out spots or chipped flanges, and frequently a car has been shopped for wheel change after less than a week's running. Steel wheels or tires are nearly always shopped for worn flanges, the tendency of alternate wheels to wear sharp being cared for by changing the positions of the wheels under the car when half worn. Except in unusual cases, such as for bad slid flats from emergency stops, proper inspection makes it possible to attend to the steel wheels at the time of general overhauling, so that no time is lost on this account, the rule being that the wheels are ready for return to the car long before the inspection and overhauling of the motors, control, brakes and other equipment on the car has been completed.

The accompanying drawings show sections of the wheels as purchased from the manufacturer, and after re-tiring, fig 1 being the city equipment and fig 2 the interurban. The city wheel weighs practically the same after re-tiring as before. The interurban wheel with steel centre is much lighter than with a specially built cast iron centre and has a neat appearance with its tire.—Electric Railway Journal.



Worn steel wheels are made into centres and are equipped with tires. City and interurban wheels are shown in figs. 1 and 2 respectively.

the introduction of steel wheels on the city equipments, but other factors such as the distance of this property from wheel makers, and local climatic conditions which, particularly in Vancouver, cause unusually slippery rails during the wet season, contributed to the development of this practice, experience having indicated that slid flats are less prevalent with steel than with chilled iron wheels. Flats on the steel wheels, also, can be more easily remedied.

A brief history of the experiences which led to the adoption of steel tires will perhaps be of interest. In 1905 the standard wheels were 33-in. cast iron, single-web plate wheels being used for interurban equipment. A number of double truck city cars of the Narragansett convertible type were built and equipped with 30-in. wheels, but the smaller motor clearance on temporary ballasted tracks, and the apparent tendency of the smaller wheel to develop slid flats more rapidly than the others led to their being discarded. In 1909 two experimental sets of steel tired wheels of English manufacture were installed, one each on city and interurban cars, and the performance of these resulted in specifying 33-in. rolled steel wheels for 30 new

enings, by rolling the inside edge of the tire over that of the centre was adopted for the city wheels, and the Midvale bolted tire, now rapidly becoming standard, was selected for the interurban wheels.

Experience so far has shown that the use of steel tires effects a saving over that of either solid steel or chilled iron wheels, even if the f.c.s. wheel is included. The amount of steel scrapped from a worn-out tire is considerably less than from a solid wheel, and a market for scrap tires can be found where the wheel centres cannot be disposed of. The life of a tire is about the same as that of a steel wheel and averages about four years, during which time four cast iron wheels would have to be installed. According to prices as at the end of 1916, the costs per thousand car-miles of city equipment, including shop costs and returns for scrap, etc., were for chilled iron f.c.s. wheels, 30c; rolled steel wheels, 25c, and for tires, 20c.

There is also a saving in time for cars in shop, as during the four years a car with iron wheels will be shopped 2 to 15 times for wheel grinding, rewheeling, etc., as compared with four to six times for turning or renewing tires. Iron wheels are scrapped mostly for slid flats, shelled

## Lethbridge Municipal Railway Report.

Following are extracts from the commissioners' and auditors' reports for 1916 which have only been issued recently:

Revenue.	
Traffic	\$47,812.55
Advertising	574.50
Rental electric substation	720.00
Earnings, merry-go-round	487.34
Sale unclaimed personal property	45.15
Net deficit	27,924.89
\$77,564.43	
Expenditures.	
Operation and maintenance	\$37,657.15
Administration and miscellaneous	3,003.10
Merry-go-round operation	181.95
Merry-go-round depreciation	750.00
Debenture interest	20,063.35
Sinking fund	9,903.14
Insurance	401.51
Taxes	5,604.23

\$77,564.43

Commissioner Graves in a report dated June 28, 1917, says: "Our street railway has shown very satisfactory returns considering everything. I have made a careful study of statistics published by other street railway systems, large and small, privately owned and otherwise, and I find our cost per car mile compares very favorably with any of them. Passengers carried per car mile is low with us, on account of population, but passengers carried per 100 of capita, is quite up to the average. I have made it a rule to keep the equipment fully repaired and in a good state of efficiency, which feature I note is being sadly neglected in some of our other cities. The ties which have been down for a number of years will require replacing and expenses on track maintenance will be heavy from now on. "During the first five months of 1916 our Red Line obtained considerable additional traffic owing to soldiers at the fair grounds. This year to date shows a falling off of about \$25 a day on this line, in fact there was so little patronage for this car that it was considered advisable to reconstruct two small cars, so that they could be operated from either end and discontinue the park section during certain months and by shortening the run,



give a faster service for 6th Avenue points. These cars are ready, but the service to the park will require the through service up to the middle or end of September, when the change will be put into effect. However, in spite of the falling off on the Red Line, increases in wages, cost of materials, interest, sinking fund payments and taxes, the consumption of power has been reduced, and the traffic on other lines has increased so that I am reasonably confident that the system will not be more than \$1,000 to \$1,500 below 1916 in net results."

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

**Brandon Municipal Ry.**—We are officially advised that nothing further has been done in regard to the proposal to extend the line to Lake Percy, other than making an inspection of the route recently. It is not expected that anything will be done in the way of construction at present. T. Boden, Brandon, Man., is Superintendent. (Oct., pg. 407.)

**British Columbia Electric Ry.**—The Kitsilano bridge, owned by the C. P. R., and leased with the Lulu Island Ry. to the B. C. E. R. is claimed to be a menace to navigation. An agitation was launched by the British Columbia Tug Owners' Association, Nov. 2, with the view of having it removed.

An arrangement has been completed between the company and the North Vancouver city and district councils, for the extension of the company's tracks on to the ferry wharf at North Vancouver. The estimated cost of the work is \$4,000 towards which the two councils will ask the ratepayers to pass bylaws at the annual elections in January, providing \$2,500.

The Timberland Lumber Co., of New Westminster, B.C., is building a new mill on the south bank of the Fraser River, just west of the railway and highway bridge. It proposes to link up with the B. C. E. R. by a spur line at a cost of about \$30,000. It is reported that arrangements for building this spur have been completed, the lumber company to do all the work, and the B. C. E. R. to provide the rails and the wire for overhead work. (Nov. pg. 444.)

**Guelph Radial Ry.**—We are officially advised that a single end two car turnout is being put in on Carden St., Guelph, Ont. A. H. Foster, Ont., is Manager. (Nov., pg. 444.)

**London St. Ry.**—The Ontario Railway and Municipal Board has made an inspection of the company's lines in connection with the building of the Tecumseh St. line. (Oct. pg. 407.)

**The Niagara, St. Catharines & Toronto Ry.** has practically completed rerailing and rebonding its line at Niagara Falls, with 80 lb. rails, and 90 lb. girder rails in pavement. On the local line, from the Roman Catholic church to Montrose, about 4½ miles, 65 lb. rails have been laid instead of 56 lb. (Nov., pg. 444.)

**Nipissing Central Ry.**—We are officially advised that a 6-car siding has been built at Haileybury, Ont., for the Riordan Pulp and Paper Co., and that the reconstruction of the car barns at North Cobalt, which were partially destroyed by fire, Mar. 4, is about 80% completed.

**Port Arthur Civic Ry.**—We are officially advised that there are under construction two timber bridges over the McIn-

tyre River on the main line. The specifications were approved by the Ontario Railway and Municipal Board. The estimated cost is \$2,890. (Nov. pg. 444.)

**Toronto and York Radial Ry.**—We are officially advised that the object of the spur line proposed to be built to connect the company's track at Aurora, Ont., with the G. T. R., is to facilitate the delivery of cars to the factories there and thereby save the teaming which is now necessary from the west side of the town to the G.T.R. station. The proposed siding is located 1½ miles south of the town, at the point where Yonge St. crosses the G.T.R. and will be about 1,500 ft. long, single track. An inspection of the locality was made at the end of October by a Board of Railway Commissioners' engineer who suggested that all the parties interested should get together and reach an amicable agreement in regard to the matter. (Nov. pg. 444.)

**Toronto Civic Ry.**—We are officially advised that the extension to the Bloor Division from Quebec Ave. to Runnymede Road, in Ward Seven, has been completed. Tenders for the work were called in June, but no contract was let. Construction was started Sept. 28, and was carried out under the direction of D. W. Harvey, Superintendent. The extension consists of half a mile of single track, laid with 56 lb. steel rails, and ballasted with gravel. A car service was put in operation Nov. 5. (Nov. pg. 444.)

**Fares on Electric Railways.**—The question of increases in fares charged on electric street railways is occupying the attention of those concerned in practically every country where they are operated. This applies to railways operated by companies, as well as by municipalities. At a meeting of the Municipal Tramways Association of Great Britain recently, it developed that 16 municipal street railways were not able to turn the corner financially, while 20 others placed their profits at not more than sixpence per 100 passengers. Some others, to induce traffic, had lengthened the distance carried for a particular sum, and some had decreased fares, with success. This could be done in the larger cities where there are large aggregations of people, but in the smaller towns there seemed to be nothing but to carry the loss. It was held that the only true basis for fixing fares, is the cost of providing the service rendered, and all who avail themselves of the service to be required to pay on a uniform scale. This seems to be the true basis of fixing fares, and therefore is an argument in favor of the zone system. Under the present system in Canada, the long haul passenger is carried at a loss, and the short haul passenger is discouraged from travelling, owing to being penalized to make up the loss on the long haul passenger.

**Sandwich, Windsor and Amherstburg Ry.**—Consideration is being given in Windsor, Ont., to a plan for settling various questions at issue between the Sandwich, Windsor and Amherstburg Ry., and the city, and it is expected that a joint conference will be held to see if an agreement can be reached. The Ontario Railway and Municipal Board has advised that if an agreement cannot be arrived at, the council should state what it wants done and the board will then take action.

About 290 jitneys are being operated in Winnipeg under the new bylaw as against about 500 which were operating before the owners were compelled to take out bonds.

### Electric Railway Finance, Meetings, Etc.

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

	Sept., '17		3 mths. to 3 mths. to Sept. 30, '17	
Gross	\$457,709	\$414,811	\$1,350,512	\$1,250,396
Expenses	381,591	351,760	1,157,813	1,050,011
Net	76,118	63,051	192,699	200,385

**Calgary Municipal Ry.**—Surplus earnings over operating expenses for October, \$1,144. Total earnings for 10 months ended Oct. 31, \$458,388.99; expenditures \$478,288.38. There are some credits not yet adjusted amounting to about \$19,000, which when added will about even up the receipts and expenditures.

**Cape Breton Electric Co.**—

	Sept. '17		3 mths. to 3 mths. to Sept. 30, '17	
Gross	\$39,805.36	\$33,804.16	\$119,989.66	\$101,927.53
Exp.	25,628.29	18,189.45	77,588.69	56,545.52
Net	14,177.07	15,614.71	42,400.96	45,382.01

**Edmonton Radial Ry.**—A departmental report states that for September there was a surplus of receipts over operating expenses of \$3,073.03, but a deficit of \$17,996.70 when interest charges and depreciation were taken into consideration. The number of passengers carried was 453,836 against 737,068 in Sept., 1916.

**Montreal and Southern Counties Ry.**—The following board of directors have been elected for the current year: H. G. Kelley, President; Frank Scott, Vice President and Treasurer; J. E. Dalrymple, Vice President; J. A. Yates, Secretary; W. H. Ardley, Comptroller; W. H. Biggar, K.C., General Counsel. The General Manager is W. B. Powell.

**Regina Municipal Railway**—

	Oct. 1917		10 months to Oct. 31, 1917	
Gross	\$18,628.60	\$17,890.99	\$187,485.50	\$187,485.50
Expenses	17,331.84	15,238.98	163,227.85	163,227.85
Net	936.85	2,658.01	24,247.65	24,247.65

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

	Sept. '17		9 mths. to 9 mths. to Sept. 30, '17	
Gross	\$1,023,517	\$913,535	\$8,891,112	\$8,005,764
Exp.	559,590	452,979	4,732,305	4,087,653
Net	463,927	460,556	4,158,807	3,918,111

W. A. Read & Co., New York, sold \$750,000 of the company's one year 6% gold notes, Nov. 21.

**Winnipeg Electric Ry. and allied companies.**—

	Sept. '17		9 mths. to 9 mths. to Sept. 30, '17	
Gross	\$267,170	\$267,497	\$2,431,794	\$2,561,454
Exp.	203,744	179,644	1,861,667	1,582,571
Net	63,426	87,853	570,127	878,883

**Toronto Suburban Railway's Highway Crossings.**—Canadian Railway and Marine World for October gave particulars of several orders passed by the Ontario Railway and Municipal Board, respecting protection of highway crossings along the T.S.R.'s extension from Lambton to Guelph. Another order was passed Oct. 26, respecting the crossing of Hurontario St., near stop 37, and the Hickey Farm. This order rescinds the one passed Sept. 20 in regard to the same crossing, and requires that every car going in either direction shall come to an absolute dead stop at the shelter known as stop 37. Every car going westerly shall be under complete and absolute control, from the time when it is within 50 ft. of the east side of the highway, that is, that although the car shall come to an absolute dead stop at the shelter on the west side of the highway, in addition thereto, it shall be under such control before reaching the eastern side of the highway, that, in the event of a vehicle approaching the crossing, the motorman may be able to stop immediately, anywhere on the crossing, when necessary to avoid a collision.



# Marine Department

## Shipbuilding Activities Throughout Canada.

### STEEL AND WOODEN SHIPBUILDING FOR BRITISH GOVERNMENT.

Canadian Allis-Chalmers, Ltd., as announced in our last issue, received a contract from the Imperial Munitions Board for the construction of four general cargo freight steamships of 3,500 tons each for the British Government. The vessels, which will be built at the company's shipyard on the Niagara River, near Bridgeburg, Ont., will be 261 ft. long overall, 42½ ft. breadth moulded, and 23 ft. depth moulded, of steel construction throughout, to class 100 A1 British Lloyd's Register. They will be of the usual bulk cargo type, but with special features adapting them for use during the present war time conditions, being provided with appliances to protect them against submarine attacks, in addition to being arranged with a view to evade visibility and identification. The steel will be furnished by the British Government through the Cunard Steamship Co. and it is expected that a considerable tonnage of this steel will be available for delivery this year, enabling the builders to start operations immediately. The propelling machinery will be built at the company's Davenport works, Toronto. The main engine will be of the triple expansion type, the size being 20, 33, and 54 x 40 in. stroke and of the surface condensing type. The two boilers will be 14 ft. diameter and 12 ft. long, for a working pressure of 180 lb. They will be fitted, for economical working, with heated draft. The coal bunkers will be located under the bridge deck and in the wings of the boiler space and will hold over 500 tons. There will be three cargo holds; nos. 1 and 2 holds to have one cargo hatch each, and no. 3 hold, abaft the engine room, will have two cargo hatches. Each cargo hatch will be served by two independent cargo derrick booms, each of five tons capacity, and each boom will have its independent cargo winch. The steam steering engine will be located on the upper deck, in a special house abaft of the engine casing. The life saving equipment will include two 26 ft. life boats and one 18 ft. working boat. The water ballast tanks, 3 ft. deep amidships, will extend the entire length from the collision bulkhead forward to the peak tank aft. The accommodations throughout the ship will be steam heated and the lighting throughout will be by electricity.

**J. Coughlan & Sons, Vancouver, B.C.**—Work was resumed at these yards, Oct. 29, after having been suspended since Oct. 3, owing to a strike of employees. The men recommenced work on the understanding that the shop be made a closed one, and pending the reports of the United States Wage Adjustment Board, which is investigating the general situation in the shipyards along the U.S. Pacific coast Six steel steamships are on order at these yards for the Imperial Munitions Board, and it was anticipated that the first of them would have been launched in November.

**The Foundation Co., Victoria, B.C.**—Four of the five hulls under construction for the Imperial Munitions Board are reported to be in an advanced stage of construction.

Fraser Brace & Co., who, as mentioned in our last issue, have a contract from the Imperial Munitions Board for the construction of the hulls of four wooden steamships at Montreal, have acquired a site for a shipbuilding yard of approximately eight acres at Cote St. Paul, on the south side of the Lachine Canal. Keels for the first two vessels have been laid on the eastern bank of the slip, and these, when completed, will be launched in the usual manner. The other two keels will be laid in the bed of the slip, and when completed, the slip will be flooded from the canal, and thus, the erection of launching ways will be avoided. It is reported that an additional contract for four similar vessels is being negotiated. Machine shop, stores and office buildings are in course of erection, and it is expected to employ about 600 men on the present contract.

Fraser, Brace & Clark, Ltd., has been incorporated under the Dominion Companies Act, with \$500,000 authorized capital, and office at Montreal, to build, own and operate and deal in vessels of every description, and to carry on a general transportation business, also to build warehouses, wharves, docks, etc. As stated in our last issue, Fraser, Brace & Co. hold contracts from the Imperial Munitions Board for the construction of four wooden steamships, for which, it is reported the keels have been laid at the company's yard on the south bank of the Lachine Canal, between Atwater and Cote St. Paul bridges.

Grant & Horne, St. John, N.B., laid the keel of a wooden steamship for the Imperial Munitions Board, at their Courtenay Bay yard recently. It is of British Columbia fir, 250 ft. long.

The William Lyall Shipbuilding Co. expected to have the last of the keels of the six vessels which it is building at its North Vancouver yards, laid by the end of November. Construction work on four of the hulls is in an advanced state, but no date has been announced for the first launching.

The Victoria Machinery Depot, Victoria, has under contract from the Imperial Munitions Board, the construction of 12 boilers of the Howden water tube type for wooden steamships which the board is having built on the Pacific coast. It is expected that other similar orders will be placed shortly.

The s.s. War Dart was launched at the Port Arthur Shipbuilding Co.'s yards at Port Arthur, Ont., Nov. 3. It is expected that she will be completed and dispatched to the coast before navigation closes. She is the third vessel of this type launched by the company this year. Her dimensions are, length 261 ft., beam 43½ ft., depth 28 ft. 2 ins., with a gross tonnage of 2,406 tons and deadweight carrying capacity of 4,280.

The s.s. War Honour was launched at the Detroit Shipbuilding Co.'s yards at Wyandotte, Mich., Nov. 3. This is one of the series of vessels ordered for British interests, and which has since been taken over by the United States Shipping Board. Like other vessels built at lake shipyards, it is of full Welland Canal size, with a carrying capacity of about 3,000 tons. It was expected that she would be

complete and ready for sea about the end of November.

Ships' Carpenters engaged on wooden steamships for the Imperial Munitions Board, at the Cameron-Genoa mills and the Foundation Co.'s yards at Victoria, B.C., threatened to strike work toward the end of November unless they were granted an increase of 33 1-3% in their pay. The rate is \$4.50 a day and they want \$6. It was reported that the Imperial Munitions Board, which controls the rate of wages, had offered \$5 a day but was not disposed to grant the full increase asked, which it considered out of all proportion to the class of labor employed, a large part of which is unskilled.

The installation of the engines and equipment in the wooden hulls of the steamships being built in British Columbia for the Imperial Munitions Board, will be carried out in a large shed which is being built on pier 2 at Victoria. As announced in our last issue, the contract for building the shed has been awarded to Grant, Smith & Macdonnell, Ltd. The building will be 703 ft. long by 200 ft. wide, and the walls will be 22 ft. high under the eaves and 29 ft. at the ridge, with a 16 ft. clearance inside. It is stated that the shed will have the greatest floor space of any shed on the Pacific coast. The building will be entirely of wood, over 2,000,000 ft. of lumber being required for its erection. A most elaborate arrangement of hydrants and standpipes protection. Each 18 ft. section of the walls will form a sliding door, for easy will be installed to ensure efficient fire access to all parts of the building. The plans show a depressed railway track running from the shore end right through the centre of the shed, and surface tracks on the outside of the building at each side. Sufficient skylights and windows will be provided to supply adequate light during the daytime, and large electric lamps will be provided for night work. The most modern system of ventilation will be installed. It is expected that the building will be completed during, or by the end of January, and as each hull is launched, she will be brought round to the shed for her equipment. H. A. Bayfield, formerly Superintendent of Dredges for the Dominion Government on the Pacific coast, has been appointed in charge of the assembling of the equipment at the shed.

### GENERAL SHIPBUILDING NOTES.

The Anglo-Newfoundland Development Co. is reported to be building two 350 ton sailing ships equipped with auxiliary power, at Botwood, Nfld.

Cameron-Genoa Mills Shipbuilders Ltd. —It is reported that negotiations are in progress with French interests, through H. W. Brown, General Manager, Canada West Coast Navigation Co., for the construction by this company, of six auxiliary powered schooners of the same type as those built recently for the Canada West Coast Navigation Co., and four wooden steamships, similar to those being built on the Pacific coast for the Imperial Munitions Board. Plans are said to have been prepared for laying out



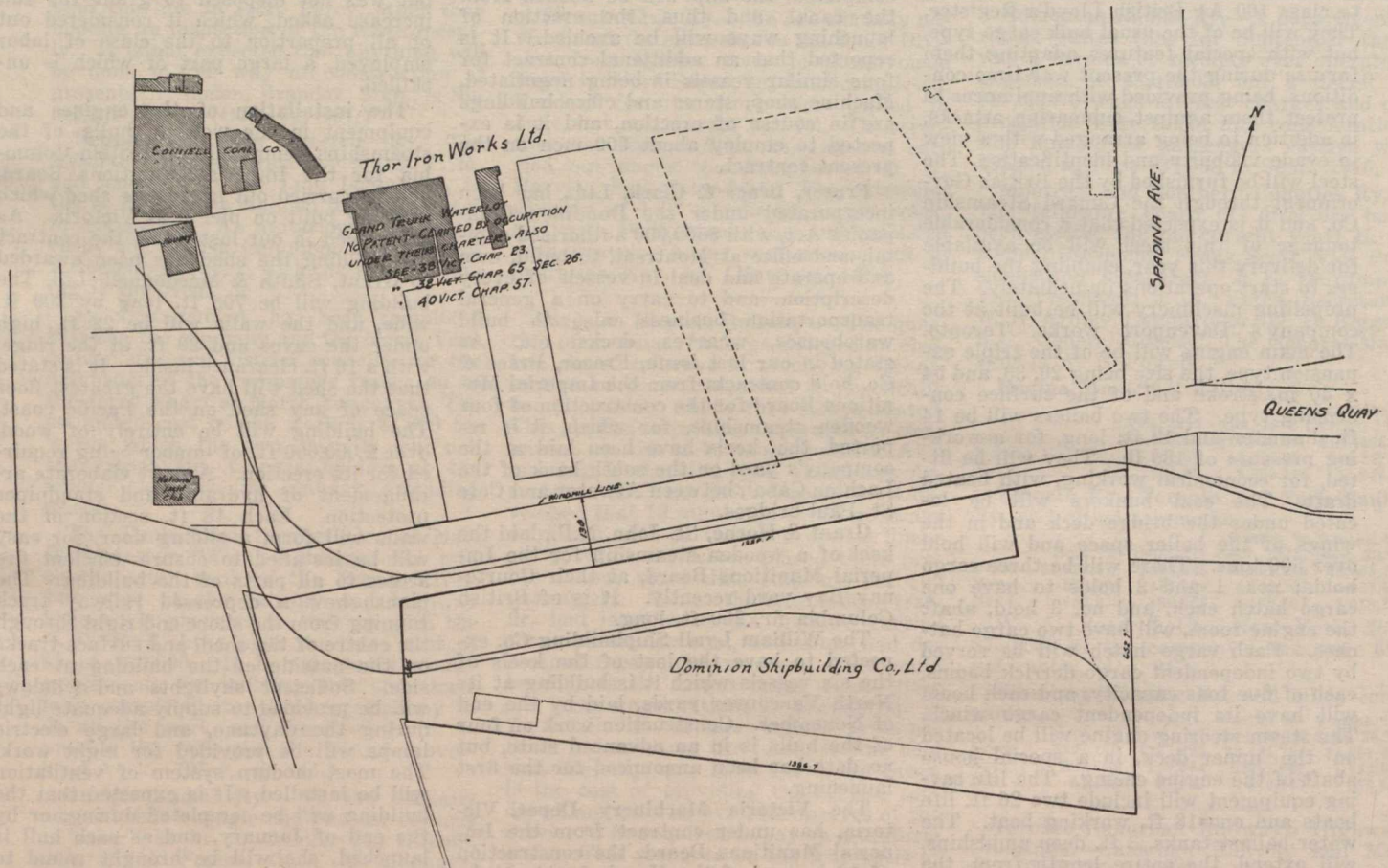
three additional building slips at the company's yards near Victoria, B.C.

Canada West Coast Navigation Co.'s last vessel of the schooner type, with auxiliary power, to be built at Victoria, B.C., by Cameron-Genoa Mills Shipbuilders, Ltd., was launched there, Nov. 23, and christened Beatrice Castle. She is reported to have been sold to U. S. interests, with which W. B. Castle, President, Zena Iron Works, Duluth, Minn., is closely concerned. It is reported that some difficulty is being experienced in obtaining delivery of Bolinder engines, and that one or two of the vessels launched recently have been dispatched on their voyages without auxiliary power. It is also stated that the engines for the vessel Joan Steedman are expected to arrive early in December, and that she is being held in port with the object of equipping her before she sails.

other purposes. The company's shipbuilding plant is to be laid out on a site to be provided by the Toronto Harbor Commission on reclaimed land situated due south of the Thor Iron Works' shipyard, near the foot of Bathurst St. This tract of land extends from the foot of Spadina Ave., westerly for 1,386 ft. and consists of 15.2 acres. The accompanying plan shows the position of the Thor shipyard, and also of the reclaimed tract of land. The Toronto Harbor Commission is carrying out the engineering work connected with the preparation of the site, and will also place the contracts for the construction and equipment of the plant, which will consist of five shipbuilding berths and the necessary shops. The company has orders for 11 steel steamships for undisclosed interests, and it is expected that the plant will be completed in the spring, ready for the employ-

some schooners at his yards shortly.

The International Shipbuilding Corporation, Ltd., Newcastle, N.B., incorporated recently under the Dominion Companies Act, with \$2,000,000 authorized capital, is building four-masted schooners of about 575 tons register, of the following dimensions: length of keel 155 ft., beam 37 ft., depth of hold 13 ft. The company is reported to be remodelling a lumber mill at Nordin N.B., on the Miramichi River, formerly owned by the Rosebank Lumber Co., and that machinery is being installed. We are advised that the company has closed no contracts for vessels, and is apparently building for the market for the time being. Among those principally interested are said to be A. E. McCurdy, Manager, Royal Bank; Jos. Ander, Manager of Canadian Gear Works, both of Newcastle; and F. MacNaught, Managing Director, Maritime Foundry &



Site of Dominion Shipbuilding Co.'s Ltd., Plant, Toronto Harbor.

J. Coughlan & Sons have deposited at the Public Works Department, Ottawa, Ont., a description of site and plans for a wharf and four launching ways, it is proposed to build on False Creek, Vancouver, B.C., in front of lots 1 to 8 inclusive, block 1, District Lot 200-A, Vancouver District.

The Davie Shipbuilding Co., Levis, Que. is reported to have received an order for six military barges, 130 ft. long, in addition to two already under construction there.

The Dominion Shipbuilding Co., Ltd., has been incorporated under the Ontario Companies Act, with \$1,000,000 authorized capital and office at 12 King St. East, Toronto, to carry on a general shipbuilding business, and in connection therewith to build and operate steam and other vessels, graving and other docks, wharves, engines, boilers, and all kinds of machinery, machine tools and plant, necessary for the construction of vessels and for

ment of 2,000 men. L. Dahlgren, who is connected with Thor Iron Works, Ltd., will be Vice President and General Manager, and A. C. McMaster, Secretary. Thor Iron Works, Ltd., will be continued as heretofore with L. Dahlgren, who has acquired about 70% of the stock, as President and General Manager. It is said that the principal interest in the company is held by Cristofer Hannevig Inc. of New York, and that the vessels said to have been ordered are for Norwegian interests.

The Foundation Co. is reported to have under consideration the building of six wooden steamships at its Victoria yards, for private interests. The company is also reported to have applied for a lease for two years of its present shipbuilding site, to become effective at the expiry of the present lease for a year, with the option of renewal month by month thereafter.

J. A. Gregory, Grand Bay, Nfld., will, it is reported, commence the building of

Machine Works, Chatham, N.B.

The Kent Shipbuilding Co., St. John, N.B., is reported to be interested in a proposal to establish a shipbuilding plant at Tufts Cove, near Dartmouth, N.S.

The McKeen Shipbuilding Co., St. John, N.B., is reported to be interested in a shipbuilding plant at Liverpool, N.S., where it is preparing to commence the construction of wooden sailing ships, and later to undertake vessels of a heavier type, including steamships.

Midland Shipbuilding Co., Ltd., Midland, Ont., has taken over the business of Midland Drydock Co., Ltd., there.

Montreal Shipbuilders, Ltd., has been incorporated under the Dominion Companies Act, with \$300,000 authorized capital and office at Montreal, to own, operate, build and repair ships and vessels of every description, also wharves, docks, grain elevators, and other shipping facilities, and to carry on a general shipbuilding business.



The Newfoundland Shipbuilding Co.'s shipbuilding plant under construction at Harbor Grace, Nfld., was inspected by a number of government officials and others toward the end of October. The plant covers a space 850 ft. square, and includes ship yards, offices and stores and foundries. There are berths for the construction of five vessels of about 1,100 tons

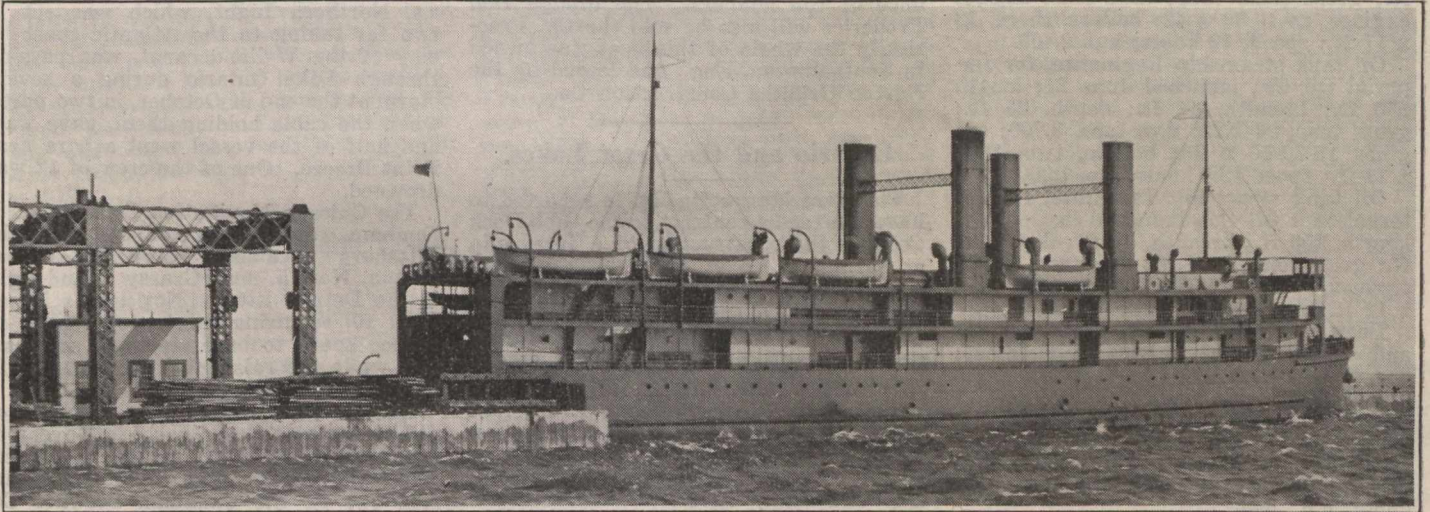
chiefly interested in the company.

D. Pelley, South West River, Nfld., launched a 200 ton schooner at his yards there recently, and intends laying the keels of two similar vessels during the winter.

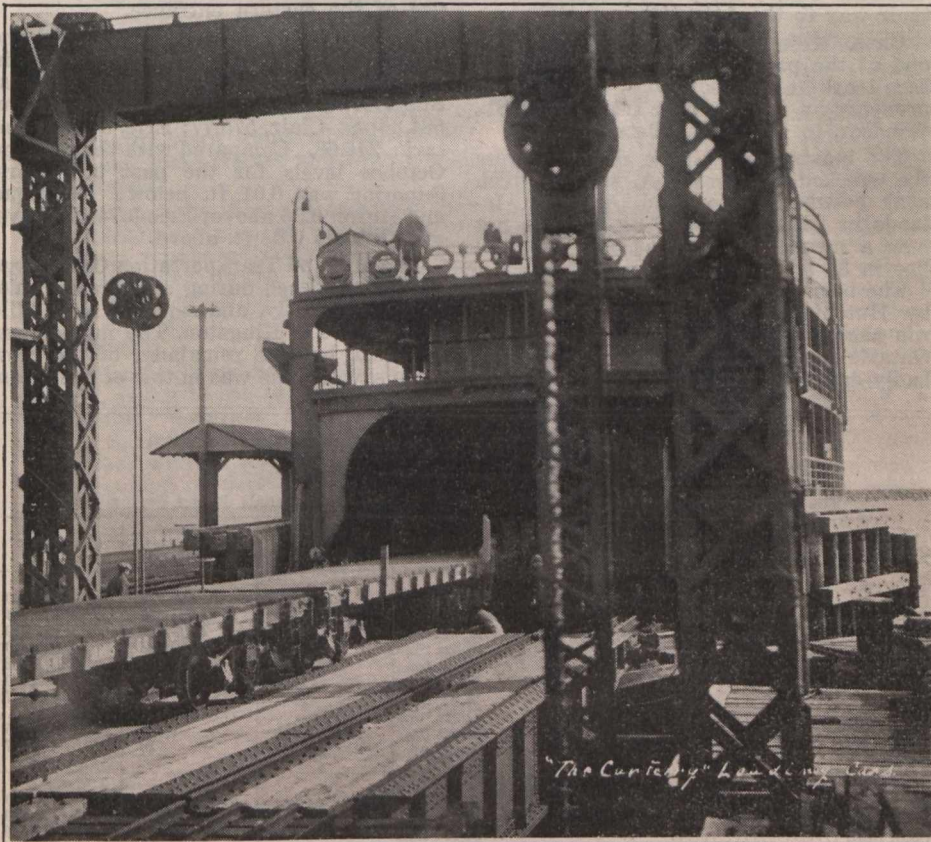
The Quebec Shipbuilding and Repair Co. launched a four masted, auxiliary powered schooner at its St. Laurent yards

The reinforced concrete steamship under construction for the Atlas Construction Co., was launched at the Montreal Dry Dock and Shipbuilding Co.'s yards at Montreal, during November. Some details of this vessel have been given in previous issues.

Rafuse Bros., Bridgewater, N.S., are reported to have purchased the shipbuild-



Car Ferry Steamship Prince Edward Island in her berth at Cape Tormentine, N.B.  
This vessel and its terminals were fully described in Canadian Railway and Marine World for November, pg. 447.



Loading cars on to Car Ferry Steamship, Prince Edward Island.

each, and the berths are so arranged that they can easily be altered so as to build steel vessels of about 5,000 tons capacity. It is hoped to have the construction and equipment of the yards so far advanced by the end of the year, that vessel building will be commenced in January, after which, it is hoped to turn out one vessel a month. Orders are on hand for thirteen auxiliary powered schooners of varying tonnage. C. Hannevig of New York is

on the Isle of Orleans, Que., recently. It is stated to be the first wooden ship to be built in Quebec, since 1893. The dimensions are, length over all, 223 ft., breadth 42 ft., depth of hold 20 ft.; approximate register tonnage 1,350 tons; dead weight capacity, about 2,100 tons. The vessel was christened M. P. Connolly, and was towed to the Louise dock, Quebec, where finishing touches were made. It has been built for private owners.

ing yard and premises at Shelburne, N.S., from the late Joseph McGill's estate.

T. C. Rice, Weymouth, N.S., is reported to have laid the keel of a large schooner.

The St. John Shipbuilding Co. is reported to be negotiating for a site for a shipyard, adjacent to the Grant and Horne yards on Courtenay Bay, St. John, N.B. Thomas Nagle is Manager.

D. H. Saker & Co., St. John, N.B., have laid the keel of the first of a series of four masted, auxiliary powered schooners. Their dimensions will be, length, keel, 165 ft., length over all 185 ft., breadth 40 ft., depth of hold 18 ft.; dead-weight capacity, about 1,000 tons.

Upper Gagetown, N.B.—It is reported that there is a possibility of shipbuilding being undertaken on the bank of the St. John River at Upper Gagetown, N.B., if the necessary site can be secured at a reasonable price, and that the laying out the yards will be done during the winter.

Vancouver, B.C. It is reported that a company having local and Winnipeg interests is negotiating with the Dominion Government for a lease of a site on the eastern extremity of Industrial Island, in Vancouver harbor, for the establishment of a shipbuilding plant. The capital stock of the company is stated to be \$500,000, and it is said that contracts are ready to be closed with French interests for at least five steamships of heavy tonnage.

The Clare Shipbuilding Co., Meteghan, N.S., launched a schooner of 350 register tons, 135 ft. long, early in November. The vessel was named Racewell, and it is reported that it has been sold to Newfoundland parties. The company is commencing operations on another similar vessel immediately.

The various steam and other vessels plying on Lake Winnipeg, were placed in their winter quarters during the early part of November, at Selkirk, with the exception of the Dominion Government steamship Bradbury, which was then on a trip in the Little Saskatchewan River with spawn for the fish hatcheries.



**Collingwood Shipbuilding Co's Launchings in 1917.**

Following are particulars of vessels launched by Collingwood Shipbuilding Co., Ltd., Collingwood, Ont., during 1917.

Cargo steamship Westmount, for Montreal Transportation Co., launched in May; length, 550 ft.; breadth, 58 ft.; depth, 31 ft.; gross tons, 7988; d.w. tons, 11,000; engines, 24-40-66 x 42; boilers, three, 13 x 11 ft.; speed, 12 knots; h.p. 2,400.

Oil tank steamship Reginolite, for Imperial Oil Co., launched June 21; length 250 ft.; breadth, 44 ft.; depth, 25 ft.; gross tons, 2,642.22; d.w. tons, 3,700; engines, 18-30-50 x 36; boilers, two, 13½ x 11 ft.; speed 10.5 knots; h.p. 1,200.

Oil tank steamship Talaralite, for International Oil Co., launched in October; length, 250 ft.; breadth, 44 ft.; depth, 25 ft.; gross tons, 2,642.22; d.w. tons, 3,700; engines, 18-30-50 x 36; boilers, two, 13½ x 11 ft.; speed 10.5 knots; h.p. 1,200.

Deep sea trawlers, T.R. 7, 8, 9, 10, 11 and 12, for Naval Service Department; nos. 7 and 8, launched in September, no. 9 in October, no. 10 in November, nos. 11 and 12 in December; length, 125 ft.; breadth, 23½ ft.; depth, 13½ ft. gross tons, 288; engines, 12¼-21½-35 x 24, boiler, one, 13½ x 10½ ft.; speed, 10 knots, h.p., 500.

The above shows nine launchings, the gross tonnage being 15,000.44 and the total horse power 7,800.

**Maritime Provinces and Newfoundland.**

Losses of sailing vessels in the Newfoundland trade through storms, German raiders and submarines since the war started have been more than made up by building within the colony and purchase abroad. The Newfoundland sailing fleet now numbers 125 vessels, and 17 more are on the stocks, the total of 142 making the largest locally owned fleet in a generation. This is exclusive of boats used only in the island trade.

The s.s. Norse I. owned by C. Hannevig, New York, and of the Newfoundland Shipbuilding Co., Harbor Grace, Nfld., was wrecked on the Newfoundland coast in October, and was reported a total loss. She was built at Wedgeport this year and was a small vessel with a crew of ten, all of whom were saved. She was carrying equipment for use in the shipbuilding yards at Harbor Grace, all of which was lost.

The Boston and Yarmouth Steamship Co.'s s.s. Prince Arthur, running between Yarmouth, N.S., and Boston, Mass., has been requisitioned by the Admiralty. It is stated that the s.s. North Star will be operated on the route in her place. The s.s. Prince Arthur was built in Hull, Eng., in 1898, her dimensions being, length 290 ft.; breadth 38 ft.; depth 16.5 ft.; tonnage, 2,188 gross, 913 register, and she is screw driven by engine of 716 n.h.p.

Eastern Steamship Lines' s.s. Governor Cobb has been placed on the Boston-St. John route, instead of the s.s. Governor Dingley, which has been transferred to the Boston-Portland route. The service of three trips a week on the Boston-St. John route is being maintained by the steamships Calvin Austin and Governor Cobb, but the latter vessel will probably be transferred shortly to the Key West-Havana route.

Sales continue to be made of the various units of the dredging fleet which was

used by the Norton Griffiths Construction Co. in its operations in Courtenay Bay, St. John, N.B., under a Dominion Government contract. One of the self propelling hoppers, no. 47, was sold recently to Foley Bros., Welch, Stewart and Fauquier, for \$50,000, for use in port development work at Halifax, N.S.; and it is stated that negotiations are proceeding with a U. S. firm for the sale of the balance of the hoppers. The dredge Don Frederico will also be sold shortly. Practically the whole of this fleet was owned in Southampton, Eng., and leased by the Norton Griffiths Construction Co.

**Ontario and the Great Lakes.**

The Pere Marquette Ry. is reported to have awarded a contract to the Gibb Dock Co., for the construction of a ferry slip at Sarnia.

The Collingwood Steamship Co., which operated its s.s. City of Meaford between Collingwood and Sault Ste. Marie, during the year, will probably place a second steamship on the route in 1918.

The Public Works Department received tenders to Nov. 26, for the construction of a temporary pile protection breakwater in the Port Arthur District of Thunder Bay and Rainy River.

Four small boats, known as submarine chasers, and a trawler, all built at northern lake ports, passed through the Welland Canal, early in November, on their way to the Atlantic.

Chas. Millar, K.C., Toronto, who was one of the promoters of the Kenilworth race track at Windsor, Ont., is said to be promoting a ferry service from Brock St., Windsor, to Brush St., Detroit.

The masts having been removed from the wrecked s.s. George A. Marsh, which sank between Pigeon and Amherst Islands in Lake Ontario, Aug. 8, it is not now a menace to navigation. The hull lies in 85 ft. of water.

The barge Abyssinia, 2,037 tons, owned by Hutchinson & Co., Cleveland, Ohio, ran ashore on the Tecumseh reef on the Ontario shore of Lake Erie, recently, was badly damaged, and abandoned as a total

loss. She carried a cargo of 15,000 bush. of wheat, and was valued at about \$200,000. No insurance was carried.

The Montreal Transportation Co.'s barge Ungava is reported to have been sold to French interests. She was built at Collingwood in 1906, her dimensions being: length 200 ft., breadth 41 ft., depth 17 ft.; tonnage, 1,226 net tons.

The Great Lakes Transit Corporation's s.s. Northern Light, which was cut in two for taking to the Atlantic coast by way of the Welland canal, was passing through Lake Ontario during a severe storm at the end of October, in two parts, when the cable holding them, gave way, and half of the vessel went ashore near Point Breeze. One of the crew of 12 was drowned.

The Chicago Navigation Co.'s s.s. J. S. Dunham was sunk in collision with the Pittsburg Steamship Co.'s s.s. Robert Fulton, Nov. 5, near Grassy Island light in the Detroit River. Notice was issued Nov. 10, requiring master of vessels to reduce speed to bare steerway, in passing, while the raising of the vessel is in progress.

The western entrance to the harbor at Toronto was closed early in November for the balance of the season, in connection with the dredging work being carried out by the Canadian Stewart Co. Traffic has to enter the harbor by the eastern entrance, and the western entrance will only be open for use on such days as weather conditions prevent the use of the eastern entrance.

The U. S. Lake Survey reports the levels of the Great Lakes for October, in feet above mean sea level, as follows: Superior, 602.67; Michigan and Huron, 581.36; St. Clair, 575.77; Erie, 572.81; Ontario, 246.68. Compared with the average October levels for the past ten years, Superior was 0.01 ft. below; Michigan and Huron 0.96 above; Erie 0.74 ft. above, and Ontario 0.88 ft. above.

The Midland Transportation Co.'s barge Aloha foundered during a storm on Lake Ontario recently, and sank off Nine Mile Point, west of Kingston. The master was drowned, but the remainder of the crew were saved. She was in tow of the steam

**Sault Ste. Marie Canals Traffic.**

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

ARTICLES	CANADIAN CANAL	U. S. CANAL	TOTAL
Flour ..... Eastbound ..... Barrels	514,020	690,920	1,204,940
Wheat ..... Bushels	9,933,784	24,781,060	34,714,844
Grain ..... Bushels	1,318,030	2,773,359	4,091,389
Copper ..... Short tons	42	10,428	10,470
Iron ore ..... Short tons	1,085,489	7,046,799	8,132,288
Pig iron ..... Short tons		2,500	2,500
Lumber ..... M. ft. b.m.	233	47,214	47,447
Stone ..... Short tons			
General merchandise ..... Short tons	5,831	32,825	38,155
Passengers ..... Number	304	13	317
Flour ..... Westbound ..... Barrels	10		10
Grain ..... Bushels		3,960	3,960
Coal, hard ..... Short tons	22,500	335,139	357,639
Coal, soft ..... Short tons	117,700	2,469,149	2,586,849
Iron ore ..... Short tons		1,013	1,013
Manufactured iron ..... Short tons		13,501	13,501
Salt ..... Barrels	8,729	67,167	75,896
Oil ..... Short tons			
Stone ..... Short tons			
General merchandise ..... Short tons	39,764	113,669	153,433
Passengers ..... Number	271		271
SUMMARY			
Vessel passages ..... Number	647	2,500	3,147
Registered tonnage ..... Net	1,366,223	7,616,659	8,758,400
Freight—Eastbound ..... Short tons	1,471,320	8,050,924	9,522,244
—Westbound ..... Short tons	181,212	2,942,610	3,123,822
Total freight ..... Short tons	1,652,532	10,993,534	12,646,066



tug C. W. Chamberlain, owned by the same company, with a cargo of coal from Erie, Pa. She was built at Mount Clemens, Mich., in 1888, her dimensions being, length 171.2 ft., breadth 32 ft., depth 12 ft.; tonnage, 517 register.

The wrecked s.s. Charles S. Price, which was lost in the great storm on Lake Huron, Nov. 9, 1913, is reported to have been sold by the underwriters to un-stated Canadian parties, for \$30,000, to be taken as she lies. The vessel was owned by the Mahoning Steamship Co., Cleveland, Ohio, and was discovered after the storm subsided, floating bottom upward. She subsequently sank, and several attempts were made to save her, but all were abandoned, the last being by the Great Lakes Towing and Wrecking Co., in 1916.

### British Columbia and Pacific Coast.

The British Yukon Navigation Co.'s s.s. Nasutlin left Dawson for White Horse, Oct. 21, thus closing navigation for the winter on the Yukon River.

The North Vancouver City Council is petitioning the Dominion Government to undertake immediately, the construction of a dry dock on the north shore of Burrard Inlet, as a government work.

The s.s. British Columbia, which sank at her moorings at Vancouver, Aug. 24, was raised Oct. 29, after two months work, and taken to the New England Fish Co.'s dock, where she was pumped out.

The C.P.R. s.s. Princess Mary was hauled out on the ways at Victoria, during November, and overhauled and repaired, after her collision with the s.s. Henriette. Some plates were replaced and others faired, and some frames and beams were straightened.

The steamships Santa Maria and Selma, which, as stated in our last issue, have been purchased from All Red Line Ltd., Vancouver, by the Union Steamship Co. of British Columbia, have had their names changed to Chilco and Chasina, respectively.

The Pacific Steamship Co. has announced that, owing to the requisitioning of its steamships Governor and President, by the U. S. Government for Hawaiian service, the winter service between San Francisco and British Columbia ports will be given by the steamships Admiral Schley and Queen.

The s.s. Quadra, which was owned formerly by the Dominion Government and operated along the Pacific coast as a lighthouse tender, is now running between Britannia Beach and Tacoma, with Capt. M. Carter as master. The Quadra was sunk in collision with the s.s. Charmer at the entrance to Nanaimo harbor, and was sold where she sank. She has been thoroughly overhauled and refitted for the ore trade.

The Grand Trunk Pacific Coast Steamship Co. has purchased the steam tug Lorne, from Alex. McDermott of Victoria. The vessel has been lying idle in Eagle Harbor for over three years. It was owned by the Puget Sound Tug Boat Co., and was wrecked in Sept., 1914, while on the way from Seattle, Wash., to Vancouver, towing the coal barge America. The hull was considerably damaged, and is being repaired, the machinery being intact.

Pacific Coast Coal Mines, Ltd., has built an extension wharf at Boat Harbor, Vancouver Island. It lies in the same direc-

tion as the older wharf and is separated from it by about 62 ft. It is 392 x 48 ft., the north side being protected by dolphins and the south side is equipped with a travelling chute connected with a conveyor with movable tripper. There is a depth of 33 ft. of water at low tide at the outer end of the extension, and 30 ft. on the south side.

The auxiliary powered schooners Esquimalt and Mabel Brown, built recently at Victoria and North Vancouver respectively, for Canada West Coast Navigation Co., are reported to have been sold to French interests and transferred to France. The Esquimalt was the third vessel of this type built by Cameron-Genoa Mills Shipbuilders Ltd., and completed her maiden voyage to Australia with lumber recently. The Mabel Brown was the first of this type, and was built at Wallace Shipyards, North Vancouver. She has also been to Australia with lumber.

Yarrows Ltd., Esquimalt, are reported to have received an order for another stern wheel steamboat for use in shallow waters in Asia. The company has already received orders for four of these vessels, two of which have been delivered, the other two being now under way. The hulls only are built are Esquimalt, and shipped in knockdown shape. The machinery is supplied by the parent concern in Glasgow, Scotland, and shipped direct. The latest vessel, it is stated, is to be used as an oil carrier, and will be 185 ft. long by 37 ft. beam.

The Empress of Ireland-Storstad Collision.—The appeal of the C.P.R. as owner of the s.s. Empress of Ireland, which was sunk by the s.s. Storstad, in the St. Lawrence, near Father Point, May 29, 1914, is before the Supreme Court of Canada. The Admiralty Court judgment was to the effect that as the accident occurred in Canadian waters, the amount realized by the sale of the s.s. Storstad should be divided pro rata amongst those who claim for loss of life. On behalf of the C.P.R., it is contended that the accident occurred beyond the three mile limit, in open sea, and therefore the distribution must be pro rata amongst all claimants, as provided under the British Merchant Shipping Act, and that if that point is not upheld, the fact that the s.s. Empress of Ireland was registered in Great Britain, would bring her under that act.

Food Saving on Steamships.—Representatives of 33 of the most important steamship lines, members of the American Steamship Association, have pledged themselves to assist the U.S. Food Administration in every way in the conservation of food. At a recent conference in New York resolutions were passed promising their co-operation and appointing committees to assist in prosecuting a vigorous campaign of saving and substitution. The steamship lines represented at the conference purchase an aggregate of \$100,000,000 worth of food supplies each year.

The demand for shipping may be illustrated by the particulars of a recent transaction on the Atlantic coast. A sailing vessel, five years old, which originally cost \$30,000, was purchased for \$50,000 and chartered to carry 10,000 quintals of fish to the Mediterranean. The insurance on the vessel was 25%, and on the cargo 15%, and yet the vessel's freight on the outward voyage will pay for her and leave a profit of \$5,000.

### Common Sense About Concrete Ships.

Thanks to widespread publicity, there is today a great deal of talk about the concrete ship, despite the fact that the rosy expectations are pretty far ahead of present knowledge. One highly experimental ship of large tonnage is on the ways at San Francisco, a small, motor driven vessel is being built at Montreal, and several small ships have been built in Scandinavian countries. These represent the efforts of thoughtful engineers and business men to solve the tremendous problem of adapting concrete to the wracking and sudden strains of a ship at sea. Quite soon they and the committees appointed to investigate the question will be able to report the progress, or the hopelessness, as the case may be, of the concrete ship. Until then the future will be veiled behind theory and experiment. For some time, however, there must be an orderly development in the size of ships experimented upon. There is no more relation between a concrete rowboat or launch and the 3,000 ton, 15 knot freighter demanded in the present shipping crisis than there is between a toy airplane and a giant Caproni. Step by step up through the scow, the barge and the small framed and formed hull must progress be made to the hoped-for large vessel for ocean travel. This is the normal course of all engineering design. On account of these necessary intermediate steps, it seems as though there is at the present time a bigger field of practical work in the concrete barge for coastwise, river or canal trade. Here the gap between present knowledge and desired results is not so great and the possibility of immediate use is much nearer. If improved design and construction make such vessels seaworthy and permanent, as many of the early ones were not, some of the most serious problems of the big ship will be solved and at the same time some very necessary bottoms supplied.—Engineering News-Record.

The Military Service Act and Vessel Employees.—The carrying out of the Military Service Act, is interfering to some extent with the manning of vessels, especially in the coastwise trade. So far as vessels on the Great Lakes are concerned, any effect it may have will not be felt until the reopening of navigation, and in the meantime the tribunals are exercising their discretion in granting short exemptions so that a minimum of inconvenience will be caused. Instructions have been issued by the government that eligible men belonging to class 1, and medically classified as A2, must not be permitted to sign ships' articles. This applies to all men who had attained the age of 20 on Oct. 12, and who were born after Jan. 1, 1883, and who are unmarried, or widowers without children.

Amy Turner Shipping Co., Ltd., has been incorporated under the British Columbia Companies Act, with \$60,000 authorized capital and office at Victoria, to acquire and operate the sailing ship Amy Turner, formerly owned by the Coastwise Steamship and Barge Co., together with all contracts and charters relating thereto, and with power to own and operate steam and other vessels of every description, and to carry on a general transportation business. The bark Amy Turner was built at Boston, Mass., in 1877, her dimensions being, length 174 ft., breadth 35.4 ft., depth 21.6 ft.; register tonnage 901.



## United States Government Shipbuilding Etc.

The Emergency Fleet Corporation is reported to have placed a contract for thirty-six 3,500 ton ocean-going steamships with the American Shipbuilding Co. instead of with Robert Dollar. The construction of these boats will require about 1,165 tons of steel, or a total of near 42,000 tons of plates and shapes. They will be 261 ft. long and 42 ft. beam. The contract price is reported to be \$700,000 for each ship, or a total of \$25,200,000. Construction will be on the Great Lakes and deliveries will be made next July or August.

The U.S. Shipping Board has approved the building of twenty 4,000 ton "non-sinkable" ships by the French Government in the U. S. By so doing it has waived the rule that no foreign construction should be permitted at this time. The "non-sinkable" ship, developed by French experts, is said to have withstood torpedo attack in a test in which four shots were fired into the hull, and the only effect was to destroy the cargo immediately surrounding the point of attack.

The U. S. Shipping Board has agreed to charter to the Italian Government approximately 25 commandeered steel ships of an aggregate of 100,000 deadweight tons, to relieve Italy's shortage of shipping to transport urgently needed supplies. Great Britain has been supplying France and Italy with shipping to meet its emergency needs, but cannot continue to do so in view of increasing British shipping requirements.

A New York press report that an order had been given the Dominion Bridge Co., Montreal, for 50,000 tons of steel for use in building U. S. vessels has been confirmed by one of the company's officials, who is reported to have said: "The contract has been signed and prices are in every way satisfactory. Work on this contract will not keep the entire capacity of the Toronto and Montreal plants busy for ten months, as stated in the report from New York, although the plants will be kept busy for several months. Work on this order will in no way interfere with the contracts awarded recently and furthermore, the company is in a position to handle any new orders which are likely to be offering in the near future."

A readjustment of the organization of the Emergency Fleet Corporation went into effect on Nov. 12 by which several civilian engineers were given supervision of certain details of the federal shipbuilding construction programme. Charles Piez, President of the Ling-Belt Co., Chicago, has been appointed a vice president of the corporation, in charge of the actual construction of the new vessels. J. Heyworth, a Chicago contractor, has been placed in control of the wooden ship construction, and Chas. Day, of Day & Zimmerman, of Philadelphia, has gone to London to study the fabricated ship work in England and to apply the experience there to our problems. A. J. Meson, another Chicago engineer, has been detailed to field supervision of the various yards under the corporation's direction. A naval architect, Frank Kirby, of Detroit, has also joined the personnel.

A U.S. Shipping Board official is quoted as stating recently that, exclusive of about 2,500,000 tons of shipping under foreign contract which was commandeered on the stocks by the board and which will begin to come from the ways in ever-increasing numbers early in 1918, the contracts actually let, with the pro-

viso that the vessels shall be completed by Dec. 31, 1918, are as follows: Fifty-eight composite ships of 207,000 tons; 345 steel ships of 2,665,400 tons; 778 wooden ships of 1,330,900 tons. The total of new ships contracted for to be delivered by Jan. 1, 1919, is 4,203,300 tons. The 4,203,000 tons of new shipping actually contracted for and the 2,500,000 tons commandeered and now being rushed to completion, gives a grand total of 6,703,300 tons which will be assured before Jan. 1, 1919, if all interests co-operate in a patriotic endeavor to defeat Germany's most dangerous weapon, the submarine.

The U. S. Shipping Board has decided that from the ships completed or about to be completed in U. S. yards, that have been commandeered by the government 10 will be turned over to the French Government, for the transportation of supplies to France and that 10 additional ships outside of those under construction in U.S. yards will also be allotted to France for the same purpose. In selecting the 20 preference will be given to ships originally contracted for on the Great Lakes by French interests and by the Cunard Co.

The U.S. Shipping Board has instructed its Director of Operations to take charge on its behalf of all ships building for foreign account in U.S. yards, which were subject to commandeering order of the Fleet Corporation of Aug. 3, 1917 (except those heretofore ordered surrendered to their owners), as fast as the same are completed, and proceed to operate them on behalf of the Shipping Board, and that the same instructions be given as to all ships building for U.S. owners who decline to accept their ships on the terms offered by the Fleet Corporation and the board.

Chairman Hurley, of the U.S. Shipping Board, announced recently that work on the wooden ship programme is progressing as rapidly as possible. In an effort to develop and bring into action all the resources of the steel shipbuilding yards so as to get all the ships that will be available in the shortest possible time, the members of the Atlantic Coast Steel Shipbuilders' Association met in Washington recently to discuss a plan of action. The outstanding fact of the conference is that of co-operation on a plan for the early completion of ships which at the present time are so greatly needed. In addressing the meeting Mr. Hurley said: "This meeting has been called for the single purpose of establishing a new goal for our expectations. Between now and March 1 this country will turn out approximately 1,000,000 tons of ships, deadweight. In the whole of 1916 we turned out a little over 750,000. Thus we will achieve in four months far more than we achieved previously in twelve months. Conservatively stated, we have quadrupled our output. The new goal of our expectations is 10 times the production of 1916. Owing to the situation in Italy, Mr. Hurley announced, preference will be given the Italian Government in regard to relief ships and the work will be pushed in order that it may have them as soon as possible.

The s.s. Bellechasse has replaced the s.s. Champlain on the ferry service between Murray Bay and Riviere Ouelle, the latter being laid up at Quebec for overhaul and repair.

## Wreck Commissioner's Investigations and Judgements.

### Sinking of s.s. Albert Y. Gowen.

Investigation at Quebec, Oct. 26, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. F. Nash and C. Lapierre, as nautical assessors, into sinking of U.S. s.s. Albert Y. Gowen, while moored in the Louise Basin, Quebec, Aug. 28. The court found that the master, Eugene Fortin, was in default for gross negligence in supervision of property entrusted to his care, and suspended his certificate for six months from Oct. 31. The chief cause of the sinking appeared to be that the starboard shoulder, or bow, of the vessel, caught underneath one of the longitudinal or horizontal timbers extending from the face of the wharf with the rising tide, thus causing her to list until the water entered through the ports into the hold. The master did not remain on board himself, or provide proper watchmen, as he should have done.

### Tunisie-Cabotia Collision.

Investigation held at Montreal, Oct. 30, into collision between Belgian relief ship Tunisie and Canada Shipping Co.'s s.s. Cabotia, near Windmill Point, Montreal, Oct. 28. Capt. L. A. Demers, Dominion Wreck Commissioner presided, and was assisted by Capt. F. Nash and C. Lapierre as nautical assessors. The court exonerated the master and officers of the s.s. Tunisie from all blame for the casualty, they having complied with the rules and regulations governing the case. The court considered the master of the s.s. Cabotia, Robert Laing, was needlessly daring and showed bad judgment and recklessness. He also violated the Port of Montreal bylaws in obstructing navigation. It therefore suspended his certificate for six months from Nov. 10.

**Turning Vessels at Fort William.**—An order in council has been passed cancelling sec. 15 and sec 15a of the regulations governing Fort William, Ont., harbor, and substituting the following sec. 15: "Any steam vessel not exceeding 200 tons gross, or in the case of a package freighter, not exceeding 275 ft. in length, may turn in any part of the Kaministikwia River, under her own power; any vessel exceeding 200 tons gross, but not exceeding 260 ft. in length, or in the case of a package freighter not exceeding 330 ft. in length, may be turned with a tug in that section of the river lying between the bend above C.P.R. elevator D, and the westerly limit of the Grand Trunk Pacific Ry. wharf, and may also turn in that section of the river between C.P.R. slip 1 and elevator C, but in the latter place turning must not take place without the use of a tug, unless sanctioned by the harbor master. All other vessels must turn in the turning basin at the head of the McKellar channel."

**Newfoundland's Shipping Increases.**—The shipping losses sustained by Newfoundland through storms and the effects of war, including raiders, submarines and mines, have been more than made up by building within the colony, and purchases abroad. It is estimated that the colony has sufficient capacity of sailing vessels to take the entire catch of cod to foreign markets in native bottoms. This is exclusive of sailing vessels engaged in purely local trade.

The Plunkett Navigation Co., Ltd., has changed its head office from Cobourg, Ont., to 118 Board of Trade Bldg., Montreal.



### Regulations Respecting Vessels' Lights.

An order in council has been passed adding paragraph 22A to the Defence of Canada Order, 1917, as follows:

The masters of all vessels shall comply with the following orders regarding ships' lights—

1. Anchor lights.—No electrically lit lanterns shall be employed by any vessel as anchor lights. The normal brilliancy of all other anchor lanterns shall be reduced by 50%.

2. Bow and steaming lights.—Vessels shall not use electrically lit lanterns as bow or steaming lights in the vicinity of any harbor.

3. Other lights.—No lights visible from outboard, either afloat, on deck or below, except those required by the Regulations for the Prevention of Collisions at Sea, and such as may be necessary for authorizing signalling purposes, shall be used on any vessel. This shall apply to all vessels whether under way or at anchor.

4. The above orders shall apply to all vessels of every description, other than H.M. ships, within the waters of the east coast of Canada and extending up the St. Lawrence as far as the port of Quebec.

5. Vessels carrying volatile oil, or spirits in bulk, shall exhibit, in lieu of oil lamps, electrically lit lanterns, not exceeding in brilliancy 50% of the brilliancy of the normal oil lamps.

### British Government Control of Shipping.

From the commencement of the war the British Government has steadily been requisitioning vessels of all classes, and operating them in the national interest. The rate paid to the owners soon became very much lower than the freights earned by free ships, and British shipowners, therefore, were unable to rely on earning the same freights as their competitors. It therefore became necessary recently for the government to take complete control of all British shipping in order to ensure the employment of every vessel in the manner and on the terms as to rate of freight, most consistent with the national interests.

With the exception of a few vessels engaged in distant waters on work of importance for British Dominions, and of vessels chartered to France and Italy, the British Government has requisitioned for hire at government rates, about 97% of the ocean going tramp steamships on the register of the United Kingdom. All British liners have been requisitioned and are being operated on government account, the owners receiving hire at government rates, and the profits derived from private freight carried at market rates go to the government and not to the shipowners. Every ocean going voyage of British steamships is directed by the government, which has regard only to the question of how to obtain essential imports from the nearest source, and disregards both the interests of the shipowner and the exporter. Many trades built up in distant waters and sustained by British industry, have had to be abandoned to neutral owners, who have gladly sought employment for their vessels in waters immune from war risk.

The coasting traffic of the United Kingdom has been under review for the purpose of withdrawing vessels which can be used for ocean going service, and of bringing about a limitation of rates wher-

ever possible. Vessel owners have placed all their organizations and resources at the government's disposal for running the requisitioned vessels, and have also agreed to pool their organizations, thus necessitating the closest co-operation between what may have been competitive interests before the war.

It should also be borne in mind that the officers and crews of merchant vessels have run, and are running extraordinary risks in the operation of their vessels. The areas round the British Isles have been singled out by the enemy for special attacks, but officers and crews have not made any difficulty about taking their vessels through the most dangerous routes.

Of necessity, British imports have been severely curtailed. Prior to the war the British imports averaged about 58,000,000 tons a year; in 1916 they fell to about 43,000,000 tons, and in 1917 they will be considerably less. Of the amount imported before the war, rather less than 25% consisted of food stuffs, while in 1916 nearly 70% of the imports consisted of food stuffs and munitions, the balance in each case being of an industry productive nature. In 1913 the British imports were valued at £769,000,000, of which about £94,000,000 were from countries with which we are now at war. In 1916, the imports were valued at £949,000,000, enemy countries of course now being eliminated. In 1913, the United Kingdom exported goods to the value of £525,000,000, and in 1916, £506,000,000, but, it is stated, that if the 1916 exports were valued on the same basis as those of 1913, the amount would be only £386,000,000.

### Mainly About Marine People.

John Laxton has been re-appointed a member of the Toronto Harbor Commission for three years.

Capt. B. F. Hayes, R.N.R., commander of the White Star s.s. Olympic, has been created a Companion of the Order of St. Michael and St. George.

H. C. DeWolf, formerly with the Furness Steamship Lines, Halifax, N.S., has been appointed chief election clerk for the ensuing Dominion elections.

A. R. Tibbits, technical officer, St. Lawrence ship channel staff, is stated in an Ottawa press dispatch as about to be appointed Assistant Deputy Minister of Marine.

J. M. Pouliot, Secretary, Gaspé and Baie des Chaleurs Steamship Co., Quebec, Que., was drowned there Oct. 30, when he fell from the gangway running from the company's s.s. Gaspésien to the wharf.

John A. Westaway, who died at Amherstburg, Ont., Nov. 11, aged 80, was for about 40 years, Superintendent of Car Ferries at Windsor, Ont., for the G.T.R. and its predecessor the Great Western Ry.

Capt. J. J. Murchison, heretofore master of the car ferry steamship Prince Edward Island, has been appointed dock master and port superintendent at Port Borden, the Prince Edward Island terminal of the car ferry service.

Capt. Wm. McNeill, whose death at Glasgow, Scotland, was Nov. 21, was master of the Anchor-Donaldson Line s.s. Letitia. He had been master of various vessels owned by the Donaldson Line for about 24 years, and was well known at Canadian Atlantic ports.

Capt. John L. Read, who took the Canadian icebreaking steamships J. D. Hazen and Minto to Russia, after they were pur-

chased by the Russian Government, has been appointed to the car ferry Prince Edward Island, operating between Cape Tormentine, N.B., and Port Borden, P. E. I.

W. J. Stephens, a well known shipbuilder on the Pacific coast, has been appointed a Lloyd's surveyor for the port of Victoria, B.C. He has charge of the surveying of the nine wooden steamships under construction at the two yards at Victoria, and of any other vessels building there, which may seek Lloyd's registry.

J. French, of New York, Chief Surveyor for Lloyd's Register, for Canada and the United States, accompanied by H. A. Ruck-Kenne, M.I.C.E., Assistant to the Chief Engineer, Lloyd's Register, London, Eng., made a tour of the various shipbuilding yards in British Columbia recently.

Hon. J. D. Hazen, K.C., Minister of Marine and Fisheries, who retired from that position on the formation of the Union Government recently, has been appointed Chief Justice of the Appeal Division of the Supreme Court of New Brunswick, and Judge of the Chancery Division of that court and of the Admiralty Court.

Capt. G. C. McKeen, who died at Vancouver, B.C., Nov. 12, had been associated with the scow coasting trade for about 30 years, as a partner of McKeen and Wilson. He was a native of Cape Breton, N.S., where he built the s.s. Native, which he ran for several years. He was connected with the Shipmasters' Association of British Columbia, of which he was president for some time.

Lincoln Smith, whose resignation as Assistant to Manager, British Columbia Coast Steamships, C.P.R., Victoria, was reported in our last issue, was presented with a rosewood clock and two pieces of silver plate, by the department's officers and employes, Oct. 31. He has taken up the position of Managing Director, Peter McQuade & Sons, ships chandlers, Victoria.

Harry F. Bradley, who was appointed Assistant General Passenger Agent, Canadian Pacific Ocean Services, Ltd., Montreal, recently, was born at Waterville, Que., July 20, 1876, and entered transportation service in 1898, since when he has been, to 1906, in various positions in the Passenger Department, Montreal; 1905 to 1912, General Agent, Toronto; 1912 to July 15, 1917, Manager, Passenger Department, all with H. & A. Allan, General Agents, Allan Line Steamship Co.

George Hicks, who died in England recently, is mentioned in some marine papers, as the originator of the Manchester Ship Canal, connecting Manchester with tidewater in the River Mersey, at Eastham, near Liverpool. While giving him all the credit for whatever share he took in arousing public sentiment in the matter, it would be a mistake to state that he was the originator of the canal as it exists. The question of making the canal was publicly discussed in Manchester in 1841, long before Mr. Hicks was interested in matters of that kind. Nothing was, however, done in the matter until 1881, when he and Hamilton Fulton, C.E., laid a scheme for a canal before the Manchester Chamber of Commerce. This scheme provided for a very deep channel from tidewater to Manchester, to allow of the tide rising the whole way, and was rejected as not feasible, and nothing was done until the following year, when the plans of E. Leader Williams, later Sir Leader Williams, were accepted, and eventually carried out.



## Transfer Restriction of British Ships.

Following similar regulations regarding the restriction of the transfer of British ships, put into force by the British Government, a Dominion order in council has been passed extending a previous order in council dated Mar. 9, 1915, so as to apply to mortgages, transfers of mortgages, etc., of ships, made after Aug. 10, 1916, of foreign controlled companies, to persons not qualified to own a British ship. A foreign controlled company is described as follows—where the majority of directors, or persons occupying the positions of directors, by whatever name called, are not British subjects; where the majority of voting power is in the hands of persons who are not British subjects, or who exercise their voting powers directly or indirectly on behalf of persons who are not British subjects; where the control is by any other means whatever, in the hands of persons who are not British subjects, or where the executive is a foreign controlled company, or where the majority of the executive are appointed by a foreign controlled company. A corporation shall not be deemed to be a British subject unless it is established in and subject to the laws of some part of His Majesty's Dominions, or some British Protectorate, with its principal place of business therein.

The Minister of Marine may require any person who is the owner or mortgagee of a British ship, or who applies to be registered as owner or mortgagee, to furnish such particulars as may be necessary to ascertain whether he is trustee for, or represents a foreign controlled company, and if he fails to supply such particulars, he shall be guilty of a misdemeanor. Where, after the passing of this order, the owner or mortgagee ceases to be a British subject or becomes a foreign controlled company, the ship, or the interest in the mortgages, shall be subject to forfeiture, unless the written permission of the Minister has been granted to permit the change.

The regulations are to be in effect during the continuance of the war and for three years thereafter.

**U. S. Regulations Respecting Coasting Privileges.**—The bill passed by the House of Representatives and Senate covering the changes in the U. S. coasting regulations, provides that during the war, and for 120 days thereafter, the U. S. Shipping Board may suspend the existing provisions and permit vessels of foreign registry, and foreign built vessels of U. S. registry, to engage in the coastwise trade of the U. S., provided that no such vessel shall so engage in the trade unless a permit issued by the Shipping Board, defining the scope of trade and the time of such employments shall have been obtained, and that such permits shall give preference to vessels of foreign registry leased or chartered by U. S. citizens or corporations, and that this act shall not apply to the coastwise trade with Alaska or between Alaskan ports. The U. S. Shipping Board has issued several permits for foreign registered and foreign built vessels to engage in the trade.

**Ferro-Concrete Vessels.**—During the last few months Lloyd's Register of Shipping Committee has approved plans for the construction in ferro-concrete of a number of non propelled barges, some designed to carry 500 tons deadweight, and also of a motor vessel. These vessels will be built in the United Kingdom and in

Norway, under the inspection of the society's surveyors, and are intended for the British and Scandinavian coastal trade. Plans of other ferro-concrete vessels of larger carrying capacity for certain sea trades are at present under consideration. One of the society's principal surveyors made a tour of inspection recently in Scandinavia, where, owing to circumstances arising from the war and other causes, the use of ferro-concrete for ship construction has so far been developed, and the report of his visit has placed the committee in possession of valuable data on the subject.

**Surplus Stores on Ocean Steamships.**—An employe of Canadian Pacific Ocean Services, Ltd., was convicted at Liverpool, Eng., recently, of stealing certain stores the property of his employers, and fined £3 or 21 days imprisonment. His defence was that he had saved the articles from his stores and he thought he was entitled to the surplus. A similar case was dealt with there some time ago, when in the course of the evidence it transpired that a custom had grown up of storekeepers, or stewards, taking to their homes, or otherwise disposing of, stores which they claimed had been saved from the allowances made for use on the voyage. It was clearly stated then that the stores were issued for use on the voyage, and if they were not used, the surplus belonged to the company.

**Dominion Government Atlantic-Pacific Service.**—The Manchester, Eng., Guardian, of recent date, states that "it is not improbable that the Canadian Government will, after the war, establish state cargo services both on the Atlantic and Pacific." The Dominion Government has already announced its intention of placing vessels in freight cargo service from the Pacific to the Atlantic coasts, via the Panama Canal, and proposed to place contracts for the building of two vessels for this purpose. These however are suspended for the present. As for state cargo services operating on the Atlantic and Pacific Oceans, there is no immediate prospect of the government engaging in transoceanic service.

**Welland Canal Lock Gate Accident.**—The Bay State Fishing Co.'s trawler Spray, a small vessel of about 96 tons, while passing through the Welland Canal, downbound, Nov. 5, collided with the heel path foot gate of lock 9, badly damaging the gate, which had to be replaced by a spare one. This occurred at 4.30 p.m., and navigation was resumed at midnight, the damage being estimated at \$1,000. The cause of the accident, as given, is that the vessel's engines went ahead when the master states his signal was to reverse. The report that damage was caused to lock gates on the canal, by the s.s. War Beaver, while on its way to the coast, as mentioned in press reports, is incorrect.

**Manchester Liners, Ltd.**—The report for the financial year completed recently shows a trading profit after allowing for depreciation and excess profits, taxes, of £174,177, in addition to £20,176 brought forward from the previous year. After paying debentures, interest, fees and preferred dividend of 5%, a dividend has been paid on the ordinary shares of 10% and a bonus of 15%, free of income tax. Of the balance, £100,000 is placed to reserve account, \$5,564 to debenture reserve account and £14,118 carried forward to the next year's accounts.

**Limiting Shipbuilding Bounty.**—The Newfoundland Government has announced its intention of introducing a bill at the next session of the Legislature, to

limit the class of vessels entitled to bounty under the Shipbuilding Bounty Law. Hereafter, it is intended that bounty will be payable on vessels not exceeding 120 tons gross measurement, and vessels exceeding 120 tons gross will not qualify for any bounty whatever. The existing regulations will apply to all vessels of which the keel had been laid at Oct. 19, but all vessels the keels of which were not laid at that date, are to come within the scope of the proposed new regulations.

The British Government has requisitioned four Swedish steamships which were in British ports, in order to protect British capital invested in the vessels, a German prize court having decided that notwithstanding that the vessels were sailing under a neutral flag, they were to be treated as British vessels. The owners are being compensated by the British Government. It is stated that other vessels in which British capital is invested, though operated under a neutral flag, will also be requisitioned on a similar basis.

**Dominion Marine Corporation, Ltd.**, has been incorporated under the Dominion Companies Act, with \$1,500,000 authorized capital, and office at Montreal, to carry on the business of the transportation of passengers, mail and freight, by land and water, and to undertake towing, wrecking and salvage in all its branches, and in connection therewith to own and operate steam and other vessels of all kinds, wharves, docks, piers, warehouses, shipbuilding yards, etc.

**"Without a Trace."**—The British Civil Lord of the Admiralty announced in the House of Lords recently that in the three years ended Oct. 31, 122 vessels had been lost without leaving any trace. In normal times, the average of such losses was about 15 a year. As intercepted German messages have proved that instructions were given to sink as many vessels as possible, "without leaving a trace," it is presumed that these losses are almost entirely due to enemy attack.

**U.S. Shipbuilders** have launched recently four steel steamships of the "War" series" at Great Lakes ports. The War Banner, said to be the first trans-Atlantic freight steamship to be built in the U.S. for British register, at South Chicago, Ill.; the War Finch at Cleveland, Ohio; the War Beaver at Detroit, Mich.; and the War Signal at Superior, Wis.

**The Transpacific Navigation Co., Ltd.**, has been incorporated under the British Columbia Companies Act, with \$100,000 authorized capital and office at Vancouver, to own and operate steam and other vessels of every description, and to carry on a general steamship owning and operating business.

**The Hamburg - American Steamship Co.'s** offices at New York, have been seized, together with all equipment and fixtures, and all other property of the company located on the premises, on behalf of the U. S. Government. It is said that the offices will be used by the U.S. War Trade Board.

**Foreign Tugs in Canadian Waters.**—An order in council has been passed authorizing the Minister of Customs to issue licenses permitting foreign tugs to be chartered for use in Canadian waters without payment of customs duties, during the war.

**The Marine Navigation Co. of Canada, Ltd.**, has had its authorized capital stock increased by supplementary letters patent under the Dominion Companies Act, from \$50,000 to \$1,000,000.



## Standardized Shipbuilding in Great Britain.

The commissioning of the first unit of the British Government's programme of standardized shipbuilding, and the launch by the King at Greenock recently of "a vessel of a new type, designed for merchant service," were events which, but for the restrictions imposed by the war, would have given occasion for wide discussion. In present circumstances, however, nothing can be said about the methods which are being adopted to render these vessels as immune as possible from being sunk by torpedoes or mines; but much may be said, that in no sense do they represent any radical departure from previous practice in naval architecture. They are ordinary cargo carriers, similar in general design to many that were built in previous years, capable of taking their place in the British mercantile marine after the war is over. But they embody in their fitting out many new ideas, each representing an effort to beat the enemy submarines by defensive or offensive methods, and all combining to make them more safe in this respect than any cargo vessels have been since the war began.

It is realized that safety is not to be found in any single specific, but in a combination of ideas each of which has either been proved valuable by experience or promises well in theory. In this respect the standard ships represent a bundle of compromises, while in the matter of hull designs they represent the elimination of variety, and the reduction of plans to a level of uniformity which should enable tonnage to be produced more rapidly than ever it has been produced in the past. The fact that hull designs have been standardized, and not revolutionized, is not a little significant. It shows that those responsible for the scheme have discarded the many suggestions for "unsinkable" ships and placed their confidence in that which experience had proved to be good, supplemented by all the expedients for increasing safety which could be adopted with hope of success, and without making each vessel other than a good seaworthy and efficient cargo carrier.

This is a point which must always be remembered when the merits of the scheme of standardized shipbuilding are considered. There have been very few rash experiments in British shipbuilding. An occasional freak boat has been constructed, but as a whole the history of British shipbuilding is a story of great restraint and scientific conservatism, of the development of theories to the point when their success is assured before they are put into actual practice, and of preliminary experiments so conclusive that there was no danger of failure when actual vessels were produced. It was largely this innate conservatism that prevented the adoption of revolutionary ideas in the standard ships. The Shipping Controller's advisory committee declined to rely on untested theories when the demands of the war were calling for the largest possible supply of efficient cargo tonnage, and they therefore decided that a large number of vessels of thoroughly dependable types should be built—types which would not only do a known amount of work after being commissioned, but with the construction of which all shipbuilders and marine engineers were familiar, and which could, therefore, be turned out rapidly once the standardized programme was fairly set going. The time was seen not to be one for experimenting with vessels the value of which was an unknown

quantity, and therefore all the proposals for revolutionary plans were turned down, and cargo steamers in three classes, propelled not by turbines or internal combustion engines, but by ordinary reciprocating engines, were ordered and are now being constructed at many of the shipyards in the United Kingdom. This is a remarkable illustration of that conservatism in methods to which reference has been made, and of that safe policy which looks like want of enterprise, but which so frequently proves wisest in the long run. It is a policy of safe progress, and its best justification is to be found in the story of British shipbuilding and marine engineering.

Now the idea of an unsinkable, or practically unsinkable, ship is being recommended, and the Admiralty and the Ministry of Shipping are being criticized because they decline to do more than express a favorable opinion on the plans put before them. Whatever the merits of these plans, their adoption would mean an interruption of the standardized programme. It is, in all probability, purely a matter of what may be called tactics. Now that the standard programme is fully under way the stage is presumably seen approaching when it will act as an effective setoff to the enemy submarine campaign; hence it is not considered wise to make another new beginning, especially with a scheme which is bound to be experimental in its early stages.

As to the unsinkable ship as such, it is an old will-o'-the-wisp, which many good men have followed, but which no one has yet caught. It would be quite possible to construct something which would continue to float for a very much longer time than anything at present in existence, and that in spite of very serious attacks by mines, submarines or gunfire. It might even float until it was wholly destroyed. But it would not be a ship, because it would be of little or no value as a ship. Take, for example, the question of internal subdivision. By means of extreme subdivision—many transverse and longitudinal bulkheads carried up to or above the main deck, and with no openings leading from one compartment to another—the buoyancy of a ship might be preserved after she had been attacked many times; but the amount of subdivision necessary to make her even relatively safe would make her useless as a ship. Numerous bulkheads without openings, the only communications between the compartments being by the top decks, would render her very difficult to work, while with many small compartments her cargo could not be handled expeditiously, and she would represent the very opposite of that clear-hold type which is so efficient and economical, and toward which the designers of cargo steamers have been working for many years past.

Again, all forms of outside protection, such as screens after the fashion of the old time torpedo nets around warships, are open to the unanswerable objection that they would enormously reduce the speed and the steering and manoeuvring power of any vessel to which they were attached. The latest idea from America, that each transport crossing the Atlantic should carry along each of her sides, at some distance off, a wall of steel plates, so that she would be sailing all the time within these walls, is the torpedo net carried to its extreme limits, and it is open to the same objections, but to a much greater extent.

The simple fact is that a ship must be a ship first and foremost, and any alteration in design, or any protective device, which detracts from her value and efficiency as a ship is ruled out by that fact. The true line of progress is that on which we are moving—that of maintaining efficiency and also utilizing every plan which assists in defying the enemy without spoiling the ship as a ship.—Times, London, Eng., Engineering Supplement.

The United States Consul at Glasgow, Scotland, reported recently as follows: The first of the standardized ships built under the British Government's specifications has completed its final tests, and has been put into commission as a cargo carrier. In every respect the trial proved an unqualified success. It was of a most exhaustive and comprehensive nature, and the experts who were aboard were unanimous in their praise of the ship, which marks a new epoch in Great Britain's maritime history. A choppy sea and rain squalls prevailed during the trials, but these conditions served only to enhance the steadiness and seaworthiness of the craft.

The standardized vessel was designed with the idea of providing a good type of cargo carrier in the shortest possible time, with the minimum expenditure of material, having regard to war conditions which involve the question of speed. The keel was laid in Feb., 1917, and on Aug. 25, 1917, the first ship was fully loaded and ready to proceed on its maiden voyage.

In reality there are two types of standardized vessels of 8,000 tons deadweight carrying capacity. These are classified as A and B—single-deck and double-deck ships. The first one is of class A. It is said that the government intends also to construct two smaller types—class C, of 5,000 tons deadweight, and class D, of 3,000 tons. Other types are said to be under consideration. The machinery and engines, as well as the hull, are standardized, so that the first engine goes into the hull complete. Special attention has been devoted to the question of speed, with a view to attaining the maximum number of knots. Features of the general equipment are the very large hatchways, which make the ship as nearly self-trimming as possible. This greatly facilitates loading and discharging. In fact, the central idea is that such vessels not only should be built quickly, but also should be capable of being worked economically and speedily.

The accommodations provided for the crew have been given the closest attention, with the result that the provision made marks a big advance as compared with sailors' quarters in ordinary cargo steamers, and particularly those of the tramp class. The crew are berthed aft in the poop, instead of in the fore-castle, as has been the general rule hitherto, and separate apartments are provided, each fitted with two berths. Messing quarters are entirely separated from the sleeping compartments, a smoking room is provided for general use, and there is steam heat in the men's quarters. There is also a bathroom for the crew.

Marine Navigation Co., Ltd., a Canadian company, is reported to have purchased the sailing vessel *Juteopolis* built at Dundee, Scotland, in 1891. She was owned by G. Windrum & Co., and is 2,652 net tons.



## The Canadian Pacific Railway's Relations with Austria.

The statement made recently that C.P.R. observation cars were being used as hospital cars by the enemy in Austria, brings to mind the part played by the C. P. R. before the war, and which, looking at it in the light of later events, may be considered almost as skirmishing tactics preliminary to the declaration of war. For a number of years steamship traffic to and from the European continent, was practically controlled by the Germans, and this control was specially marked in the case of American tourist traffic to the German and Austrian baths and mountains. Almost the whole of the American traffic to the Austrian Tyrol passed through German hands to the detriment of the Austrians, and the Austrian State Railways suffered. In order to remedy this state of affairs, the Austrian Government entered into contracts with the C.P.R., first for the supply and operation of a number of specially constructed observation cars on the more picturesque sections of the State Railways through the Austrian Alps, and by arrangement with the Swiss Government, to Zurich. A special car was designed, following on the design adopted in this country, but modified in certain particulars to suit the requirements of continental railway operation, and several were built, to plans prepared by the C.P.R., at the Nesseldorf works in Austria. The arrangements for this were made by H. H. Vaughan, then Assistant to the Vice President, C.P.R., who visited Austria for the purpose. The service was first operated during the summer of 1912, between Zurich and Innsbruck, Vienna and Innsbruck, and Salzburg and Trieste, under the supervision of G. McL. Brown, European Manager, C.P.R., London, Eng.

It was felt later that Austria was not getting its fair share of the continental traffic going from America, owing to the alleged Hamburg - American Steamship Co.'s control of the North Atlantic Conference, which allocated certain percentages of the traffic to certain companies, and consequently to certain ports. The Austrian Government then arranged with the C.P.R. for the inauguration of a steamship service between Canada and Trieste, with a call at Naples, Italy. This service was commenced in March, 1913, the C.P.R. steamships Lake Champlain and Lake Erie being used, and renamed Ruthenia and Tyrolia. On the inauguration of the new service, it was announced from Berlin that the North Atlantic Conference would oppose it by placing a competitive service on the same route, and the Austro-Americana Line was formed to run between Canada and Trieste, calling at Patras, Greece and other Mediterranean ports.

At a meeting of the North Atlantic Conference, which was attended by G. McL. Brown, European Manager, C.P.R., it was demanded that the C.P.R. surrender its contract with the Austrian Government and pay a default, and naturally this was refused. Later the C.P.R. withdrew from the conference entirely, and as a consequence all agreements for the pooling of continental business came to an end. Immediately following the withdrawal of the C. P. R. from the conference, its Austrian agent was arrested and its Austrian offices were closed. There is not the slightest doubt that these actions were carried out at the instigation of the German authorities, acting through the Hamburg-American Steamship Co., with the intention of driving the C.P.R. out

of the continental business. The C. P. R. agent was subsequently released and certain of the offices opened, the business done being considerably restricted. Action was however maintained against S. Altman, Agent, C.P.R., for breaches of the emigration act, it being alleged that by degrees the country was being depleted of men of military age, and that the C.P.R. agent aided and abetted such men in evading the provisions of the emigration act. On this account the C.P.R. withdrew its steamship service between Canada and Austria, and placed the vessels on another route. G. McL. Brown, European Manager, C.P.R., spent a considerable time on the continent, during the various disputes with the North Atlantic Conference, and only closed up matters shortly before the outbreak of war in Aug. 1914. After war was declared between Great Britain and Austria, which was at a later date than the German break, all C.P.R. property in Austria was seized, and the local staff interned.

## The Welland Ship Canal and the War.

The United States Shipping Board is reported to be considering an appeal to the Dominion Government to push to an early completion the construction of the Welland Ship Canal, on the ground that such construction would not only divert the great bulk of the Great Lakes tonnage to the coastwise trade during the winter when lake navigation is closed, but would make possible the utilization of the large shipbuilding facilities on the lakes without the necessity of cutting vessels in two in order to get them to the ocean.

In carrying out its policy of not expending money on large public works not immediately connected with war services, the Dominion Government suspended all work on the construction of the Welland Ship Canal, and dispersed the staffs on May 2 last. At the time, contracts were running for sections 1, 2, 3, and 5, and the work taken as a whole was rather over 50% completed; that on sec. 3, the heaviest on the whole route, not being in so forward a state as on the other sections. The contract called for completion of this section by April 1, 1917, but owing to labor and other difficulties, it was estimated that it was about 12 months behind time. The time for the completion of sec. 5 was fixed for April 1, 1918, so that the completion of all the heavy work on the construction of the canal might have been looked for during 1918, and possibly the completion of the whole of the canal as well, as the balance of the work is of a comparatively light nature. To do this, however, the work would have to be rushed from end to end with a full force of men, and undertaken as a war work of the utmost necessity. There is a large amount of alien labor in Canada, most of which is engaged on work of considerably less importance than this, and which could be transferred with little difficulty. Apart from this, if the work is allowed to stand for any great length of time, there is bound to be a serious deterioration and consequent loss, and even if it were taken up again at once, there would be some difficulty in reassembling plant and staffs, as in some cases, plant, which was of a more or less special character, was sold, or transferred to other points.

No doubt the cessation of the work was ordered in good faith, it never being contemplated that it would be required as a link of very great importance in connection with the carrying of the war to a successful conclusion. The fact, however,

remains that had the canal been complete and ready for service, it would have assumed an importance of such a nature, as a means, not only for the quick transfer of the larger lake vessels to the ocean, but also for the complete and beneficial utilization of the lake shipbuilding yards for the construction of larger and more useful vessels than is now possible there, owing to the delays necessary for the cutting of the larger vessels in two on the lakes and rejoining them on the St. Lawrence.

## United States Government Rates for Requisitioned Steamships.

Following are particulars of the rates which the United States Shipping Board is paying for vessels which it has requisitioned for ocean service, under government form time charters:

Cargo Boats and Tankers.	
Over 10,000 tons d.w. capacity,	\$5.75 per d.w. ton.
8,001 to 10,000	6.00
6,001 to 8,000	6.25
4,001 to 6,000	6.50
3,001 to 4,000	6.75
2,500 to 3,000	7.00

Vessels of speed in excess of 11 knots are allowed 50c a ton dead-weight per month for each knot or part of a knot over 11 knots.

For passenger steamships the board adopted a two fold basis of classification, Class A consisting of steamships with a capacity of over 150 passengers, and Class B consisting of steamships with a capacity of from 75 to 150 passengers. Steamships falling in both classes are further classified according to speed. The rates for passenger steamships are as follows:

Class A.	
10 to 11 knots	\$9.00 a ton gross register
12 "	9.50
13 "	10.00
14 "	10.50
15 "	11.00
Over 15 "	11.50
Class B.	
10 to 11 knots	8.00 a ton gross register
12 "	8.50
13 "	9.00
14 "	9.50
15 "	10.00
Over 15 "	10.50

The foregoing rates became operative Oct. 15. The vessels embraced in the requisition, except in so far as actually required for government service, will be left in the hands of the present owners to be operated for government account, but subject at all times to such dispositions as the board may direct. A certain number of the requisitioned vessels which are required for the continuing and exclusive service of the navy and army, will be taken over on a bare ship basis. The rate of hire on this basis has been fixed by the board at \$4.15 per deadweight ton for cargo boats, and \$5.75 per ton gross for passenger steamships of 11 knots speed, with an additional allowance of 50c per ton for each knot in excess of 11 and up to 16. All the foregoing rates are tentative. The board will carefully examine the results of operation under the requisition rates, and from the results, as certified by expert examiners, will determine upon such revision as fair and equitable treatment of the owners of the requisitioned vessels may require. Revisions will be made, if reasons therefore are found to exist, at intervals of not more than 90 days. As to insurance, the government assumes the war risk, and in some instances, the marine risk as well. In cases, in which for any reason, it is more convenient for the government to assume the marine risk, the usual rate for such insurance will be deducted from the charter hire.



## Telegraph, Telephone and Cable Matters.

A. E. Holmes has been appointed chief operator, Great North Western Telegraph Co., Winnipeg, vice A. D. Campbell, deceased.

J. O. Pilon, heretofore assistant to local manager, Grand Trunk Pacific Ry. Telegraphs, Edmonton, Alta., has been appointed local manager, there, vice R. M. Macmillan promoted.

Mrs. R. N. Young, wife of the Superintendent of Telegraphs, British Columbia District, C.P.R., sustained a broken leg, through being knocked down by an automobile in Vancouver, at the end of October.

The Association of Railway Telegraph Superintendents held a special meeting at Chicago, Ill., Nov. 22, to discuss various topics in which the members are interested. This meeting took the place of the usual annual convention which it was deemed desirable to postpone indefinitely.

The Great North Western Telegraph Co. has reopened its office at Restigouche, Que., and has closed its offices at Pointe au Pic and Valcartier Camp, Que.; Bath, Camp Borden, Camp Leaside, Paisley and Petawawa Camp, Ont., and Grand Beach, Man. The name of the office at Brockville Jct., Ont., has been changed to Forfar.

A. Mackenzie, Agent, C.P.R. Telegraphs, Guelph, Ont., who retired after 28 years with the company there, on account of ill health, commenced telegraph service in 1872 with the Montreal Telegraph Co. as a messenger, later becoming an operator with the same company and transferring to the C.P.R. Telegraphs in 1889. All his service has been in Guelph.

The Great North Western Telegraph Co. is reported to be employing girls as messengers at Calgary, Alta. It is stated that no girl is employed unless over school age, and their work is confined to the centre of the city, and to the day time. Only a few have been employed so far as an experiment, as it is said that latterly boy messengers have been very inattentive.

Some difference of opinion seems to have arisen as to the payment of war taxes on collect telegrams passing between Canada and the U. S. An enquiry directed to the local agent of the C. P. R. Telegraphs, Montreal, by a press representative brought the statement that when the tax was instituted in the U.S., the company communicated with Washington on the subject, and was informed that the tax on a collect message sent from the U. S. was collected from the sender before the message was dispatched. A representative of the Great North Western Telegraph Co. however stated that the U. S. war tax was being collected from recipients of collect messages and a monthly return made to the U.S. Government and that this course was being adopted on Canadian collect messages sent to the U.S. The Canadian tax is 1c and the U.S. tax is 5c.

R. M. Macmillan, heretofore local manager, Grand Trunk Pacific Ry. Telegraphs, Edmonton, Alta., has been appointed acting Division Superintendent, G.T.P.R. Telegraphs, Winnipeg, and acting Superintendent of Time Service, G.T.P.R. vice F. T. Caldwell, who has been granted extended leave of absence on his appointment as a lieutenant in the U.S. Army Signal Corps. He entered the Western Union Telegraph Co.'s service in 1904 as

a messenger, at Sydney, N.S., and after learning operating, he worked his way to the position of local manager in the east, and went west in 1911, entering C.P.R. Telegraphs service at Winnipeg. He transferred to the G.T.P.R. Telegraphs service in 1912, as night operator at Winnipeg, and was appointed local manager at Regina, Sask., when an office was established there. Later he occupied a similar position at Calgary, Alta., and from 1914, at Edmonton, Alta.

## Among the Express Companies.

Express companies applied to the Interstate Commerce Commission on Nov. 15 for an increase of 10% in rates. The Adams, American, Southern, and Wells-Fargo companies, making the application in behalf of themselves and other express companies, set forth that they had suffered a net loss of \$39,848 as the result of increases in operating expenses and taxes during the first six months of this year.

The various express companies operating in Canada have announced that with a view to improving the working conditions of their employes, and to co-operate in the general movement to conserve the country's resources with respect to time and men, it has been decided to discontinue all pick-up and delivery of express shipments on Sundays, and not to contract to make calls or start deliveries after 5 p.m. on week days.

The Board of Railway Commissioners has extended the express collection and delivery limits for Hamilton, Ont., to include the area in the east end within a continuous line following the west side of Lottridge Inlet, Burlington, Ottawa, Barton, Frederick, Cannon and Ottawa Sts., Roxborough and Kensington Aves., Main St., and Cage Ave.; also Burlington St., from Ottawa St. to and including the Dominion Sheet Metal Co.'s premises. The matter was down for hearing on the application of the City of Hamilton, but the city and the companies, through the Express Traffic Association, had come to an agreement before the hearing, so that it only remained for the board to make an order amending the original order, as arranged between the parties.

The Dominion Ex. Co. was sued recently by Gold Seal Ltd., Calgary, Alta., for refusal to accept shipments of intoxicating liquors for export from Alberta to Saskatchewan and elsewhere, and for refusal to receive shipments in British Columbia, when consigned to plaintiffs' warehouse in Calgary. The express company contended that it is prohibited from doing so under the provisions of the Alberta Liquor Act, and the plaintiffs claimed that the act is ultra vires of the province as being an interference with trade and commerce, which is a matter within the exclusive jurisdiction of the Parliament of Canada. Judgment was given for the plaintiffs, it being stated that the act did not prevent a bona fide business being conducted in the matter of storage within the province for the legitimate supply to points within and without the province.

The Anglo-American Shipping Co., Ltd. the incorporation of which was announced in our last issue, has been formed to carry on the business of building and dealing in steam and other vessels, to act as shipping agents, insurance agents, etc. The officers are: S. Bick, President; G. H. Meehan, Vice President and Managing Director; J. I. Bennett, Treasurer. The office is at 11 St. Sacrament St., Montreal.

## 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.

**Northern Electric Co.**—A. Dwight Smith, formerly Manager of the Company's branch at Ottawa, has been appointed Sales Manager, Montreal district.

**General Railway Signal Co.**—The G.T.R. is installing the A.P.B. automatic block signalling system on its line between Shelburne, N.H. and Bethel, Me. The work is being done by the company's own forces.

**Metal Hose and Tubing Co.**, New York, which is represented in Canada by Lyman Tube and Supply Co., has issued a loose leaf illustrated catalogue of its new hose, "Triplex," thoroughly explaining its construction.

**Theodore Malm**, who for the past six years has been electrical and mechanical engineer for various Mackenzie-Mann interests, including Toronto Ry., Toronto Power Co., Toronto Electric Light Co., Toronto & York Radial Ry., Toronto Suburban Ry., London Electric Co., Suburban Construction Co., Canadian Northern Ry., etc., has established two companies, viz., Railway & Power Engineering Corporation, Ltd., and Theo. Malm & Co., with offices at 202 C. P. R. Building, Toronto. Railway & Power Engineering Corporation will deal in railway, light and power equipment, and Theo. Malm & Co. will undertake surveys, plans and estimates for development of electric power, prepare plans, estimates and specifications and supervise work of electric, street and interurban railways and mining electrifications, also complete systems for generation, transmission and distribution of electrical energy for commercial purposes and industrial plants.

**The Standard Underground Cable Co.** of Canada, Ltd., Hamilton, Ont., has placed on the market a new style of outdoor (type d. o. a.) cable terminal which is known as the protected disconnection style. All the copper parts are covered by a porcelain hood, which permits the disconnection of the aerial extension wire even while the circuit is alive. The company states that all its outdoor (type d.o.a.) cable terminals are readily disconnected from the aerial conductor, either by means of a set screw, cap nut or turnbuckle stem. The stem of the new terminal is a modification of the regular cap nut stem and it is claimed that it has some additional advantages where frequent disconnection of the aerial circuit from the terminal is necessary. The new terminal, as well as the complete line of outdoor cable terminals, is fully described in the company's bulletin 700-2.

**Refrigerator Heater and Ventilator Car Co.**, St. Paul, Minn., has received approvals of its Moore heater from the United States Bureau of Explosives and from the Underwriters' Laboratories. The report from the Bureau of Explosives' Chemical Laboratory says:

"A Moore heater car was examined at Newark, N.J., on Sept. 5. The heating system consists essentially of a small iron stove carried in a special compartment underneath the car. The stove is of cast



iron, and has a grate 10 in. in diameter. The fire door of stove works vertically in slots and cannot be jarred open. The compartment containing the stove asbestos is in turn lined with sheet metal. The products of combustion pass directly upward through an iron flue passing through the car floor through the car, and out through the roof, so that the flue gases from the stove do not enter the car. The stove and smoke flue are jacketed with sheet metal, and the space between the flue and jacket is used for warming the air passing into the car. Fresh air from the outside of car enters this space through an opening directly under the stove. Still another metal jacket surrounds the inner jacket. The space between these two jackets produces the air circulation by creating a draft from the air spaces under floor of car. This outer jacket is protected from damage by a heavy metal guard firmly attached to floor and side of car. There is a grating provided which is placed inside the stove at outlet to pipe, so as to prevent any possibility of hot coals doing any damage should the car be overturned. The fuel used in the stove is pea coal. From the construction and design of heating system and from fuel used it is believed that this heating system is not likely to be a source of ignition of car or contents. It is of course not anticipated that inflammable liquids will be shipped in this car when heater is in operation."

The Underwriters' Laboratories put the device to an exacting test. The Engineer of Gases and Oils report shows, in table 1, that they started with a uniform temperature of 11° C. and gradually forced the fire until the air directly above the hot air inlet into car reached 220° C. or 396° F. without danger of igniting the car. These tests were for the purpose of determining the safety of the device from an insurance standpoint. It was not a theoretical determination. It was an actual trial. In table 2 the conditions were much the same as shown in table 1, except the ventilator door was closed. Although the temperature above the hot air inlet to car was forced to 210° C. or 378° F. and the temperature in the heater box about the stove to 180° C. or 324° F., no danger of ignition of car was discovered. Table 3 shows a representative service test. Here again the heat was forced as high as possible, or to 227° C. or 409.6° F., with no resulting danger from fire.

Of course, these temperatures do not represent the ordinary temperatures of the heater or air in car during ordinary operations, but they represent the highest temperatures to which the heater can be forced, or which it can at any time or under any conditions attain, and all with the result that it is safe. The size of the car was reduced to magnify or increase the heat effect.

### Transportation Associations, Clubs, Etc.

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

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Association for National Defence, W. M. Neal, General Secretary, 263 St. James St., Montreal.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

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

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

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

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

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

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

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

Transportation Club of Vancouver—C. E. Blaney, 2337 Third Ave. West, Vancouver, B.C.

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

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

### CANADIAN PACIFIC RAILWAY COMPANY.

#### Dividend Notice.

At a meeting of the Board of Directors held today a dividend of two and one-half per cent. on the Common Stock for the quarter ended 30th September, last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account, was declared payable on 31st December next, to shareholders of record at 1 p.m. on 1st December next.

By order of the Board,

ERNEST ALEXANDER,

Secretary.

Montreal, 12th November, 1917.

**MARINE ENGINE ERECTOR:—**  
Wanted for Canadian Shop an experienced foreman to take charge of erecting 1500 H.P. marine engines. Apply Box T834, Canadian Railway & Marine World.

#### NOTICE.

The General Railway Signal Company of the United States of America, the owner of the exclusive rights to Canadian patents No. 92323, No. 93127, No. 96256, and No. 97758, issued to Young and Townsend, and covering methods of signalling electrified railways, wishes to call the attention of all possible users of the devices and systems covered by such patents to the facts that it is prepared to sell and furnish, at short notice, all such devices and to install such systems upon any railway in the Dominion of Canada.

All inquiries regarding the above should be addressed to The General Railway Signal Company of Canada, Limited, Lachine, Province of Quebec, Canada.

### FOR SALE

#### Four Second-Hand Locomotives In Good Condition.

One 2-6-0

Cylinder 20x26, Weight on Drivers 109000.

Two 4-6-0

Cylinder 19x26, Weight on Drivers 103500.

One 2-6-0

Cylinder 17x24, Weight on Drivers 125500.

For detailed specifications, address:

COMPTROLLER'S OFFICE

Kettle Valley Railway, Penticton, B.C.

**GRAND  
TRUNK  
RAILWAY  
SYSTEM**

### THE DOUBLE TRACK ROUTE

## WINTER TOURS to CALIFORNIA

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Pacific Coast Points, Florida, Texas, New Orleans, etc.

Winter Tour Tickets now on sale. Stop over privilege allowed.

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