

Canadian Railway and Marine World

April, 1920

Valve Motion.

By F. Williams, Mechanical Designer, Canadian National Railways, Moncton, N.B.

The duties which a locomotive valve gear has to perform are exacting in the extreme, as it has to control the distribution of steam to the cylinders with almost perfect precision through a wide range of cut-offs in forward and reverse direction. There is no apparatus on a locomotive upon which the economical working depends so largely, and when we consider that at diameter-speed the movement of the distribution valve is reversed 672 times a minute, we can appreciate with what care the design must be undertaken.

From the point of view of economical steam distribution, valve motion design has today reached a point where it cannot be greatly improved upon, and the chief attention of the designer has for the last few years been taken up with questions of accessibility and low maintenance cost, his aim being to apply a gear which would run and keep square from shopping to shopping with the minimum of attention. Considered from the stand-point of steam distribution alone, I doubt if a well designed and properly set Stephenson gear has ever been excelled, but owing to inaccessibility, high maintenance cost and its great liability to get out of square due to the springing of parts and development of lost motion, the Stephenson gear has become a back number, and I shall only refer to it for purposes of comparison.

For several years past practically every locomotive built in this country has been equipped with an outside gear, the vast majority with Walschaert's, and to this gear I shall devote most attention. Of all locomotive valve gears made, Walschaert's is the simplest to understand, to design and to set, and when this gear has been well designed and correctly set, it will keep square for an indefinite length of time. The simplicity of the gear lies in the fact that the valve receives its motion from two sources, first from the crosshead through the combination lever, and second from the eccentric through the link, and each of these sources of motion can be dealt with separately without considering the influence of the other, both in designing and setting.

The motion derived from the combination lever is equal to the steam lap plus the lead and it attains its maximum travel when the engine is on the dead centers, it is not affected in any way by the reverse gear but remains the same in all position of the lever. The motion derived from the link is simply a symmetrical motion front and back of the center line, and is increased or decreased according to the distance of the link block from the center of the link. When the link block is exactly in the center of the link, there is, of course, no motion from this source and as the block gets by the center the motion is reversed. When the engine is on the front or back dead center the link assumes such a position that the reverse lever can be moved backward and forward through

the entire travel without imparting any motion to the valve, and the distance the valve is off center is entirely due to the position of the combination lever which is at its maximum travel at these points.

The proportioning of the length of the combination lever is a simple matter when we have decided on the steam lap and lead required. The length of the combination lever from the radius bar connection to the union link connection must bear the same proportion of its length from the radius bar connection to the valve stem crosshead connection as does half the stroke of the piston to the lap plus the lead plus $1/64$ in. The $1/64$ in. is added to the lap plus the lead to take care of lost motion. Care must be taken that the length of the combination lever adopted will bring the lower end of the lever to the correct level to connect up with the union link, especially if the union link is connected directly to the wrist pin, which is the practice generally adopted unless the Ripken Kingan main rod arm is used.

I have seen various rules as to the length of the radius bar and eccentric rod, but they are for the most part worthless, as our problem is to apply a gear to a locomotive; we are not permitted to design a valve gear and then build an engine around it. The best rule we can adopt therefore is to make both the radius bar and the eccentric rod as long as circumstances will permit and with ordinary wheel bases this will invariably give satisfactory results. The radius of the link slot center line is of course determined by the length of the radius bar, and the preferred location of the link support bearings is such that the horizontal center line is on a level with the radius bar connection to the combination lever. This location may be varied within reasonable limits, without affecting the valve events to any appreciable extent; for instance, on a locomotive with a very large cylinder the steam chest center line and the cylinder center line are of necessity quite a distance apart, and in this case the link support is sometimes lowered an inch or two, to bring the link tail nearer to the horizontal center line of the axle. The angle through which the link rocks should not exceed 45° , and if it can be kept lower so much the better.

The eccentric rod connection to the link tail should be kept within 3 in. or 4 in. of the horizontal center line of the axle, in order to keep the angularity of the eccentric rod within limits, and owing to this angularity of the rod, it will be found necessary to offset the tail connection of the link in order to give it the same angular travel on either side of the central position. I have heard men with a good deal of experience state that an approximately correct offset is all that is required, but as it is just as easy to make this offset correct as otherwise I always prefer to make it dead right. The eccentric crank must be set so that it brings the link dead on its central po-

sition when the engine is on either front or back dead center, and the throw of the eccentric pin must be such that, acting in combination with the radius of the link tail, it will give the required angular travel to the link. The reverse shaft location, length of arm, and swing link are very important considerations, and unless great care is exercised in the arrangement of these details the efficiency of the motion may be considerably reduced. The arc which the reverse shaft arm describes should be so arranged as to reduce the link block slip to a minimum in all positions of the reverse lever, special attention being paid to the running position in fore gear. It is impossible to avoid link block slip altogether, but it can be kept pretty low, and if this is not carefully looked after the effect will be seen in the valve events and also in the wear on the link and link block. The steam chest center line should be outside the cylinder center line far enough to permit of bringing the whole motion into practically a straight line, thus eliminating the necessity for rockers, and doing away with the twisting effect and lost motion which the use of rockers involves.

All road locomotives equipped with Walschaert gear should be so arranged that the link bottom is in the bottom half of the link for fore gear, the eccentric of course following the crank pin. The advantages of this arrangement are that the wear on the link support bearings is diminished and the link block slip in running position may be kept very small, as the swing link describes an arc which is very similar to the arc struck by a point in the bottom of the link, the concave side of both these arcs being uppermost. It is very important that the design of this gear should be as good as it is possible to make it, for, if it is faulty, it is impossible for the valve setter to correct its faults. With a badly designed Stephenson gear, a good valve setter could often get very fair results in running position, by sacrificing the other positions of the reverse gear, but with a Walschaert gear this is out of the question, as it is squared on the dead centers, and, if the design is good, all the valve events naturally come within very close limits of being square, but if they do not there is practically nothing the valve setter can do to correct them.

It must be borne in mind that the chief aim of the designer is to obtain as nearly as possible a perfect steam distribution, but the most important consideration with the valve setter is to get four level beats up the stack. A perfect steam distribution will of course give a perfect exhaust, but a perfect sounding exhaust does not necessarily mean a perfect steam distribution, by any means. The steaming properties of the boiler, and the fuel economy, depend very greatly on the evenness of the exhaust, and if the exhaust is ragged, the vacuum in the smokebox is unsteady and the fire is soon pulled in holes, resulting in a

great waste of fuel. The designer therefore endeavors to obtain a perfect exhaust, by giving as nearly as possible a perfect steam distribution; the valve setter has to get an even exhaust at all costs. The normal setting for a Walschaert gear is square on dead centers, with a constant lead in all positions of the reverse lever, but there is another setting which is sometimes resorted to, and this is to give no lead at all, or a very slight lead in full fore gear and an increasing lead as the lever is notched

full gear, as it hinders the starting of the engine. Some text books also tell us that the object of lead is to cushion the piston at the end of its stroke. If we study the question closely, we will agree, I think, that both of these arguments are incorrect. Lead cannot hinder starting, unless the admission takes place considerably before the piston completes its stroke, and as a matter of fact, the pre-admission in full gear is so small that it can hardly be measured; as for lead cushioning the piston, a

pre-admission increases as the lever is notched up, so that if the cushioning effect of the live steam is really required, we have this effect increasing as the lever is pulled toward mid-gear. I do not pretend to say that the pre-admission increases to the same extent as on a Stephenson gear, but I think it is generally admitted that the pre-admission is high on this gear in running position. The real object of setting the Stephenson gear with no lead, or 1/16 in. or so blind, in full gear, was, not to overcome the detrimental effect of lead in full gear, as this is non-existent, but to bring the closure point to such a position that the compression would not be excessive when running at high speeds, so that if this variable lead setting with Walschaert gear is justified, it is through its influence on the other valve events, such as cut-off, release, closure, etc., as the lead itself has no influence one way or the other in starting.

We will now take a look at the valve diagram shown in fig. 1, plotted for one of our large passenger locomotives. This engine has 24 x 28 in. cylinder, a 14 in. valve, 6 in. valve travel, 1/4 in. constant lead, 1-1/16 in. steam lap and 1/4 in. exhaust clearance. The broader ellipse in the center shows the valve travel, in relation to the piston travel, in full fore gear, and the narrow ellipse inside it shows the same thing with the lever notched up to 25% cut-off. The distance from the steam edge to the exhaust edge on the valve over the packing rings is 2 3/4 in., therefore the similar ellipses which are plotted 2 3/4 in. above and below the center ellipse, with lighter lines, must represent the movement of the exhaust edges of the valve. The three ellipses shown in dotted lines represent the movement of the valve set with no lead in full fore gear. Picking out the valve events we find that with the 1/4 in. lead setting we have the cut-off at 23 in. and 23 7/8 in., the release at 25 9/16 in. and 26 1/4 in. and the closure at 26 13/16 in. and 27 1/4 in. Set with no lead, however, we have the cut-off at 23 9/16 in. and 24 5/8 in., the release at 26 3/8 in. and 26 3/4 in., and the closure at 27 1/4 in. and 27 5/8 in., so that the net result of adopting this latter setting is to delay the cut-off from 83.7% to 86.1%, the release from 92.6% to 94.5% and the closure from 96.6% to 98%, an improvement in the starting position of 2.4, 1.9 and 1.4% of the stroke respectively.

The valve diagram shown in fig. 2 is plotted for the same locomotive in full back gear, the ellipse shown in dotted lines representing the valve movement with the variable lead setting. In this case I have two lines 1/4 in. above and below the center line, representing the amount of the exhaust clearance; these lines will determine our release and closure points in the same way that the outside edges of the steam ports did in fig. 1, and will simplify the diagram. A glance at this diagram will show us that the cut-off, release and closure points, are advanced in backgear, by just about the same amount as they were delayed in fore gear, so that whatever we have gained in the foregoing position we have done so at the expense of the back. In the short cut-offs there is so little difference in these two settings that I have only plotted one, which I mentioned before when alluding to fig. 1.

Before we can realize exactly how much or little advantage is to be gained by this variable lead setting in full fore

VALVE DIAGRAM
FULL FORE GEAR AND RUNNING POSITION

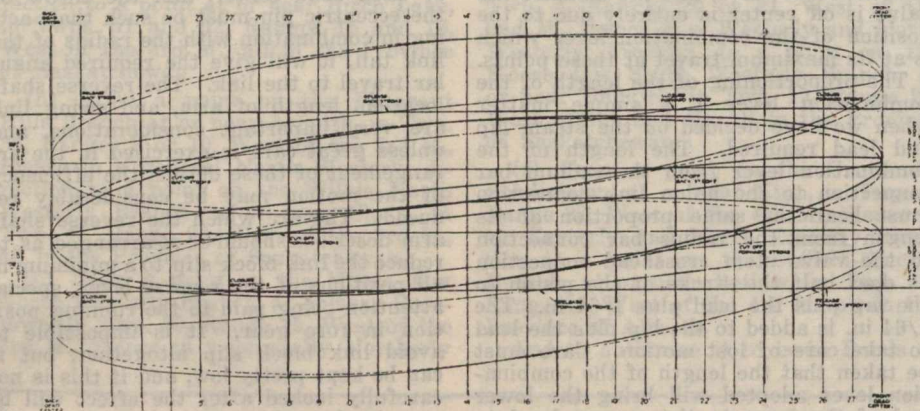


FIGURE 1
FULL BACK GEAR

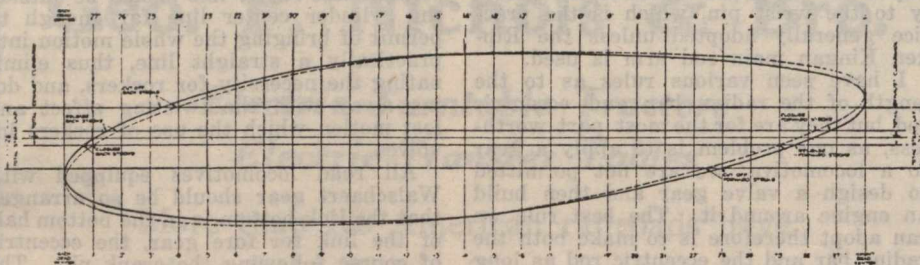


FIGURE 2

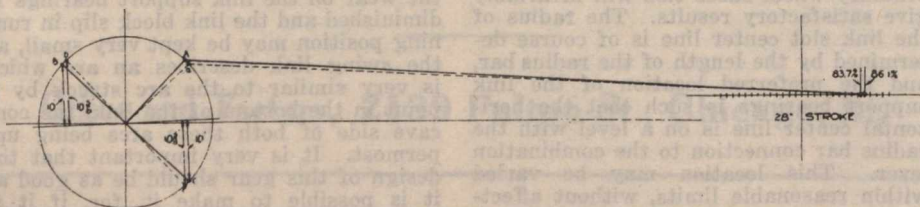


FIGURE 3
FULL FORE GEAR 80% - 75% CUT-OFF

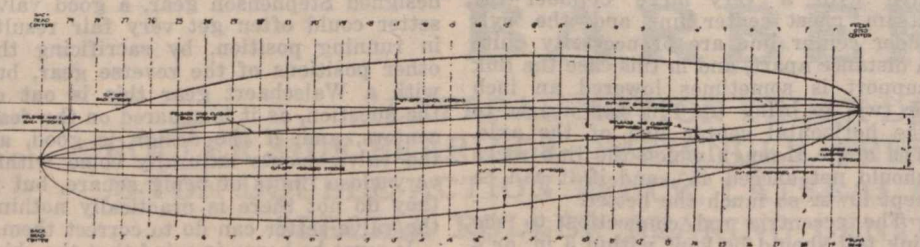


FIGURE 4

up toward mid-gear. This variable lead is a feature which is natural to the Stephenson gear, with open rods, and this gear was commonly set with no lead in both fore and back full gear, but in notching up from either of these positions an increasing lead was obtained. It is not a natural feature with the Walschaert gear, however, and if we produce it in the fore gear we do so at the expense of the back gear.

A prevalent idea seems to be that it is detrimental to have any lead at all in

glance at a few indicator cards will show us quite plainly that compression and not lead has to take care of this. The main object of lead is to give an unrestricted supply of steam to the cylinder, when the piston begins its stroke, and with the pre-admission down to about 1/64 in. it is impossible that the steam admitted to the cylinder can exert any appreciable turning moment on the axle until the crank pin has gone over the center. Although the lead is constant, on a normally set Walschaert gear, the

gear, we shall have to analyze the situation a little further and go into the question of starting tractive effort. We all know that the worst starting position for a locomotive is when she is standing with one side just past the cut-off point. In this case the whole starting effort has to come from the other cylinder where the crank has not yet reached the point of maximum leverage. Fig. 3 shows the position of the crank pin of this locomotive at the point of cut-off, the full line indicating position with normal setting and the dotted line with the variable lead setting. It is evident that, when the locomotive is standing in this position, we shall get the minimum starting effort, as all the turning moment has to come from the other crank, which will be either at B b or C c, according to whether A a represents the right hand crank or the left. The effective length of the crank, which is doing the work, is 10 in. for nominal setting and 10% in. for the variable lead setting, or a difference in favor of the variable lead of 6¼%, so that we may say that the minimum starting effort of this locomotive is increased 6¼% by this setting. I do not wish to convey the impression that this locomotive can be improved 6¼% by this means, as the maximum tractive effort is not affected in any way, and the only advantages are that the maximum tractive effort is available through a very slightly wider range of positions, and in the very worst starting position the tractive effort is increased by 6¼%. As soon as the locomotive has turned a wheel the advantage almost entirely disappears, the slight delay in the release and closure points may result in a slight improvement during the early stages of acceleration, but on notching up the two settings are practically identical.

Fig. 4 shows a diagram plotted for one of our mikado locomotives. This locomotive has a 27 x 30 in. cylinder, 14 in. valve, 6½ in. valve travel, ½ in. constant lead, 1 in. steam lap and no exhaust clearance. The chief difference from the passenger locomotive settings are reduced lead, reduced steam lap, and elimination of the exhaust clearance.

We have already seen that reducing the lead will give us a later cut-off in starting position, and have decided, I think, that this is an advantage when starting the load. Reducing the steam lap has the effect of lessening the period of expansion, but by reducing the exhaust clearance the period of expansion is lengthened and thus the ill effect of cutting down the steam lap is neutralized. The reduction or total elimination of the exhaust clearance lengthens the period of expansion by delaying the release, and this in itself is a good feature, but it has also the effect of advancing the closure point and the question naturally arises as to why it should be permissible to eliminate exhaust clearance and thus advance the closure point on freight locomotives and not on passenger locomotives. The first reason is that in running position the passenger locomotive is generally notched up to a much earlier cut off than the freight locomotive—about 25% of the stroke instead of 50%—and the second the piston speed of the passenger locomotive averages much higher than that of the freight locomotive.

The passenger locomotive, under consideration, has a piston speed of 1,136 ft. a minute when making 50 miles an hour, or over 40% higher than that of

the freight locomotive at 30 miles an hour, and the higher the speed the higher the compression will be, provided that all other conditions are equal. It is a mistake to think that compression always starts from the closure point; it does at very slow speeds, but as the speed increases the compression begins earlier, owing to the fact that the piston has to sweep a considerable volume of steam through a port opening which is narrowing down for the closure, in an increasingly short space of time. By giving this locomotive exhaust clearance, we not only delay the closure point, but also give a greater exhaust port opening, thus allowing the exhaust freer access to the atmosphere, and the result is a freer running locomotive.

You may say that when the locomotive is working at a short cut off less steam is admitted to the cylinder, and, therefore, the piston has less to sweep out on the return stroke, but if we consider for a moment we shall realize that the exhaust begins with the release, and by the time the return stroke has begun there is very little difference in the amount of steam left in the cylinder, whether running on long or short cut off.

When dealing with the question of compression we have to look into the matter from several different view points. From the point of view of economy of steam consumption per unit of power developed, the higher the compression the greater the economy, provided we do not run the compression higher than boiler pressure. This is on account of the clearance volume, and we can readily understand that, the higher the compression the less steam has to be supplied from the boiler to build up the initial pressure, and if the compression reaches boiler pressure there is no steam drawn from the boiler until the piston actually starts its working stroke.

The next thing to consider is the power required, as it is no use trying to run on a very fine thread of steam if we cannot get the tractive effort necessary to keep the load moving. From this aspect of the question, compression is negative effort, and a high compression curve seriously cuts down the area of an indicator diagram and the mean effective pressure, thereby reducing the power delivered.

The third and most important consideration is machine friction, and this generally limits the compression in practice. When the compression is too high, it can generally be detected in the cab, as the locomotive will jig, and ride badly at high speeds, and the effect on the rods and other running gear will be disastrous if this condition is allowed to continue. If we compare fig. 1 and 4 we find that the closure takes place at 76% of the stroke for the passenger locomotive in running position; with the freight locomotive running at the same cut off the closure takes place at 73%, but if we eliminate the exhaust clearance on the passenger locomotive we shall advance the closure point from 76% to 68% of the stroke. This goes to show how much the closure point is affected by the amount of exhaust clearance. For my own part I do not think the actual closure point is of very much importance, but that the exhaust port opening has a great deal more influence on the compression than the actual position of the closure point. I contend that if we pay proper attention to the exhaust port opening, the closure point will take care

of itself.

There is no purely mathematical means of determining the most desirable exhaust port opening, and this, like so many other problems in locomotive work, has had to be determined by practical experiments. It is here that we find the chief difference between passenger and freight locomotive setting, and, still referring to figs. 1 and 4, we see that the maximum exhaust port opening in running position for the passenger locomotive is just over 1½ in., whereas that of the freight locomotive is just over 1 9/16 in., when running at 50% cut off, while if we notch up the freight locomotive to the same cut off as the passenger locomotive we have a maximum exhaust port opening of only 1¼ in. This maximum port opening is only maintained for a few inches of the stroke, and it is easy to understand that when this port opening begins to narrow down it will form quite a choke for the exhaust, at a high piston speed, and will build up quite a little compression before the closure point is reached.

We all realize that a locomotive exhaust has to be choked to a certain extent, to obtain a high velocity jet up the stack, which will induce a proper draft through the grates, but this choking should be done by the exhaust pipe tip and not by the valve. Any choking which is effected by a correct exhaust pipe tip can build up but very little back pressure in the cylinder, whereas the throttling of the exhaust by the valve builds up considerable back pressure, and its effect on the draft is only detrimental. The area of the bore of the exhaust pipe tip on the passenger locomotive under consideration is about 23 sq. in., and on the freight locomotive 29 sq. in., and the valve displacement necessary to give a port opening equal to the area of the tip will be approximately 11/16 in. for the Pacific locomotive, and 7/8 in. for the mikado. This 11/16 in. port opening you can see from the diagram is maintained for 53% of the stroke on the Pacific locomotive, but on the mikado the 7/8 in. port opening is only maintained for 36% of the stroke when notched up to the same cut off as the Pacific. When the mikado is running at a 50% cut off, which is approximately her running position, the 7/8 in. exhaust port opening is maintained for 58% of the stroke, which compares favorably with the Pacific. I think that this gives us the chief reason why the Pacific setting is found to be more suitable for high speeds and short cut offs, while the mikado setting is better on the slower speeds and long cut offs.

We will now sum up the chief differences between passenger and freight locomotive settings, and as far as possible the reasons for the variation. The passenger locomotive has a greater lead, which gives an unrestricted supply of steam to the cylinder at the beginning of the stroke, and reduces the wire-drawing of the steam at high piston speeds. It has also the effect of increasing the exhaust port opening, which we will at once realize when we consider that the exhaust port opening at the end of the stroke must always be equal to the sum of the steam lap, plus the lead, plus the exhaust clearance, so that the greater any of these three properties are, the greater by that amount is the exhaust port opening at the end of the stroke. The freight locomotive has a smaller lead, in order to get a slightly later cut off, which will increase the

starting effort, and as this locomotive works at relatively lower speeds, it is not subject to wire-drawing to nearly the same extent as the passenger engine. The passenger locomotive has a greater steam lap, which lengthens the period of expansion and also increases the exhaust port opening, as explained before. The freight locomotive has a smaller steam lap, which allows a slightly later cut off in full gear, and though it tends to cut down the period of expansion a little, the ill effect is neutralized by the reduction or total elimination of the exhaust clearance. The passenger locomotive has a greater exhaust clearance, which hastens the release and delays the closure point, but, what is more important, it increases the exhaust port opening the amount necessary to keep the compression below the limit which will give a smooth running locomotive at the high speeds at which it has to work. The freight locomotive has little or no exhaust clearance, which has the effect of delaying the release, which is an advantage. It also has the effect of advancing the closure point and restricting the exhaust port opening, but there are no ill effects to be found from this at the long cut offs and relatively slow speeds at which this engine works. From this comparison we can see that the passenger locomotive setting has been developed to give a smart and free running locomotive at high speeds and short cut offs, while the chief consideration with the freight locomotive setting is to obtain the greatest possible tractive effort at moderate speeds and to run on comparatively long cut offs with the greatest possible economy by delaying the release point as far as possible.

I wish to express my gratitude to W. U. Appleton, Mechanical Superintendent, C.N.R., Moncton, for the help he has given me in getting out this paper, both in the way of suggestions and in affording me opportunities of taking readings from the actual locomotives.

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

Coal Car Shortage in United States—

The Interstate Commerce Commission issued the following circular March 2: The supply of cars available for the transportation of coal is insufficient to meet the demand. Unusual movements, incident upon the strike of coal miners, has brought about an abnormal location of cars. It is desirable that the proper relocation of cars shall be brought about as rapidly and with as little confusion as is possible. Critical situations still exist in which fuel for essential industries and purposes must be provided. The railways and the coal operators have all been working under the uniform mine rating and car distribution rules established by the Railroad Administration, which seem to be generally satisfactory and to meet with general approval. To the end that conflicting and contradictory rules on different roads, and in different fields, may be avoided in the unusual conditions which now exist in the industries and on the roads, the commission recommends that until experiences and careful study demonstrate that other rules will be more effective and beneficial, especially during the remainder of the early spring, the uniform rules as contained in the Railroad Administration's Car Service Section circular CS-31 (revised) be continued in effect.

Passenger fares have been advanced on French railways, 50%, in addition to previous advances.

Birthdays of Transportation Men in March.

Many happy returns of the day to:—

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

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

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

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

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

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

F. D. Burpee, Superintendent, Ottawa Electric Ry., Ottawa, Ont., born there, Apr. 25, 1876.

G. Cobb, Superintendent, Western Division, Reid Newfoundland Co., Bishop's Falls, Nfld., born at Coupar Angus, Scotland, April 21, 1885.

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

R. J. Collins, Chief Dispatcher, Cranbrook Division, British Columbia District, C.P.R., Cranbrook, born at Winnipeg, April 29, 1883.

J. P. Doherty, Port Agent, Canadian Government Merchant Marine Ltd., St. John, N.B., born at Portland, Me., April 8, 1889.

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

A. Gaboury, Superintendent, Montreal Tramways Co., Montreal, and President Canadian Electric Railway Association, born at Montreal, April 6, 1875.

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

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

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

E. J. Hilliard, Division Freight Agent, G.T.R., Ottawa, Ont., born at Montreal, April 14, 1870.

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

Capt. A. H. Kendall, M.C., Master Mechanic, Quebec District, C.P.R., Montreal, born at Aspatia, Cumberland, Eng., April 4, 1878.

G. F. Knight, Superintendent, St. Malo shops, Canadian National Rys., Quebec, Que., born at Charlottetown, P. E.I., Apr. 3, 1879.

A. A. Larocque, President, Sincennes-McNaughton Line Ltd., Montreal, and Second Vice President, Dominion Marine Association, born at Henryville, Que., April 30, 1865.

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

A. MacDonald, Traffic Superintendent, Winnipeg Electric Ry., Winnipeg, born April 7, 1872.

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

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

G. P. MacLaren, Engineer, Ontario District, Canadian National Rys., Toronto, born at London, Ont., April 4, 1878.

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

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

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

T. R. Percy, General Agent, Canadian Pacific Ocean Services Ltd., Yokohama, Japan, born in Ireland, April 21, 1888.

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

S. J. L. Potter, Local Treasurer, Eastern Lines, Canadian Northern Ry., Toronto, born at Burrington, Devonshire, Eng., April 5, 1887.

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

Lieut. R. S. Richardson, Superintendent, Canadian National Rys., Fort William, Ont., born at Napanee, Ont., Apr. 9, 1865.

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

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

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

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

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

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

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

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

H. E. Whittenberger, General Manager, G.T.R. Western Lines, Detroit, Mich., in remitting his yearly subscription, writes: "I consider Canadian Railway and Marine World a very finished periodical, and take a great interest in reading it."

Steel Rail Orders.—The Algoma Steel Corporation, Sault Ste. Marie, Ont., has booked during the past 6 months, orders for nearly 230,000 tons of steel rails, as follows: 140,000 tons, 85 lb., for C.P.R.; 50,000 tons, 85 lb., and 60 lb., for Canadian National Rys.; 35,000 tons, 100 lb., A.R.A. section, type A, for G.T.R., and also a few small lots of 85 lb. sections.

Agreement for Acquisition of Grand Trunk Railway System by Dominion Government.

Canadian Railway and Marine World for March contained particulars of the G.T.R. shareholders' meeting in London, Eng., at which it was decided to ratify the agreement arrived at between the Dominion Government and the company's Chairman, Sir Alfred Smithers. Under the authority of an order-in-Council passed Dec. 31, 1919, the agreement was signed by the Minister of Railways, Hon. J. D. Reid, and by the Railway Department's Acting Secretary, and was sent to the Canadian High Commissioner in London for execution by the G.T.R. Co.'s Chairman and Secretary. The agreement is as follows:

Whereas, by an act of the Parliament of Canada, entitled The Grand Trunk Railway Acquisition Act, 1919, the parties hereto were authorized to enter into an agreement for the acquisition by the government, on the terms therein stated, of the entire capital stock of the Grand Trunk except the guaranteed stock amounting to £12,500,000; whereas the issued capital stock of the Grand Trunk (not including the present guaranteed stock) consists of the following:

First preference stock, 5%	3,420,000
Second preference stock, 5%	2,530,000
Third preference stock, 4%	7,168,055
Ordinary or common stock	23,955,437
	£37,073,492

And whereas the present outstanding debenture stocks of the Grand Trunk, consisting of—

Five per cent. G.T. debenture stocks	4,270,375
Five per cent. Great Western debenture stocks	2,723,080
Four per cent. G. T. debenture stocks ..	24,624,455
Four per cent. Northern debenture stocks	308,215
	£31,926,125

are entitled to certain voting powers at meetings of shareholders of the Grand Trunk; witnesseth: that the parties hereto have agreed as follows:

2. Statement of Control.—The Grand Trunk represents that the companies, properties and interests comprised in the G. T. R. System are correctly and fully set forth in the first schedule of this agreement, and that it has in such schedule correctly and fully shown how the various companies and their undertakings are controlled by the Grand Trunk, whether by stock ownership and to what extent, and whether by leases, agreements or otherwise, distinguishing in these respects the direct ownership and control by the Grand Trunk from the indirect ownership and control through companies included in the system.

2. Sale and Purchase of Certain Stocks.—The Grand Trunk hereby undertakes and agrees to use its best endeavors to cause the sale and delivery to the government, and the government agrees to acquire, in the manner and on the terms hereinafter set forth, the preference and common stock of the Grand Trunk now issued and outstanding to the face value mentioned in the recitals to this agreement.

3. Part Consideration—Cessation of Voting Powers.—As part of the consideration for such acquisition, the government agrees to guarantee the pay-

(a) Dividends payable half-yearly, at 4% per annum, upon the present guaranteed stock; (b) The interest upon the present debenture stocks as and when

payable, in accordance with the terms thereof; these guarantees to take effect upon the date of the appointment of the committee of management hereinafter mentioned. The guarantees shall be in form, or substantially in the form, set forth in the second and third schedules, respectively, to this agreement, shall be signed by the Minister of Finance and Receiver General of Canada on behalf of the King in the right of the Dominion of Canada, and, forthwith after the appointment of the committee of management hereinafter referred to, shall be deposited with the High Commissioner for Canada in London, Eng., for the benefit and information of all parties concerned. Provided that concurrently with the deposit of such guarantees, the voting powers at meetings of shareholders of the Grand Trunk now vested in or exercisable by the holders of the present guaranteed stocks and the present debenture stocks, respectively, shall cease and determine absolutely.

4. Committee of Management.—Forthwith after the ratification of this agreement, as provided in the said act, a committee of management of the G. T. System shall be formed, consisting of five persons, two to be appointed by the Grand Trunk, two by the government, and the fifth by the four so appointed. The functions of the managing committee shall be to insure the operation of the G. T. System (in so far as it is possible to do so) in harmony with the Canadian National Rys., the two systems being treated, in the public interest, as nearly as possible as one system. No contract or agreement shall be made by the Grand Trunk, or by any company comprised in the G. T. System, and controlled by the Grand Trunk, other than such as are necessary for the usual and ordinary business of the system except with the concurrence of the managing committee, and the approval of the Governor in council. The managing committee may, with the consent of the Governor in council, borrow from the government on Grand Trunk notes, or other obligations or securities approved of by the Governor in council, for the carrying on of the operation or improvement of the G. T. System. The committee shall continue to act until the preference and common stocks are transferred to or vested in the Government, when it shall be discharged.

5. Examination of Books and Properties.—The books, minutes, reports, documents, and other records, and all the railways and properties of the companies comprised in the G. T. System, shall at all times be accessible and open to inspection and examination by any person or persons named by the Minister of Railways and Canals of Canada, or by the board of arbitrators hereinafter mentioned; and all proper aid and assistance shall, on request, be rendered to such person or persons by the committee of management and by the officers and employees of the Grand Trunk and its allied companies, including the making and giving of extracts, copies and statements.

6. Submission to Arbitration.—The value, if any, to the holders thereof, of the preference and common stock shall be determined by a board of three arbitrators, one to be appointed by the government, one by the Grand Trunk, and the third shall be Sir Walter Cassels, Judge

of the Exchequer Court of Canada, who shall be Chairman of the board. Should Sir Walter Cassels die or be unable to act, the said parties shall agree upon another third arbitrator who shall be either the then Judge of the Exchequer Court of Canada, or one of the judges of the Supreme Court of Canada, and who shall likewise be Chairman. Should any vacancy occur in the board of arbitrators other than the third arbitrator, the arbitrator to fill the vacancy shall be appointed in the same way as the arbitrator whose seat has become vacant was appointed.

7. Arbitration Proceedings.—The board of arbitrators shall have full power and authority in respect of the control of the arbitration and the proceedings thereof including the administration of oaths and in respect of the admission of evidence. The board shall have power to employ or procure such legal, engineering, actuarial or other assistance and such evidence as it may require. Should the arbitrators require that the evidence of any person be taken de bene esse, or out of Canada, the arbitrators may delegate to any person power to administer oaths, to take such evidence under oath, or otherwise, and to transmit to the arbitrators for use upon the arbitration. The evidence upon the arbitration shall be taken in shorthand and transcribed by competent stenographers appointed by the arbitrators and duly sworn.

8. Making of Award and Appeals.—The award shall be made by the arbitrators, or a majority of them, within nine months from the appointment of the arbitrators, or within such further time as the Governor in council may approve. The unanimous award of the arbitrators shall be final, but should the award not be unanimous, and should notice of appeal be given by either party to the other within 30 days after the making of the award, an appeal therefrom, upon any question of law, shall lie to the Supreme Court of Canada, and/or to the Judicial Committee of the Privy Council, if leave be granted by the said committee.

9. Clerical Errors.—The arbitrators shall have the power to correct in their award any clerical errors or mistakes, at any time within two weeks after delivery thereof.

10. Undisclosed Liabilities.—Should the government, within three months after the making of the award, claim that there existed any liabilities of the Grand Trunk, or of any company comprised in the G. T. System, which were not disclosed to the board of arbitrators prior to the making of their award, the government may, within such period of three months, apply to the board of arbitrators to amend their award, and the board may thereupon decide whether such liabilities existed and were disclosed to them, whether the amount of their award would or would not have been affected thereby, and the amount of the deduction, if any, to be made in respect thereof; and may amend their award accordingly.

11. Limit to the Amount of the Award.—The value, if any, so determined shall not be greater than an amount on which the annual dividend at 4% per annum on the aggregate face value of

the present guaranteed stock and the new guaranteed stock taken together would be \$5,000,000; that is, the value, if any, so determined shall not exceed \$64,166,666.66. The fixing of this limit shall not be taken by the arbitrators as any admission or indication that the value to be determined is the amount so fixed, or any other amount.

12. Issue of new Guaranteed Stock.—Upon the value of the preference and common stock being finally determined under the provisions of this agreement, the Grand Trunk shall create an issue of non-voting 4% capital stock. The amount thereof shall be the amount of the value, if any, of the preference and common stock, determined as above provided, less such deductions therefrom as are to be made under the terms of this agreement. The government shall guarantee to the holders of the new guaranteed stock that there shall be paid a dividend thereon at the rate of 4% per annum, payable half yearly, from the date of the appointment of the committee of management. The new guaranteed stock shall be distributed among the holders of the preference and common stock, upon the transfer to or vesting in the government of such stock, in proportions which shall be determined by the arbitrators. The new guaranteed stock shall be deemed and issued as fully paid stock and free from calls and other liabilities. The new guaranteed stock shall be in the form, or substantially in the form, set forth in the fourth schedule to this agreement, and the guarantee of the government in respect thereof shall be signed and deposited in the same manner as is provided in this agreement with respect to the guarantee of the present guaranteed stock. A copy of the guarantee in this clause provided for shall be endorsed or printed upon the certificates of new guaranteed stock as from time to time issued.

13. Transfer of Preference and Common Stocks.—The new guaranteed stock shall be issued in exchange for the preference and common stock upon the transfer to or vesting in the government, or its nominees, of such preference and common stock as aforementioned. Should any shares or any part of the preference and common stock not be transferred to the government, the

Governor in council may declare such shares or any such part of the preference and common stock to be the property of the Minister of Finance in trust for His Majesty and upon the making of such declaration the shares or part thereof not so transferred shall immediately become the property of His Majesty, and proper entries thereof in the stock registers and other books in that behalf shall be made. The amount of the new guaranteed stock to which the holders of any such shares or part thereof so vested in His Majesty would be entitled to under the terms of this agreement shall be issued and delivered to such holders, or their representatives, upon proper application being made therefor to the government and the surrender or delivery of such shares to the government or its nominees, or proper evidence of the applicants' rights thereto should such share certificates be lost or destroyed.

14. Redemption of Stocks.—The present guaranteed stock and the new guaranteed stock, or any part thereof, may be called in or redeemed by the government or the Grand Trunk, at par, at any time after five years from the date of the appointment of the said Committee of Management, on six months notice, by advertisement, to the holders thereof.

15. Vacating of Offices.—Upon the preference and common stock being vested in the government, or its nominees, the Grand Trunk shall cause its board of directors, and the board of directors of each Company comprised in the G. T. System, to resign or vacate their offices, as directors, at such time or times and in such manner as may be requested by the government, and nominees of the government shall be duly appointed to the vacancies caused thereby. Should any director of the Grand Trunk, or of any company comprised in the G. T. System, which is within the legislative authority of the Parliament of Canada, neglect to resign or vacate his office in accordance with such request, the Governor in council may declare the office of any such director to be vacant on and after a date to be named in such order, and may appoint a director in his stead.

16. Varying Obligations.—After the execution of this agreement and until the preference and common stock is vested in the government, the Grand Trunk shall refrain, without the approval of the

Governor in council, from varying by bylaws, agreement, or in any other manner whatsoever, the rights or liabilities appertaining to the capital stocks or securities of the Grand Trunk, or of any company comprised in the G. T. System, and from increasing, without such approval, except in so far as is necessary in the usual and ordinary conduct of the business of the system, or as may be concurred in by the committee of management and by the Governor in council, the obligations or liabilities of the Grand Trunk or of any company comprised in the G. T. System. The Grand Trunk shall also refrain, without such approval, from declaring any dividends on any of the capital stocks.

17. Superannuation and Pension Funds.—The Grand Trunk Superannuation Fund shall continue in existence, and shall continue to be administered as at present, and in accordance with the rules and regulations governing the same. The rules and regulations of the Grand Trunk pension system shall continue to be applicable to employes of the G. T. System until a general pension scheme applicable to all employes of Canadian Government owned or controlled railways shall be adopted and become effective. The rules and regulations of the Grand Trunk Insurance and Provident Society shall continue to be applicable unless and until the government shall adopt and make effective a general insurance scheme applicable to all employes of Canadian Government owned or controlled railways.

Schedule Companies Directly Controlled by G. T. R. Co. of Canada.	
Bay City Terminal Ry. Co.	Stock ownership 100%
Canada Atlantic Transit Co.	" 100%
Canada Atlantic Transit Co. of U.S.	" 100%
Central Vermont Ry. Co.	" Majority
Champlain & St. Lawrence Ry. Co.	" and lease 100%
Chicago, New York & Boston Refrigerator Co.	Stock ownership 100%
Detroit, Grand Haven & Milwaukee Ry. Co.	" 100%
Detroit Terminal Rd. Co.	" 50%
Grand Rapids Terminal Rd. Co.	" 100%
Grand Trunk Junct. Ry. Co.	" 100%
Grand Trunk Pacific Ry. Co.	" 100%
Grand Trunk Western Ry. Co.	" 100%
International Bridge Co.	" 100%
Michigan Air Line Ry.	" and lease 100%
Montreal & Southern Counties Ry. Co.	" Majority
Montreal Warehousing Co.	" Majority
New England Elevator Co.	" 50%
Ontario Car Ferry Co.	" 100%
Ottawa Terminals Ry. Co.	" 100%
Portland Elevator Co.	" 100%
St. Clair Tunnel Co.	" 100%
Terminal Warehouse Registered	" 100%
The Canadian Express Co.	" 100%
The Erie, London & Tilsonburg Ry. Co.	" 100%
The Lachine, Jacques Cartier & Maisonneuve Ry. Co.	" 100%
The Maganetawan River Ry. Co.	" 100%
The Oshawa Ry. Co.	" 100%
The Rail & River Coal Co.	" 100%
The Realty Assets Co., Ltd.	" 100%
The Toronto Belt Line Ry. Co.	" 100%
Thousand Islands Ry. Co.	" 100%
Toledo, Saginaw & Muskegon Ry. Co.	" 50%
Toronto Terminals Ry. Co.	" 100%
Transcontinental Townsite Co., Ltd.	" 100%
United States & Canada Rd. Co.	" and lease 100%

Companies Controlled by Subsidiary Companies of G.T.R. Co. of Canada	
Chicago & Kalamazoo Terminal Rd. Co.	Controlled by G.T. Western Ry. Co. through ownership of 100% of stock.
Detroit & Huron Ry. Co.	
Pontiac, Oxford & Northern Rd. Co.	Controlled by G.T.W. Ry. Co. by lease. G.T.W. owns 50% of stock. G.T.W. owns 9.68% of stock.
Chicago, Kalamazoo & Saginaw Ry.	
Detroit & Toledo Shore Line Ry. Co.	G.T. Junction Ry. owns 1/12 of stock. G.T. Junction Ry. owns 1/5 of stock.
Toledo Terminal Railway Co.	
Belt Ry. Co. of Chicago	Controlled by Detroit, Grand Haven & Milwaukee Ry. through ownership of 100% of stock.
Chicago & Western Indiana Rd. Co.	
Grand Trunk Milwaukee Car Ferry Co.	Controlled by G.T. Pacific Ry. Co. by ownership of 100% of stock.
G.T. Pacific Branch Lines Co.	
G.T. Pacific Coast Steamship Co., Ltd.	
G.T. Pacific Development Co., Ltd.	
G.T. Pacific Dock Co. of Seattle	
G.T. Pacific Saskatchewan Ry. Co.	
G.T. Pacific Telegraph Co.	
G.T. Pacific Terminal Elevator Co., Ltd.	
The Bulkley & Telkwa Valley Coal Co.	
The National Construction Co., Ltd.	
The Pacific Northern & Omineca Ry. Co., Ltd.	
The G. T. Pacific Alaska Steamship Co., Ltd.	
Barre Granite Ry.	Controlled by G.T. Pacific Dock Co. of Seattle, by ownership of 100% of stock.
Bethel Granite Ry.	
Central Vermont Transportation Co.	
Montreal & Province Line Ry. Co.	
Montreal & Vermont Junction Ry.	
Southern New England Ry. Co.	
Southern New England Rd. Corporation	Controlled by C.V. Ry. by ownership of 100% of stock.
Southern Vermont Ry.	
Stanstead, Shefford & Chambly Rd. Co.	
New London Northern Rd. Co.	
West River Rd. Co.	
Controlled by C.V. Ry. by lease.	

Companies Controlled by G.T.R. Co. of Canada by Lease.	
Atlantic & St. Lawrence Ry.	
Buffalo and Lake Huron Ry. Co.	
Central Counties Ry. Co.	
Chicago, Detroit & Canada Grand Trunk Junction Rd. Co.	
Cincinnati, Saginaw & Mackinaw Rd. Co.	
Lewiston & Auburn Rd. Co.	
Norway Branch Rd. Co.	
Pembroke Southern Ry. Co.	

In no case shall any acquired rights or vested interests in either the pension system or the Insurance and Provident Society be affected.

18. **Grand Trunk Pacific.**—The Minister of Railways and Canals, as receiver of the G.T.P. Ry. System, may entrust to the committee of management on terms to be approved by the Governor in council, the exercise of such of his powers as Receiver as the Governor in council may deem requisite, in order that the operation and management of the G. T. Pacific System may be conducted in harmony with the operation of other railways and properties under the control of the committee, and upon the transfer to or vesting in the government of the preference and common stock as herein provided for, the Governor in council may, on such terms and conditions as may be deemed necessary in the public interest, order the discharge of the receivership of the G. T. Pacific System, and the termination and withdrawal of the proceedings in the Exchequer Court of Canada relating thereto.

19. **G.T.P. Guarantee and Claims.**—

For the purpose of the valuation provided in this agreement, the obligations of the Grand Trunk as guarantors of any indebtedness of the G. T. Pacific Co., or of the G. T. Pacific Branch Lines, or otherwise, and the claims of the government against either of the above mentioned companies, or against any company forming part of the G. T. R. System, shall not be treated as extinguished or affected by anything contained in the said act.

20. If the arbitrators consider that the market prices or quotations of the stocks are to be taken into consideration in establishing their value, they shall not take into account the fluctuation, if any, in the market prices or quotations of the said preference and common stock caused by the negotiations between the parties hereto, the passing of the said act, or the execution of this agreement. This shall not be taken to mean that the market prices or quotations are relevant matter to be inquired into by the arbitrators.

21. **Costs.**—Each of the parties to this agreement shall pay its own costs of

and in connection with the arbitration subsequent to the date of this agreement, including the remuneration of the arbitrator appointed by it. The remuneration of the third arbitrator, of the secretary of the arbitration board, secretarial, clerical, reporting, travelling and other necessary expenses which may be considered as in the common interests of both parties, shall be equally borne by each party. In order to provide the necessary funds to pay its expenses and its share of the common expenses, the directors of the Grand Trunk shall be entitled to create a fund, by means of assessments on the present debenture stocks and present guaranteed stock, in such proportions as the directors in their discretion may determine, which shall be deducted from any payments on said debenture and present guaranteed stocks as may be necessary:

Should any difference arise as to what is included in the expression "common interests of both parties", as used in this clause, such difference shall be settled by the board of arbitrators on the application of either party.

Graphic Production Control Discussed.

The paper on graphic production control, by E. T. Spidy, A.M.Am.Soc.M.E., Production Engineer, Angus Shops, C.P.R., Montreal, which was published in Canadian Railway and Marine World for February, was, after its reading, discussed by the Canadian Railway Club's members, as follows:

L. C. Ord, Assistant Works Manager, Angus shops, C.P.R. After Mr. Spidy's remarks it is possible that some of the members may think, from the amount of color on the charts, that this subject is a complicated one which requires considerable staff and considerable work. It, however, requires a very small staff to operate, as in a shop of 2,500 men the total additional staff required to handle this would not be more than four or five men, and with this, 50% increase should be obtained in the output without increasing the supervision. This method of control also looks after the movement of material, and in a shop, large or small, it is a familiar sight to see the foreman, who should be watching his men, chasing over to the stores or elsewhere, looking for material which he is short of. Under this system the chasing of material is done by one man and the foreman stops moving from shop to shop. The same condition applies where are several shops handling the same material. One fellow knows that the stores has something he wants and he goes and gets it, but with the schedule man watching, the delivery of material is checked up, and he sees that it is distributed to the shop as required. Where large quantities of material are used for new equipment the tracing position is serious, and in the case of some items it is handled in bulk. We carry considerable stock ahead and as the supply begins to run low the check is repeated every day until it is received. This system shows the number of days the shop has been out each class of material. The party concerned is supplied with a list of the outstanding material that is short and he can act on the situation. The staff required to do this is extremely small and the men who specialized on it does more work than several foremen. In any large shop, where

any special work is required in a hurry, nothing gives a quicker answer than a schedule. This schedule is not a new method. It is equivalent to putting a lazy man on the basis of a good man. The older experienced foremen planned his next day's work the day before. He knew what he had to do and did not wait until the morning to assign his men to their different work. He wrote up the list of what was to be done and told his men to do it. Various foremen had different methods. This system writes up the list for the foreman the night before and gives it to him in time to assign men to the jobs for the following day, and the men do not work one against the other. In making a chart you have a definite and uniform method and with a large staff every man knows it in time. In a shop where you put four or five men on a car or locomotive, and have some working on the wheels and some on the other parts, if the men could do all the work it would then be a simple matter to take the material as it came along, but the modern shop is gauged up to its maximum and each man specializes, and it becomes more difficult to see that each man gets off the job in time for the next man. The schedule puts that in the hands of each foreman, as it indicates whether any one shop is late repeatedly or whether it is ahead of time. In almost every shop where a job is started a different schedule is required. You do not start off and find out later where you are going to come out at. Before a foreman starts a job he has to make a definite plan of how he is going to do the work, and then he is checked up to see that he carries it out. His plan can be checked up in detail before he starts out and you know how closely he lives up to it. By checking the work and your layout you can see that distribution is controlled before the job starts and each schedule will bring better results later on. The last point is that it does ensure uniformity of output and a certainty of operation that cannot be obtained in any other way.

A. McAlpin, Angus Shops, C.P.R., Montreal. Production by schedule has been so clearly stated that, to shop-

men at any rate, questions seem hardly necessary. That is as far as the paper goes. But there is one thing not mentioned in the paper that at present time has a distinct bearing on the paper and in the future may have a still more direct bearing. These schedules have all been based on an output under a piecework system, or one might say on an accelerated labor basis. As the Canadian railways have accepted the McAdoo award and as one of the clauses of that award decrees that where the men rate a majority against piecework, it automatically shall cease to exist. I would like to know if Mr. Spidy can enlighten us as to how we are to keep up the labor pace to fulfil the requirements of the present schedule.

E. T. Spidy. You ask what would happen to the schedule if the piecework system fails. At Angus shops piecework is in force, which accelerates the output of the individual and this would, in a way, affect the schedule, but the schedule in itself is entirely independent. Should piecework be discontinued the check we get on individual operations by the piecework foremen would also be discontinued. We would still have, however, in every department, the check which is made by the production staff in each shop. Should piecework be discontinued, a certain number of the piecework staff would probably be absorbed into supervision, which would provide extra foremen to check up the work and see that it was done. My own opinion is that a shop without piecework requires a production schedule that is more extensive than one which has piecework, because that provides the only individual check on the work. Just how one is going to prevent a slow up in the output is a matter the supervisors will have to handle, but if you provide the supervisor with a list of work required each day, he has something definite to work to, and the management has a definite check every day, it can be readily seen when he is falling down and where. The schedule will tell you exactly how your shop is being run, which will give the necessary stimulus to get the output.

W. Blackbird, Contract Inspector, G.

T.R. I do not consider that our system on the G.T.R. has very much bearing upon the system explained by Mr. Spidy. We have a system of contract which, while it perhaps does not control the output in the same manner as Mr. Spidy's system, gives a stimulus to the men. By having a system of time allowances, based upon the average man's production, the man that is capable of doing a little better, by the extra effort, earns bonus. It has proved to be of very great assistance in maintaining the output, especially in car and motive power department's work. Our schedules are all upon a time basis, and if a man produces an amount of time which exceeds his actual time worked, the excess time, at his hourly rate in the shop, represents his bonus. I do not think the systems are comparable.

W. H. Sample, General Superintendent, Motive Power and Car Departments, G.T.R.: May I ask Mr. McAlpin if he has had any experience working with a schedule, on piecework or working on a stated hourly basis, and did he make a comparison of the results?

A. McAlpin: I have to answer in the negative. I am employed at the Angus shops and our output is on a strictly work basis.

J. Burns, Works Manager, Angus Shops, C.P.R.: I do not think we can compare this schedule with piecework as it is an entirely different proposition. As Mr. Spidy explained, the intent of the schedule is to plan the work out so that each unit comes in its proper course, and delay is thus avoided. When we start to build locomotives or cars, we have to have designs or drawings and after that the patterns have to be made and castings and other materials produced. The schedule is framed so that each article comes along in its proper turn. The piecework has nothing to do with this. Of course the piecework or bonus system has to do with the output, but the schedule has to do with it in a different sense. We all know that material coming from the blacksmith shop or the machine shop, if not delivered in time, will finally cause delay in other parts of the shop. If we are to receive steel castings from the outside stores and they are not delivered, and we have a boiler ready, it has to wait until we get the castings. This is where the schedule shows its proper use. Anyone who has seen it operate will certainly know that in large shops it is an absolute necessity, and it can be used in any shop, but in large shops especially, where so many different departments are producing or require material, it is necessary to ensure that no delay takes place at the different parts of the shop. We have found that in our shops where we manufacture parts for locomotives and cars, and also manufacture material for outside points on the system, the machine shop foreman gets orders from the stores for material for outside points at the same time that he is supplying material for the erecting shop, and if the foreman of the erecting shop is waiting for the material, and the man at the outside point is also waiting for it, then somebody has got to come in between who knows where the material should be supplied at first. The schedule man has a schedule for that material and he knows the time the material is to be delivered. He has the matter in hand and can deliver to the stores, also at the same time produce the article for the erecting shop, in time to avoid delay. If we did not have a sched-

ule, to know our actual requirements, we would not know what to do. When you take the system all the way through, it helps both the foreman and the supervision in handling the work. Each one knows just what is required and can bring pressure to bear at the proper time to get the desired results.

W. A. Booth, Chief Draftsman, G.T.R.: I notice that considerable mention has been given in the paper about the drawing office. As a general rule the drawing office comes in for very little credit. I remember my first chief, the late Geo. Holland, saying that if anyone came in for criticism it was generally the drawing office. Go anywhere you will; it is just the same, the drawing office is the bumping post of every mechanical institution. After going through this paper and considering the subject, I am satisfied that everything hinges on the drawing office. That office must prepare the designs and drawings before the patterns can be made, and the foundry, machine and erecting shops are all more or less dependent on that office. I said to one of my principals a short time ago that, as a doctor is to the patient, so the drawing office is to the shop foremen and I make that statement without any fear of contradiction.

W. H. Winterrowd, Chief Mechanical Engineer, C.P.R.: In all fields there has always been incentive to produce efficiently and economically. During the past few years that incentive has become greater and I do not believe that we have ever had a greater incentive than we have at present, to produce efficiently and economically. The greatest majority of successes have been accomplished by individuals, or groups of individuals, who have had a full knowledge of all the facts with which they have had to contend, all possible steps having been taken to eliminate uncertainty. By means of the system which Mr. Spidy has described, all, or the greater part, of uncertainty, or guess work is eliminated. This system puts facts into the hands of the man, or the men, who have to use them, and with this knowledge, and within the sphere described, it is possible for them to carry out their work in the best and most efficient manner.

T. C. Hudson, General Master Mechanic, Canadian National Rys.: I think it would be unwise for the official of any other road to attempt to criticize this system which is more or less new in many respects. In the Canadian National Rys. shops, the output and cost of repairs is watched very closely. It is true, as Mr. Ord has pointed out, that any supervisor in a shop must always look ahead and plan the work that is coming next, but, with the aid of these charts, the foreman knows each day just what he has accomplished. There never has been a time when increased production was more necessary than at present. We have heard the members speaking about day work and piecework, and it brings to our minds the fact that if there is one thing we need to fear, it is the tendency which exists to do a smaller day's work, and, will have to deal with this thing pretty soon or we will suffer. European nations are organizing to increase production and we must get our thinking caps on and study local conditions in order to produce more. It is equally to the interests of the working men to consider this matter also. It will be necessary to get together to bring about the desired results. If these

charts will show the workmen what they are doing, at the end of the day, they will be a benefit. I can remember the time when there was keen competition between the little shops and the big shops on the C.P.R. and in those days we used to set a good pace for Angus shops. I am glad to see that they are using the chart system to increase efficiency.

E. T. Spidy: With regard to the question as to how the estimates are arrived at. In the case of locomotive repairs, we have the average costs for the past few years, and, as a rule, the class of job is one which has been done so many times, that it is pretty well known what it should cost, and we use these averages to form our general basis, but the general average is only good in the case of straight repairs; if a job is extra big, we add a certain percentage to the average cost to make our total estimate. In the case of individual shop costs we estimate on the straight piecework basis. We have prices for each job, and by simply adding up the different operations we get the total costs of the job in that shop. Schedule work cuts the time between jobs. Piecework concentrates on the job itself. The schedule aims to cut out the lost time.

Annual Passes for C.P.R. Employees.

E. W. Beatty, K.C., President, C.P.R., has issued the following circular to officers and employees: Effective Mar. 1, annual passes will be granted to employees coming within the following classifications and will be made good also for employee's wife where desired (one pass for two persons). Employee on a general superintendent's district, who has had continuous service for not less than 10 years, will be granted annual pass good over district on which employed. Such employee who has had continuous service for 20 years and over, will be allowed annual pass good over Eastern or Western Lines, upon which ever employed. Employee of any other department of the service will enjoy the same privilege as above, stating the territory over which pass desired. These privileges and conditions also apply to a pensioner, and to an employee who has been reinstated or re-employed, not out of the service for more than 12 consecutive months, and given seniority upon return. Women employees will be treated the same as male employees, except that passes will be good for themselves only. Upon certain trains, such as 7 and 8, these passes will not be honored. The company's general pass regulations will continue in force, except in respect of the employees above mentioned.

No 16-Storey Hotel for Montreal.—The Montreal Administrative Commission is reported to have decided Mar. 9 to reject the application which the city council had approved for the erection of a 16-storey hotel in the city. The commission took the ground that the city, having good building bylaws, should not permit any variation therefrom. The bylaws permit the erection of 10-storey structures only. It was proposed to erect a \$5,000,000 building on St. Catherine St., between Peel and Metcalfe Streets. Lord Shaughnessy and E. W. Beatty, K.C., of the C.P.R., were interested in the project.

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

Bellechasse and Temiscouata Counties, Que.—The Minister of Railways stated in the House of Commons, March 22, in answer to questions, that Parliament has not, within the last few years, granted a charter to build a railway between St. Camille, Bellechasse County, and Cabano, Temiscouata County. Parliament has voted subsidies in this connection, but only part of them were granted, they having lapsed.

Canadian Niagara Bridge Co.—A press report of March 8 states that M. C. Spratt, special attorney representing the New York Central Rd., Toronto, Hamilton and Buffalo Ry., and Canadian Pacific Ry. companies, which are promoting this bridge building company, had announced that the land under option on Grand Island, in Niagara River, and on the U.S. mainland necessary for the company's purposes had been purchased; that men would be put to work at once clearing up the land on Grand Island, and that work would be started on the construction of the bridge in the spring. Everything in connection with this project is being done as secretly as possible, and no official information is obtainable. (March, pg. 135).

Dauphin Industrial Railway—Tenders were received to March 19 by J. A. Gorley, Secretary, Dauphin Rural Municipality, Man., for all or any part of the following equipment: 7 miles, 20 lb. rails, 24 in. gauge, with and without steel ties; 4 curves, 24 in. gauge, 40 ft. radius; 7 switches, 24 in. gauge; 110,000 ft. b.m. tamarac or B.C. fir, 3"x6"x16'; 1 six ton gasoline locomotive, 24 in. gauge; 1 three ton gasoline locomotive, 24 in. gauge; 4 five ton dump cars, 24 in. gauge, with or without roller bearings; 4 five ton flat cars, 24 in. gauge; 1 gasoline or steam shovel ½ to 1 cubic yard capacity.

Dominion Atlantic Ry.—The new station recently opened at Bridgetown, N.S., is a conveniently arranged structure 24 x 56 ft., with 20 ft. overhanging at each end, and has in front a walk 390 x 12 ft. The building has a cement pebbledment, the main structure being of stucco on trussed lath, centered with base-dash, with smooth finish above and below, and an asbestos shingle roof. The inside finish is of Douglas fir and birch, the ceilings and sidewalks being sand-finished and cream tinted. It contains an office 14 ft. square; ladies' waiting room, 12 x 24 ft.; men's waiting room, 20 x 24 ft., and baggage room, 20 x 10 ft. The building is heated by hot air. On the opposite side of the track a freight shed 30 x 48 ft. has been built. The contractors for these buildings were J. H. Hicks and Sons.

A press report of March 15 states recent storms and floods in Nova Scotia washed out about eight miles of the company's railway between Plympton and Digby, which will have to be rebuilt. (Dec., 1919, pg. 655).

Edmonton, Dunvegan and British Columbia Ry.—The car sheds at Edmonton, Alta., were destroyed by fire recently, along with 2 cars which were being repaired. The building was of frame, 150 x 50 ft. (Nov., 1919, pg. 602).

An Edmonton, Alta., press report of March 15, states that the Alberta Government, desiring to be in a position to make a deal with the E., D. and B.C.R.

in the event of the Dominion Government not taking it over, has prepared a bill for submission to the legislature, appropriating \$1,000,000 for improvements on the line. The expenditures proposed include \$200,000 for ties; a large sum for ballasting all along the line, and particularly between Spirit River and Grande Prairie; \$200,000 for leasing additional locomotives, and money to provide for paying interest on the bonds as it becomes due. (March, pg. 134).

Esquimalt and Nanaimo Ry.—The British Columbia Legislature has passed an act ratifying the agreement between the City of Victoria, the B.C. Government and the company, respecting the construction of a railway and general traffic bridge on Johnson St. The Lieutenant Governor on March 8, returned the bill to the legislature, recommending the substitution of an amended agreement in place of the one forming Schedule A of the original bill. The amendment desired was considered, and an amended bill was read and sent forward to the committee the same night, and the committee reported approving of the same, March 10.

A press report states that the Marine Department at Ottawa has directed an enquiry to be made to know how the proposed new bridge will affect the Dominion property on the former Songhees Indian Reserve.

A contract has been signed for the purchase of plans for the special span from Strauss Bascule Bridge Co., Chicago, Ill., and we are advised that general detail plans and specifications are being prepared for a 150 ft. single leaf combined railway and highway bridge.

Grading and other work on Lane St., in connection with the approach to the new bridge, is reported to have been started March 3, under charge of F. M. Preston, City Engineer.

There has been deposited with the Public Works Department at Ottawa, a description of the site and plans of a wharf and transfer slip proposed to be built in Nanoose Bay, Vancouver Island. (March, pg. 135).

Grand Trunk Pacific Ry.—A recent press report stated that a contract was about to be let for building another dock at Prince Rupert, B.C. It will be an extension of the company's present wharfage area, and will involve an expenditure of \$600,000. It will be 860 x 173 ft. and will be provided with a shed 820 ft. long, with a capacity of 25,000 tons. Two tracks will be laid along the dock and provision is also being made for a travelling crane and 2 elevators.

A press report states that the United Farmers of Alberta, Sedelva Branch, has been advised that owing to financial conditions, it will be impossible to proceed with building the Biggar-Calgary Branch this year. The line is in operation from Biggar to Loverna, at the Saskatchewan-Alberta boundary, 105 miles. (Jan., pg. 18).

Hudson Bay Ry.—The Lieutenant Governor's speech at the opening of the Manitoba Legislature recently in referring to the Hudson Bay Ry., said: "You will again be asked to consider resolutions requesting the completion of the Hudson Bay Ry., and the transfer of the natural resources of the province to provincial jurisdiction. This road, in operation to the seaboard, and the realization of the long cherished desire of

our people to be in possession of their own resources, would permit of the development of the extensive timber resources and rich mine deposits of the northern area, and produce an industrial activity capable of sustaining a large population." The resolutions had not been brought before the legislature at the time of writing.

Western members of the House of Commons met at Ottawa, March 18, and decided to press for the immediate completion of the line. It was stated that a delegation from the Manitoba Legislature would go to Ottawa to ask the Dominion Government to proceed with the work. (Dec., 1919, pg. 654).

Kettle Valley Ry.—The Board of Railway Commissioners has authorized the opening for freight traffic of the portion of the line from mile 13.6, near Princeton, B.C., to mile 8, south of Princeton, 5.6 miles.

The British Columbia Legislature is being asked to ratify an agreement between the B.C. Government and the K.V.R. Co. for the building of a railway from Penticton, towards the International Boundary to open up the irrigation settlement in the southern Okanagan valley. The length of the projected line is about 50 miles, exclusive of the stretch of navigation at Dog Lake. Three miles of railway will be built from Penticton to the north shore of Dog Lake, where a wharf will be built and a ferry service put on to the lower end of the lake, from which point the railway will be continued to the irrigation settlement. It is stated that this means the construction of 25 miles of railway during this year. Construction on the remaining mileage will, it is said, be carried on during 1921, the route being along the shore of Osoyoos Lake to the International Boundary at Oroville, Wash. The route is to be laid out by the government.

The Board of Railway Commissioners in Dec., 1919, approved of a route plan of the line from the south end of Dog Lake to the Indian Reserve near Okanagan Falls, about 750 ft.

The British Columbia Legislature is being asked to authorize the B.C. Government to enter into an agreement with the K.V.R. Co. for building a line from Coalmount, near Princeton to the Granite Creek Coal Mines. A press report stated that the agreement had not been completed.

Montreal, Joliette and Transcontinental Junction Ry.—The Dominion Parliament is being asked to extend the time within which the company may begin and complete the building of its projected railway from Montreal to Joliette and thence to Parent, Que., on the National Transcontinental Ry., 180 miles. The Quebec Legislature last session voted a subsidy of 4,000 acres of land a mile to the company to aid the construction of the railway, a condition being attached to the effect that if 25 miles of the line are not completed by Dec. 1, 1920, the subsidy will be cancelled.

This company was incorporated by the Dominion Parliament in 1918, with E. J. Walsh, F. T. Delaney, H. S. Short, C. W. Butler and L. J. Kelroe, Ottawa, as provisional directors. The Joliette and Lake Manuan Colonization Ry. Co., incorporated nearly 20 years ago, had power to build over practically the same route, but after some clearing and grad-

ing was done the company went into liquidation, and its assets were offered for sale under a court order in Sept., 1917. (July, 1918, pg. 285).

Mount McKay and Kakabeka Falls Ry.—Application is being made to the Ontario Legislature to extend the time during which the company's railway and any authorized extensions thereof may be operated by steam, and to extend the time for the completion of the lines authorized. This railway extends from the Fort William, Ont., city boundary for about 5 miles westerly, and is used for switching by the railways entering Fort William. It was originally designed as an electric railway, the intention being to build from Lot 10, Kakabeka Falls, to the mouth of Mission River, and thence along the shore of Thunder Bay to Squaw Bay. (Oct., 1917, pg. 393).

Flin Flon and Mandy Mines—A press report states that the Manitoba Government has decided to build a railway from Pas to the Flin Flon Mine, at an estimated cost of \$2,500,000, as soon as the mining companies are prepared to guarantee a certain tonnage of ore. It is stated that the Canadian National Rys. will be asked to operate the line. The object is to provide an outlet for the copper ores of the district, of which the largest is the Flin Flon Mines; another being the Mandy Mine. There have been several rumors to the effect that this Flin Flon property had been sold, the latest being that the International Nickel Co. had bought it for \$1,000,000 cash, but this is denied. Another report is to the effect that the Mandy Mine plant and equipment is being transferred to the Flin Flon Mine.

Quebec Central Ry.—We are officially advised that tenders have been received for building the extension from Scotts to St. Isadore, Que., to connect with the Quebec bridge, and that it is expected a contract will be awarded by April 1.

The Quebec Legislature, at its last session, granted a subsidy of 2,000 acres of land a mile, not convertible into money by the government, for a further extension of the Quebec Central Ry.'s Chaudiere Valley Branch, from its present terminus at Lake Frontier to St. Pamphille, L'Islet County, 25 miles. The road will follow the boundary line between Quebec and Maine and will open up a rich timber and agricultural section. We are officially advised that no decision has been arrived at by the company as to when construction will be commenced. (May, 1919, pg. 254).

St. George's Coal Fields Ltd.—The report presented at the annual meeting held recently at St. John's, Nfld., referred to the development of the company's mining properties which cover an area of 10 square miles. It stated that during Oct., 1919, W. F. Canning made preliminary surveys for building a railway and the provision of shipping facilities when such become necessary. He reported that the country traversed presented no engineering difficulties, and that Little Harbor, in Laporte Bay, is the most suitable point for a shipping port, it being open all the year round and contains water deep enough for the largest ships afloat close to its shores. J. J. St. John is President and T. J. Freeman, Secretary, of the company.

St. John and Quebec Ry.—The Lieutenant Governor's speech at the opening of the New Brunswick Legislature, March 11, said among other things:—"I am pleased to know that the Valley Railway has been completed to Westfield,

and is being operated by the Canadian National Rys., to St. John. The completion of the railway will not only prove a great convenience and avenue of trade to the people along its whole length from Westfield to Centreville, but will afford another entrance from the west to St. John, one of Canada's winter ports. In view of the heavy burden imposed upon the people to build this railway, it is a matter for sincere congratulation that the government has been able, by reason of the lowered price in the English market of its guaranteed debenture stock and the rate of exchange prevailing, to purchase and cancel such a portion of the outstanding stock as to effect a considerable reduction in the liability for the construction of this road."

A delegation from the Centreville-Grand Falls district waited on the New Brunswick Government at Fredericton, recently, and asked that the extension of the line from Centreville be built as planned originally. The delegation is reported to have been advised that the Dominion subsidy for the portion of the projected extension between Grand Falls and Andover had lapsed or been cancelled in 1912, and that the only funds now available out of the guaranteed bonds in the hands of the Prudential Trust Co., Montreal, amount to \$20,000 a mile for about 12 miles of line. The estimated cost of the line from Centreville to Andover, 23 miles, is \$50,000 a mile. (Jan., pg. 18).

Timiskaming and Northern Ontario Ry.—A press report states that the T. and N.O.R. Commission has bought 40 acres of land adjoining Liskeard station and will use part of it as the site for freight sheds to be built this year.

A deputation from Parry Sound waited on the Ontario Government recently and urged that consideration be given to a project for extending the T. and N.O.R. from North Bay to Parry Sound. Two routes were suggested, one of 77.5 miles and the other 81 miles. The premier is reported to have informed the deputation that consideration would be given the matter when the price of labor and construction material became less prohibitive, and other conditions more favorable. (Nov., 1919, pg. 603.)

Timiskaming District—At the opening of the Quebec Legislature's recent session the Lieutenant Governor said: "A railway in the Timiskaming region has become a necessity and my government is taking steps to secure its construction." The building of a line into this region has been discussed for several years past, and several projects have been initiated for the construction of a railway along the Ottawa and Des Quinze River valleys, the most important one being that promoted by the Interprovincial and James Bay Ry. Co., under C.P.R. auspices. The Quebec Legislature offered subsidies in aid of the construction of such a line, but until the present time the conditions have not warranted its construction. The M. J. O'Brien interests have now projected the development of the Des Quinze falls for power purposes, and the construction there of a large pulp and paper mill, thus rendering railway connection necessary. The Nipissing Central Ry. (electric), owned by the Ontario Government and operated by the Timiskaming and Northern Ontario Ry. Commission, has a Dominion charter to build a line into this territory, and proposals are reported to be already under consideration for building an extension from

Liskeard, Ont. Such a line, however, would not serve the large area of Quebec Province, lying east of Lake Timiskaming, which would be opened up by the Interprovincial and James Bay Ry., or any of the Quebec chartered companies which had proposed to build into the territory.

The Quebec Legislature, following up the intimation quoted above, has granted a subsidy of \$1,600 a mile to the C.P.R. towards the building of 66 miles of railway, either from the terminus of the branch line from Mattawa, at Timiskaming, or Lumsdens Mills, as it was called formerly, or from Kipawa, a branch of this line, northeasterly by way of Ville Marie, to the Des Quinze River. Provision is made in the act for the payment of a further cash subsidy at the rate of \$6,400 a mile for the construction of this railway, in the event of the Dominion Parliament not voting a subsidy for its construction.

Toronto, Hamilton and Buffalo Ry.—The Board of Railway Commissioners has authorized the rebuilding of a bridge over the main line at Hamilton, Ont. (Jan., pg. 18).

Wabash Rd.—A press report states that owing to increasing traffic, the Wabash Rd. will build a second track between Welland and Bridgeburg, Ont. The Wabash Rd. does not own any track in Canada, but operates under lease the Grand Trunk air line from the Niagara River to the Detroit River.

United States Railway Notes.

The Director General of the U.S. Railroad Administration announced, March 3, that the condition of the money market for several months had not been such as to warrant the carrying through of the National Equipment Corporation's plan, which was proposed before the railways were returned to private control.

The United States second assistant Postmaster General is reported to have stated recently that the aerial mail service is not costing the country anything, but is saving the people more than \$100,000 a year, that it costs considerably less than \$400,000 a year to operate a 1,500 lb. mail capacity airplane one round trip daily between New York and Chicago, and by establishment of such a schedule, the Post Office Department has been able to discontinue nearly \$500,000 worth of railway distributing space and clerical hire.

The Capreol, Ont., Railway Y. M. C. A. Building under construction by the Canadian National Rys., was destroyed by fire Feb. 29, the damage being estimated at about \$75,000. We are advised that the building was well advanced to completion, and that rebuilding has been started. An illustrated description of the building was given in Canadian Railway and Marine World for February.

Canadian National Railway Organization—The Minister of Railways stated in the House of Commons, Mar. 15, that no action had been taken in the direction of the organization provided for by the National Railway Corporation Act. The government has been waiting until it could be decided what action could be taken in connection with the Grand Trunk Ry. System, so that in forming the organization the government could take into consideration all the railways that go to make up the Canadian National Rys. System.

Mainly About Railway People Throughout Canada.

J. R. W. Ambrose, Chief Engineer, Toronto Terminals Ry., has been elected Chairman American Railway Engineering Association's Roadway Committee, of which he has been a member since 1910, and of a subcommittee of which he was Chairman in 1915, 1916 and 1917.

George Bradshaw, who was Supervisor of Safety under the U.S. Railroad Administration at Detroit, Mich., has, on the return of the railways to their owning companies entered Pere Marquette Rd's service. He was born at Franklin, Ky., Sept. 12, 1873, and entered railway service Nov. 17, 1902, since when he has been, to May 1, 1909 Assistant Claim Agent, Chicago & North Western Ry., Chicago, Ill.; May 1, 1909, to Mar. 16, 1913, General Safety Agent, New York Central Lines, New York, N.Y.; Aug. 16, 1913, to Sept. 21, 1918, Safety Engineer, G.T.R. and Grand Trunk Pacific Ry., Montreal, Winnipeg and Toronto; Oct. 1918 to Mar. 1, 1920, Supervisor of Safety, U.S.R.S., Detroit, Mich.

Sir George McLaren Brown, European General Manager, C. P. R., London, Eng., arrived in Canada, Mar. 8, on a business trip.

Lt. Col. Botsford Busteed, K.C., who died in Montreal Mar. 24, aged 63, was a brother of F. F. Busteed, C.E., Vancouver, B.C.

H. C. Butler has been appointed Manager, Montreal Locomotive Works, succeeding D. W. Fraser, appointed Vice President in charge of sales, American Locomotive Co., and Montreal Locomotive Works, at New York, N.Y.

Henry J. Cambie, Special Assistant Engineer, C.P.R. and Chief Engineer, Esquimalt and Nanaimo Ry., Vancouver, B.C., who retired from active service Mar. 15, was born in County Tipperary, Ireland, Oct. 25, 1836, and on Sept. 1, 1852 entered the office of Walter Shanly, Chief Engineer, Toronto and Guelph Ry., which was absorbed by the G.T.R. in 1853. From 1853 to 1859 he held various positions with C. S. Gzowski & Co., contractors for the western portions of the G.T.R.; from 1860 to 1862 he was engaged in land surveys and explorations in Ontario, 1863 to 1866 engaged with Sandford Fleming in surveys, exploration and preliminary surveys, Intercolonial Ry.; 1867 to 1869 in charge of location and construction, Windsor and Annapolis Ry.; 1870 to 1873 Division Engineer, Intercolonial Ry., Metis, Que.; 1874 to 1875, Division Engineer, government surveys, C.P.R. in British Columbia, and during this period, with John Trutch, made explorations across the Cascade Mountains by the Similkameen and Tulameen Valleys; 1876 to 1879 in charge of government surveys, C.P.R., in British Columbia, and conducted exploration from Port Simpson by way of the Skeena River, Lakes Babine and Stewart and Peace and Pine River Passes to Lower Slave Lake, also location survey from Yellowhead Pass to Burrard Inlet, and reported on the route by the Thompson and Fraser Rivers, with reference to the comparative advantages of that route and the line to Bute Inlet; 1880 to 1883 in charge of government construction, C.P.R. in Fraser River canyons; 1884 to 1885 in charge of C.P.R. construction Savona, Shuswap and Kamloops, B.C.; 1886 to 1904 Division Engineer, in charge on main line and branches in British Columbia, C.P.R.,

Vancouver; 1905 to 1907 in charge of construction of Nicola Valley and Similkameen Ry. (C.P.R. branch) Vancouver, and from 1908 to Mar. 15, 1920, Special Assistant Engineer, C.P.R. and Chief Engineer, Esquimalt and Nanaimo Ry., Vancouver.

J. E. Dalrymple, Vice President, (Traffic) G.T.R., Montreal, and Mrs. Dalrymple, visited Algonquin Park, Ont., in March.

W. R. Davidson, who has been appointed General Superintendent, Western Lines, G. T. R., Chicago, Ill., was born at Everton, Mo., Nov. 8, 1871, and entered railway service in Jan. 1890, since when he has been, to July, 1901, operator, Missouri Pacific Ry., at various points; July, 1901, to Mar., 1904, dispatcher, same road, Wichita Kan.; Mar. to Oct., 1904, Chief Dispatcher, same road, Wichita, Kan.; Oct., 1904, to Mar., 1911, Trainmaster same road,



W. R. Davidson,
General Superintendent, Western Lines, Grand
Trunk Railway.

Wichita, Kan.; Mar., 1911, to Feb., 1913, Trainmaster, G. T. R., London, Ont.; Feb., 1913, to Mar., 1916, Superintendent G. T. R., London, Ont.; Mar., 1916, to Sept., 1917, Superintendent, G. T. R., Detroit, Mich.; Sept., 1917, to May 1, 1918, General Superintendent, Western Lines, G. T. R., Chicago, Ill.; May 1, 1918, to Mar. 1, 1920, General Superintendent, Eastern Lines, G. T. R., Montreal.

H. G. Dring, European Passenger Manager, C. P. R., London, Eng., arrived in Canada, Mar. 8, on a business trip.

B. J. Farr, who has been appointed Superintendent Motive Power and Car Department, Western Lines, G. T. R., Battle Creek, Mich., was born at Elenburg, N. Y., Sept. 8, 1876, and entered railway service in 1893, since when he has been, to 1898, machinist apprentice, Central Vermont Ry., St. Albans, Vt.;

1898 to 1900, Erecting Shop Foreman, same road, St. Albans, Vt.; 1900 to 1905, General Foreman, same road, St. Albans, Vt.; 1905 to 1906, General Foreman, Motive Power and Car Department, Delaware & Hudson Co., Schenectady, N. Y.; 1906 to 1908, Master Mechanic, Motive Power and Car Department, United Fruit Co., Port Limon, Costa Rica; 1908 to 1914, Engineering Department, Panama Canal, Gatun and Cristobal, Panama; 1914 to 1916, General Foreman, G. T. R., Battle Creek, Mich.; 1916 to Oct., 1918, Master Mechanic, G. T. R., Battle Creek, Mich.; Oct., 1918, to Mar. 1, 1920, Superintendent, Motive Power and Car Department, Grand Trunk Western Lines Rd., (U.S.R.A.), Detroit, Mich.

Robert H. Fish, whose appointment as General Superintendent, Eastern Lines, G.T.R., Montreal, was announced in our last issue, was born at Oakville, Ont., in 1871, and entered G.T.R. service in 1890, since when he has been, to 1900, locomotive fireman; 1900 to Oct. 1, 1908, locomotive man; Oct. 1, 1908, to Jan. 23, 23, 1913, Road Foreman of Locomotives, London, Ont.; Jan. 23, 1913, to Nov. 14, 1916, Trainmaster, Districts 20 and 21, Ontario Lines, Brantford, Ont.; Nov. 14, 1916 to March 1, 1920, Superintendent, Stratford Division, Ontario Lines, Stratford, Ont.

T. J. Gracey, whose appointment as Assistant Auditor of Disbursements, Canadian Northern Ry. System, Toronto, was announced in our last issue, was born at Kingston, Ont., Mar. 21, 1889, and entered railway service Feb. 8, 1906, since when he has been, to June 1, 1915, stenographer and clerk, chief clerk, and superintendent's accountant, Timiskaming and Northern Ontario Ry., North Bay, Ont.; June 1, 1915, to Feb. 16, 1920, Auditor of Disbursements and accountant, same road, Toronto.

D. B. Hanna, President Canadian National Rys., addressed Ottawa Board of Trade Mar. 6, and spoke at Brockville, Ont., Mar. 8, and Kingston, Ont., Mar. 9.

Louis Kossuth Jones, I.S.O., Assistant Deputy Minister of Railways and Canals, Ottawa, retired on superannuation, Mar. 31, after 50 years government service. He was born at Cobourg, Ont., June 9, 1849, and educated at Trinity College School, Weston, Ont., and Trinity College University, Toronto. He entered government service as clerk to the Secretary of the Canal Commission, in Mar. 1870, and joined the staff of the District Engineer on the construction of the Intercolonial Ry. in the Miramichi District, Newcastle, N.B., in 1871. In 1874 he was appointed Secretary to Collingwood Schreiber on the latter's appointment as Chief Engineer, Intercolonial Ry., with headquarters at Ottawa, and remained in that position until the completion of the road, continuing with Mr. Schreiber on the latter's appointment as Chief Engineer and General Manager of Government railways, and from 1879, on Mr. Schreiber's additional appointment as Chief Engineer on construction of the C.P.R., during the building of a portion of the road by the government, he was assistant to the Chief Engineer and General Manager, Government Railways. From 1893 to 1897 he was chief clerk, Department of Railways and Canals, and from 1897 to May, 1912, was Secretary; from May, 1912 to Dec., 1914 Assistant Deputy Minister and Secretary, and

from Jan. 1, 1915, to his retirement, Assistant Deputy Minister of that department. In 1882, in addition to his departmental duties, he was appointed Secretary of a board of commissioners named by Sir Charles Tupper, consisting of County Judge Clark, Cobourg, Ont., Chairman; F. Broughton, then General Manager, Great Western Ry., Hamilton, Ont., and Col. D'Arcy Boulton, Cobourg, Ont. to settle contractors' claims in connection with the construction of the Intercolonial Ry., and in 1887 was appointed Secretary to a board of arbitrators, consisting of Chancellor Boyd, Chairman; Thomas Keefer, C.E. for the C.P.R., and C. C. Gregory, for the Dominion Government, to investigate C.P.R. claims against the government in connection with the construction of the British Columbia section of that railway. The first meeting of the arbitrators was held in Feb., 1888, and a later meeting was held in Vancouver, B.C., in June 1888, the arbitration being continued until the summer of 1891, when the award was made. The counsel engaged in the arbitration for the C.P.R. were Edward Blake, Walter Cassels, G. F. Blackstock, and ex-Judge Clark; and for the government, Christopher Robinson, R. B. Osler and W. D. Hogg.

Orange Jull, inventor of the rotary snow plough, died in Toronto, Mar. 15, aged 75.

Sir Hormidas Laporte, one of the Canadian National Rys. directors, has been elected chairman of Montreal's charter commission, which has been formed to draw up a charter containing all necessary provisions for assuring the peace of the city and its good government by the ratepayers.

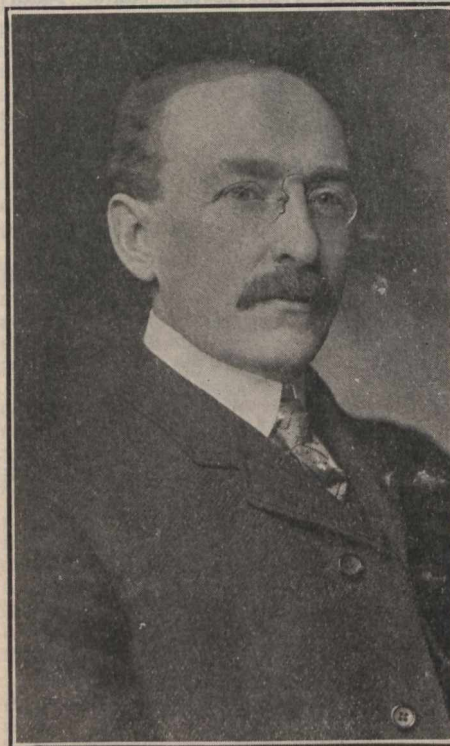
R. S. Logan, Vice President (Land Tax & Claims) G.T.R., and Mrs. Logan, have returned to Montreal, after spending a month in the south.

Francis Frederick William Lowle, whose appointment as Local Freight Agent, C.P.R., Edmonton, Alta., was announced in a recent issue, was born in Gloucestershire, Eng., May 20, 1876, and entered railway service in Mar. 1891, serving to Mar. 1903 in various capacities in the Freight Department, Midland Ry., at London and Birmingham, Eng.; May 1903 to June 1904, farming in Manitoba; June to Dec. 1904, clerk in Claims Department, C.P.R., Winnipeg; Dec. 1904 to Jan. 1905, clerk, Baltimore & Ohio Rd., Chicago, Ill.; Jan. to May 1905, statistical clerk, Audit Department, Chicago and Eastern Illinois Rd. Chicago, Ill.; July 1905 to June 1906, clerk in wharf freight office, and assistant purser on coast steamships, C.P.R., Victoria, B.C.; June 1906 to July 1907, assistant agent, C.P.R., Skagway, Alaska; July 1907 to June 1916, Freight and Passenger Agent, C.P.R., Skagway, Alaska; June 1916 to Oct. 1919, General Agent, Alaska and Yukon, C.P.R., Juneau, Alaska, and from Mar. 1919, he also acted as British Vice Consul for Alaska.

F. S. Macdonald, Superintendent, North Shore Section, Pacific Great Eastern Ry., and brother of G. E. Macdonald, General Manager, P.G.E.R., who has resigned that position, died at Vancouver, B.C., Mar. 11, aged 38, from pneumonia, after a short illness. He was born in Nova Scotia, and went to British Columbia at the age of 18, as telegraph operator on the C.P.R., and was later engaged as an engineer on the construction of the Pacific Great Eastern Ry., being later appointed agent of that road at Squa-

ish, in charge of construction there.

Capt. Robert McKillop, who has been appointed Superintendent, London Division, Ontario District, C.P.R., London, Ont., was born at Perth, Scotland, Dec. 26 1884 and entered C.P.R. service June 22 1905, since when he has been, to Apr. 1, 1922, draftsman, in Chief Engineer's office, Montreal; Apr. 1, 1812, to Feb. 8, 1915 Assistant Engineer in charge of Building Department; Feb. 8 to Dec. 13, 1915, Division Engineer, Eastern Division, Montreal; Dec. 13, 1915 to June 12, 1916, Superintendent, District 2, Atlantic Division, Woodstock, N.B.; June 12, 1916 to Feb. 28, 1917, Superintendent, District 3, Eastern Division, now Laurentian Division, Quebec District, Montreal. On Feb. 28, 1917, he was granted leave of absence, to take command of the 2nd Section Skilled Railway Employes, and went overseas Apr. 16, 1917, returning May 22, 1919, demobilized May 22, 1919, and transferred to the general list of officers, the C.P.R. granting him an additional six months leave



J. D. McDonald,
General Passenger Agent, Western Lines, Grand
Trunk Railway.

of absence. From Nov. 1, 1919, he has been acting as relieving Superintendent at various points.

Malcolm McMillan, President, McMillan Bros., Ltd., Railway Contractors, died at Winnipeg General Hospital, Mar. 21, after a long illness. He was born in Bruce County, Ont., 1861, and had lived in Winnipeg for about 40 years.

A. B. McNaughton, who has been appointed Superintendent, Portland Division, G.T.R., Portland, Me., was born at Arnprior, Ont., Nov. 10, 1877 and entered transportation service in 1893 in the Canada Atlantic Ry. telegraph department and was, from 1894 to 1907, brakeman and freight and passenger conductor, same road; Nov. 1, 1907, to Dec. 3, 1918, General Yardmaster, G.T.R., Ottawa, Ont., Dec. 3, 1918 to Mar. 1, 1920, Superintendent, Grand Trunk Railway Lines in New England (U.S.R.A.), Portland, Me.

Hector King Morrison, who has been

appointed Division Engineer, Montreal Division, Quebec District, Canadian National Rys., Montreal, was born at Dartmouth, N.S., Oct. 12, 1885, and entered railway service in 1903 since when he has been, to 1904, chairman, Halifax and Southwestern Ry.; 1904 to 1905, rodman, same road; 1905 to 1906, topographer, Canadian Northern Quebec Ry.; 1906 to 1907, levelman, Canadian Northern Ontario Ry.; 1907 to 1910, transitman, same road; 1910 to 1912 in charge of location party, same road; 1912 to 1914 Resident Engineer, same road, Pembroke, Ont.; Jan. to June 16, 1919, Resident Engineer, Canadian National Rys., Hornepayne, Ont. June 16, 1919, to Mar. 1, 1920, Division Engineer, Superior Division, Canadian National Rys., Hornepayne, Ont.

P. B. Motley, Engineer of Bridges, C.P.R., Montreal, addressed the Delphic Club, there, Mar. 5, on the problems overcome in building a railway across the North American continent.

Charles G. Orttenger, whose appointment as General Agent, Passenger Department, G.T.R., Chicago, Ill., was announced in our last issue, was born at Port Huron, Mich., Jan. 21, 1869, and entered G.T.R. service in Dec. 1884, since when he has been to May 1889 clerk, Port Huron, Mich.; May 1889 to Feb. 1896 in Audit Department, Detroit, Mich.; Feb. 1896 to April 1907 chief clerk, city ticket office, Chicago, Ill.; April 1909 to Oct. 1918, City Passenger and Ticket Agent, Chicago; Nov. 1919 to Mar. 1, 1920, General Agent, Passenger Department, Grand Trunk Western Lines Rd (U.S.R.A.) Chicago.

H. S. Osborne, formerly Works Manager, Angus Shops, C.P.R., Montreal, died at Montreal, Mar. 17, after a short illness. He was born at Sevenoaks, Kent., Eng., in 1859, and came to Canada in 1880, when he entered railway service in the G.T.R., Point St. Charles shops, Montreal, and transferred to C.P.R. service soon after the organization of that company. He was for some time engaged at the company's Delormier Ave. shops, Montreal, and was transferred to the Angus shops when they were built, and was eventually appointed Works Manager there, holding that position until his retirement from active service about a year ago. He was buried at Mount Royal cemetery.

E. J. Owens, heretofore office engineer St. John and Quebec Ry., has been appointed engineer of the New Brunswick Public Works Department's highway division, and will continue to act in a similar capacity for the St. J. & Q.R.

Dwight W. Pardee, Secretary, New York Central Rd., and many of its subsidiary companies, including Canada Southern Ry., died at Westfield, N.J., recently, after a long illness.

F. W. Peters, General Superintendent, British Columbia District, C.P.R., Vancouver, B.C., has been elected President of the Shaughnessy Golf Club.

Williams Phillips, whose appointment as European Manager, Canadian National Rys., and Canadian Government Merchant Marine, Ltd., London, Eng., was announced in our last issue, was born at Toronto, Jan. 31, 1870, and entered transportation service Apr. 1886, since when he has been, to Mar. 31, 1896, in G.T.R. offices, Toronto; Apr. 1, 1896, to Feb. 28, 1902, Northwest Transportation Co., Winnipeg; for a portion of this time he was also General Agent, Chicago Great West-

ern Ry., and from Apr. 1, 1900, also Northwest Agent, Northern Navigation Co.; Mar. 1, 1902, to May, 1911, General Eastern Agent, C.N.R., Toronto, in Nov. 1906, he was also appointed General Freight and Passenger Agent, Canadian Northern Ontario Ry., and in Apr. 1910, also acting Traffic Manager, Canadian Northern Steamships, Ltd., and in April 1911, his last position was changed to General Freight and Passenger Agent, Canadian Northern Steamships, Ltd.; May 1911, to May 1912, he was General Freight Agent Canadian Northern Ontario Ry., Central Ontario Ry., Bay of Quinte Ry., Irondale, Bancroft & Ottawa Ry., and Niagara, St. Catharines & Toronto Ry. and Navigation Cos., and also General Freight and Passenger Agent, Canadian Northern Steamships, Ltd.; May 1912, to Nov. 1914, European Traffic Manager, C.N.R., London, Eng., and from Nov. 1914, until the absorption of Canadian Northern Steamships, Ltd., by the Cunard Steamship Co., European Railway and Steamship Manager, C.N.R., and Canadian Northern Steamships, Ltd.; Nov. to Dec. 1916, Freight Traffic Manager, Eastern Lines, Canadian Northern Ry., Toronto; Jan. 1, 1917 to Mar. 1, 1920, Canadian Representative, Cunard Steamship Co., and director Robert Reford Co., Montreal. After spending some little time in Toronto consulting with the C.N.R. management in connection with his new duties, Mr. Phillips sailed from New York on the s.s. Mauretania, Mar. 23, to take over his new duties. His office will be at Orient House, London.

H. W. Ploss, whose appointment as Commercial Agent, G.T.R., Milwaukee, Wis., was announced in our last issue, entered railway service in Aug. 1889, since when he has been, to Oct. 1891 clerk, G.T.R., Chicago, Ill.; 1891 to 1893 Soliciting Freight Agent, West Shore Line and Reading Despatch, Chicago, Ill.; Nov. 1, 1900 to July 1, 1909 Contracting Freight Agent, G.T.R., Milwaukee, Wis.; also from Mar. 19, 1906, to July 1, 1909, Agent, Reading Despatch, Milwaukee, Wis., and also acting as Agent of the Milwaukee and Michigan lines Grand Trunk Despatch and Northern Express lines; July 1, 1909 to Mar. 1, 1919, Commercial Agent, G.T.R. Milwaukee, Wis.; Mar. 1, 1919 to Mar. 1, 1920, General Agent Freight Department, Grand Trunk Western Lines Rd. (U.S.R.A.) Milwaukee, Wis. He is President of the Milwaukee Traffic Club, and was also for a number of years, Chairman of the Milwaukee Freight Committee until its dissolution, when the U.S.R.A. assumed control of the railways.

Mrs. Alfred Price, wife of the General Manager, Eastern Lines, C.P.R., Montreal, died there recently after a long illness.

Bernard Joseph Quilty, whose appointment as Trainmaster, C.P.R., McAdam, N.B., was announced in our last issue, was born at St. John, N.B., Nov. 1, 1878, and entered C.P.R. service in December 1896 and has been, to Dec. 1905 Trainmaster; Dec. 1905 to Nov. 1918, conductor; Nov. 1918 to Feb. 1920, Yardmaster, Fairville, N.B.

John M. Riddell, General Agent, G.T.R., Portland, Me., died Mar. 10, at Westmount Que., on his 71st birthday, after a long illness. He was born at Port Dover Ont., and entered railway service in 1874 with the Port Dover and Lake Huron Ry., now part of the G.T.R.. He was for some time agent at Woodstock

and Stratford, Ont., and in 1882 was appointed Assistant Superintendent, Stratford Division, and later, Assistant Superintendent at Toronto, Belleville and Montreal successively. In 1896 he was appointed Freight Agent at Montreal, and in 1907 was transferred to Portland, Me., where he had charge of import and export freight, and held that appointment until his death. G. T. Riddell, of the G.T.R., and C. P. Riddell, Secretary Railway Association of Canada, are sons. He was buried at Westmount.

Hon. Walter Rollo, Ontario Minister of Labor, has been appointed Chairman of the Ontario Legislature's railways committee.

H. R. Safford, who has been appointed Assistant to President, Chicago, Burlington and Quincy Rd., Colorado and Southern Lines, etc., Chicago, Ill., was born at Madison, Ind., in 1875 and prior to graduation in civil engineering from Purdue University in 1895 was engaged with an engineering corps operating on the Pennsylvania lines immediately west of Pittsburg, Pa. In 1895 he entered Illinois Central Rd. service, remaining



William Phillips, European Manager, Canadian National Railways and Canadian Government Merchant Marine, Ltd.

with it until May, 1910, and holding the following positions: 1895, rodman; 1896 to 1897, Resident Engineer; 1897 to 1900, Assistant Engineer; 1900 to 1901, Roadmaster, Amboy Division; 1901, Roadmaster, Freeport Division; 1902, Roadmaster, St. Louis Division; 1903 to 1905, Principal Assistant Engineer; 1905 to 1907, Assistant Chief Engineer; 1907 to 1910, Chief Engineer, Maintenance of Way; 1910 to Oct. 1911, not in railway service; Oct. 1911 to Sept. 1918, Chief Engineer, G.T.R., Montreal; Sept. 1918 to Mar. 1, 1920, Engineering Assistant, Central Western Region, U.S. Railroad Administration, Chicago, Ill.

W. H. Spicer, whose appointment as Assistant General Freight Agent, Western Lines, G.T.R., Detroit, Mich., was announced in our last issue, was born at Montreal, Sept. 29 1871, and entered railway service Nov. 1, 1890, since when he has been to May 1, 1896 Travelling

Car Agent, Western Lines, G.T.R., Detroit, Mich.; May 1 to July 1, 1896, Travelling Car Agent G.T.R., Montreal; July 1, 1896 to Jan. 1, 1898, Travelling Car Agent, G.T.R., Portland, Me.; Jan. 1 1898 to Mar. 1, 1910, Travelling Car Agent; G.T.R., Boston, Mass.; Mar. 1, 1901 to Apr. 1, 1902, Agent, National Despatch-Great Eastern Fast Freight Line, Battle Creek, Mich.; Apr. 1, 1902 to Mar. 2, 1905, chief clerk, General Freight Department Western Lines, G.T.R., Chicago, Ill.; Mar. 1 1905 to July 1, 1909, Agent Lackawanna-Grand Trunk Fast Freight Line, Milwaukee, Wis.; July 1, 1909 to Dec. 1, 1912, Commercial Agent, G.T.R., Detroit, Mich.; Dec. 1, 1912 to July 1 1918, Division Freight Agent, G.T.R., Detroit Mich.; July 1, 1918 to May 1, 1919, Division Freight Agent, Grand Trunk Western Lines Rd. (U.S. R.A.); May 1, 1919 to Mar. 1, 1920, Assistant General Freight Agent, G.T.W. L.R., (U.S.R.A.) Detroit, Mich.

H. E. Suckling, Treasurer, C.P.R., Montreal, while being driven to the Toronto union station, Mar. 13, in company with E. Alexander, Secretary; G. Hodge, Assistant to Vice President, Eastern Lines, and E. P. Flintoft, Assistant General Solicitor, after having attended the company's annual dinner, was slightly injured when the automobile collided with a street car.

R. D. Waugh, Chairman, Greater Winnipeg Water District Commission, which operates the Greater Winnipeg Water District Ry., has been appointed by the Council of the League of Nations, as a member of the board to investigate damage done during the war in the Saar district in France.

Barton Wheelwright, who has been appointed Engineer Maintenance of Way, Portland Division, Eastern Lines, G.T.R., Portland, Me., was born at Minneapolis, Minn., Mar. 12, 1888, and entered G.T.R. service July 1, 1911, since when he has been, to Mar. 1, 1912, draftsman on grade separation, Toronto; Mar. 1, 1912 to Dec. 1, 1914, Block Signal Inspector, Montreal; Dec. 1, 1914, to Jan. 14, 1916, Assistant Signal Engineer, Montreal; and from Jan. 14, 1916 acting Signal Engineer.

H. H. Williams, who has retired from business after 43 years work, has attended to C.P.R. real estate matters in Toronto for several years, including purchase of right of way for freight terminals, the North Toronto station site, and the renting of the office building at King and Yonge Sts.

Presentation to Wm. Phillips. On the eve of leaving for London, Eng., to take up his duties as European Manager Canadian National Rys. and Canadian Government Merchant Marine, Ltd., William Phillips was the recipient of a handsome leather travelling case fitted with silver, from a number of shipping friends in Montreal. The inscription within the case read: "Presented to Wm. Phillips, by a few of his shipping friends, as a token of esteem and respect on the occasion of his leaving Canada for England." The shipping people who subscribed to the presentation included the Hon. L. C. Webster, W. I. Gear, P. A. Curry, W. F. Forbes and Thomas Robb; J. T. Walsh, W. G. Annable, J. B. Binning, D. W. Campbell, W. A. Coates, H. W. Cowan, E. W. Foulds, A. E. Francis, Thos. Harling, A. M. Irwine, T. C. Lockwood, W. T. Marlow, E. J. McClure, J. W. Nicoll, R. B. Teakle, Leo H. Tobin.

Canadian Pacific Railway Construction, Betterments, Etc.

St. John, N. B. Bridge—A press report of Mar. 9, stated that work on the foundations of the new railway bridge across the St. John River at the Reversible Falls, St. John, would be started within the next few weeks, and that it is expected to have the bridge ready for traffic in the summer of 1921. While the general location of the bridge has been decided upon, the location of the main piers has not yet been definitely settled, as the borings to establish the nature of the rock bottom are not completed. The main span will be of the cantilever type, and of approximately the same length and height as the present bridge, while the 480 ft. western approach will be of concrete construction instead of steel, as is the present approach. The boring tests of the foundations, a press report states, being made by the Foundation Co., Montreal.

Interprovincial and James Bay Ry.—In connection with the subsidy of \$1,600 a mile, and the special subsidy of \$6,400 a mile (the latter subsidy being payable in the event of the Dominion Government declining to grant any subsidy), voted by the Quebec Legislature in aid of the construction of a line from Timiskaming or Kipawa, Que., via Ville Marie to the Des Quinze River Falls, we are officially advised that the C.P.R. has already built a line from Kipawa to mile 10, Mercier Y., and has completed surveys to the crossing of the Kipawa River. A survey party in charge of W. H. Roberts, Assistant Engineer, is in the field locating a route for the line from the Kipawa River to the Des Quinze River at approximately mile 66 from Kipawa.

London to Sarnia, Ont.—A Sarnia, Ont., press report of Mar. 9, stated that it was expected that E. W. Beatty, President, and other C. P. R. officers would visit London, Sarnia and intervening points at the end of April or early in May, to look over the ground with a view to building a line from London to Sarnia.

Saskatchewan Branch Line—A press report states that it is planned to start construction this year on an extension of the Wilkie-Cutknife Branch, from the latter place, northwesterly, and also on a line from Coronation to Empress, on the Saskatchewan-Alberta boundary.

The Board of Railway Commissioners has approved revised general location of the Leader Southeasterly Branch, Sask., mile 29 to 50.1, and general location from mile 88 to 153.6.

One of the branch lines, for the building of which extensions of time and other powers are being asked from the Dominion Parliament, is projected from Asquith northwesterly to Tp. 42, Range 20 west 3rd meridian, Sask., at Cloan, mile 14 on the Wilkie-Cutknife branch. Protests are being made by Battleford residents against this line, on the ground that when power was originally obtained to build a line from Asquith northwesterly, Battleford was mentioned as the terminus, and no change was made in this regard when extensions of time were granted in 1912 and 1915.

Weyburn-Sterling Line—Application is being made to the Dominion Parliament for an extension of time for the completion of the Weyburn-Sterling line,

which is now in operation to Manyberries, Alta., from the west, and to the Alberta-Saskatchewan boundary at Altawan from the east, leaving a gap of about 37 miles to be built. We are officially advised that tenders will be invited for the grading on this mileage very shortly, but that owing to labor conditions it is not expected to complete more than half the work this year, and to complete the balance probably in 1921.

Alberta Branch Lines—The Board of Railway Commissioners has approved the route map for a branch line from Pashler, Alta., 15 miles east of Medicine Hat, on the main transcontinental line, northeasterly, mile 0 to 109.3.

A press report states that construction has been in progress all winter on the line from Acme, easterly via Drumheller to Empress, Alta., and that it is expected to have the Acme-Drumheller section completed this year. This section is 37 miles long, and grading was reported to be 22% completed at the end of 1919. The grading is being done by the John W. Stewart Construction Co., Vancouver, B. C.

Lethbridge Division Bridges—The Board of Railway Commissioners has authorized the rebuilding of bridges at mile 2.3 Taber subdivision, and at mile 45.5 Crowsnest Subdivision, Lethbridge Division, Albert District.

Connaught Tunnel—A Dominion order-in-Council, was passed Mar. 5, granting the company the surface rights over the Connaught tunnel and the right of way of the approaches thereto, from mile 75.75 to 87.51, Mountain Subdivision, British Columbia District, subject to certain reservations. The C. P. R. has surrendered to the Crown the right of way on the original route of that section of the railway, which was used prior to the building of the tunnel.

Vancouver Pier—A press report states that work was expected to be started on Mar. 8 on the dredging and filling of the site of the pier to be built between piers A. and D., Burrard Inlet, Vancouver. The Pacific Dredging Co., Vancouver, is reported to have the contract. (Mar. pg. 122.)

Intercolonial and P.E.I. Rys. Provident Fund—The Minister of Railways stated in the House of Commons, Mar. 17, that the Railways Department contributed \$100,000 during the year ended Mar. 31, 1919, to the Intercolonial and Prince Edward Island Rys. Provident Fund. The number of employees entitled to participate in the fund in 1919 was 12,223, and the average amount contributed by the men was \$8.18.

Railway Bridge Across St. John Harbor—At a meeting of St. John, N.B., City Council, Mar. 9, a suggestion was made that the C. P. R. instead of rebuilding its bridge at the Reversible Falls, should put the money into a bridge across the harbor. The mayor stated that the question of the building of a railway bridge across the harbor had been discussed with D. B. Hanna, President Canadian National Rys. Mr. Hanna informed him that while the C.N.R. would like to make use of the facilities on the west side at times, but it had no interest in a project which would place it under tribute to any other railway.

Freight and Passenger Traffic Notes.

The Pere Marquette Rd. district freight office at London, Ont., will, a press report states, be closed, and the staff moved to Walkerville, Ont.

Canadian passenger agents are reported to have discussed at a recent meeting the question of adding the differential on currency to prepaid charges for passenger tickets from Canadian grounds to the United States.

The C. P. R. shore line from St. John to St. Stephen, N. B., has not been operated, a press report says, since February, owing to snow and floods, until Mar. 16, when it was reopened between St. Stephen and St. George.

The Board of Railway Commissioners ordered recently that the increased rates on commutation tickets which railways proposed to put into effect Mar. 1, should not be put in operation until the conclusion of the investigation by the board.

The Minister of Railways stated in the House of Commons Mar. 17, that 14,273 passengers had been carried on the Quebec and Saguenay Ry., and that there was a deficit of \$9,048.72 on the operation of the railway of from Oct. 1, 1919, to that date.

A new switching agreement is being negotiated between the railway companies entering Winnipeg, and the manufacturers and merchants. It was reported Mar. 5 that several points had been settled and that further conferences would be held to adjust the matters not agreed upon.

The Alberta and Great Waterways Ry., which is a branch of the Edmonton, Dunvegan and British Columbia Ry., has advised shippers that railway service on the line from Lac La Biche to navigable water near McMurray, Alta., will be discontinued April 1, and until such time as weather conditions warrant a resumption.

Travel Bureau, Ltd., has been incorporated under the Ontario Companies Act, with authorized capital of \$10,000, and office in Hamilton, Ont., to buy and sell steamboat, railway and other tickets, foreign exchange, letters of credit for travellers and others, foreign money and securities, and to carry on a general brokerage business. The provisional directors are: H. A. Alwyn, J. P. Bell, M. C. Hart, M. W. Morton, and G. L. Williams, Hamilton, Ont.

A new schedule of cartage charges is reported to have been arranged for the collection and delivery of freight in Winnipeg, between the railway companies and of the Board of Trade Shippers' Bureau. The new charges were to become effective Mar. 15. Within what is known as the 'inner limits' they will be 5c per 100 lbs. on carloads and 7c on less than carloads, with a minimum of 35c. Beyond the inner limits the advanced rates will be 6c per 100 lbs. on carloads and 8c on less than carloads, with a minimum of 50c. On certain light and bulky articles the rates fixed are slightly higher.

Taxi and Auto Transportation, Ltd. has been incorporated under the Quebec Companies Acts, with \$95,000 authorized capital and office in Montreal, to carry on business as carriers of persons and things by means of automobiles, taxis, autobusses, drays, omnibusses and other vehicles throughout Quebec Province.

Railway Rolling Stock Orders and Deliveries.

The Pacific Great Eastern Ry. has ordered three cabooses from Canadian Car and Foundry Co.

The Minneapolis, St. Paul and Sault Ste. Marie Ry. has ordered 500 box cars from Haskell and Barker Car Co.

Canadian Car and Foundry Co., between Feb. 15 and March 15, delivered 12 sleeping cars to Canadian National Ry., and 204 repaired box cars to the Grand Trunk Ry.

W. R. Smith, General Manager and Chief Engineer, Edmonton, Dunvegan and British Columbia Ry., is reported to have stated recently that the company was securing two more locomotives.

The C.P.R., between Feb. 13 and March 15, received 2 vans, 2 passenger locomotives, 2 freight locomotives, and 1 double track snow plough, from its Angus shops, Montreal.

Canadian National Ry., in addition to the working equipment mentioned in our last issue, has ordered 4 rail loaders, 3 15-ton coal cranes with buckets, and 3 15-ton bridge cranes, with 35 ft. boom, from F. H. Hopkins and Co., Montreal.

The G.T.R. has ordered 10 8-wheel switching locomotives (0-8-0) from Canadian Locomotive Co., and is building 25 6-wheel switching locomotives (0-6-0) at its Montreal shops, the boilers for which will be built by Canadian Locomotive Co.

The Canadian National Ry. was stated, in Canadian Railway & Marine World for March, to have ordered two ¾ yd. Erie steam ditchers, from F. H. Hopkins & Co., Montreal. We are advised that the information furnished us in this connection was erroneous, and that the order was for two ¾ yd. Marion ditchers.

The G.T.R. has asked tenders for the supply of 1,000 flat cars, 50 baggage and express cars, 15 express refrigerator cars and 10 express horse cars, for its Canadian lines; and for 3,000 automobile cars and 25 6-wheel switching locomotives (0-6-0), similar to those being built at its Montreal shops for use on its lines in the U.S., west of Detroit and St. Clair Rivers.

The C.P.R. sleeping cars, 18 of which have been ordered from National Steel Car Corporation, Hamilton, Ont., as announced in our last issue, will be 73½ ft. long over body corner posts, and will be built complete with body, frame, steel work and trucks by the Car Corporation, and the interior work will be completed by the C.P.R. at its Angus Shops, Montreal. The trucks will be of the 6-wheel type, with American Steel Foundries clasp brake, and Commonwealth cast steel frame. The bodies will be fitted with Westinghouse air brakes, and Miner friction draft gears and buffing device.

Canadian National Ry. 1,150 general purpose (coal) cars, ordered from Eastern Car Co., as announced in our last issue, will have the following general dimensions, etc.:

Length, inside	36 ft. 4½ in.
Width, inside	9 ft. 1¼ in.
Truck centers	26 ft.
Wheel base	5 ft. 6 in.
Weight	44,400 lb.
Trucks	Arch bar
Journals	5½ x 10 in.
Side boxes	McCord
Bolsters	Miner balanced
Brakebeams and brakebeams	Simplex
Door mechanism	Creco 4 point
Handbrake	Enterprise
Draft gear	Miner ideal
Couplers	Cardwell friction
Airbrakes	Class D, 6 x 8 in.
	Westinghouse K.C., 10 x 12 in.

The Canadian National Ry. improved Hart convertible ballast and general service cars, 350 of which have been ordered from the Hart-Otis Car Co., as mentioned in our last issue, will be of 50 tons capacity, and will have the following dimensions,—

Length over end sills	36 ft. 8 in.
Width over side sills	8 ft. 9 in.
Length inside as hopper car	20 ft. 10 in.
Length inside as gondola car	34 ft. 8 in.
Width inside	8 ft. 8 in.
Width overall	10 ft. 3¾ in.
Width at top	9 ft. 9¾ in.
Height from rail to top of floor	4 ft. 4¼ in.
Height from rail to top of car	8 ft. 4¼ in.
Height inside	4 ft.
Truck centers	26 ft. 8 in.
Wheel base of truck	5 ft. 6 in.
Length of hopper door opening	16 ft. 8½ in.
Width of hopper door opening	2 ft. 1 in.

The G.T.R. has ordered 25 light switching locomotive boilers from Canadian Locomotive Co. They are to be fitted with a smoke prevention device, and are to be applied to the 25 class F9 switching locomotives, which the G.T.R. is building at its Point St. Charles shops. Following are the chief details:

Type	Radial stayed
Diar., front	69 9/16 in.
Diar., largest	76 in.
Firebox	96¾ x 75¼
Tubes, no. and diar.	178 2 in.—28 5¾ in.
Tubes, length	12 ft. 4 in.
Heating surface, firebox	168 sq. ft.
Heating surface, tubes	1,168 sq. ft.
Heating surface, flues	608.5 sq. ft.
Heating surface, arch tubes	26 sq. ft.
Heating surface, total	1,970.5 sq. ft.
Grate area	50.60 sq. ft.
Staybolts	Brown's iron

Canadian National Ry. 500 steel frame box cars ordered from Eastern Car Co., as announced in our last issue, will have the following general dimensions, etc.:

Capacity	40 tons
Length, inside	36 ft.
Width, inside	8 ft. 6½ in.
Truck centers	26 ft. 10 in.
Wheel base	5 ft. 6 in.
Weight	41,500 lb.
Trucks	Arch bar
Journals	5 x 9 in.
Journal boxes	McCord
Side bearings	Miner balanced
Bolsters and brakebeams	Simplex
Brakebeam support	Creco 4 point
Roof	Winslow improved, type B
Draft gear	Miner twin spring
Couplers	Class D, 6 x 8 in.
Airbrake	Westinghouse K.C., 8 x 12 in.
Door fixtures	Camel

Canadian National Ry. 6 all steel snow ploughs ordered from Eastern Car Co., as mentioned in our last issue, will have inside lining of wood, and side wings, front cutters and ice cutters will be operated by air from the cupola. Following are the chief details:

Length, inside	19 ft. 3½ in.
Width, inside	18 ft. 1 in.
Truck centers	18 ft.
Wheel base, front truck	4 ft. 2 in.
Wheel base, rear truck	5 ft. 3 in.
Weight	63,800 lb.
Front truck, type	40 ton arch bar
Rear truck, type	30 ton arch bar
Journal boxes	McCord
Bolsters and brakebeams	Simplex
Side bearings	Laughlin
Headlight	Pyle National
Draft gear	Keyed yoke
Couplers, rear	Class D, 6 x 8 in.
Couplers, front	Pilot

The G.T.R. has ordered 10 eight-wheel switching locomotives (0-8-0) from Canadian Locomotive Co. Following are the chief details:

Weight in working order	240,000 lb.
Wheel base of engine	15 ft. 6 in.
Wheel base, engine and tender	50 ft. 6½ in.
Heating surface, firebox	235 sq. ft.
Heating surface, tubes	2,497 sq. ft.
Heating surface, total	2,732 sq. ft.
Driving wheel, diar.	56 in.
Driving wheel, centers	Cast steel
Driving journals, diar. and length	11 x 20 and 10 x 13 in.
Cylinders, diar. and stroke	26 x 30 in.

Boiler, type	Radial stayed
Boiler, pressure	170 lb.
Tubes, no. and diar.	228 2 in. and 32 5¾ in.
Tubes, length	15 ft.
Injectors	Hancock non-lifting, 5,000 gal.
Safety valves	World
Brakes	Westinghouse American
Packing	King metallic
Superheater	Locomotive Superheater Co.
Weight of tender, loaded	166,360 lb.
Water capacity	9,000 U.S. gal.
Coal capacity	10 tons
Tank, type	Water bottom
Tender truck	4 wheel equalized
Tender truck wheel	33 in.
Wheel, type	Solid rolled steel
Journals, diar. and length	6 x 11 in.
Brakebeam, type	Huntoon steel

Canadian National Ry. 30 six wheel switching locomotives (0-6-0) ordered from Canadian Locomotive Co., as mentioned in our last issue, will have the following general dimensions, etc.:

Weight in working order	150,000 lb.
Wheel base, engine	12 ft.
Wheel base, engine and tender	41 ft. 1¼ in.
Heating surface, firebox	132 sq. ft.
Heating surface, tubes and arch tubes	1,449.7 sq. ft.
Heating surface, total	1,581.7 sq. ft.
Driving wheel, diar.	51 in.
Driving wheel, centers	Cast iron
Driving journals, diar. and length	8½ x 11½ in.
Cylinders, diar. and stroke	21 x 26 in.
Boiler, type	Straight top
Boiler, pressure	180 lb.
Tubes, no. and diar.	157—2 in. 24—5½ in. 12 ft. 5 in.
Tubes, length	12 ft. 5 in.
Airbrakes	Westinghouse E.T. 6
Packing	Metallic
Fire brick	Security
Valve motion	Walschaert
Cab	steel, wood lined
Headlight	10 Pyle National type K, and 15 Schroeder Electric Taylor and Arnold casing
Weight of tender, loaded	96,000 lb.
Water capacity	3,800 imp. gals.
Coal capacity	6 tons
Truck type	4 wheel arch bar
Wheels, diar.	33 in.
Wheel, type	10 Davis C and 15 cast iron chilled
Journal, diar. and length	4¼ x 8
Brakebeam	Simplex
Airbrake	Westinghouse K.D., 8 x 12 in.

The Canadian National Ry. cabooses, 80 of which have been ordered from Canadian Car and Foundry Co., and 20 from Preston Car and Coach Co., will be of center sill construction, with six 5 by 9 in. sills and two 7 in. ship channels, bolted below the two center wood sills, which will form the draft sill. They will have wooden frames, with bolster post 4 by 2½ in., intermediate post 4 by 2½ in. The outside and inside will be sheathed, and the inside of the roof will also be sheathed, to provide proper insulation; double board roof on the exterior with rubberoid paper between, and tar paper between the frame and the inside sheathing; floors double boarded, with tar paper between; cupola, full width of roof, with sliding window on side, double windows on front and back, and cars equipped with walk-over seats; trucks, Simplex with elliptic springs, and Miner twin spring draft gear; brakes, standard freight, Westinghouse K.C. 812. Following are the general dimensions:

Length over end sills	30 ft. 0 in.
Truck centers	20 ft. 4 in.
Truck wheel base	4 ft. 10 in.
Width over eaves	9 ft. 9½ in.
Height overall	14 ft. 5¾ in.
Weight on drivers	256,000 lb.
Weight on truck	33,000 lb.
Weight on trailer	31,000 lb.
Weight, total	320,000 lb.
Wheel base, driving	20 ft. 6 in.
Wheel base, engine and tender	70 ft. 2¼ in.
Cylinders, diar. and stroke	26 x 32 in.

The Canadian National Ry. 25 Santa Fe (2-10-2) locomotives, ordered from the Montreal Locomotive Works, as mentioned in our last issue, will have the following chief details:

Weight in working order	240,000 lb.
Wheel base of engine	15 ft. 6 in.
Wheel base, engine and tender	50 ft. 6½ in.
Heating surface, firebox	235 sq. ft.
Heating surface, tubes	2,497 sq. ft.
Heating surface, total	2,732 sq. ft.
Driving wheel, diar.	56 in.
Driving wheel, centers	Cast steel
Driving journals, diar. and length	11 x 20 and 10 x 13 in.
Cylinders, diar. and stroke	26 x 30 in.

Cylinders, spread	10 ft. 6 1/2 in.
Driving wheel, diar.	57 in.
Driving wheel centers	50 in.
Driving wheel center, material	Cast steel
Driving journals	11 1/2 x 22
Trailer wheel diar.	31 in.
Trailer wheel journals	7 x 12
Engine truck wheels	31 in.
Engine truck wheel journals	7 x 12
Frames, width	6 in.
Boiler, type	Extended wagon top radial stay
Boiler, diar, inside first ring	78 in.
Boiler pressure	200 lb.
Firebox, length and width	144 1/8 x 84 1/4 in.
Tubes, no. and diar.	270 2 in.
	43 5 1/2 in.
Heating surface, tubes	2,390 sq. ft.
Heating surface, flues	1,023 sq. ft.
Heating surface, f.b. tubes	41 sq. ft.
Heating surface, firebox	240 sq. ft.
Heating surface, total	3,699 sq. ft.
Superheating surface	850 sq. ft.
Grate area	66.7 sq. ft.
Tractive power	64,500 lb.
Factor of adhesion	3.96
Center of boiler from rail	9 ft. 10 in.
Superheater	Schmidt
Reverse gear	Screw
Cab top	Vestibule
Tender frame	C.N.R. standard 10 x 13 channels
Tender, wheel diar.	34 in.
Tender truck, type	equalized
Tender journals	6 x 11 in.
Tank type	Water bottom
Water capacity	10,000 U.S. gal.
Coal capacity	17 tons
Coal pusher	Locomotive Stoker Co.'s horizontal

The Canadian National Rys. Pacific type locomotives, 32 medium and 10 heavy, ordered from the Montreal Locomotive Works, as mentioned in our last issue, will have the following chief details:

	Medium.	Heavy.
Weight on drivers	166,000 lb.	175,000 lb.
Weight on truck	50,000 lb.	45,000 lb.
Weight on trailer	50,000 lb.	49,000 lb.
Weight, total	266,000 lb.	273,000 lb.
Wheel base, driving	13 ft.	13 ft.
Wheel base, engine and tender	66 ft. 5 1/4 in.	66 ft. 6 1/4 in.
Cylinders, diar. and stroke	23 1/2 x 28	24 x 28
Cylinders, spread	10 ft. 3 1/4 in.	10 ft. 4 in.
Driving wheel, diar.	69 in.	69 in.
Driving wheel centers	62 in.	62 in.
Driving wheel centers material	Cast steel	Cast steel
Driving journals, Main	10 1/2 x 21	10 1/2 x 21
Others	10 x 13	10 x 13
Trailer wheel, diar.	48 in.	48 in.
Driving wheel journals	9 x 14	9 x 14
Engine truck wheels	33 in.	33 in.
Engine truck wheel journals	6 1/2 x 12	6 1/2 x 12
Frames, width	5 in.	5 in.
Boiler, type	Straight top radial stay	Extended wagon top radial stay
Boiler, diar, inside first ring	71 1/2	72 1/2
Boiler pressure	200 lb.	200 lb.
Firebox, length and width	108 x 75 1/4	108 1/2 x 75 1/4
Tubes, no. and diar.	182 2 in.	228 2 in.
	28 5 1/2 in.	32 5 1/2 in.
Heating surface tubes	1,945 sq. ft.	2,378 sq. ft.
Heating surface, flues	804 sq. ft.	897 sq. ft.
Heating surface, f.b. tubes	27 sq. ft.	27 sq. ft.
Heating surface, fire box	188 sq. ft.	215 sq. ft.
Heating surface, total	2,964 sq. ft.	3,517 sq. ft.
Superheating, surface	677 sq. ft.	757.3 sq. ft.
Grate area	56.4 sq. ft.	56.5 sq. ft.
Tractive power	38,100	39,700
Factor of adhesion	4.36	4.4
Center of boiler from rail	9 ft. 5 in.	9 ft. 8 in.
Superheater	Hungerford	Schmidt
Reverse gear	Screw	Screw
Cab top	Vestibule	Vestibule
Tender frame	C.N.R. standard 10 and 13 in. channels	C.N.R. standard 10 and 13 in. channels
Tender, wheel diar.	36 in.	36 in.
Tender truck type	Equalized	Equalized
Tender journals	6 x 11	6 x 11
Tank type	Water bottom	Water bottom
Water capacity	6,500 imp. gal.	9,000 U.S. gal.
Coal capacity	10 tons	10 tons
Coal pusher	Locomotive Stoker	

Canadian Pacific Railway Orders.

It was announced on Montreal Mar. 24 that the C.P.R. had sold \$12,000,000 6% equipment notes through the United Financial Corporation of Montreal, and the Guaranty Trust Co. of New York. The notes, which mature serially in from one to 12 years, will be offered

shortly in the United States by a syndicate headed by the Guaranty Trust Co. The equipment against which the new securities will be issued, involving an outlay of some \$15,000,000, will all be built in Canada, thereby assuring to the car building and allied industries a highly substantial volume of business for some months to come.

Up to Mar. 27 no official announcement had been made as to the rolling stock to be built and ordered, but it is said that the programme includes a number of locomotives, 53 sleeping cars, 12 dining cars, 13 compartment cars, 24 baggage cars, 2,500 box cars, 500 refrigerator cars, 500 automobile cars, and 67 are cars. A large portion of these orders will be built at the company's Angus shops, Montreal, but considerable will be placed outside. As stated in Canadian Railway & Marine World for March, orders have been given Canadian Car & Foundry Co., for 35 steel frames for sleeping cars, and to the National Steel Car Corporation for 18 sleeping cars, including body frames, steel work and trucks, the interiors to be completed by the C.P.R. We are also advised of orders having been given for 2,500 fifty-ton box cars, 1,500 to Canadian Car & Foundry Co., and 1,000 to Nation Steel Car Corporation, and it is said 500 have been ordered from Eastern Car Co. It is also said that the box cars will be of the United States Railroad Administration type, except that arch bar trucks will be used, instead of steel frame side type, and that the C. P. R. grain hopper will be installed.

The company has ordered five cabooses to be built at its Angus shops.

Canadian National Railways Earnings.

	1920	1919
January	\$ 7,726,562	\$ 6,787,517
February	6,516,059	6,265,562
	\$13,783,621	\$13,053,079

Approximate earnings for three weeks ended March 21, \$4,892,646, against \$4,338,033 for same period, 1919.

Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

	Gross	Expenses	Net	Increases or decreases
Jan...	\$13,914,569	\$13,323,628	\$585,941	*\$967,571
	\$13,914,569	\$13,323,628	\$585,941	*\$967,571
Incr. ..	\$ 886,241	\$ 1,853,812		
Dec.			\$967,571	

Approximate earnings for February, \$13,208,000, and for three weeks ended March 21, \$9,657,000, against \$10,882,000, and \$7,946,000 for same periods, 1919.

Grand Trunk Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net earnings, and increases or decreases, from Jan. 1, 1920, compared with those of 1919:

	Gross	Expenses	Net	Increases or decreases
Jan. ..	\$ 5,054,034	\$ 5,867,445	*\$ 813,411	†\$ 97,406
	\$ 5,054,034	\$ 5,867,445	*\$ 813,411	†\$ 97,406
Incr. ..	\$ 651,805	\$ 749,211		
Decr. ..			\$97,406	

Approximate earnings for February, \$4,664,778, and for three weeks ended March 21, \$3,755,257, against \$4,088,029, and \$3,618,738 for same periods, 1919.

Grand Trunk Railway Construction, Betterments, Etc.

Ottawa Central Station—A press report states that alterations and improvements estimated to cost \$60,000 are being made to the car sheds at this station. The car shed is being extended to the edge of the Rideau Canal, and a concrete platform is being built between tracks 1 and 2. It is expected that the erection of the steel work will be started about April 15, and that the whole work will be completed by June 15. The work is being done by the company's maintenance force, except the steel work, the contract for which has been let to the Dominion Bridge Co.

Montreal-Brockville Track—A press report states that about 140 miles of track between Montreal West, Que., and Brockville, Ont., will be relaid with 100-lb. steel rails during this year, and that the new rails will be laid on the west-bound track, except for a stretch on the east track between Morrisburg and Summerstown, Ont.

Allandale-Collingwood Bridges—The Board of Railway Commissioners has authorized the company to use for traffic bridges 291, 292 and 293 over Mad River, Batteaux Creek and Pretty River, respectively, between Allandale and Collingwood, Ont. (Mar. pg. 124.)

Telephone Dispatching Installation—A press report states that it is proposed to instal a telephone despatching system on the line from Hamilton to Sarnia, about 150 miles, at a cost of approximately \$200,000 during this year.

London Freight Shed Burned—The company's freight shed and offices on York street, between Wellington and Waterloo Sts., London, Ont., were destroyed by fire Mar. 6, involving an estimated loss of from \$125,000 to \$150,000. The buildings were considerably damaged by a fire about five years ago, and have been merely patched up since. The mayor and representatives of the Chamber of Commerce and the Board of Trade are reported to have sent a joint message to the company's headquarters at Montreal, asking that steps be taken to erect modern freight sheds and offices. A press report states that a freight shed and a 2-story office building, to cost approximately \$30,000 are to be erected at once, and that it is expected to have the work completed by June 1.

East London Reclamation Yards—A press report states that work on laying out the reclamation yards in East London, Ont., will be put in hand as soon as the necessary authority is received from Montreal.

London Division Track Relaying—The relaying of the track between London and Sarnia, Ont., with 100-lb. rails in place of the present 85-lb. rails will, it is said, be started about May 1. It is reported that 40 miles of track east of London will also be relaid with 100-lb. rails.

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

	Acres
Canadian Northern Ry.	156,636
Canadian Pacific Ry. grants	.40
Canadian Pacific roadbed and station grounds	75.22
Edmonton, Dunvegan and British Columbia Ry.	3.45
Grand Trunk Pacific Branch Lines Co.	182.77
Total	418.476

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.

Important traffic orders made by the board are given in full on another page of this issue.

29,370. Jan. 30.—Approving Fredericton and Grand Lake Coal and Ry. Co. standard passenger tariff C.R.C. 4.

29,371. Feb. 14.—Extending to May 15 time within which Canadian National Rys. shall build class 3 station and extension of passing track at Elie, Man.

29,372. Feb. 16.—Authorizing Grand Trunk Pacific Branch Lines Co. to build spur for Parker Creek Coal Co. at mile 85.7, Calgary Branch, Sec. 21, Tp. 38, Range 23, west 4th meridian, Alta.

29,373. Feb. 16.—Ordering C.P.R. to rearrange and rebuild waiting room at Carmichael, Sask., by June 1.

29,374. Feb. 16.—Approving revised location Canadian Northern Pacific Ry. Kamloops—Vernon—Kelowna—Lumby Branch, mile 41, east from Kamloops Jct., B.C.

29,375. Feb. 12.—Authorizing Lake Erie and Northern Ry. and Toronto, Hamilton & Buffalo Ry. to operate over crossing and interlocking plant at Brantford, Ont.

29,376. Feb. 16.—Authorizing G.T.R. to build spur for Canadian Oil Cos., near Pottersburg, Ont.

29,377. Feb. 19.—Suspending orders 29,312 and 29,336, Jan. 30 and Feb. 5 respectively, regarding car supply at Fort William and Port Arthur, Ont., for carriage of grain to Eastern Canada for domestic consumption.

29,378. Feb. 20.—Authorizing Toronto, Hamilton & Buffalo Ry. to rebuild bridge over Main St., Hamilton, Ont.

29,379. Feb. 20.—Authorizing Esquimalt & Nanaimo Ry. to use British Columbia Electric Ry. on Store St., Victoria, B.C., to Canadian Puget Sound Lumber and Timber Co.

29,380. Feb. 20.—Authorizing British Columbia Electric Ry. to build spur on Store St., Victoria, B.C., for Canadian Puget Sound Lumber & Timber Co.

29,381. Feb. 20.—Approving route map of C.P.R. Pashley Northeastly Branch, mile 0 to 109.3.

29,382. Feb. 20.—Authorizing Saskatchewan Government to make crossing over C.P.R. s.e. ¼ Sec. 11, Tp. 34, Range 25, west 2nd meridian, Sask.

29,383. Feb. 14.—Rescinding order 19,514, June 9, 1913, re G.T.R. speed limitation at crossing of Queen St., Mount Forest, Ont.

29,384. Feb. 19.—Authorizing G.T.R. to use bridge between Lots 17 and 18, St. Marys, Ont.

29,385. Feb. 17.—Approving clearance at G.T.R. siding for I. Cohen, Kingston, Ont.

29,386. Feb. 20.—Authorizing Kettle Valley Ry. to open its line for freight traffic from mile 13.6, Princeton, to mile 8, south of Princeton, 5.6 miles.

29,387. Feb. 20.—Authorizing Canadian Northern Western Ry. to cross highway in n.e. ¼ Sec. 4, Tp. 22, Range 12, west 4th meridian, Alta.

29,388. Feb. 19.—Approving revised general location of C.P.R. Leader Southeastly Branch, mile 29 to 50.1, and general location from mile 58.0 to 153.6.

29,389. Feb. 21.—Dismissing application of Saskatchewan Supply & Fuel Co. for modification of Rule 2 (b) of Canadian Car Demurrage Rules, orders for unloading cars, also for allowance of free time for paying freight charges.

29,390. Feb. 21.—Authorizing C.P.R. to build loco branch, Cascade Subdivision, B.C. for Robert McNair Shingle Co., at mile 0.8 National Rys., Cascade Subdivision, B.C.

29,391, 29,392. Feb. 21.—Authorizing Canadian National Rys. to cross and divert road in n.e. ¼ Sec. 1, Tp. 23, and n.e. ¼ Sec. 36, Tp. 19, Range 12, west 4th meridian, Alta.

29,393. Feb. 21.—Authorizing C.P.R. to build spur extension for Tees and Persse, Ltd., Regina, Sask.

29,394. Feb. 23.—Authorizing Canadian Northern Pacific Ry. (Kamloops-Vernon-Kelowna-Lumby Branch, to cross and divert highway at mile 59.8, east from Kamloops Jct., B.C.

29,395. Feb. 23.—Approving alteration in location of G.T.R. siding authorized by order 15318, Nov. 10, 1911.

29,396. Feb. 23.—Amending order 28497, July 7, 1919, re bridge to be built by Toronto, Hamilton & Buffalo Ry., over its track near Vinemount, Ont.

29,397. Feb. 23.—Authorizing Canadian National Rys. to cross and divert highway in s.e. ¼ Sec. 19, Tp. 2, Range 7, east principal meridian, Man.

29,398 to 29,400, Feb. 24.—Approving Bell Telephone Co.'s agreements, Feb. 3, with Goulet Bay Telephone Co., Algoma District; Feb. 4, with Greenwood Telephone Association, Algoma

District, and with Mornington Tp., Perth County, Ont.

29,401. Feb. 20.—Authorizing City of St. Boniface, Man., to continue Rue Messier, across C.P.R. Emerson Branch.

29,402. Feb. 24.—Extending to Mar. 24 time within which G.T.R. shall install bell at crossing of Victoria Road, near Guelph, Ont.

29,403. Feb. 25.—Relieving C.P.R. from providing further protection at highway crossing near Versailles Station, Que.

29,404. Feb. 24.—Approving revised location of Canadian Northern Pacific Ry., Kamloops—Vernon—Kelowna—Lumby Branch, at mile 29 south from Vernon, B.C.

29,405. Feb. 23.—Authorizing Canadian National Rys. to change spur and build additional spur to siding for P. Burns & Co., Prince Albert, Sask.

29,406. Feb. 25.—Authorizing Vancouver, Victoria & Eastern Ry. and Navigation Co., and British Columbia Electric Ry. to operate over crossing on Georgia St., Vancouver, B.C.

29,407. Feb. 27.—Suspending, pending, hearing, tariffs of G.T.R., C.P.R., Canadian National Rys., Toronto-Hamilton & Buffalo Ry., New York Central Ry., and Central Vermont Ry., showing increase in commutation rates, effective Mar. 1.

29,408. Feb. 24.—Authorizing G.T.R. to install improved type of automatic bell at crossing of Main St., Lucan, Ont.

29,409. Feb. 25.—Amending order 29,220, Jan. 2, re Canadian National Rys. highway crossing in s.e. ¼ Sec. 9, Tp. 26, Range 17, west 3rd meridian, Sask.

29,410. Feb. 24.—Relieving C.P.R. from providing further protection at crossing of Prince de Galles St., at Laval Rapids, Que.

29,411. Feb. 26.—Ordering Canadian National Rys. to install improved type of automatic bell at crossing of main road leading to crossing of Red River, St. Jean Baptiste, Man.

29,412. Feb. 28.—Authorizing Canadian National Rys. to cross highway between Secs. 7 and 18, Tp. 29, Range 16, west first meridian, Man.

29,413. Feb. 23.—Relieving G.T.R. from providing further protection at crossing of North Augusta Road, Brockville, Ont.

29,414. Feb. 27.—Authorizing Saskatchewan Government to make crossing over Canadian National Rys. station grounds at Tichfield, Sask.

29,415. Feb. 27.—Authorizing G.T.R. to build siding for Windsor Petroleum & Refining Co., Tecumseh, Ont.

29,416. Feb. 28.—Authorizing C.P.R. to build spurs for Robert Bell Engine & Thresher Co., Winnipeg.

29,417. Feb. 27.—Rescinding order 28,613, July 30, 1919, re building by Great Northern Ry. of glance pier or crib from bridge 539, between Princeton and Brookmere, B.C., and ordering that stream be diverted to the west side of railway from bridge 539 to bridge 538.

29,418. Feb. 27.—Rescinding order 26137, May 22, 1917, respecting appointment of temporary agent by C.P.R. at Domain station, Man.

29,419. Feb. 28.—Extending to June 1 time within which Canadian National Rys. shall build freight and passenger station, and passing track at Rosebud, Man., as required by order 27,875, Nov. 18, 1918.

29,420. Feb. 20.—Dismissing application of residents of Pine Beach and vicinity, Dorval, Que., for order that Pine Beach be made a stopping place during summer, half way between Strathmore and Dorval, on G.T.R. and C.P.R.

29,421. Mar. 2.—Authorizing Canadian National Rys. to rebuild bridge over Yamachiche River, mile 98.88 from Quebec.

29,422. Feb. 22.—Authorizing C.P.R. to build its Langdon North Branch, Acme to Empress, at mile 48.5, under Grand Trunk Pacific Branch Lines Co.'s tracks in s.w. ¼ Sec. 21, Tp. 29, Range 24, west 4th meridian.

29,423. Mar. 2.—Approving revised location of C.P.R. Archive-Wymark Branch, mile 0 to 24.7.

29,424. March 3.—Dismissing complaint of T. H. Taylor Co., Chatham, Ont., that carload of flour loaded and sealed by them at Chatham, Ont., out-turned a shortage at Sydney, N.S., and claim is refused by carrier on ground that car reached its destination with shipper's seals intact.

29,425. March 4.—Authorizing G.T.R. to build spur for City of Welland and Vaughan Seed Co., Welland, Ont.

29,426. March 4.—Authorizing C.P.R. to build connection spur with Key Valley Ry. (Schroeder Mills and Timber Co.'s lumber railway), at mile 74.70, Parry Sound Subdivision, Ont.

29,427. March 4.—Authorizing C.P.R. to build spur and three sidings, with crossover track and transfer tracks, for Strong Lumber Co., at mile 7.86, Sudbury District, Ont.

29,428. March 3.—Authorizing Canadian National Rys. to build spurs for Portage Milling & Transfer Co., St. Boniface, Man.

29,429. March 3.—Authorizing Canadian National Rys. to build spur for Saskatchewan Co-operative Creameries, North Battleford, Sask.

29,430. March 3.—Authorizing Canadian National Rys. to build extension of spur for Car-

rol Wilson, Ltd., Block 7, Hudson's Bay Reserve, Edmonton, Alta.

29,431. March 3.—Authorizing G.T.R. to rebuild bridge 19 at mile 2.87, Stratford Division, Ont.

29,432. March 3.—Amending order 29,402, Feb. 24, re time for installation of automatic bell by G.T.R. at Victoria Road crossing near Guelph, Ont.

29,433. March 5.—Extending for 3 months from date, time within which distant signals may be installed where C.P.R. crosses Canadian Northern Ontario Ry., at Central Ontario Jct. (Bonarlaw).

29,434. March 4.—Authorizing Bell Telephone Co. to operate its telephone lines by attaching two cables to Gouin bridge, crossing Richelieu River, between St. Johns and Iberville, Que.

29,435. March 2.—Ordering on application of Freight Adjusting Bureau of Vancouver, B.C., that shoddy blankets are entitled to rate provided for specified articles of dry goods in item 250 of Canadian Freight Association Commodity Tariff 1-A, C.R.C. 14.

29,436. March 2.—Ordering on application of United Grain Growers, Ltd., Winnipeg, that rating of road graders set up, be reduced to 1½ first class subject to Rule 6, of Canadian Freight Classification 16, as amended by Supplement 10.

29,437. March 9.—Approving Kettle Valley Ry. location south end of Dog Lake to Indian Reserve near Okanagan Falls townsite, about 750 ft.

29,438. March 9.—Approving Canadian National Rys., Acadia Valley Branch right of way, as located through Tps. 27 and 26, Ranges 28 and 29, west 3rd Meridian, Sask., mile 0 to 11.88, and authorizing its construction across 15 highways.

29,439. March 9.—Approving agreement Feb. 16, between Bell Telephone Co. and Pleasant View Telephone Co., Grey County, Ont.

29,440. March 9.—Relieving Brantford & Hamilton Electric Ry. from providing further protection at crossing of the Stone Road, just east of Cainsville, Ont.

29,441. March 6.—Ordering British Columbia Electric Ry. to furnish certain train service between Vancouver and New Westminster, B.C.

29,442. March 8.—Authorizing C.P.R. to take certain lands owned by E. Agnew, in west half of lot 6, Con. 2, Nassagaweya Tp., Ont.

29,443. March 10.—Approving combined shipping bill, way bill and receipt form of Algoma Central & Hudson Bay Ry., for use of British-America Express Co.

29,444. Mar. 10.—Authorizing town of Maple Creek, Sask., to make highway crossing over C.P.R. at Sidney St.

29,445. March 11.—Authorizing Saskatchewan Government to make crossing over C.P.R. in s.e. ¼ Sec. 1, Tp. 12, Range 13, west 3rd Meridian.

29,446. March 11.—Authorizing G.T.R. to operate over siding to be built by Toronto Harbor Commissioners for Barrett Co.

29,447. March 11.—Approving change in C.P.R. function numbers at Tillsonburg, Ont., that all home and distant dwarf signals are to be pipe-connected and that all signals are to operate in the upper quadrant.

29,448, 29,449 March 12.—Authorizing C.P.R. to rebuild bridges 2.3 Taber Subdivision, and bridge 45.5, Crownstn Subdivision, Lethbridge Division, Alta.

29,450. March 12.—Authorizing Hull Electric Co. to build spur for Federal Stone and Supply Co., Hull, Que.

29,451. March 11.—Authorizing C.P.R. to build spur for Harris Abattoir Co., Toronto.

29,452. March 12.—Authorizing G.T.R. to build spur for Geo. Hall Coal Co., of Canada, Ltd., Montreal.

29,453. March 12.—Authorizing G.T.R. to use bridges 291, 292 and 293 over Mad River, Batteaux, Creek, and Pretty River, respectively, between Allandale and Collingwood, Ont.

29,454. March 9.—Authorizing Railways & Canals Department to connect Grand Trunk Pacific Ry. and Canadian National Rys at Lobstick, Chip Lake, Snarling Jct., Pochontas and Henry House, Alta.

29,455 to 29,460. March 13.—Authorizing Canadian National Rys. to cross 6 highways in Alberta with its Munson to Wayne second track.

29,461. March 13.—Authorizing Grand Trunk Pacific Branch Lines Co. to build spur for M. Vitaly at mile 52.1, Alberta Coal Branch, in s.e. ¼ Sec. 19, Tp. 47, Range 19, west 5th meridian, Alta.

29,462 to 29,464. March 13, 12.—Authorizing Canadian National Rys. to cross highways at 3 points in Alberta with its Munson to Wayne second track.

29,465. March 15.—Authorizing Canadian National Rys. to build spur for McNall Co., Regina, Sask.

29,466. March 15.—Relieving C.P.R. from providing further protection at Sudbury Road, Chelmsford, Ont.

29,467. March 17.—Approving supplement 1 to Ottawa Electric Ry. Standard Passenger Tariff, C.R.C. 1, effective Apr. 5.

29,468. March 16.—Dismissing application of town of Pointe Claire, Que. for leave to divert

farm crossing over C.P.R. and G.T.R., within the town limits into a public crossing.

29,469. March 17.—Authorizing Grand Trunk Pacific Ry. to build spur for Red Mountain Lumber Co., in s.e. ¼, Lot 5500, Range 4, Cariboo District, B.C.

29,470. March 8.—Relieving C.P.R. from speed limitation of 10 miles an hour at pedestrian crossing in Riverdale Park, Toronto.

29,471. March 15.—Ordering that side road at crossing of highway by Michigan Central Rd., known as Stone Road crossing, 2 miles east of Welland, Ont., be diverted to the Stone Road, and orchard trees on triangular parcel north of railway cut down.

29,472. March 12.—Ordering that crossing of G.T.R. and C.P.R. at Kingston, Ont., be protected by interlocking plant to be installed by C.P.R.

29,473. March 9.—Disallowing tariffs of C.P.R., G.T.R., C.N.R., New York Central Rd., Quebec, Montreal & Southern Ry., Napierville Jet. Ry. and Montreal & Southern Counties Ry., increasing rates on milk in passenger or mixed service.

29,474. March 18.—Authorizing Canadian National Rys. to build spur to serve block 123, and to rearrange Scott Fruit Co.'s spur, at Regina, Sask.

29,475. March 18.—Authorizing Canadian National Rys. to cross and divert highway between secs. 7 and 8, Tp. 18, Range 20, west principal meridian.

29,476. March 18.—Approving revised station site of Grand Trunk Pacific Branch Lines Co., at Lorlie, Sask.

29,477. March 18.—Authorizing Canadian National Rys. to install standard portable station at McDiarmid, Ont.

29,478. March 18.—Ordering London and Port Stanley Ry. forthwith to erect shelter with heating, apparatus and proper light at east end of Base Line Road, Westminster Psychopathic Hospital, London, Ont.

General order 283. Feb. 24.—Declaring track scale allowances to be made by railways subject to Board's jurisdiction, also tolerance for variation in weights disclosed in check weighing or reweighing passed without alteration of billed weight.

General order 284. March 8.—Providing increases in existing charges for heated refrigerator cars.

General order 285. March 2.—Dismissing application of Canadian Manufacturers' Association and others for order directing extension of Canadian Car Demurrage Rules, to provide for the average demurrage plan.

General order 286. March 4.—Authorizing all telephone companies under the Board's jurisdiction to charge tolls published in their respective tariffs filed with the board.

Superannuated Intercolonial Ry. Employees. In answer to an enquiry, Is the Government aware that old superannuated I.R.C. employes are receiving inadequate pensions and not at all in relation with the cost of living?" the Minister of Railways stated in the House of Commons, Mar. 22, that the question of increased pensions for them cannot be dealt with until a final scheme is decided upon, which will be uniform for the whole Canadian National Rys. System. The Railways Department is not ready to grant the employes an annual bonus, similar to the one granted to civil servants.

The Victoria Rolling Stock and Realty Co. is applying to the Ontario Legislature for an act to amend the statutes of 1881, Chap. 58, Sec 1, which provides for the issue of debentures for the purpose of the company to be a first charge upon "such personal property, rights and credits of the company as shall be specified in the bylaw authorizing such issue." The amendment desired is the striking out of the word "personal."

Lotbiniere & Magantic Ry. Transfer. The Minister of Railways stated in the House of Commons Mar. 22, that an order-in-Council, passed Dec. 1, 1919, gives the government authority to buy this railway, but that the transfer had not been made.

J. E. Morazain, General Superintendent, Quebec Division, Canadian National Rys., in remitting his subscription, writes: "Canadian Railway and Marine World is a welcome monthly visitor."

Proposed Purchase of Inverness Ry. and Coal Co.'s Railway.

The Minister of Railways in replying to questions in the House of Commons, Mar. 10, said the Dominion Government had not bought the Inverness Ry. and Coal Co.'s railway on Cape Breton Island, N.S., but it had made an effort to do so. The committee representing the bondholders urged that the government take over the railway as a feeder for the Canadian National Rys. system, the transfer to be made on a basis similar to that on which certain branch lines in New Brunswick had been taken over. On this basis, it was agreed that the price be \$150,000 for 60.91 miles of railway, and 4.6 miles of sidings, exclusive of the company's pier at Port Hastings; the rolling stock and equipment to be paid for on a price to be agreed upon between the committee and the Canadian National Rys. directors, but such price not to exceed \$175,000. Supplies on hand to be taken over at valuation to be made by the President Canadian National Rys. The bondholders committee expressed a willingness to accept the offer, and the negotiations are still pending. The government hopes to complete the purchase on the basis agreed to. It is reported that Sir Wm. Mackenzie controls a majority of the bonds and that he is not willing to accept the terms offered.

Fire Protection for Wooden Bridges and Trestles.

At the Railway Fire Protective Association's last annual meeting a report was presented on this subject, it being stated that 90% of fires on wooden bridges and trestles on railways are caused by locomotive sparks. Following are the principal recommendations:

That effective spark screens be provided in the front end of all locomotives and carefully maintained.

That ash pans and grates be made tight and kept in good working order, as the dropping of hot coals or ashes is a source of a large amount of the trouble.

That special places be provided for dumping cinders and ashes, and that grates be not shaken down except at safe points.

That all combustible refuse, such as dry leaves, dead grass, weeds, brush and rubbish, be cleared away from under and around all wooden bridges.

That the decks of all wooden bridges, between the rails be covered with 22 galvanized iron, to prevent sparks from setting fire to the structure should they be dropped from the locomotive.

That all wooden bridges be coated with a fireproof or fire-retardent paint, demonstration having proved some of them to be of excellent protection and that they can be applied at a cost no greater than that of ordinary paint.

That one water barrel and one pail be provided for all wooden bridges of a length of 50 ft. or less, and two water barrels and two pails, one to each barrel, be provided for all bridges whose length is more than 50 ft. up to a length of 150 ft., and one water barrel and one pail for each additional 150 ft.

That where a bridge requires one or two barrels and pails, the same be placed at the ends of the bridge, located at proper clearance from the track and buried in the ground to within 6 in. of the top, and where barrels and pails are located in the middle of the bridge they be lo-

cated at proper clearance from the rails and that the top of the barrel be provided with wood or iron cover.

In the past great difficulty has been experienced in keeping pails intact with the water barrels, especially where galvanized iron pails or fire buckets have been used, and they are invariably missing when wanted, and it is therefore recommended that a square wooden bucket of unfinished lumber be provided and that it be suspended in the water inside of the barrel.

That all locomotives be equipped with fire fighting apparatus.

Freight Rates on Lumber.

The Canadian Lumbermen's Association at its recent annual meeting in Quebec discussed freight rates and passed the following resolution: "Whereas, the situation frequently arises that sales of lumber, etc., are made for delivery from a given point on one line of railway to a destination on some other line, between which points the railway companies have no through commodity rates in effect, be it therefore resolved that the Canadian Lumbermen's Association, in annual meeting assembled, authorizes the incoming committee on transportation to take such steps as may be necessary to obtain the filing of tariffs by the railways, providing through commodity rates between points on two or more railways, said rates to conform to rates for similar mileage between other points which may be in effect already."

The following were appointed members of the transportation committee: Chairman, A. E. Clark, Toronto; E. R. Bremmer, Ottawa; W. B. Snowball, Chatham, N. B.; J. F. Gregory, St. John, N. B.; A. H. Campbell, Montreal; W. T. Mason, Montreal; G. T. Edwards, Ottawa.

St. John and Quebec Ry. Operation. The Minister of Railways stated in the House of Commons, Mar. 17, that an agreement for the operation of the St. John and Quebec Ry. was made between the Dominion and New Brunswick Governments Nov. 9, 1916, the Dominion Government to pay the St. John and Quebec Ry. Co. 40% of the gross proceeds. The Dominion Government did not make an agreement to secure running rights for the St. J. and Q. Ry. over the C.P.R. from Westfield Beach and St. John, but such an agreement was made by the St. J. and Q. Ry., under which the company is to pay interest on a proportion of the value of the joint section, plus a proportion of all working expenses on a wheelage basis. The line is being operated by Canadian Government Rys. as a part of the system.

Standard Time for Railways. The Minister of Railways stated in the House of Commons, Mar. 22, that it had not been decided whether the Canadian National Rys. will operate under standard time during the ensuing summer. In answer to a further enquiry as to whether the government would compel privately owned railways to use the same time, the Minister said that all railways would, of necessity, use the same time.

Quebec & Saguenay Ry. Freight Rates. The Minister of Railways stated in the House of Commons, Mar. 22, that local class freight rates on the Q. & S. R. are not higher than those on other railways. They were fixed by Canadian National Rys. traffic officials.

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.

Canada Steamship Lines, Ltd.—W. P. O'BRIEN, Agent, Victoria pier, Montreal, was mentioned in our last issue as having been agent at Quebec, Que., prior to his present appointment. This is incorrect; M. P. Connolly is General Agent at Quebec, Que.

Canadian Government Merchant Marine, Ltd.—B. C. KEELEY has been appointed General Agent at Vancouver, B.C.

Canadian National Rys.—H. R. ARTHUR, Trainmaster, Saskatoon, Sask., has been appointed Trainmaster, Lucerne, B.C., vice H. W. Culver, resigned.

J. FERGUSON has been appointed Trainmaster, Prince Albert, Sask., vice W. C. Owens, transferred to Saskatoon, Sask.

T. J. GRACEY, heretofore Auditor of Disbursements and Accountant, Timiskaming and Northern Ontario Ry., Toronto, has been appointed Assistant Auditor of Disbursements, Canadian Northern Ry. System, vice T. R. Ralph, deceased, and not Auditor of Disbursements, as erroneously stated in our last issue. Office, Toronto. R. S. GOSSETT, is Auditor of Disbursements, Canadian Northern Ry. System.

H. R. KEMPSVILLE, heretofore conductor, Division 2, Central District, has been appointed Trainmaster Neepawa, Man., vice W. A. Kirkpatrick.

E. R. LOGIE has been appointed Division Engineer, Superior Division, Hornepayne, Ont., vice H. K. Morrison, transferred to Montreal.

H. K. MORRISON, heretofore Division Engineer, Superior Division, Hornepayne, Ont., has been appointed Division Engineer, Montreal Division, Quebec District, vice T. Kearney, transferred. Office, Montreal.

W. C. OWENS, heretofore Trainmaster, Prince Albert, Sask., has been appointed Trainmaster, Saskatoon, Sask., vice H. R. Arthur, transferred to Lucerne, B.C.

S. H. SYKES, recently Assistant to Chief Engineer, Eastern Lines, Canadian Northern Ry., Toronto, has been appointed District Engineer, Canadian National Rys., Vernon, B.C., vice Major W. G. Swan, D.S.O., resigned on his recent appointment as Chief Engineer, Vancouver Harbor Commission.

Canadian Pacific Ry.—G. ANDERSON has been appointed Roadmaster, Empress, Alta., vice J. Daem, transferred to Maple Creek, Sask.

D. BERTIE, heretofore Travelling Passenger Agent, C.P.R., and Canadian Pacific Ocean Services, Ltd., Minneapolis, Minn., has been appointed Travelling Passenger Agent, same companies, Duluth, Minn.

A. M. BIRD, heretofore Roadmaster Kingston, Ont., has been appointed Roadmaster between Megantic and Kyle, Moosehead Subdivision, New Brunswick District. Office Brownville Jct., Me.

HENRY J. CAMBIE, who has been in the C.P.R. service since its inception, latterly as Special Assistant Engineer, at Vancouver, B.C., and Chief Engineer, Esquimalt & Nanaimo Ry., retired Mar. 15.

W. F. CAWLEY has been appointed

Travelling Passenger Agent, C.P.R. and Canadian Pacific Ocean Services, Ltd., Minneapolis, Minn., vice E. G. Rennels, transferred.

J. DAEM, heretofore Roadmaster, Empress, Alta., has been appointed Roadmaster, Maple Creek, Sask., vice J. V. McNab, whose appointment as Divisional Engineer, Saskatoon, Sask., was announced in our last issue.

C. F. A. FLUGGE, formerly Agent, at Hamburg, Germany, has been reappointed to that position on the re-opening of the agency there.

C. H. FOX, heretofore Division Engineer, Regina, Sask., has been appointed Assistant District Engineer, Manitoba District. Office Winnipeg.

E. B. FRASER, heretofore Shop Foreman, Winnipeg, has been appointed Locomotive Foreman, Wilkie, Sask., vice W. P. Crawford.

T. J. LACKEY, heretofore acting



H. E. Whittenberger,
General Manager, Western Lines, Grand Trunk Railway.

Roadmaster on the Bruce Division, has been appointed Roadmaster, Kingston subdivision, Kingston, Ont., vice A. M. Bird, transferred.

CAPT. R. MCKILLOP, heretofore acting as relieving Superintendent, has been appointed Superintendent, London Division, Ontario District, vice A. Williams, transferred.

L. C. STOCKBRIDGE has been appointed Travelling Passenger Agent, C.P.R. and Canadian Pacific Ocean Services, Ltd., Minneapolis, Minn., vice D. Bertie, transferred to Duluth, Minn.

Chicago, Burlington and Quincy Rd.—H. R. SAFFORD, formerly Chief Engineer, G.T.R., Montreal, and latterly Engineering Assistant, Central Western Region, United States Railroad Administration, Chicago, Ill., has been appointed Assistant to President C. B. & Q. R. Office, Chicago, Ill.

Chicago, Milwaukee & St. Paul Ry.—F. O. FLINN, formerly Agent, Victoria, B.C., from 1917 in the Royal Air Force, overseas, and latterly in transportation

service at Seattle, Wash., has been appointed Commercial Agent, Victoria, B.C.

G. W. HIBBARD, formerly General Passenger Agent, Western Lines, has been appointed General Agent, Vancouver, B.C.

Grand Trunk Ry.—A. BEARDSHAW has been appointed Locomotive Foreman, Turcot, Que., vice J. D. McCuaig, promoted.

G. BRADSHAW, Supervisor of Safety, Grand Trunk Western Lines Railroad, having resigned to enter another company's service, that position has been abolished. Safety First work through the safety committees is being handled by G.T.R. Western Lines.

W. R. DAVIDSON, heretofore General Superintendent, Eastern Lines, Montreal, has been appointed General Superintendent, Lines in the U.S., west of Detroit and St. Clair Rivers, J. J. Corcoran, formerly General Superintendent, Western Lines, G.T.R., and latterly General Superintendent, Grand Trunk Western Lines Rd. (U.S.R.A.), having resigned to enter another company's service. Office Chicago, Ill.

W. H. EDMONSON, heretofore Assistant to Federal Manager, Grand Trunk Western Lines Rd. (U.S.R.A.) Detroit, Mich., has been appointed Assistant to General Manager, Western Lines, G.T.R. Office Detroit, Mich.

B. J. FARR, heretofore Superintendent, Motive Power and Car Department, Grand Trunk Western Lines Rd. (U.S.R.A.) Detroit, Mich., has been appointed Superintendent of Motive Power and Car Department, Western Lines, G.T.R. Office, Battle Creek, Mich.

W. C. FOSS has been appointed Purchasing Agent, Western Lines, G.T.R. Office, Detroit, Mich.

S. HUSSARD, heretofore at Toronto, is reported to have been appointed General Yardmaster, Brockville, Ont., vice C. F. McEwen, assigned to other duties there.

T. T. IRVING, heretofore Chief Engineer, Grand Trunk Western Lines Rd. (U.S.R.A.) Detroit, Mich., has been appointed Chief Engineer, Western Lines, G.T.R. Office, Detroit, Mich.

J. S. LILLIE, formerly Assistant Land and Tax Commissioner, Western Lines, G.T.R., and latterly Land and Tax Agent, Grand Trunk Western Lines Rd. (U.S.R.A.) has been appointed Land and Tax Agent, Western Lines, G.T.R., reporting to the Assistant to General Manager. Office, Detroit, Mich.

J. D. McCUAIG, heretofore Locomotive Foreman, Turcot, Que., has been appointed General Foreman, motive power shops, Ottawa, vice F. Foster.

A. B. McNAUGHTON, heretofore Superintendent, Grand Trunk Lines, in New England, (U.S.R.A.) Portland, Me., has been appointed Superintendent Portland Division, G.T.R., with jurisdiction from Portland to west yard limit board at Island Pond, Vt. Office, Portland, Me.

J. McWOOD, heretofore Master Car Builder, Eastern Lines, Montreal, has been appointed General Foreman, in charge of Ottawa Shops and outside points on Districts 30, 31 and 32, Eastern lines, reporting to Master Car Builder, Eastern Lines. Office, Ottawa.

D. C. MESSEROLL, heretofore General Travelling Car Inspector, Montreal, has been appointed Master Car Builder, Eastern lines, vice J. McWood, transferred. Office, Montreal.

Canadian National Railways Construction, Betterments, Etc.

W. J. PIGGOTT, heretofore Trainmaster, Allandale, Ont., has been appointed Superintendent, Stratford Division, Ontario Lines, vice R. H. Fish, whose appointment as General Superintendent, Eastern Lines, Montreal, was announced in our last issue. Office, Stratford, Ont.

B. WHEELWRIGHT, heretofore acting Signal Engineer, has been appointed Engineer, Maintenance of Way, Portland Division, reporting to General Superintendent Eastern Lines, Montreal. Office, Portland, Me.

Grand Trunk Pacific Ry.—The position of Trainmaster at Melville, Sask., held formerly by C. B. MUTCHLER, whose appointment as Assistant Superintendent there was announced in our last issue, has been abolished.

R. A. HARLOW, heretofore instrument man, has been appointed Roadmaster, Pacific to Prince Rupert, B.C., vice O. Carlson, on leave of absence through illness. Office, Prince Rupert, B.C.

Lehigh Valley Rd.—F. V. HIGGENBOTTOM has been appointed Canadian Passenger Agent, Toronto.

E. R. THORPE, heretofore in G.T.R. service, has been appointed General Agent, L.V.R., in charge of Freight and Passenger Traffic, Toronto.

Michigan Central Rd.—W. A. BECKER, heretofore appointed Local Freight Agent, St. Thomas, Ont., vice W. H. King, retired on superannuation.

Pacific Great Eastern Ry.—G. E. McDONALD, General Manager, is reported to have resigned, to enter the Blackstone Coal Co.'s service at Edmonton, Alta.

Pere Marquette Ry.—F. H. ALFRED, heretofore Federal Manager, Pere Marquette Rd., (U.S.R.A.) has been appointed President and General Manager. Office, Detroit, Mich.

E. N. Brown, heretofore Chairman and President, has resigned the position of President, but retained that of Chairman of the Board.

J. L. CRAMER, heretofore Federal Treasurer, Pere Marquette Rd., (U.S.R.A.) has been appointed Vice President, Treasurer and Assistant Secretary. Office, Detroit, Mich.

F. M. GOODFELLOW, heretofore chief clerk, London, Ont., has been appointed Travelling Freight and Passenger Agent, London, Ont., vice W. M. Guy, promoted.

W. M. GUY, heretofore Travelling Freight and Passenger Agent, London, Ont., has been appointed Division Freight Agent, London, Ont., vice R. W. Youngs, deceased.

W. E. MARTIN, heretofore Treasurer, P.M.R. Co., has been appointed Assistant Treasurer. Office, New York.

S. L. MERRIAN, heretofore General Solicitor, Pere Marquette Rd., (U.S.R.A.) has been appointed General Counsel. Office, Detroit, Mich.

Union Pacific Ry.—G. W. VAUX, latterly General Manager, Ziegler Co., Ziegler, Ill., has been appointed General Agent, U.P.R., at Toronto.

Daylight Saving and Standard Time—There will be no alteration of railway time this year under daylight saving, for Canada as a whole, according to a statement, reported to have been made by a Railway Association of Canada's official Mar. 24, but where municipalities and districts enact daylight saving bylaws provision is made so that the railways may alter their schedules of local trains to suit local conditions if thought desirable.

Bridgewater Station on the Halifax and South Western Ry. was destroyed by fire Mar. 9, the loss being estimated at \$10,000. It contained the auditing department, dispatcher's and telegraph offices and passengers' waiting room.

St. John, N.B., Station—A press report states that owners of property on North St., St. John, N.B., have been notified that the properties have been acquired for the Canadian National Rys. The government is said now to own all the properties from the station along North St. to the Mission church on Paradise Row. The object of the purchase is reported to be the erection of a new station, which it is stated will cost about \$1,000,000. A. P. Barnhill, K.C., one of the C.N.R. directors, is reported to have stated that plans had been definitely settled, and that before anything was arranged there would have to be a conference with the C.P.R. as to track levels.

Rebuilding of Canadian Northern Ry. between Cap Rouge and Portneuf. This section of line, some 30 miles, which was washed out in 1918, and the operation of which had to be abandoned, has been repaired after 5 months work, and train service has been resumed. The principal portion of the work consisted of heavy rock filling, for shore protection, and took approximately 150,000 cu yd. of heavy rock, also the rebuilding and filling of approximately a mile of crib protection work. The track had to be raised for some miles, in some places as much as 10 ft., the filling being made of loose rock, and later on the track was lined up and ballasted with broken stone. On account of the high cliffs, in close proximity to the line, large culverts had to be built to carry off the heavy flow of water from the many creeks and other natural drainage. The following large equipment was used on the work: 2 steam shovels; about 50 12-20 yd. air dump cars; 5 locomotives, 2 heavy rock drilling outfits and cranes. V. T. Bartram, Toronto, was the contractor.

Gosford Branch.—The opening of the Gosford branch line for traffic is being advocated by the district board of trade. The section of the line from Valcartier to River Aux Pours, 5.25 miles, is reported to have been out of operation for some years on account of the condemnation of a bridge over the Jacques Cartier River.

St. Charles River Bridge.—We are officially advised in regard to the bridge to be erected across the St. Charles River at mile 8.7 from Quebec, Batiscan Subdivision, that the substructure will consist of a through plate girder span, 106 ft. 0 $\frac{1}{2}$ in. center to center and will be erected on the two existing masonry abutments. The contract for the bridge has been let to the Dominion Bridge Co.

Chaudiere Station.—The Minister of Railways, replying to questions in the House of Commons Mar. 17, said Chaudiere Station in Levis County, Que., is under the Dominion Government's control. The station there was burned about four years ago and was replaced by a box car, but the government is not aware that this car had been condemned by the board of health. It is proposed to build a station at Chaudiere, but on account of the old building having been destroyed, as a result of a collision for which the G.T.R. was responsible, the

question of the size and cost of the new station has been a matter of negotiations with the G.T.R., and the government expects to arrive at a definite understanding on the matter in the near future.

Acadia Valley Line.—The Board of Railway Commissioners has approved of a right of way plan for this branch as located through Tps. 27 and 26, Ranges 28 and 29, west, 3rd meridian, Sask., mile 0 to 11.88, and has authorized construction across 15 highways there. A contract for the construction of this line, 25 miles, was let in April, 1919, to Grant Smith & Co. and MacDonnell, Ltd., Vancouver, and considerable grading has been done.

Munson to Wayne Second Track.—The Board of Railway Commissioners has authorized the building of a second track across 8 highways, between Munson and Wayne, Alta. The distance between these two points is 18 miles, and 6.75 miles of the second track work was completed in 1919.

Alberta Branch Lines.—Replying to questions in the Alberta Legislature Mar. 16, the Premier gave information relative to the construction of Canadian Northern Ry. branch lines, for the construction of which the legislature authorized a guarantee of bonds as to principal and interest. The lines to be built were: From Strathcona, via Camrose to Calgary, 230 miles, and from north of Calgary to Lethbridge, 125 miles, a total of 355 miles. The southerly 96.87 miles are yet to be built.

From the crossing of above line and Little Bow River south, via Macleod to the International boundary, 110 miles, none of which has been built.

From Camrose to Vegreville, 45 miles, which has been completed.

From near Macleod to the western boundary of Alberta, 65 miles, none of which has been built.

Bonds in respect of these four lines were sold to the extent of 88.245% of the guarantees executed, and there remains to the Provincial Treasurer's credit, \$1,201,791.85, of the proceeds, which will be paid out on further progress of the works. There was paid to the company in respect of the uncompleted sections of the lines \$188,600 for the first, \$182,325 for the second, and \$86,282.30 for the third.

Edmonton Car Shops.—A press report states that the penitentiary buildings at Edmonton, Alta., are being pulled down, and that the site will be utilized for erecting car shops for the Canadian National Rys., including the Grand Trunk Pacific Ry.

Peace River Branch.—A press report of Mar. 19, stated that the trestle over the Little Paddle River had been completed and that track laying was in progress beyond that point, and that it was expected to reach Greencourt about a week thereafter.

Canadian Northern and Grand Trunk Pacific Ry. Connections.—The Board of Railway Commissioners has authorized the Department of Railways to connect Canadian Northern Ry. tracks with Grand Trunk Pacific Ry. tracks, at Lobstick, Chip Lake, Snaring Jct., Pochantas and Henry House, Alta. These points are all in the Jasper Park coal mining areas.

Kamloops - Vernon - Kelowna - Lumby Line.—The Board of Railway Commissioners has approved revised location plans of this line, mile 41 east from Kamloops Jct., B.C.

Vancouver Island Lines.—A press report states that the Victoria City Council has granted permission for the erection of a temporary frame station building and freight shed north of Point El-

lice Bridge, near Esquimalt Road, reserving the right to cancel the permit by giving six months notice. The permanent station will be, it is said, erected near Johnson St. (Mar., pg. 123.)

Traffic Orders by Board of Railway Commissioners.

Track Scale Allowances and Tolerance.

General order 283, Feb. 24.—Re track scale allowances and tolerance; Upon hearing the matter at Ottawa, Mar. 18, 1913; Vancouver, May 19, 1913; Calgary, May 26, 1913; Edmonton, May 27, 1913; Regina, May 29, 1913; Winnipeg, May 30, 1913, and Fort William, June 4, 1913; the Canadian Pacific, Grand Trunk, Grand Trunk Pacific, Canadian Northern, Canadian Northern Quebec, and Ottawa & New York Railways, Canadian Freight Association, Canadian Manufacturers' Association, Canadian Lumbermen's Association, the Montreal, Toronto, Edmonton, Winnipeg and Regina boards of trade, British Columbia Lumber & Shingle Manufacturers, and Massey-Harris Company, being represented at the hearings, and what was alleged; and upon reading the further written submissions filed, it is ordered, with respect to freight traffic referred to herein, carried between points in Canada, that railway companies publish and file tariffs to provide for the following allowances per car from the ascertained gross weights of loaded cars; subject to the condition that the said allowances shall not operate to reduce the net weights of the loadings of the cars below the minimum carload weights provided for in the tariffs applicable thereto:

1. For temporary or permanent racks, on flat or gondola cars, loaded with bark, provided the weight of the racks is not included in the stencilled tare of the car is 1,000 lb.

2. For temporary protectives as follows:

(a) Blockage, dunnage or temporary racks, in connection with carload shipments of agricultural implements, machinery, stoves, acid in carboys, and vehicles of all descriptions Actual weight, but not more than 650 lb.; the shipper to certify to the weight of the said protectives on the shipping order and bill of lading

(b) Temporary racks, stakes, standards, strips, braces, or supports, in connection with carload shipments of commodities, other than those specified above, requiring such provision for safe transportation when loaded on flat or gondola cars Actual weight when ascertainable, but not more than 500 lb.; the shipper to certify to his ascertained weight of the said protectives on the shipping order and bill of lading.

3. For lumber used by shippers in lining box (not refrigerator) or stock cars for shipments of perishable freight. Actual weight, but not more than 800 ft. at 2½ lb. a foot; the shipper to certify to the measurement of the lumber so used on the shipping order and bill of lading. Also, a further allowance of the actual weight, but not exceeding 500 lb. of the stove and fuel, if furnished by the shipper.

4. For foreign matter not part of the lading, such as snow, ice, manure, or refuse, in or on cars at the time of weighing An estimated allowance adequate to the actual conditions in each case.

And it is also ordered that, irrespec-

tive of the aforesaid allowances, the tariffs of the said railway companies include the following definition and directions, viz.:

For tolerance, i.e., variations in weights disclosed in check-weighing or reweighing passed without alteration of the billed weight:

(a) On ashes, brick, cinders, clay, drain tile (soft), dolomite, ganister, gravel, mill-scale, ore, sand, slag, stone (all kinds except "cut") and other similar bulk freight, loaded on flat or open top cars 1% of the weight of the lading, but not less than 1,000 lb. a car.

(b) On all other freight (including coal and coke) the weight of which is not subject to change from its inherent nature 1% of the weight of the lading, but not less than 500 lb. a car.

Charges for Heated Refrigerator Cars.

General order 284, Mar. 8.—Re application of Canadian Freight Association, on behalf of railway companies for an order rescinding general order 173, Oct. 26, 1916, and authorizing the said railway companies to publish and file charges for the use of heated refrigerator cars on the basis of 1½¢ a car per mile, with a minimum charge of \$2 a car, in addition to the regular freight charges. Upon hearing the matter at Toronto, April 13, 1917; Ottawa, April 17, 1917; Regina, June 21, 1917; Vancouver, Nov. 21, 1919; Calgary Nov. 27, 1919; Edmonton, Nov. 28, 1919; Saskatoon, Nov. 29, 1919; Regina, Dec. 1, 1919; Winnipeg, Dec. 2, 1919; Fort William, Dec. 3, 1919; and Ottawa, Jan. 7, 1920, in the presence of representatives of Canadian Freight Association, Canadian Manufacturers' Association, the Toronto, Montreal, Winnipeg, Regina and Calgary boards of trade, Ontario Fruit Growers' Association, Nova Scotia Fruit Growers' Association, British Columbia Credit & Traffic Association, Nova Scotia Shipping Association, Western Canada Fruit Jobbers' Association, Ontario Vegetable Growers' Association, Niagara Peninsula Fruit Growers' Association, Quebec Department of Agriculture, Canadian Pacific and Grand Trunk Railways, Canadian National Rys., and Michigan Central Rd., and what was alleged; and upon reading the further written submissions filed it is ordered that the general order 173, Oct. 26, 1916, be amended to permit increases in existing charges for heating refrigerator cars by the carriers, in addition to the freight rates pertaining to the loadings thereof, and also in addition to the charges, if any, for the use of the said cars, as follows:

(a) Between points west of and including Port Arthur, Ont.; also between points east of and including Westfort, Ont., from 1¢ a car per mile, subject to a minimum total charge of \$2 a car, to not more than 1½¢ a car per mile, subject to a minimum total charge of not more than \$2 a car.

(b) From points east of Port Arthur to points west of, Westfort, and from points west of Westfort to points east of Port Arthur, the maximum charges authorized by the general order 173, when increased not more than 50% to apply.

And it is also ordered that the tariffs to give effect to this order may be published and filed not less than seven days previously to the date, or dates, on which they are intended to come into force.

Average Demurrage Plan Refused.

General order 285, Mar. 2.—Re application of Canadian Manufacturers' Association for an order directing the extension of the Canadian Car Demurrage Rules, so as to provide for what is known as the average demurrage plan. Upon hearing the matter at Toronto, April 25, 1911; Vancouver, May 19, 1913; Calgary, May 26, 1913; Edmonton, May 27, 1913; Regina, May 29, 1913; Winnipeg, May 30, 1913; Fort William June 4, 1913, and Ottawa, June 16 and 17, 1913, in the presence of representatives of Canadian Manufacturers' Association, Canadian Retail Coal Dealers' Association, Canadian Lumbermen's Association, Canadian Car Service Bureau, Montreal Lumber Association, Montreal Grain Exchange, Toronto, Vancouver, Calgary, Edmonton, Regina, Winnipeg and Montreal boards of trade, Canadian National Rys., Canadian Pacific, Grand Trunk and Grand Trunk Pacific Railways, Michigan Central and Pere Marquette Rds., Winnipeg shippers, Great West Saddlery Co., Winnipeg Sandstone Brick Co., D. Ackland & Sons, Manitoba Bridge & Iron Works, Dominion Bridge Co., the Beaver Soap Co., Vulcan Iron Works, J. D. Clark Billiard Co., Winnipeg Cabinet Factory, Parker Whyte, Ltd., Alaska Bedding Co., Canadian H. W. Johns-Manville Co., Manitoba Linseed Oil Mills, Martin-Senour Co., Canada Cement Co., Alsip Brick Tile & Lumber Co., Canadian Carbon Co., Winnipeg Steel Granary & Culvert Co., Gurney Northwest Foundry Co., Winnipeg Paint & Glass Co., Manitoba Gypsum Co., Perfection Concrete Co., George Gale & Sons and Anthes Foundry, and what was alleged; and upon reading the further written submission filed it is ordered that the application be refused.

Transportation of Dangerous Articles Other Than Explosives.

General order 287, March 22.—Re general order 203, Aug. 11, 1917, approving the regulations for transportation by freight of dangerous articles other than explosives, as amended by general orders 206, 207 and 260, Sept. 7, Oct. 26, 1917, and March 17, 1919 and re application of People's Gas Supply Co. for order repealing or amending second paragraph of rule 1861 (j) of the regulations aforesaid. Upon hearing the matter at Ottawa, June 10, 1919, the People's Gas Supply Co., Canadian Railway War Board, Bureau of Explosives, Compressed Gas Manufacturers' Association, L'Air Liquide Society, and Commercial Acetylene Supply Company, being represented and what was alleged, it is ordered that the general order 260, March 17, 1919, be amended by striking out the second paragraph of clause (j) of rule 1861, and substituting therefore the following, namely:

"Cylinders containing acetylene gas must not be shipped unless they were charged by a person, firm, or company,

having possession of complete information as to the nature of the porous filling, the kind and quantity of solvent in the cylinders, and the meaning of such markings on the cylinders as are prescribed by the board's regulations and specifications applying to containers for the transportation of acetylene gas.

"That every manufacturer of cylinders for the shipment of acetylene gas in Canada shall file with the Inspector of the Bureau of Explosives, at Toronto, complete information as to the nature of the porous filling, the kind and quantity of solvent in the cylinders, and the meaning of such markings on the cylinders as are prescribed by the board's regulations, together with the serial numbers of the cylinders, using a particular kind of filler; and that, upon application of any manufacturer of acetylene gas to the Bureau of Explosives for information necessary to enable him to comply, in the recharging of the same, with the regulations of the board, the same shall be furnished."

Shortage on Flour.

29,424. March 3.—Re application of T. H. Taylor Co., complaining that a carload of flour loaded and sealed by them at Chatham, Ont., out-turned a shortage at Sydney, N.S., and that its claim therefor has been refused by the carrier, on the ground that the car reached its destination with the applicant company's seals intact, and applying for a ruling that the checking out of the lading was an obligation on the carrier. Upon reading what is alleged in support thereof and on behalf of the Canadian Manufacturers' Association, it is ordered that the complaint be dismissed.

Freight Rate on Shoddy Blankets.

29,435. March 2.—Re application of the Freight Adjusting Bureau, Vancouver, B.C., for a ruling of the board that shoddy blankets are entitled to the rate provided for specified articles of dry-goods in item 250 of Canadian Freight Association's Commodity Tariff 1-A, C.R.C. 14. Upon hearing the application at Vancouver, Nov. 21, 1919, the applicant and Canadian Freight Association being represented and what was alleged, and upon reading the board's Chief Traffic Officer's report, and its appearing that item 250 of the said tariff must be read in connection with item 265, it is ordered and declared that shoddy blankets shipped since July 31, 1918, were and are entitled, by the language of the tariff, to the rate of \$2.65, provided for in item 250 of the said tariff.

Classification of Road Graders.

29,436. March 2.—Re application of United Grain Growers of Winnipeg, for a reduction in Canadian freight classification rating of road graders, set-up, from double first class to first class, subject, when loaded on flat cars, to a minimum weight of 5,000 lb. Upon hearing the matter at Winnipeg, Nov. 15, 1919, the applicants and Canadian Freight Association being represented, and upon reading the further written submissions filed, and the report of the board's Chief Traffic Officer's report, it is ordered that the application for the first class rating be dismissed, and it is also ordered that the rating of road graders, set up, be reduced to 1½ first class, subject to rule 6 of Canadian Freight Classification 16, as amended by Supplement 10 thereto;

the said change to be included in the forthcoming Supplement 13 to the said Classification, and to come into force on the effective date thereof.

Disallowance of Milk Tariffs.

29,473. March 9.—Re application on behalf of National Dairy Council for an order suspending C.P.R. Tariff C.R.C. no. E-25, to take effect June 1, 1919, increasing rates on milk, in passenger or mixed passenger and freight, train service; the application of the Toronto Board of Trade for an order suspending G.T.R. Tariff 693, C.R.C. no. E-2756, effective June 1, 1919, and other similar tariffs, increasing rates for the transportation of milk in baggage cars; and order 28,355, May 28, 1919, suspending certain increased tariffs. Upon hearing the matter at Ottawa, June 10, 1919, the National Dairy Council, Toronto Board of Trade, Farmers' Dairy Co., Toronto; Ottawa Dairy Co., High Cost of Living Commission, Montreal Dairy Co., Border Chamber of Commerce, Windsor, and C.P.R. and G.T.R., being represented, and upon reading the further written submissions filed, it is ordered that the following tariffs, viz.:

Canadian Pacific Ry. C.R.C. no. E-25; Grand Trunk Ry. C.R.C. no. E-2756; Canadian National Ry. C.R.C. no. E-29; New York Central Rd. C.R.C. no. 249; Quebec, Montreal & Southern Ry. C.R.C. no. 271; Napierville Jct. Ry. C.R.C. no. 113; Montreal & Southern Counties Ry., Supplement 2 to C.R.C. 22, be, and they are hereby, disallowed.

Railway Finance, Meetings, Etc.

Algoma Central and Hudson Bay Ry.—Philadelphia, Pa., press dispatch, Mar. 13, President Cunningham, of the Lake Superior Corporation, has announced that negotiations have been completed for the re-financing of the Algoma Central and Hudson Bay Ry. The terms are: The present outstanding issues of \$10,080,000, and H. B. R. 1st mortgage 8% bonds, fully guaranteed by the Lake Superior Corporation as to principal and interest, to be converted into an issue of \$10,080,000 3% bonds, guaranteed by the Lake Superior Corporation as to the first 10% of the principal, and as to the first 1% of the annual interest.

International Railway of New Brunswick—The Lieutenant Governor in his speech at the opening of the N.B. Legislature Mar. 11, announced that during the recess bonds guaranteed by the N. B. Government in connection with the construction of the International Ry. of N. B. to the amount of \$896,000 had been paid off by the company and canceled.

Canadian Northern Pacific Ry. Construction Suit.—S. D. Hogan, of Innisfree, Alta., is suing the National Construction Co., Mackenzie, Mann & Co., Ltd., the Canadian Northern Pacific Ry., and the Canadian National Rys. in the Alberta Supreme Court, to recover \$115,898.29 for alleged breach of contract. The claim states that plaintiff in Mar., 1912, contracted to build a section of the Canadian Northern Pacific Ry., between mile 34.8 and 48.18, west of the Yellowhead Pass Summit, the work to be completed by Aug. 1914. The contract was involved an expenditure of \$1,075,057.77 at contract prices, and \$21,112.86 for additional work. Plaintiff states that there was paid on account \$98,027.34, and he is now suing for the balance with interest from 1914.

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

Week ended Mar. 5, 1920.	Wheat. Bush.	Oats. Bush.	Barley. Bush.	Flax. Bush.	Rye. Bush.	Totals. Bush.
Fort William						
C.P.R.	95,154	22,048	73,931		43,063	234,196
Empire Elevator Co.	279,341	217,855	206,116	9,208	50,276	762,796
Consolidated Elevator Co.	265,605	64,928	57,511	23,217	13,322	424,583
Western Terminal Elevator Co.	526,205	30,658	97,736		50,149	704,748
Ogilvie Flour Mills Co.	258,099	28,327	24,888	14,806	8,208	334,328
G. T. Pacific	791,369	327,836	42,467	18,610	33,599	1,213,881
Grain Growers' Grain Co.	937,391	294,577	199,735		65,004	1,496,707
Fort William Elevator Co.	204,714	354,870	36,265		4,739	617,147
Northwestern Elevator Co.	456,331	31,993	45,614		69	534,051
Port Arthur						
Port Arthur Elevator Co.	1,904,709	791,837	281,864	225	59,052	3,037,688
Sask. Co-op. Elevator Co.	1,539,422	457,688	76,192	40,522	27,569	2,141,293
Canadian Government Elevator	188,744	99,308	27,632	55,971	17,763	389,418
Thunder Bay	368,766	499,629	99,819		6,956	994,266
Davidson and Smith	95,441	35,532	13,860			146,871
Eastern-Richardson	372,532	194,664	49,372	9,340	35,581	661,489
Total Terminal Elevators	8,283,822	3,451,650	1,333,002	186,836	441,349	13,696,659
1. Private Terminal Elevators	260,692	165,875	116,711	1,170	3,184	547,632
2. Country Elevators	17,045,861	11,288,883	1,751,343		359,144	30,485,231
*Total Interior Terminal Elevators	2,602,834	1,402,015	107,860	7,735	21,816	4,142,260
Midland						
Aberdeen Elevator Co.	4,500	103,314	109,072			216,886
Midland Elevator Co.	28,071	295,062	24,561			347,694
Tiffin, G.T.P.	285,665					285,665
Port McNicoll	306,267	426,444	3,415			736,126
Goderich						
Elevator and Transit Co.	520,278	56,100				576,378
West Can. Flour Mills Co., Ltd.	134,094					143,094
Toronto Campbell Flour Mills Co.	139,081	21,083				160,164
Kingston						
Commercial Elevator Co.		33,284				33,284
Montreal						
Harbor Commissioners No. 1 and 2	60,793	185,909	52,760		3,439	302,901
Montreal Warehousing Co.	441,323	21,192				426,515
Ogilvie Flour Mills Co.	265,848	2,200	7,492			275,540
Quebec Harbor Commissioners		21,116				21,116
West St. John, N.B., C.P.R.	356,458		274,317			630,775
St. John, N.B., Can. Nat. Rys.	412,355		38,441			450,796
Halifax, N.S., Can. Nat. Rys.	275,232					275,232
Total Public Elevators	3,721,165	1,165,704	510,058		3,439	5,400,366
Total Quantity in Store	31,914,374	17,514,127	3,818,974	195,741	828,932	54,272,148

*Quantity for each individual interior terminal elevator not received.

Canadian Railway AND Marine World

ESTABLISHED 1898.

Devoted to Steam and Electric Railway, Marine, Shipbuilding and Railway, Harbor and Canal Contractors' Interests.
Official Organ of various Canadian Transportation Associations.

Published on the first of each month.

Acton Burrows, Limited, Proprietors,
70 Bond Street, Toronto, Canada.

ACTON BURROWS,
President and Editor.

AUBREY ACTON BURROWS,
Business Manager.

Assistant Editors,

JOHN KEIR and DONALD F. KEIR

United States Business Representative,
A. FENTON WALKER, 143 Liberty St., New York.

Member of
Associated Business Papers,
Audit Bureau of Circulations
Canadian National Newspapers
and Periodicals Association,
Canadian Press Association,

Authorized by the Postmaster General for Canada, for transmission as second class matter.

SUBSCRIPTION PRICE, including postage anywhere, \$2 a year in advance.

SINGLE COPIES, 25 cents each, including postage.

The best method of remitting is by express or post office money order. If remittance is made by cheque, 15 cents should be added to cover cost of collection unless cheque is payable at par in Toronto or Montreal.

NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application.
ADVERTISING COPY must reach the publishers by the 10th of the month preceding the date of the issue in which it is to appear.

TORONTO, CANADA, APRIL, 1920.

PRINCIPAL CONTENTS.

Appointments, Transportation	185
Ballast Spreader Attachment	190
Birthdays of Transportation Men	170
Board of Railway Commissioners—	
Orders by, Summaries of	183
Traffic Orders	187
Canadian Northern Rys.—British Columbia	
Terminals	195
Construction, etc.	186
Canadian Pacific Ry.—Construction, etc.....	180
Officers' Dinner	191
Electric Railway Department	196 to 204
Dominion Power and Transmission Co.'s	
Report	197
Fare Increases in Canada	203
Fare Increases in U.S.	196
Finance, Meetings, etc.	200
Levis County Ry. Gear Drive Snow	
Sweeper	198
Ottawa Electric Ry., Legislation for Tak-	
ing Over	204
Projects, Construction, etc.	202
Wages, Working Conditions, etc.	199
Winnipeg Street Car Problem	200
Express Companies, Among the	195
Freight and Passenger Traffic Notes	180
Grain Removal From Fort William and	
Port Arthur Elevators	189
Grain in Store at Terminal Elevators	188
Grand Trunk Ry.—Acquisition by Govern-	
ment	171
Construction, etc.	182
Graphic Production Control	173
Mainly About Railway People	177
Marine Department	205 to 222
Canada Shipping Act	218
Canada Steamship Lines' Meeting	221
Canadian Government Merchant Marine	
Ltd., Shipbuilding, Operation, etc.	205
Halifax Graving Dock Expropriation	214
Loss of s.s. Bohemian	219
Navigation and Power Development on	
St. Lawrence River	210
Ocean, Coast, Lake and River Steamships	
Shipbuilding for 1920	208
Vessels Registered, General, in Canada	212
Railway Development	214
Railway Earnings	175
Railway Finance, Meetings, etc.	182
Railway Rolling Stock Orders and Deliveries	
Telegraph, Telephone and Cable Matters	181
Valve Motion	195
Valve Motion	160

Removal of Grain by Rail from Fort William and Port Arthur Elevators.

In the House of Commons on Mar. 19, J. A. Robb, M.P. for Chateauguay-Huntingdon, Que., called the Minister of Railway's attention to a letter from a Winnipeg grain shipping firm, dated Mar. 13, stating that there had been no coarse grain shipped out of Fort William, for domestic purposes, since Mar. 1. The Minister of Railways in reply read a letter from Chief Commissioner F. B. Carvell, of the Board of Railway Commissioners to the Deputy Minister of Railways, dated Mar. 19, as follows: "In reply to yours of yesterday re the shipment of oats from the head of the lakes, I beg to state that the whole story of what the board has done since the close of navigation would be a rather lengthy one. Early in the season we attempted to regulate loadings out of elevators in an equitable manner to all parties concerned, and on Dec. 6 we received a telegram from Chairman Stewart, of the Wheat Board, as follows:

"The C.P.R. through Grant Hall has assured us an all rail movement of grain from Fort William east of a minimum of 125 cars a day. We would like this apportioned as follows: 20 cars for coarse grains domestic and export, 40 cars for domestic wheat, 65 cars for export wheat to Atlantic seaboard ports including Portland and St. John. Canadian National Rys. through C. A. Hayes have assured us of minimum movements of 50 cars a day which we would like apportioned as follows: 15 cars for coarse grains domestic and export, 10 cars for domestic wheat, 25 cars for export wheat to Atlantic seaboard ports, including Portland and Halifax. Undoubtedly roads can improve this movement and haul more domestic wheat and export and domestic coarse grains than the total of 85 cars a day and until further advised we would like these interests to benefit to the full extent of the increased movement, but the 65 cars on C.P.R. and 55 cars on Canadian National for export wheat are irreducible daily average minimums and should take precedence over other grains. Will you be kind enough to confirm this to the railway companies accordingly?"

"Some discussion took place with the railways and with Mr. Stewart about issuing an order, but all parties agreed that, in so far as it was possible, 175 cars a day would be shipped out. The Wheat Board asked for a priority order for the 85 cars a day for export wheat. This we declined to grant, until satisfactory evidence was furnished as to dates of sailings, tonnage, etc., and, as this data has never been furnished the board, we have, therefore, refused to give a priority order; but there was a general understanding, as we understood it, between the railways, the Wheat Board, the Lake Shippers' Association, and ourselves that the percentage of different grains, both export and domestic, as set forth in Mr. Stewart's telegram would be adhered to as closely as possible. Unfortunately, the weather conditions during January and February made it impossible for the railways to furnish 175 cars a day for this particular movement, and it very soon became apparent that some interests would not be able to receive the amount of grain required. In the course of a few weeks, this board became convinced that coarse

grains were not receiving their due percentage of shipments, and, therefore, in order to see that our intentions were carried into effect, on Jan. 30 this board issued an order the operating portion of which is as follows:

"That on Monday, Feb. 2, and on each succeeding Monday until otherwise ordered by the board, the C.P.R. provide at least 125 cars and the Canadian Northern Rys. at least 50 cars at the elevators at Fort William and Port Arthur, for the receipt, handling and carriage of grain, other than wheat, also flaxseed, for domestic use in Canada; the said cars to be allocated in proportion to the cars ordered for which the necessary documents have been surrendered."

"During the next three Mondays, including Feb. 16, 545 cars of domestic coarse grains, mostly oats, were shipped out, and, on account of severe weather conditions, we then concluded that coarse grains, mostly oats, were shipped their fair percentage, the result being that, on Feb. 17, this order was suspended. Since that date up to Mar. 13, 211 cars of domestic coarse grains have been shipped, more than 90% of which would be oats. In addition to the above statement, according to information furnished us by the Lake Shippers' Association on Mar. 16, for the fortnight ended Mar. 13, 420 cars of coarse grain have been shipped from western points direct to the east. During the same period, the Lake Shippers' Association inform us that a total of 153 cars of domestic grains of all kinds have been furnished the local mills and 819 cars of export wheat. This board receives daily from the Lake Shippers' Association, the C. P.R. and the Canadian National statements of the number of cars loaded and handled, and at present we are subdividing the coarse grains under different headings, so that we are in a position to know exactly how much of each kind of grain is moving out daily, and, early in this present week, we came to the conclusion that coarse grains were not receiving their fair proportion. Telegraphic correspondence was entered into with the Lake Shippers' Association on Mar. 15, and, after the exchange of a number of telegrams, on Mar. 18 the following order was issued by wire:

"Your telegram yesterday received re coarse grain movement from head of lakes. This board requires that beginning tomorrow and until further orders 20% of all cars loaded from all elevators at head of lakes be assigned to coarse grains for domestic consumption which is practically the percentage set forth in Mr. Stewart's telegram to me of Dec. 26, 1919. Please confirm."

Yesterday afternoon confirmation was received as follows: "If the daily returns require a change in these directions, the board will not hesitate to take whatever action may be necessary. I think, however, I shall point out the very serious conditions under which grain has been handled during the past two months, and I am satisfied that the railway companies have handled every car which it was humanly possible to get over their roads. Their first great difficulty has been weather conditions not only around the head of the lakes, but at the ter-

minals, where hundreds of cars have been frozen in from Halifax, N.S., to Portland, Me., and probably never in the history of railroading in this country have as many cars been held up at ocean terminals, owing to weather conditions, as have been in that condition since the first day of February. Added to this

have been the most abnormal weather conditions from the operating standpoint, but probably even beyond both these difficulties has been the shortage of cars, due very largely to the fact that there are about 20,000 more Canadian cars on United States lines than there are U.S. cars on Canadian lines,

and without cars it is impossible to handle freight. I again wish to emphasize the splendid manner in which the railway companies have worked with this board, in order to produce the maximum result and have ever been ready to carry out any wish which we have expressed."

Attachment for Ballast Spreader.

The attachment to a ballast spreader, illustrations of which, from photographs taken on a locomotive back, at a terminal on the Eastern Lines C.P.R., are given herewith. It consists of a steel channel

operation, and Fig. 3 shows the results obtained in one operation, the track freed and cleaned out well below top of rails, the depth varying according to desire, as the cutters are adjustable, and cut can

case if it was applied to a car.

The device was tried on the C.P.R. in 1918-1919, and proved so successful that this winter there are some 20 attachments in service on the Eastern

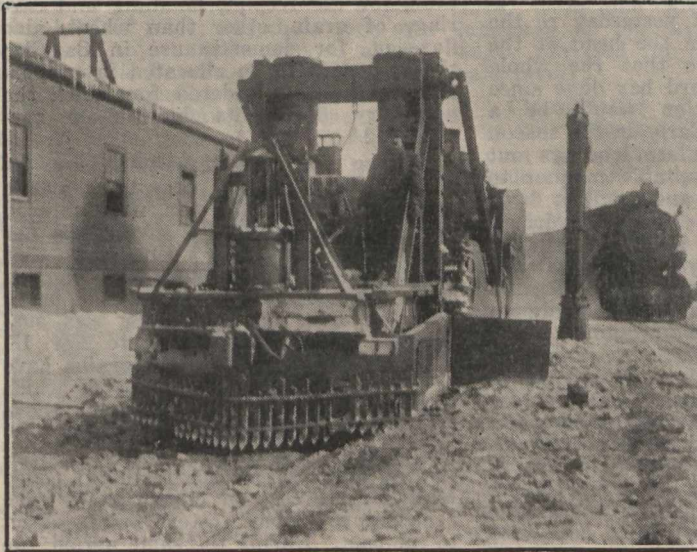


Figure 1.



Figure 2.

frame, designed to fit snugly over the front of the spreader plow, over all, without the removal of anything on the spreader. The channel contains a set of chisels, and is fastened to the front of the spreader plow by special bolts, simply and effectively. Each ice cutting chisel is held in frame independently; the chisels are interchangeable, and can be quickly and individually removed for redressing. They are also adjustable in the frame to regulate the cut desired below the top of rail. In this way they can be reground several times, or until the cutting portion is entirely used up and worn out, thereby extending the life of cutters to a maximum. A pair of flanged shoes is fastened under the frame, and spreader plow front which rides the rails, similar to that of a snow plow, and actuates the device to the center line of the track. Its construction is simple, durable and inexpensive, combined with special features which render it absolutely effective, for freeing railway tracks, for safe and economical operation, of any ice, frozen cinders and other elements encountered in winter accumulation, which is especially found in yard terminals, where the climate reaches a very low temperature, and material which could not be removed by any other known means, other than hand picking, which involves manual labor. This renders the ice cutting attachment an enormous labor saver.

Fig. 1 shows the condition of the tracks previous to running of the ice cutter, accumulation of ice, cinders and other sediments being well above the top of the rails and frozen very hard. It also shows the arrangement of the cutting chisels in general on the attachment, Fig. 2 shows the machine and device in

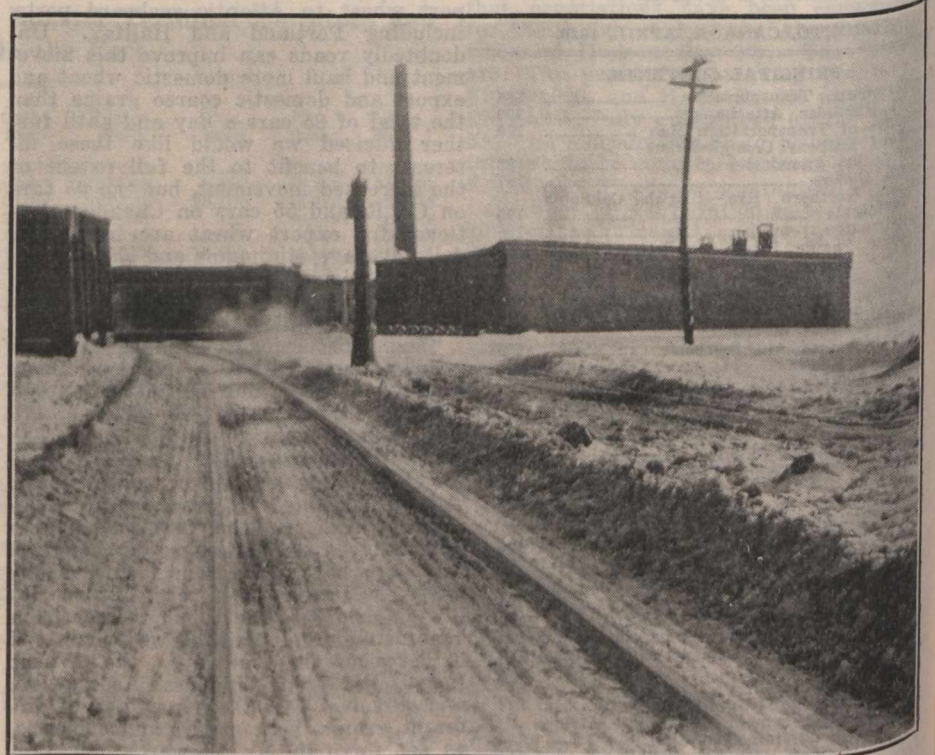


Figure 3.

be regulated to the depth required.

This attachment can be applied conveniently to any car or spreader, but it is best to attach it to a spreader, and also the more economical, as the spreader is in winter used freely for the removal of snow, and this avoids the tying up of other equipment which would be the

Lines. One man operates the spreader, easily raising and lowering it for obstructions, and it will do the work of hundreds of men, and besides the saving in this respect, it gives quick use of yard tracks, as it only takes a few minutes to remove the cars, run the ice cutter through, and put the cars back.

The Canadian Pacific Railway Officials' Annual Dinner at Toronto.

The C. P. R. officials' fourth annual dinner, the holding of which was suspended during the war, but was revived at Montreal in Mar. 1919, was held at the King Edward Hotel, Toronto, on Mar. 13, being attended by some 600 officials, from all the principal points on the system, from the Atlantic to the Pacific, and from Great Britain and United States. Special trains were run from Montreal and Winnipeg to Toronto, for those attending from those districts. Those at the head table were Sir Geo. McLaren Brown, European General Manager, who presided; His Honor L. H. Clarke, Lieutenant-Governor of Ontario; Hon. Henry Mills, Ontario Minister of Mines; the Mayor of Toronto; W. G. Chester, Chairman, C. P. R. Employes Co-operative Board, and the following company officials: E. W. Beatty, K.C., President; Grant Hall, Vice President; W. R. MacInnes, Vice President, Traffic; A. D. MacTier, Vice President, Eastern Lines; W. N. Tilley, K.C., Consulting Counsel; C. Murphy, General Manager, Western Lines; F. L. Wanklyn, General Executive Assistant; Col. J. S. Dennis, Chief Commissioner of Colonization and Development; J. Leslie, Comptroller; C. E. E. Ussher, Passenger Traffic Manager; E. Alexander, Secretary; H. E. Suckling, Treasurer; H. A. Beatty, M.D., Chief Medical Officer; J. H. Walsh, General Manager, Quebec Central Ry.

During the service of the dinner, and before the toasts, a musical entertainment was given, and a number of moving pictures were shown, illustrating the C. P. R. from the Atlantic to the Pacific. Letters of regret at inability to attend were read from the Ontario Premier, from Lord Shaughnessy, Sir Edmund Osler, and Sir John Eaton of the company's directorate; I. G. Ogden, Vice President, Finance, and D. C. Coleman, Vice President, Western Lines, Lord Shaughnessy expressed the earnest hope that the occasion would be as interesting, inspiring, and enjoyable as it had been in the past. I. G. Ogden said: "I regret that it will not be possible for me to join you at the dinner, where I am sure the best of feeling will prevail, and at which some of the addresses to be given will be as good to be well digested as the best things at the dinner can be. My feelings to the officers and employes of the company have only changed since my letter of a year ago to be stronger, and to look more on all connected with the company as my best friends. The more we see and know of other constructions and systems the brighter becomes the C. P. R. as the brilliant sign of all that is good and best for this our country. It will long remain the great strength on which the people of Canada may well depend. I wish you all an enjoyable and beneficial meeting, which should be looked forward to for renewal each year."

Sir George McLaren Brown in proposing the health of the guests, said: "In some situations, it is almost impossible to keep ones emotions within bounds. My present position, presiding over this gathering of C.P.R. men and their friends in the capital city of my native province, and your more than kindly reception have opened wide the gates for my emotions, and, as it were, have set over my mind travelling swiftly backward over my 34 years service with our great Canadian institution, the C.P.R., that standing monument to Canadian intelli-

gent foresight, courage and enterprise—that great organization of which all Canadians must indeed be proud—that great company which has placed Canada on the map. As I look about this gathering, and recognize so many friends of my old C.P.R. days in Canada, I indeed admit it tugs at my heart strings and words fail me; yet I would like to be able to tell you how much this moment means to me. I was delighted when I found that in the ordinary course of my duties I would be able this year to be present at this gathering, but I admit that I was startled, and have not yet recovered from it, when in Montreal a few days ago I was told that I was to preside this evening. I realize my inability to fill the position properly, yet I want you to know how deeply I feel the honor you have done me, and how much I appreciate your extreme kindness. What I have said is, however, not to the toast which it is my privilege to propose, and though I have gone off on a tangent I feel that both our guests, and you, my friends and associates, will under the circumstances forgive my momentary departure from the programme. It is my privilege to propose the toast to our guests whom we so delight to welcome and who so greatly honor us by their presence. Although I am conscious of my inability to do justice to the occasion, I rest easy in mind in the certainty of the enthusiasm of the reception of the toast; the certainty of the sincerity of the welcome of our guests. I couple with the toast the names of four distinguished fellow countrymen who in their respective spheres have made their niche in the community, the Lieut. Governor of Ontario, Mr. Lionel Clark, Hon. Henry Mills, Minister of Mines for Ontario; the Mayor of Toronto, Mr. T. L. Church, and Mr. W. G. Chester, Chairman of the C.P.R. Employes Co-Operative Board. The Lieutenant Governor in his distinguished career has won not only title to great personal honor and success, but to what is of greater importance; he has established the most enviable record in public service which those who know him best will tell you is of far greater satisfaction to him than any personal honors he has gained. In Henry Mills, I think I recognize someone whom I first met years ago when we were both younger in years in the service of our great company. We can both look back on many years of strenuous work, and if he will permit it from an old C.P.R. employe, I would like to tender him personal congratulations on his success, and in saying this I am sure I but echo the congratulations of every member of the old brigade, and as for a quarter of a century or more he merited the confidence reposed in him by the C.P.R. so now onward as a Minister of the Crown, he will, by the exercise of his sound and sterling qualities, merit the confidence of the people of Ontario, and if I might be permitted to indulge in a little prophecy I would predict that before long he will find that his sphere will be extended so as to embrace the greater interests of the whole Dominion. I consider, and you no doubt do too, that we are indeed fortunate in having with us the Mayor of Toronto, Mr. Church, whose name and that of the Queen City of the Dominion are synonymous. His record needs no statement. You find it in this beautiful Canadian city for which

he has done so much. I am particularly delighted to be able to pay my tribute to Toronto, for though for a time in my early youth I only saw Toronto from the famous mountain top which characterizes the city of my birth (Hamilton), I had many happy hours in Toronto as a school boy, and despite the prejudices of some of my friends, have constantly to look upon Mr. Church's city as the premier city of Canada. Of course I do not always express myself so emphatically, for the very obvious reason that I have no desire to lose any of my Montreal friends. We welcome Mr. Chester in a dual capacity, as our guest, as chairman of the Employes Co-Operative Board, and as a fellow employe, known and esteemed for many, many years by most of us tonight. I am at a loss to know how to address him; whether as a guest or as a fellow worker. As a guest, he represents interests of a vast section of the personnel of the organization, and his presence here indicates to me that happy association of all concerned which is so essential to the proper maintenance and advance of the C.P.R., which is a responsibility for us all. So long as mutual friendly understanding, tolerance and confidence is maintained between us employes and the company's executive, none of us who pride ourselves in the association with this great enterprise need have any fear for the future of the company, because it is only in this way that we are enabled to see things in their proper perspective, and thereby guide our course in the best interests of all concerned. If I might be permitted at this moment to make a few observations, which possibly to some may seem irrelevant, which to my mind are quite pertinent, I would like to speak of the phase of my experiences during the past five years. Prior to the war, in working in the ordinary course of my duties I made the acquaintance of several of the men prominent in the labor world in the old country, but it was not until the war came that I was privileged to come into intimate association with them. During those years I met many men prominent in the labor world of England on very intimate terms, and I would pay my tribute to them with but few and immaterial exceptions. I found them of sound judgment, of strong character and unselfishly working to the betterment of humanity, and I have not the slightest doubt that you have such men in similar positions in Canada. In England these men urged some very necessary social reforms, which undoubtedly they have definitely brought about, and there are no people in the community more keenly alive to the necessity for observance of law and order, their advocated methods are constitutional and not bolshevistic, and without doubt their counsels in the affairs of state can do only good and not harm."

The Lieutenant-Governor of Ontario responded and proposed the toast of the company, warmly eulogizing its management. Hon. Henry Mills, Ontario Minister of Mines, who, until assuming his present office a short time ago, was a C. P. R. locomotive man, running out of Fort William, responded and proposed the toast of the company's vice-presidents and officers. T. L. Church, Mayor of Toronto, who also responded for the guests, proposed the toast of the company's employes.

President Beatty's Speech.

E. W. Beatty, K.C., in responding to the toast of the Company, said: "One of the duties which the Company's bylaws, if my preference were consulted, should contain, would be that the Chairman of the company, or some other officer, was obligated to make public speeches. It has unfortunately fallen to my lot to be compelled to speak in several places in Canada since Oct. 1918, and I sincerely believe it is one of the most arduous and least interesting of any of the phases of activity pertaining to the office.

When I was at college in this city, and afterwards when I practiced law in Montreal, I prided myself upon the fact that never on any occasion, outside of a court or a commission, did I indulge in speech-making, either platform, or after dinner. In my ignorance I considered that that was a creditable record, especially for one who had actively practiced law for upwards of 17 years. It came to pass, however, that my nemesis overtook me, and I was compelled in January, 1919, to make what was my first public appearance in that capacity in Montreal. It was a Sunday night gathering of the Fifth Sunday Association, composed largely of railway men, and wishing to make myself at home with the audience, or rather induce them to be at home with me, and in an amateur effort to secure their sympathy, I told them it was my first appearance as a speaker, and I also told them the following story, which was a true story, and designed also to secure a friendly reception. Some years ago I gave my first and only indication of wealthy instincts by contracting appendicitis. In due course an eminent surgeon spent 13½ minutes of his valuable time in removing the cause of the trouble, and when convalescing I said to the assisting surgeon that I would like to have the fee fixed for this eminent gentleman's exhibition of digital dexterity. He was in due course approached, and the first question he asked was: 'What does Mr. Beatty do?' The answer that he got was: 'He is only a poor lawyer; in fact I understand a very poor lawyer indeed.' The result was that the minimum fee was fixed in my case.

"Now, as I say, I told that story, and after the meeting was over a G.T.R. employe met a C.P.R. employe on the street, and the C.P.R. man said to the G.T.R. man: 'What did you think of the old man's speech?' (The old man being me). 'Well,' drawled the G.T. man, 'He first said that he was a damned poor speaker, and then he told us that he was a damned poor lawyer. On the whole I thought it was a damned poor speech.' So you see there are important personal reasons why I should welcome a change in the functions of the office, which would permit someone else to do the public speaking.

"If ever I do make a speech, however, I can say with perfect honesty that I would rather speak to the C.P.R. officers and employes than to any other audience, and particularly am I glad on this occasion to say a few words because this dinner is taking place in my former home city, a city of great commercial and transportation importance, under somewhat different auspices than former dinners in that we have been honored by several distinguished men, including the Lieutenant-Governor, the presence of all of whom I wish to assure them is very welcome and deeply appreciated. If I might further particularize, without invid-

iousness. I would like to mention the gratification we all feel at the presence of Hon. Mr. Mills, Minister of Mines, and Mr. W. G. Chester, representing the company's employes. Mr. Mills stepped off one of our locomotives to take his present portfolio, and there is one mineral substance with the use of which he is very familiar. I refer to coal. If there is anything in the way of defects in the quality of coal that he has not discovered, and mentioned, during the last few years, I do not know what it is. With that branch of his duties he comes to his new office extraordinarily well equipped, and I have no doubt will administer the important functions of that office with the same efficiency as he showed in this company's service. Mr. Chester represents the backbone of this enterprise, and he typifies in himself that loyalty to the interests he represents, combined with co-operation and fairness, which has made his association with the company's officers one of great advantage to both.

"I notice, too, among the invited guests, my friend, the Mayor of Toronto, whose insistence upon the rights of his city in all matters of controversy has been remarkable. We have not been able to agree always with the city's contentions, but we have been sensible of the pertinacity with which their views have been presented and the underlying sincerity of their appreciation of the interests of their municipality, which has characterized their presentation. I do not wish you to understand that in all the controversies between the city and the railways, the railways have been right. I know of several cases in which a more generous appreciation of the needs of the municipality, and a general financial support to them by the companies, would have avoided controversies, both bitter and expensive, and of far reaching consequences. In this city and its prosperity this company has a tremendous stake. It is the chief commercial center of Ontario, an enormous shipper and receiver of goods, served by three railways; I think well served by them, but certainly served to the advantage of the traffic on their respective lines. It was my home for many years, and in spite of that its progress continued. I left it 19 years ago, and in spite of that it grew. The city has always been represented by two directors from Toronto, who were among the oldest of those associated with the C.P.R. enterprise. Sir Edmund Osler and the late Mr. W. D. Matthews have been connected with the company for many years. The former for 35 years, and the latter for 31 years prior to his death. From their association on the board, we have received the counsel and assistance which was so essential to the company's success, and to them we, who have succeeded to the responsibilities of executive and other offices, owe a great and lasting debt of obligation. There has recently been added to the board, in succession to the late Mr. Matthews, Sir John Eaton, who, by reason of his widespread interests as a citizen of Canada, is a very outstanding and important member of this community. The members of the board look forward to his association with them with the greatest pleasure.

"In common with all of you I regret the absence of the company's Chairman, but I realize that it would be asking a good deal of him, especially when his proper ambition is to be relieved of as many duties as possible, in order that

he may consider his time entirely his own—in the period of respite which he has earned, by his long, distinguished and notable services to this company.

"On the occasion of our last dinner the railway situation was somewhat different than it is today. It has now advanced another step, in what some regard as being the logical consequences of the first step, and we are met with the rather unique situation of the existence of two strong railway systems in Canada, both backed by adequate credit and both desirous of fulfilling, to the best of their ability, their share in supplying the transportation requirements of the country.

"Some people have regarded the railway situation as highly controversial, and it was, to the extent that the adherents of the two systems of administration, privately owned and publicly owned, have been insistent on the correctness of their respective views, and expressly apprehensive of the results of any other system than that which they advocated. To my mind, to regard it as controversial is now unnecessary and unwise, and the chief consideration of all of us is, as to what will be the result to the country as a whole, in the matter of railway service, and to ourselves in particular, as one of those engaged in supplying a large part of that service. The C.P.R. has been built up, over a long period of years, into an organization of which we may all be conceivably and properly proud, and an organization, the usefulness of which, in public service, is probably now more important than at any other period of its history. It is a company which can only continue to succeed, by being administered with strict integrity, and in accordance with the highest business ethics. Upon its success in service, depends its rewards.

"There has always been competition, and there always will be competition, and the character of business competition does not alter in any of its essential details as the years pass on. Our competitor is and will be a very extensive system, which will probably increase in magnitude. We all hope it will be a success, and we do not need to be altruists in order to harbor that hope. I think I can say to you with perfect candor that no man in Canada has more reason to hope for its success than I have; for two reasons, first, because its success as a railway undertaking means a gradual release of the burden on the taxpayer, and the C.P.R. is a fairly heavy taxpayer, and secondly, because the factors which contribute to its success will ensure the further and continued success of the C.P.R. If the traffic development of the country is such as to support the Canadian National Rys. system, it will undoubtedly be sufficient to add to the support of the C.P.R. You will, therefore, appreciate that on national and selfish grounds the success of the Canadian National Rys. is something that every C.P.R. official should desire. It involves competition, of course, and competition, of course, which is both keen and honest, cannot help but redound to the advantage of the competitors, to the improvement in the character of the service they render, and to the resultant advantage of the people and communities served. Personally, I have no fear of the competition adversely affecting this company or its interests, and the reason why I think I have a right to that confidence is to be found in the organization itself, and the char-

acter of the officers and men who comprise it, officers and men who I think can be relied on to play the game of transportation competition as it was meant to be played, adroitly, persistently, aggressively and fairly. In years gone by it was considered an act of proper aggressiveness for one competitor to decry the methods and wares of his rival. This is not the case today. It is foolish to depreciate your competitors outwardly or otherwise, foolish for two reasons; first, because they probably do not deserve your depreciation of them, and secondly, because it is bad business.

"Now in this competition, or in any transportation situation, which exists or is likely to exist in Canada, we have the advantage of the traditions of the company, and the ideals and standards which have been set for us by the men who formerly guided its destinies. It is difficult for me to refer to the former President, and present Chairman, in language other than that of affection and admiration. I have known him so well, so intimately, personally, officially and professionally, for so long a time, that I have a deep appreciation of the influence of his character, and his standards upon the practical commercial prosperity of this company, and the imprint which those personal qualities have upon his associates and subordinates. It would not do for any officer to now forget the debt which he owes in the way of the opportunity of service which has been afforded him by the work of these men who preceded him. It would equally not do for him to overlook the fact that the high characters of these men contributed largely to their success, and that the standards of personal integrity, official courtesy, and commercial efficiency, which they followed, are just as effective and just as necessary today as ever before. It is not necessary for me to mention to you any of the outstanding factors in connection with the company, which render your association with it so important to you and to it. In the railway alone there has been invested, in cash, in excess of \$830,000,000. In its subsidiary enterprises there are many millions, so I am safe, I think, in saying that it is the largest privately owned and operated transportation agency in the world. It has been conservatively financed, supported by the people, and the government, in its inception, in a way which was then considered as only substantial enough to keep it alive for a short time, and in later years, when it made these properties valuable, largely by its own efforts, and by the same efforts increased the value of all lands in the west, the same support has been considered by some critics as over-generous. For myself I am prepared to leave to the judgment of the people as a whole, as to whether or not the company has fulfilled the onerous obligations imposed upon it, both to the advantage of itself and the country, and I would draw your attention to the finding of the Royal Commission appointed to enquire into railways, that the people of Canada received full value for the support given to the C.P.R. under the agreement of incorporation made in 1881, a conclusion I venture to suggest which was reached by all Canadians before the finding was made.

"I only wish to add one word, a word of the highest possible commendation of the loyalty and efficiency of the officers and men who comprise this corporation and whose efforts have made, and are

making it, what it is. Do not imagine that those of us whose principal duties lie in the Windsor Street Station are unmindful of the work which you are doing in other places throughout the vast system of this company. Do not imagine that your troubles are not ours, but believe that whatever can be done in the way of advice, and support, and direction, will be given, not reluctantly or half-heartedly, but with all the ability and sagacity that we possess, because of the unified interest existing in this corporation, which has made the C.P.R. spirit a household word throughout the transportation world."

Grant Hall, Vice President, responded for the vice presidents and officers. W. G. Chester, Chairman, C. P. R. Employees Co-operative Board, responded for the employees. A. D. MacTier, Vice President, Eastern Lines, proposed "Our allied interests."

Col. J. S. Dennis, C.M.G., Chief Commissioner of Colonization and Development, in responding for "Our Allied Interests," said: "I understand the interests I am honored by being called upon to speak for include the Minneapolis, St. Paul and Sault Ste. Marie, the Duluth South Shore & Atlantic, and the Spokane International lines in the United States; those lines in Canada, like the Dominion Atlantic, Kettle Valley and Esquimalt & Nanaimo, operated under these names as part of the system; the Canadian Pacific Ocean Services, the Dominion Express Co., the C.P.R. Telegraph, the Hotel Department and the Departments of Natural Resources and Colonization and Development. This is surely a pretty big order for one speaker, and to deal with the subject fully, I decided, after careful consideration of the diversified activities of these many interests, to endeavor to limit my speech to an hour and a half. However, I have just been warned that any speaker, at this late hour, who speaks more than 10 minutes is to be summarily executed and denied a decent burial, or, worse still, excluded from visiting any of the "dry" sittingrooms after the dinner, and I am therefore constrained to try and return the thanks of all these vast interests for the way in which you have received the toast, in a very few brief remarks. In the first place, I think a better name than the 'Allied interests' might have been obtained for this toast, especially in view of the doubts now existing in many people's minds as to whether this term conveys a correct understanding of the close relationship existing between the interests included in the toast, and the parent company, and it is certain that if we are applying the Wilsonian interpretation of 'allied,' as judged by what that meant in the late war, the term is not applicable in this instance.

"What is it that makes the C.P.R. differ from any other transportation company? The answer, in my opinion, is this toast, and explanation may be illustrated by a brief summary of a day's work by our President. In the morning he has to consider many of the daily problems referred for ruling by the Operating Department. Then, for a change, he has problems connected with the operation and equipment of lines in the United States. Then come numerous questions of steamships, and routes on the Atlantic, Pacific and Great Lakes, including matters of officers and staff all over the world. Then a rapid change to questions affecting the staff all over the world. Then a rapid change to ques-

tions affecting hotels, express companies and telegraph departments. Then, for another change, matters affecting smelting, metalliferous mines, coal mines, and water powers. Then, to the other extreme of sawmills and timber and ties, and finally, questions of land settlement, land prices, experimental farms and livestock, and then, just to make sure that his day shall be varied, I come along with schemes for moving pictures, publicity, propaganda and all the various questions relative to our efforts to colonize and develop Canadian natural resources, including statistical statements like the following:

"Agricultural traffic from existing railway mines in the three prairie provinces during 1916, \$163,516,318.

"Total number of farmers in the three prairie provinces that year, 219,105.

"Average traffic value of a farmer, \$746.33; capitalized at 5%, \$13,569.

"Number of farmers located by C.P.R. on their own lands since 1882, 43,147, which, of course, does not include the vast number who were brought to the west and located on other lands.

"C.P.R. traffic from farmers located 1882-1919, \$157,363,573 net.

"Finally, just when he feels like going home and calling it a day, along comes some intricate problem of finance, connected with all this world wide activity of the greatest transportation and development organization, and on behalf of the associated interests for which I am attempting to respond, I can only say, that they should, and I know do, feel proud to be considered part of the organization, if only as allied interests."

C.P.R. Passenger Officials' Tour and Conferences.

On Mar. 14, the day after the officials' dinner, a number of the company's passenger department officials, headed by C. E. E. Ussher, Passenger Traffic Manager, left Toronto by special train, consisting of compartment observation car, compartment car, two standard sleeping cars, dining car, tourist sleeping car, and baggage car, for a trip to Seattle, Wash., where they disbanded. The route followed from Toronto was via Sudbury, and the main transcontinental line to Vancouver, with stops at Port Arthur, Fort William, Winnipeg, Brandon, Moose Jaw, Regina, Saskatoon, Edmonton, Calgary Banff, Lake Louise, Field, Revelstoke, Sicamous and Vancouver. At Port Arthur the party had luncheon at the Prince Arthur Hotel. Committee meetings were held at Fort William, Winnipeg and Saskatoon, and general sessions at Regina, Edmonton, Calgary, Sicamous and Vancouver. From Vancouver the party went by steamship to Nanaimo, and had an automobile trip to Alberni, Sproat Lake and Great Central Lake, returning to Alberni, and thence over the Esquimalt and Nanaimo to Duncan, motoring from there over the Malahat Drive to Victoria. From Victoria they went to Vancouver by the s.s. Empress of Russia and from Vancouver to Seattle on a B. C. Coast Steamship Service ship.

During the trip 10 of the compartments and 2 of the drawing rooms were used, during the day, by 12 committees of 5 each, in preparing recommendations for discussion at the general sessions. Each committee considered and discussed all phases of subjects assigned it, and set forth the conclusions reached, in the form of resolutions for submission at the general sessions, where the proposed resolutions formed the basis of discussion. The committees met a sufficient time ahead, so that a copy of the proposed resolution on each subject could

be furnished all conference members at least 24 hours before the subject was brought up at the general session, thus giving every member an opportunity to fully consider the committee's proposals and be in a position to readily set out views for or against each resolution or offer an amendment.

Light Railways for Northern Ontario.

The Ontario Legislature is being asked to incorporate the Northern Light Railways Co., to build and operate light narrow gauge railways to be operated by steam, electricity or other motive power. The railways proposed to be built consist of a main line with two branch lines, and a loop line, the routes of which are specifically set out, and other branch lines or extensions, and power is asked to connect with the Timiskaming and Northern Ontario Ry. and any other railways that may be built. Following are the routes stated: From at or near the T. & N.O. Ry., Elk Lake branch, adjoining the Smythe lawn plot, southwesterly through Roadhouse and Lawson Tps., then northwesterly through Nicol Tp. to Gowganda town plot. A branch from Nicol Tp. northerly through Nicol, Haultain, Morel and Yarrow Tps., connecting with the established gold mines in Powell Tp., known as the Fort Matachewan gold mines also in Nicol Tp., but running westerly through Nicol, Mulver, Tyrrell and McMurrich Tps., and connecting with the mines in the West Shining Tree gold mining area; and a loop line from Swastika Station, on the T. & N. O. Ry., running northeasterly through Teck Tp., the Kirkland Lake Mining area and Lebel and Gauthier Tps., thence southeasterly to Larder Lake, thence southerly through Skead Tp., and northwesterly through Catherine and Boston Tps. to Boston Creek Station on the T. & N.O. Ry.

The lines mentioned above are those outlined in the Light Railways Construction Co.'s programme, and referred to in Canadian Railway and Marine World for February, pg. 76.

Atlantic, Quebec and Western Ry. and Quebec Oriental Ry. Operation.

The Minister of Railways replied to a number of questions in the House of Commons, Mar. 15, and 17, with respect to the Quebec Oriental Ry., and the Atlantic, Quebec and Western Ry., which are operated under one management, and give connection between Matapedia, on the Intercolonial Ry., and Gaspé, Que. Answering three sets of questions asked by C. Marcell, M.P. for Bonaventure, the Minister stated that the Board of Railway Commissioners had received complaints during the last twelve months from C. Marcell, J. H. Kelly and others with respect to the service given on the railways mentioned. These complaints had been taken up by the board with the company, and the financial conditions disclosed do not warrant any additional service during the winter. The time table for the winter service was filed by the company in the usual manner and notice was given to the public of the change of service. The present service is a tri-weekly passenger train, Matapedia to Gaspé; a mixed train service, Matapedia to New Carlisle, and an accommodation tri-weekly from New

Carlisle to Gaspé. Mail is carried daily between Matapedia and New Carlisle. The reason assigned by the company for restricting its service is on account of its financial condition. The Board of Railway Commissioners has satisfied itself that the line is sufficiently equipped with motive power, also sufficient passenger cars; the company depends upon other lines for freight cars, the bulk of its traffic being through traffic with other roads.

In answer to other questions, the minister stated that the government did not contemplate taking over these railways and linking them up with the Canadian National Rys. System. The C.N.R. management had not given any consideration to the acquisition of these railways as part of the C.N.R. System, in view of the rapid development of business in Bonaventure and Gaspé Counties. If the matter of investigating the desirability of such acquisition is submitted to the management it will be duly considered.

As a result of the work of an association for the improvement of the railway situation on the Gaspé coast, found recently and which has taken up the whole matter with the Board of Railway Commissioners, a special sitting of the board is to be held at New Carlisle, where the management of the two lines is centered and which is about equidistant from Matapedia and Gaspé.

Railway Association of Canada.

J. H. Sinclair, M.P. for Antigonish and Guysborough, N. S., asked the following questions in the House of Commons, Mar. 17: "Who compose the Canadian Railway War Board? What are their respective salaries? What was the total expense connected with this board during the calendar year 1919? Is it the intention of the government to dispense with the services of this board? If so, when?"

The Minister of Railways replied as follows: "The Canadian Railway War Board (known at its inception and for several months thereafter as the Canadian Railway Association for National Defence) was formed at a convention of executives of railways in Montreal on Oct. 23, 1917. The establishment of this organization was suggested by the Minister of Railways and had for its object the co-ordination of activities of the several railways, to the end that the greatest degree of efficiency in the handling of troops, war supplies, etc., would be accomplished. When peace was declared, it was found that this organization was so beneficial that the railways decided to continue it under the name of the Railway Association of Canada. The expenses are borne by the different railways belonging to the organization, and the government is under no expense in the matter."

Grain Inspected at Western Points.

The following figures, compiled by the Dominion Bureau of Statistics, show the number of cars of grain inspected at Winnipeg and other points on the western division during February, and during 6 months ended Feb. 1920 and Feb. 1919.

	Feb., 1920	6 mons. to Feb., 1920	6 mons. to Feb., 1919
C.N.R.	3,893	34,674	36,142
C.P.R.	3,987	54,350	53,579
G.T.P.R.	1,482	15,810	12,524
G.N.R. (Duluth)	3	478	722
Total	9,365	105,312	102,967

House of Commons Committee on Railways, Canals and Telegraph Lines.

The House of Commons committee on railways, canals and telegraph lines, for the current session, is comprised as follows: J. E. Armstrong, M.P. for Lambton East, Ont., chairman, the other members being Messrs Allan, Anderson, Andrews, Archambault, Argue, Armstrong (Lambton), Arthurs, Ballantyne, Beland, Blair, Bolton, Bonnell, Boyer, Boys, Bristol Buchanan, Bureau, Cahill, Calder, Campbell, Cannon, Casgrain, Chabot, Charlton, Chisholm, Clark (Red Deer), Clements, Cockshutt, Cooper, Copp, Crerar, Crowe, Cruise, Currie, d'Anjou, Davidson, Davis, Déchène, Delisle, Devlin, Doherty, Douglas (Cape Breton), Douglas (Strathcona), Edwards, Elkin, Ethier, Euler, Fafard, Fielding, Fontaine, Fournier, Fraser, Fripp, Gauvreau Guthrie, Harold, Harrison, Hay, Henders, Hepburn, Hocken, Hughes (Sir Sam), Keefer, Knox, Lalor, Lanctôt, Lapointe, Laviguer, Leduc, Lemieux, Lesage, Long, Mackie (Edmonton), Mackie (Renfrew), Maclean (York), MacNutt, McCoig, McCrea, McCurdy, McGregor, McLean (Royal), McLeod, McQuarrie, Maharg, Manion, Marcile (Bagot), Martin, Merner, Mewburn, Middlebro, Molloy, Morphy, Mowat, Murphy, Myers, Nesbitt, Nicholson (Algoma), Nicholson (Queens), Pardee, Parent, Pelletier, Porter, Power, Reid (Grenville), Reid (MacKenzie), Richardson, Savard, Séguin, Shaw, Sheard, Simpson, Smith, Stevens, Stewart (Hamilton), Stewart (Lanark), Sutherland, Thompson (Weyburn), Thompson (Qu'Appelle), Trahan, Tudhope Vien, Wallace, Wigmore, Wilson (Saskatoon), Wilson (Wentworth), and Wright. There are 126 members of the committee, and the quorum is 25.

Steel Rail Production in Canada.

A report on iron and steel production in Canada, during 1918, prepared by the Dominion Mines Department's Mineral Resources and Statistics Division, contains the following: The production of steel rails in Canada during 1918 was 162,747 short tons, against 46,645 short tons in 1917, and 90,123 short tons in 1916. The annual production from 1905 to 1915 varied between 200,000 and 560,000 tons per annum.

The exports of steel rails during 1918 were 12,952 tons, valued at \$575,062, an average of \$44.40 a ton, against exports during the nine months ended Dec. 1917 of 26,402 tons, valued at \$1,605,742, an average value of \$60.82 a ton. The imports of steel rails as per Canadian Customs records were 7,787 tons valued at \$404,417, an average of \$51.95 a ton, against imports in 1917 of 18,160 tons valued at \$689,197, an average of \$37.95 a ton. United States trade records show exports of steel rails to Canada during 1918 of 74,545 tons valued at \$3,163,201, an average of \$42.43 a ton and during 1917 exports to Canada of 54,083 tons valued at \$1,815,768, an average of \$33.57 a ton.

The annual import of steel rails from 1895 to 1905 ranged between 50,000 and 212,000 tons, averaging about 125,000 tons. From 1906 to date, however, or since the establishment of the rail mills at Sydney and Sault Ste. Marie, the imports have fallen to an annual average of about 60,000 tons, the variation being between a minimum of 10,420 tons in 1915 and a maximum of 177,041 tons in 1918.

Canadian National Railways Terminals in British Columbia.

The British Columbia Railways Department's report for the calendar year 1919 gives the following information as to the progress of construction on the C.N.R. in the province. Construction of the C.N.R. terminals was proceeded with during the year at Vancouver, Port Mann, New Westminster and Victoria, and estimates have been approved by the department for payment in accordance with the provisions of the Canadian Northern Ry. Terminals Act, 1913, Dec. 7, from Jan. to Nov. inclusive, amounting to \$340,740.66. The Vancouver terminals were opened for business Nov. 1, 1919. The construction of the terminals at Victoria was commenced, the operations being confined to a small area north of the Point Ellice bridge. The construction programme now under way on this area consists of grading yard tracks and building a 5-stall locomotive house, machine shop, coaling station, turntable and a temporary station and freight shed. The following table shows the estimated cost of the terminals at each place stipulated for construction, the amount of money available out of the guaranteed securities for their erection, the amount earned to Nov. 30, 1919, and the percentage retained by the government:

	Estimated cost.	Cash available.	Earned.	Returned.
Vancouver	\$4,308,455.10	\$4,262,453.21	\$3,313,979.46	\$24,167.86
New Westminster	2,202,601.50	2,179,113.97	1,822,458.41	83,507.69
Port Mann	1,213,424.62	1,200,570.16	1,175,129.92	.....
Steveston	353,988.89	349,996.73	286,892.54	.....
Patricia Bay	209,908.29	208,008.39	204,804.68	.....
Victoria	858,125.00	848,790.66	34,089.14	2,855.44
Total	\$9,141,503.40	\$9,043,843.12	\$6,887,354.15	\$110,539.90

An act passed in 1913 authorized the government to guarantee an issue of bonds not to exceed \$10,000,000 at 4½%, the principal repayable April 2, 1950, to aid in the laying out of terminals and the construction of buildings in connection therewith at Port Mann, New Westminster, Vancouver, Steveston, Union Bay on Vancouver Island, and at Victoria. The proceeds of the issue of bonds have been deposited to the credit of a special fund, and payments are made to the company upon certificate as the work proceeds.

Suggested Electrical Operation of G.T.R. in Montreal.

The Minister of Railways stated in reply to questions in the House of Commons, Mar. 15, that when the government gets entire control of the G.T.R. system the whole question of Montreal terminals will be considered. The questions asked were whether it is the government's intention to substitute electric locomotives on the G.T.R. from the western city limits to Bonaventure Station; to reduce the speed of trains to 6 miles an hour in Montreal, west of Bonaventure Station, and if it is the government's intention to establish an elevated railway on the G.T.R. to give additional protection to the public.

The question of the substitution of electric locomotives for steam locomotives for hauling trains on the G.T.R. from the western limits of the city to Bonaventure Station is under consideration by the Montreal City Council, a motion requesting the administrative commission to apply to the Board of Railway Commissioners for an order to that effect having been given notice of.

Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co. has opened offices at Baker Brook, N.B., Paspébiac, Que.; Beardmore, Cronyn, Madoc and Ogahalla, Ont.; and Clair, Sask., and has closed its offices at Hibbard, Que.; Alexandria, Dorset, Gilford, Mattice and Lannin, Ont.

The Postal Telegraph Cable Co. has entered an action in the District Court, New York, against the C.P.R. Telegraphs, claiming that it has paid out in United States money to U.S. cable companies on behalf of the C.P.T. Co., \$65,058 for cable messages to South America, Asia, etc., and that while the disbursements are admitted, the C.P.T. Co. wishes to reimburse the company in Canadian money, thus placing on the Postal Telegraph Cable Co., a loss in exchange of about 10%.

W. Marconi, G.C.V.O., is reported to have made an offer to the British Government, to build a chain of wireless telegraph station at different points throughout the British Empire, and turn them over to the government at the end of 30 years, if so desired. The offer is said to provide that his companies shall carry out the construction, organization and operation of such stations, without

ernment a quarter of the profits, in return for protection and exclusive rights. It is proposed at the end of 30 years, it be decided to nationalize the system, the government should pay the original cost plus a tenth of the gross receipts during the 30 years of operation.

Among the Express Companies.

The Canadian National Ex. Co. has opened an office at Clair, Sask.

L. E. Cochrane has been appointed attorney, American Railway Ex. Co., at Vancouver, B.C., in place of J. E. Archer.

James Andrews, heretofore cashier, has been appointed agent, Canadian Ex. Co., London, Ont., vice James Overend, deceased. He is also acting for the American Ex. Co.

The Board of Railway Commissioners passed order 29,443, Mar. 10, granting Algoma Central and Hudson Bay Ry. Co.'s application for approval of combined shipping bill, way bill and receipts form for British-America Ex. Co.'s use.

The American Ex. Co. has opened a travel department at its Montreal offices and will handle steamship and railway tickets, and conduct and supervise travel generally throughout the world.

The American Railway Ex. Co. early in March placed an embargo on all express shipments from Chicago, Ill., except newspapers and funeral equipment, on account of a strike of express employes who asked for a wage increase of \$35 a month.

B. S. Murray, route agent Canadian Ex. Co., with headquarters at London, Ont., who received severe injuries to-

wards the end of February, when a train on which he was travelling was derailed, has been confined to his home in London for several weeks. He is making satisfactory progress and expects to resume his duties about April 1.

James Overend, who died in London, Ont., recently from pneumonia, was for 19 years agent Canadian and American Ex. Cos. there. He was born at Marchmount, near Orillia, Ont., May 28, 1864, was educated at Orillia public school and collegiate institute, and entered the Canadian Ex. Co.'s service at Orillia in 1879. Two years later, as train messenger, he had various runs on the Midland Division. In 1884 he was appointed train messenger on the Montreal-Toronto route, and travelled between those cities in that capacity until 1891, when he was transferred to the Toronto-Detroit route. In 1892 he was appointed joint agent of the Canadian and American Ex. Cos. at St. Thomas, Ont., where he remained until 1901, when he was appointed joint agent of the same companies at London, which position he held until his death.

The Canadian Ex. Co. has added a second story to its station warehouse at the corner of York-Station Sts., Toronto, necessary to provide this additional space the growth of business having made it to properly house the increased staff. On the second floor offices have been fitted up for the Superintendent, W. E. Norman, and Assistant Superintendent, P. H. Jones, and their staffs, also the clerical staff of the Station Agent, J. Ellison. Certain of the staff from the overcrowded city office on Yonge St. have been transferred to the station in order to handle valuables more conveniently to and from the trains. Large rooms have been provided to accommodate parcels on hand, awaiting delivery, and over without mark shipments, held until the owner can be found. There are also luncheon rooms for the station staff and sleeping rooms for train messengers who arrive during the night. The interior of the city offices at 55-57 Yonge St. is being overhauled and rooms fitted up for different departments dealing with the public under the General Agent, R. A. Mitchell.

The American Railway Ex. Co. issued the following circular to agents Mar. 15: All business destined to points in Canada must be prepaid, effective April 15. Tariff rates from offices in the U.S. to those in Canada and now, and always have been, based upon U.S. money, there being, under normal conditions, but a slight discount on Canadian currency. During the war the exchange rate began to increase and has been steadily rising, until now it is approximately 1% with the result that on every dollar we collect in Canada we realize but 8c. With constantly increasing costs in operation we are in no position to absorb the loss in money value. The only way we can get 100c for each dollar tariff rate is to collect the amount in U.S. money. This is possible only through requiring prepayment of charges on everything forwarded through our service into Canada. Effective April 15, agents will require prepayment of charges on traffic forwarded as above. We are placing the effective date far enough forward to give shippers an opportunity to make any necessary arrangements with their customers in Canada to permit of prepayment for their account. Immediate advice of this regulation should be given to shippers who are sending frequent shipments to Canada.

Electric Railway Department

Electric Railway Fare Increases in the United States.

Increased fares in some form or another are now effective in all but 56 of the 273 cities in the United States having a population of 25,000 or more. The cash fare in 196 of them is more than 5c, in 118 of them more than 6c, in 64 of them more than 7c, and in 34 of them more than 8c.

In all but 15 of the 69 cities, with more than 100,000 population, the cash rate is more than 5c, in 40 of the 62 cities between 50,000 and 100,000, it is more than 5c, and in 103 of the 142 cities having less than 50,000 it is more than 5c.

In Colorado, Connecticut, Delaware, the District of Columbia, Illinois, Maine, Maryland, Massachusetts, Missouri, New Hampshire, New Jersey, North Carolina, Oregon, South Carolina, Rhode Island and Virginia, the fares in every city of more than 25,000 have been increased. In Michigan and Pennsylvania, the fares in all but one city have been increased, while of New York's 22 cities having more than 25,000, but two remain without some form of increase.

Increases of 1919.—The trend towards higher fares is better illustrated, however, by a comparison of the statistics given herewith, with those covering the same cities as of April, 1919. These indicate that the process of readjusting street railway revenue to the situation caused by the depreciated dollar is proceeding all over the country, and that the 6c car fare is fast following into oblivion the 5c fare as insufficient to meet the still rising costs of operation.

In April, 1919, the cash fare in 156 cities was more than 5c. Today it is more than 5 cents in 196 cities. In 53 cities it was more than 6c, today it is more than 6c in 118 cities. In 24 cities it was more than 7c, today it is more than 7c in 64 cities. In 13 cities it was more than 8c, today it is more than 8c in 34 cities. In 73 of the 156 cities in which in April, 1919, cash fares higher than 5c were effective, further increases have been made, while in 15 other cities applications for higher fares are now pending.

A study of these statistics very plainly indicates the process by which is being restored the balance between the cost and the price of electric railway transportation. That costs have increased some 100% as between 1914 and the present time is now universally admitted. A part of this increase has been absorbed by the cutting down of expenses, but much the greater bulk of it can only be met by rate increases. In states where properly equipped regulatory commissions have jurisdiction over electric railway rates, there has been a consistent movement towards keeping these rates in proper relation to costs. This is notably true in Massachusetts, Pennsylvania, Missouri, and to a certain extent, in the up-state district of New York, in all of which cost has been the controlling factor in rate regulation.

Different Rates.—That a standard street car fare, in the sense of a fare common to all cities, is not to be expected, is evident from the fact that in the 273 cities covered by the statistics, there are no less than 75 different rates of fare, ranging from the top limit of 10c cash and ticket, effective in 12 cities, in-

cluding Boston, to 5c cash ticket, effective in Columbus, where, however, the city council has voted, subject to referendum, a 6c base fare. The cost of the service undoubtedly varies greatly in the different cities. In Boston, the fare under service at cost operation is 10c; in Cleveland under service at cost operation it is 5c, six tickets for 25c, 1c transfer. The fare in Boston has been increased 100% since 1914; in Cleveland the top limit of increase was 66%, and today is more than 40%, exact percentage being impossible to calculate because of the use of reduced rate tickets. Those who are familiar with operating conditions in the two cities have no difficulty in accounting for this difference. Cleveland, operating under a service at cost plan, Chicago and

mission, which believed that riding would be stimulated by a lower fare, reduced its fare from 6c to 5c for July, 1919. The result was a decrease of about \$20,000, or about one-seventh of the former total revenue.

Experiments Being Tried.—That the present period is a period of experimentation with different fare systems and varying rates of fare, is evident from the great variety of fare systems in effect. The zone system of fares seems to be growing in popularity. In April, 1919, ten companies were operating under some form of a zone system. At present, 27 companies are so operating. Between April, 1919 and the present time, the New Jersey zone experiment was made and failed, but to offset this failure, a zone system has been put in effect in Connecticut and has met with success.

One of the most interesting experiments now under way is that which is being tried by the public trustees operating the Eastern Massachusetts St. Ry. Co. Here, one of the largest operating companies in the country has partitioned its territory into fare districts, each with an important municipality as its center. The fare in each of these districts is regulated (on a service at cost basis), in accordance with the cost of operation in that particular district. The trustees have insisted that jitneys be regulated, so as not to interfere with the company's revenue, and in two cases where the communities failed to provide such regulation, have actually abandoned service for a time. In the 12 districts into which this territory has been divided, there are now four different rates of fare, indicating how costs of operation vary in various communities.

In Service at Cost Cities.—Twenty-one cities are now operating under service at cost agreements. In 10 the fare is 10c, cash and ticket; in one it is 10c cash, 8 1/3, ticket (good to traffic center only); in 6 it is 10c cash, 6 1/4c ticket (good to traffic center only); in one it is 10c cash, 6 cents ticket (monthly tickets); in one it is 8c cash, 7 1/7c ticket, 1c transfer; in one it is 7c cash and ticket, and in one it is 5c cash, 4 1/6c ticket, 1c transfer.

In two of the cities included in the statistics—San Francisco and Seattle—the street railway lines are municipally owned and operated. The fare on each is 5c and in each case the road is being operated at a loss. In San Francisco this loss now amounts to about \$11,000 a month, which is being withdrawn from the depreciation reserve. In Seattle, the system has been relieved of the payment of taxes and the city council has gone on record as favoring the assumption of the deficit in other ways than through the payment of taxes.

How Increases Were Granted.—In 150 of the 217 cities in which fares have been increased, the increase has been the result of the action of state commissions, in 44 of municipal authorities, in 2 of courts, and in 21 of automatic regulation under service at cost plans.

In Minneapolis and Denver, ordinances embracing service at cost principles have been defeated by the electorate. In Rochester, St. Paul, Toledo, Oakland, Syracuse, Norfolk, Berkeley and Ala-

Canadian Electric Railway Association.

Honorary President, Lieut.-Col. J. E. Hutcheson, General Manager, Montreal Tramways Co.

Honorary Vice President, Acton Burrows, Proprietor and Editor, Canadian Railway and Marine World.

President, A. Gaboury, Superintendent, Montreal Tramways Co.

Vice President, G. Gordon Gale, Vice President and General Manager, Hull Electric Co.

Honorary Secretary-Treasurer, pro tem, A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.

Executive Committee, The President, Vice President, and F. D. Burpee, Superintendent, Ottawa Electric Railway Co.; C. C. Curtis, Manager, Cape Breton Electric Co.; A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Railway Co.; Geo. Kidd, General Manager, British Columbia Electric Railway Co.; M. W. Kirkwood, General Manager, Grand River Railway Co. and Lake Erie & Northern Railway Co.; A. W. McLimont, Vice President and General Manager, Winnipeg Electric Railway Co.; R. M. Reade, Superintendent, Quebec Railway Light & Power Co.; Lt.-Col. G. C. Royce, General Manager, Toronto Suburban Railway Co.; C. L. Wilson, Assistant Manager, Toronto & York Radial Railway Co.

Official Organ—Canadian Railway and Marine World, Toronto.

Galveston operating under what are practically service at cost plans, are the only cities in which fares have been reduced from the top limit put in effect during the war.

It is impossible to forecast any point at which street railway fares will finally come to a rest in a state of equilibrium with costs. It has been frequently asserted that high fares result in an actual decrease in revenue, because of their tendency to discourage riding. Three instances in actual practice seem to disprove this contention. Under a 5, 7 and 8c fare, the Boston Elevated Ry. Co. accumulated progressive deficits; under a 10c fare it is not only earning the full cost of the service, but a surplus as well. In Worcester, where a zone system is in effect, the company, at the order of the Massachusetts Public Service Commission reduced its unit fare from 6c to 5c, during the month of Dec., 1919, as an experiment. The result was such a substantial decrease in revenue that the 6c rate was restored at the earliest possible moment. In Grand Rapids, Mich., the company, at the request of the city com-

meda, service at cost plans have been proposed. In Detroit and Duluth, public ownership proposals have been defeated by the electorate. In Detroit the building of a competing line has been proposed, and in Toledo, a proposition to purchase the existing system will be submitted to a vote.

In connection with the rates of fare now prevailing in U.S. cities, it must be remembered that all of these roads are operating upon a starvation basis. The cost of the service as reflected in fares now in effect, and the application for increases which are pending, represent in many cases service and facilities reduced to the minimum. New capital is not available and improvements and extensions are awaiting the restored credit of the companies. In a recent interview President J. J. Stanley, of the Cleveland Railway Co., stated that the reduction in fares in that city was made possible because of the greatly increased traffic, which is being carried with but little if any increase in track or equipment. Improvements to the amount of \$25,000,000 were urgently needed in Cleveland, he stated, and added that the addition of this sum to the company's capitalization, when made, would undoubtedly have an appreciable effect upon the rates of fare. The Detroit United Ry withdrew its application for a 1c transfer charge because it was impossible under existing conditions to obtain the \$14,000,000 needed for improvements and extensions, so that the company was carrying a much larger number of passengers, with but few additions to its equipment. One of the reasons for the high rate of fare in Boston is that a large sum has been spent in rehabilitation.

This question of rehabilitation has a marked bearing upon the entire fare situation. Deferred maintenance is piling up on most of these properties. The longer it is delayed, the greater the cost when it is finally undertaken, and the higher the cost of operation during the period in which track, equipment and overhead are neglected. A small increase of fare made immediately at the time that it is needed is worth more than a large increase that comes after a long delay.—Harlow C. Clark, in Aera.

Dominion Power and Transmission Co.'s Annual Report and Meeting.

Following are extracts from the report for the calendar year 1919 of this company, which controls and operates the following properties: Hamilton Cataract Power, Light and Traction Co., Hamilton Electric Light and Power Co., Hamilton St. Ry. Co., Hamilton and Dundas St. Ry. Co., Hamilton Radial Electric Ry. Co., Hamilton, Grimsby and Beamsville Electric Ry. Co., Brantford and Hamilton Electric Ry. Co., Hamilton Terminal Co., Dundas Electric Co., Lincoln Electric Light and Power Co., Welland Electrical Co., Western Counties Electric Co.

In a comparison of the results shown by the report for 1919 with those of the previous years, attention is naturally called to the increase in both gross earnings and operating expense. Enlargements of aernings have been made possible, and produced by continued good service rendered by the company. The plants and equipments have been thoroughly well maintained, and operate very

satisfactorily. Increases in operating cost, have, as is well known, resulted from abnormal increases in the cost of labor and materials. The total of the company's reserves and profit and loss accounts have increased by \$164,354.25, bringing this total up to \$3,302,166.19. No new securities have been issued, and during the year outstanding bonds amounting to \$145,000 were retired.

The Hamilton Radial Electrical Ry. Co., after much contention, succeeded in obtaining an increase of the unreasonably low rates of fare formerly in force, but it is too early to determine how far effective relief will be afforded thereby. Conditions surrounding the present operation of all electric railways are such as to call for relief by way of a reasonable increase in fares. The public and the companies alike are interested and will be mutually benefitted by a fair and equitable basis of operation being acceded to and maintained.

Earnings and Expenditures.	
Gross earnings	\$3,477,386.33
Operating expenses	2,287,704.00
	\$1,189,682.33
Transferred to maintenance and renewal fund	35,116.09
	\$1,154,566.29
Bond interest and interest.....	\$ 543,815.86
	\$ 700,750.43
Profit and Loss.	
Balance from 1918	\$ 853,033.12
Surplus earnings, 1919	700,750.43
Bad debts, etc., written off	\$ 12,251.07
Dividends	533,413.00
Balance	1,008,119.48
	\$1,553,783.55
	\$1,553,788.55

President J. R. Moodie, in speaking at the annual meeting, said: "The receipts were the highest in the company's history. Higher wages, increased cost of material and supplies, and the adverse exchange rate have increased operating expenses in greater proportion. The steam plant has proved a most valuable part of our system, as is evidenced by the service given under adverse conditions. In all likelihood we will find it advisable to add another generating unit, thereby increasing our capacity by 11,000 k.w., or 15,000 h.p. This means the installation of machinery only, as the present buildings are planned for such additions. With this installation, the first half of the plant as originally designed will be complete. The ultimate capacity of the steam plant when finished will be 60,000 k.w., or 80,000 h.p. With our water power development we will have a total of 130,000 to 135,000. Against much opposition we were successful in our application for increased rates on the radial railway. The low fares formerly prevailing were quite inadequate to meet the abnormal conditions through which we are passing. The change has not been long enough effective to show tangible results, but the board feels that in time it will prove beneficial. Inadequacy of fares of the street railway and some of the other electric railways of our system call for revision, in order not only to yield reasonable returns, but to admit of desirable extensions and improvements."

The directors and officers were re-elected as follows: President, Lieut.-Col. J. R. Moodie; Vice-President, Cyrus A. Birge; Treasurer, Jas. Dixon; Managing Director and Secretary, W. C. Hawkins; other directors, Lloyd Harris, C. E. Neill, W. E. Phin, Robt. Hobson and Jno. Dickenson. E. P. Coleman is General Manager.

Grand River Railway and Lake Erie and Northern Railway Betterments, Etc.

A press report states that the Grand River Ry. and the Lake Erie and Northern Ry., which give an electric railway route from Port Dover, on Lake Erie through Simcoe, Brantford and Galt to Preston, Kitchener and Hespeler, Ont., propose to spend \$1,500,000 on general betterments, etc. this year. In addition to additional rolling stock, for which \$671,000 is said to have been appropriated to buy 2 locomotives, 10 passenger cars, and an express car, it is said that the betterments will include new overhead wire on the Grand River Ry. lines, similar to that on the L.E. & N. Ry., a \$16,000 car barn at Preston, and a station to cost \$42,000, at Galt, in which the two companies' general offices will be located. For track betterments the larger proportion of the total appropriation will be spent on the G.T.R. A second track will be built from Preston to Hagey's Crossing, new rails will be laid, and at Kitchener \$60,000 is to be expended upon a revision of the location.

The new construction undertaken recently at Hespeler is reported to be nearly completed, and it is said that when the proposed betterments are completed, cars will be run through between Kitchener and Port Dover.

Motor Busses for London, Ont.—London City Council is asking the Ontario Legislature in an omnibus bill for power to issue debentures for \$30,000, without obtaining the ratepayers assent to buy motor busses. The reason set out is "to provide transport in the city, which is urgent and necessary." Power is also asked to enable the City Council to operate motor busses.

Ottawa Electric Ry. representatives, supported by the Ottawa Board of Control, waited on the acting Premier, recently, and urged the adoption of a plan for fixing different times for opening and closing the various Dominion departments so as to decrease the congestion on the railway in the morning and evening. Consideration was promised, and a later report stated that the departmental officials were investigating the matter.

The London and Port Stanley Ry. is reported to have entered into a contract with the London, Ont., Gas Co. for hauling its coal cars from the railway to the gas company's yard. A contract is also reported to have been made for hauling coal for the G. T. R. in London from Port Stanley, as soon as the necessary additional locomotive power can be acquired. For some time past the G. T. R. has handled its coal from Grien, Ont., to London.

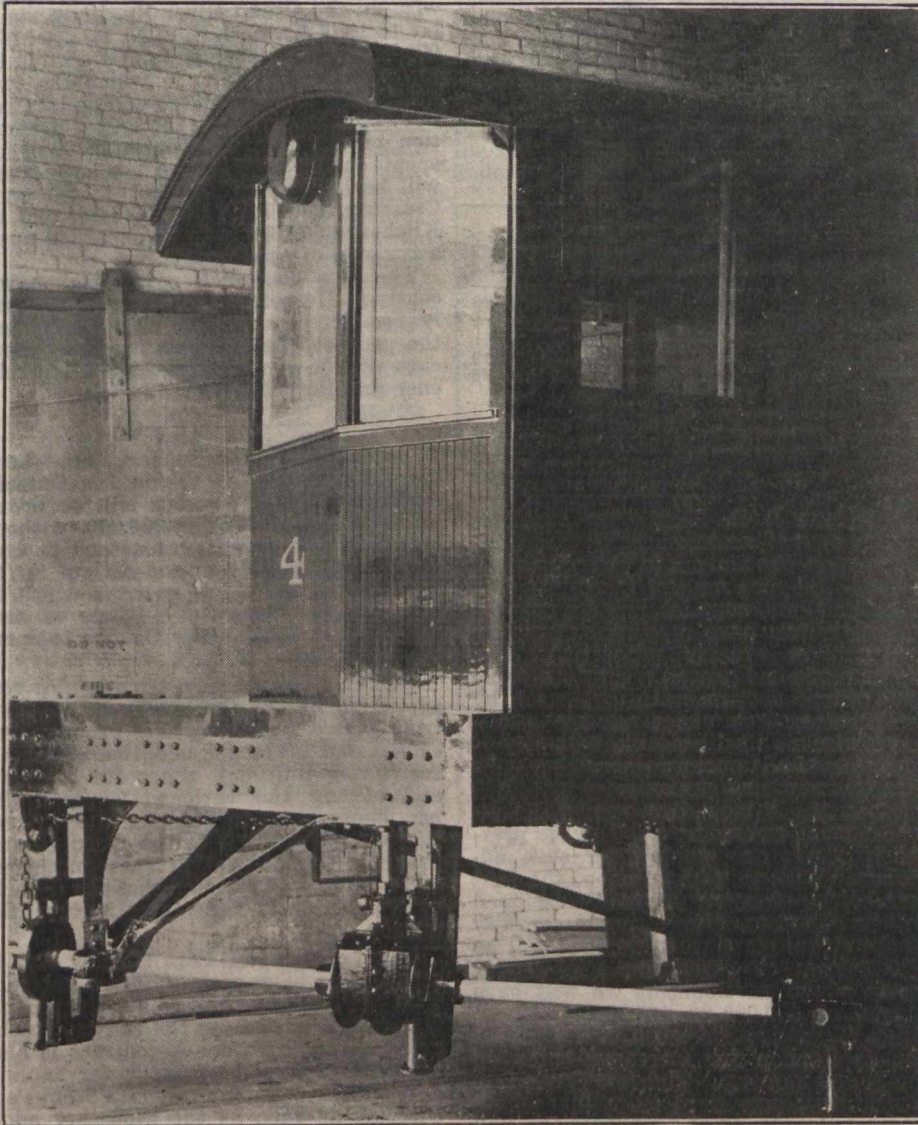
The Calgary, Alta., Municipal Ry. is reported to have received two of the second-hand cars bought recently in the United States, which will be put into service as soon as they have been overhauled in the railway shop. New steel wheels ordered six months ago for the repair of cars, are expected to be delivered shortly.

The Regina, Sask., City Council is reported as intending to submit a by-law to the ratepayers at an early date to provide for the operation of one-man cars on the Regina Municipal Ry. It is hoped to have them in operation by June 1.

Levis County Railway Gear Drive Snow Sweeper.

The Levis County Ry., Levis, Que., has had a gear drive snow sweeper built by the Ottawa Car Manufacturing Co., which is the builders' standard single truck type. Its dimensions are: Overall, 29 ft.; body, 27 ft.; width, 7 ft.; rail to top of trolley base, 11 ft. 11 in. The body of 4 longitudinal sill and cross members of 10 in. channel. The roof is of the turtle back type, supported on steel car lines. The interior of the body is in ash, natural finish. The truck is the builders' standard design, which is extra heavy; wheels are of rolled steel type 33 in. The body is painted green,

motor shaft. The power is transmitted through the longitudinal shaft to a vertical shaft, by a bevel gear, which meshes with a similar gear, on the vertical shaft, located at the end of the cab on the underside of the bottom frame. This vertical shaft, carries the power down to the broom shaft, to which it is transmitted by another set of bevel gears, which are enclosed in a case which can be filled with oil. The upper gears are also enclosed in a sheet metal box which contains grease. The brooms are raised and lowered by hand. Two wheels are located in the cab, one for each broom



Levis County Railway Gear Drive Snow Sweeper (without the brooms).

with gold numbers; the truck is painted black.

A new departure in this sweeper is the gear drive, for the broom shaft. This method of driving the brooms is claimed to be a bigger step in the development of the sweeper than any of the other improvements. The accompanying illustration shows the broom shaft without the brooms and shows the gear box at center of shaft. The motor, which drives the brooms, is of the Westinghouse type, and is mounted at the center of the underframe inside the cab. The power from it may be taken towards either end of the car, by a longitudinal shaft, fitted with a clutch on each end of the

at opposite ends. A vertical shaft with a 21 in. hand wheel, with pinion on the opposite end, in mesh with a large gear on another vertical shaft, furnishes power to raise and lower the broom shaft by arrangement of chains attached at the end of the broom shaft, connected to the large gear shaft. The brooms are braced at each end and center by heavy bracket guides, with angle braces, through which a cylindrical rod is passed, thus allowing the broom movement in a vertical direction, which is controlled by the hoisting apparatus. At the center guide, provision for raising and lowering the broom is made by allowing the power shaft to slide up and down on its

key. The distance from center to center of the outside broom shaft guides is 4 ft. 10 in. The brooms may be raised 10 in. from the track.

There is hung a scraper wing, made reversible, which is lowered and raised by lever arrangement inside of cab, being arranged so that it may swing out from the side of the car by means of chains. The wing is a $\frac{3}{8}$ in. plate, 2 ft. wide by 6 ft. long. The radial motion is controlled by a hand wheel, and vertical shaft, connected with ratchet and pawl, so the wing can be set at any angle. It is said that this sweeper is the first of its kind to be built in Canada.

Electric Railway Notes.

The Windsor, Essex & Lake Shore Rapid Ry. has bought 3 second-hand passenger cars.

The Nova Scotia Tramways and Power Co. has received 100 of its new one-man P.A.Y.E. cars, which will at first be operated on the belt line.

The Regina, Sask., Municipal Ry. is equipping all its cars with signs at the rear, so that the destination can be learned from the rear as well as from the front.

The Birmingham, Eng., City Council is reported to have decided to buy 3,000 tons of steel rails for its municipal tramways service, in the U. S., at £24 10s a ton, shipment to commence about the end of April, and be completed in June.

To enable the London Railway Commission to provide an additional electric locomotive and passenger cars for increased business, the London, Ont., City Council is applying to the Ontario Legislature, in an omnibus bill, for power to issue \$105,000 of debentures without obtaining the ratepayers' assent.

The Cape Breton Electric Co.'s car barn at Sydney, N. S., was damaged by fire, Mar. 6, and two cars, with a quantity of other equipment, were destroyed. The loss is estimated at \$50,000, which is said to be covered by insurance. As there was other rolling stock in reserve there was no interruption of the car service.

T. H. McCauley, while on his way from Calgary, Alta., to St. John, N. B., to enter on his duties as General Manager, New Brunswick Power Co., stopped off at Regina, Sask., and explained the operation of one-man cars to the city council. A. A. Dion, Superintendent Moose Jaw Electric Ry., also attended the meeting.

The British Columbia Electric Ry. mechanical department organized a social club recently at Vancouver, with the following officers: Hon. President, G. A. Dickie, master mechanic; President, C. Spooner; Treasurer, C. Donald; Secretary, W. Watt; committee: J. Davison, J. Morgan, J. Dew, W. Ford, and W. Stiles.

The Quebec Superior Court at Montreal ordered the Montreal Tramways Co. to pay the Compagnie d'Immeubles de Montreal \$2,000 as compensation for its right of way over the plaintiff's land on Queen Mary road, Cote des Neiges. The right of way was granted to the Montreal Park and Island Ry. by the original owner of the land in 1895 subject to certain conditions. These conditions had not been fulfilled, and as the provisions of articles 776 and 791 of the Civil Code, which apply to gifts of right of way had not been carried out the railway company has to pay for the right of way \$2,000 and costs.

The Montreal Tramways Commission is reported to have arranged a new system of stops for the Montreal Tramways Co.'s cars, to be put in operation May 1. The plan is to have stops at no shorter distances than 400 to 500 ft. from each other. The new plan is reported to have been tried with satisfactory results on Notre Dame St. East, the time of making the trip from the Place St. Annes to the Canadian Vickers plant having been cut down from 40 or 45 minutes to 20 or 25 minutes, or about one-half.

The Ontario Railway and Municipal Board is reported to have advised the St. Thomas, Ont., City Council that one-man cars could be operated successfully on the municipal railway, and would probably assist in cutting down the present loss in the operation of the line. In view,

however, of the fact that the electric railway crosses four steam railways not under Provincial control, it would be necessary to obtain the Board of Railway Commissioners' consent before one-man cars could be operated.

The Quebec Superior Court gave judgment at Montreal recently for \$277 and costs against the Montreal Tramways Co., as damages for injuries sustained by Mrs. L. Colbie, Feb. 12, 1917. The plaintiff was stepping aboard one of the company's cars, when it started and she was thrown to the ground and injured. The company claimed that the signal to start the car was given by boys standing on the rear end, but the court decided that it was the conductor's place to have watched the boys' actions, and that his failing to do so made the company liable.

The Westmount, Que., Police Magistrate, Mar. 16, fined George Houde, a Montreal Tramways Co.'s conductor, \$5 and costs recently for assaulting a passenger, Mr. H. Hayes. The facts were admitted, the only difference being whether or not the conductor was within his rights in ejecting Hayes from the car. Hayes transferred from a Mount Royal Ave. car, to a Windsor St. car, of which Houde was conductor, telling the latter he wished to keep his transfer, as he wanted to take a car going up Claremont ave. The conductor argued that Hayes could not use the transfer on his car, an altercation ensued and Hayes was forcibly ejected by Houde. The magistrate held that a passenger is entitled to use his transfer on whichever route he wishes where there are two or three routes.

Electric Railway Employes' Wages, Working Conditions, Etc.

Hamilton St. Ry.—Employes are reported to have decided, Mar. 6, to ask for a new agreement of the wage schedule, in which is as follows: Per hour, first six months, 50c; second six months, 55c; second year, 60c; third year and after, 65c. Men operating snow plows to be paid 5c an hour extra, and to be provided with free overalls. The men also decided to ask for one week holiday a year with full pay.

London and Port Stanley Ry.—Conductors and motormen, who now get a maximum of 48c an hour are reported to have asked for an increase to a maximum of 60c.

London St. Ry.—Conductors and motormen, whose agreement expires May 1, under which they are paid 39c an hour for the first year, 42c for second year, and 44c for third year and afterwards, have applied for an all round increase of 21c an hour, an 8-hour day, time and a half for overtime on week days, and for all time on Sundays and holidays. The men's representatives had a conference with the company's officials Mar. 11, and a press report states that the officials declined to open up the question before May 1, when the present agreement expires. J. Colbert, president of the local union, is reported to have said that the meeting had been arranged to see if the company would take up the question on April 1, and on its refusal to do so the question of wages was not discussed. It is reported that the men have threatened to go on strike May 1 if the increases asked for are not granted. The mayor and an alderman are reported to have had an interview in Toronto, Mar. 20, with Sir Adam Beck, and that together they informally discussed the matter with the Ontario Railway and Municipal Board, the chairman of which pointed out that an increase of fares could only be granted with the ratepayers' consent. The board could, under certain conditions, take possession of the line and operate it, and a London press report states that the city council will ask the board to do so if a strike occurs.

Montreal Tramways Co.'s employes are reported to have under consideration a proposal for a reduction of hours, and a meeting was expected to be called about the end of March to reach a definite decision. At present the day's work runs to 12 hours, for 7 days in the week, for the old hands, with from 3 to 5 hours work a day for spare hands. The suggestion is that an 8-hour day be given at the present maximum rate of wages of

48c an hour. A press report says that the men at a meeting on Mar. 23, decided to ask for an 8-hour day and a continuance of the present average weekly earnings, which the report says would mean a rate of about 75c an hour.

Nova Scotia Tramways & Power Co.—Negotiations between the company and its employes for a new wages scale are in progress.

Niagara, St. Catharines and Toronto Ry.—Canadian Railway and Marine World of March gave full particulars of the Board of Conciliation's unanimous award, which the employes, though their representative on the board signed the report, refused to adhere to. As a result negotiations with the management, the employes finally agreed to accept the board's report for the period from Aug. 31, 1919, to Feb. 29, 1920 as amended to correct clerical errors with the proviso that it would not reduce the wage of any employe during that period. A new agreement was entered into to date from Mar. 1, and extends to Oct. 31, 1920, and thereafter provided that either party may after Sept. 30, 1920, give 30 days notice of its desire to open the agreement for revision. The following table shows the rates of wages paid prior to the Conciliation Board's award, the rates decided on by the board, and the rates now in force under the new agreement:

	Old rate	Conciliation	New rate
Passenger conductors and motormen—			
First year	39c	36-39c	40c
Second year	41c	41c	44c
Third year	43c	45c	46c
Fourth year	45c	45c	.....
Fifth year .....	.....	.....	50c
Tenth year	47c	47c	.....
Freight conductors and locomotivemen—			
First year	47c	47c	50c
Second year	47c	47c	50c
Third year	47c	47c	50c
Fourth year	48c	48c	.....
Fifth year .....	.....	.....	52c
Tenth year	50c	50c	.....
Freight brakemen and polemen—			
First year	50-41c	41c	41c
Second year	43c	43c	43c
Third year	43c	43c	45c
Fourth year	43c	43c	.....
Fifth year .....	.....	.....	46c
Tenth year	43c	43c	.....
Armature winders.....			
Blacksmiths.....	37-48c	42-53c	42-53c
Car pit repairmen.....	37-48c	42-53c	42-53c
Truck repairmen.....	37-44½c	39-48c	39-48c
Painters.....	37-44½c	40-47c	40-47c
Carpenters.....	37-44½c	42-48c	42-48c
Bridge carpenters.....	37-44½c	40-47c	40-47c
Car cleaners.....	34½-37c	34½-37c	34½-37c
Watchmen.....	\$60-\$90	\$70 up	\$70 up

Substation operators	\$100	\$105	\$105
Linemen	37½-44c	45-50c	45-50c
Groundmen	37-41½c	37-42½c	37-42½c
Section foremen.....	\$100	\$100	\$100
		to \$110	to \$110
Section men.....	35c	35-40c	35-40c
Towermen		\$80-\$90	\$80-\$90

Nine hours are to constitute a day's work for all passenger trainmen. Overtime to be paid at rate of 15c an hour additional for the first hour over 9 hours, and at the rate of time and a half for all time over 10 hours. Conductors and motormen to receive 25c extra a day, or part thereof, for training students. Company to pay half cost of uniform, cost not to exceed \$40, for each trainman of only one year service, and thereafter, if required, to pay half cost of one uniform a year. Freight trainmen shall have a minimum of 10 hours a day for week days for each day used. On Sundays or holidays, if required, they will be paid a half day for 5 hours service, or less, or a full day for service beyond 5 hours. Freight trainmen will be paid 15c an hour extra for the first hour or part thereof after 10 hours service, and time and a half after 11 hours service. Crews of all freight motors, without cars, shall consist of at least two trainmen. Crews of freight trains of one or more cars shall consist of not less than 3 men, and a fourth man shall be supplied where the freight is heavy enough to require it. Minimum wages for baggagemen shall be \$90 a month; shedmen \$75, and watchmen \$70.

Ottawa Electric Ry. employes are said to be considering the details of a new wage schedule, etc., which they propose to ask the company to adopt, and that it will call for a maximum rate of 65c an hour.

St. Thomas Municipal Ry.—The St. Thomas, Ont., City Council's Street Railway Committee has under consideration an application of G. F. Doherty, Manager of the municipal railway for an increase of salary from \$120 to \$140 a month, and an application from the conductors and motormen for an increase of 10c an hour.

Winnipeg Electric Ry.—A Winnipeg press dispatch, of Mar. 17, states that the company's conductors and motormen, whose agreement will expire April 30, are asking increases to bring their wages up to from 60c to 80c an hour, against 46c to 55c now paid on city lines, and 51c to 60c now paid on interurban lines on week days.

A Serious Street Car Problem in Winnipeg.

The Winnipeg Electric Ry. has issued the charts which are reproduced on this page to illustrate the serious problem confronting street railway operation in Winnipeg, and explain why the company is continually appealing to shoppers to do their shopping early in the day. These charts show that by far the greatest bulk of travel is confined to about four hours of the day, from 7.30 to 9.30 a.m., and from 4.30 to 6.30 p.m. They reveal the fact that many of the cars the company must have in order to take care of these hours of heavy traffic are lying idle for the greater part of the day, and that apart from the rush hours, traffic is very considerably less than that between 5 and 6 p.m. Every available car and

down to work in the morning over a period of 2½ hours, their ranks heavily reinforced with shoppers, all make tracks for home, and in consequence there arises a peak demand for transportation. Such a demand if applied to the post office, telephones, banks, theatres, stores office elevators, etc., would undoubtedly swamp their normal facilities and inevitably require many people to wait their turn. Serving them all at once would be out of the question. But in spite of one of the most difficult operating winters ever experienced in Winnipeg the company has been able to cope with this peak demand and give a satisfactory service. This chart only indicates the conditions obtaining on Port-

cult problem, are taking facilities which rightfully belong to the workers of a great city, and are making travel uncomfortable for themselves and others.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry. and allied companies—

	Jan., 1920	Jan., 1919	7 mons. to Jan. 31, 1920	7 mons. to Jan. 31, 1919
Gross	\$828,709	\$677,489	\$5,050,625	\$4,095,584
Expenses	524,025	457,388	3,589,434	3,101,566
Net	304,684	220,101	1,461,191	994,018

Calgary, Alta., Municipal Railway—

	1920	1919
Revenue for February	\$65,804.25	\$52,846.82
Passengers carried	1,360,170	1,129,134

The Moncton Tramways, Electricity & Gas Co., which operates in Moncton, N.B., and has its office at Pittsburgh, Pa., held its annual meeting at Moncton recently. The directors and officers for this year are: President and General Manager, E. B. Reeser; Vice President, E. O. Bartlett; Assistant Secretary and Assistant Treasurer, E. A. Cummings; other directors, Robt. Law, Jr., F. H. Minard, J. A. L. Henderson and T. O. Sullivan; Treasurer, J. T. Furlong; Secretary, J. A. Dunn. The Moncton City Council is applying to the New Brunswick Legislature for an act providing for a plebiscite on the question of taking over the Company's electric lighting plant and street railway, and to provide for making arrangements for taking the same over. (Mar., pg. 145)

Montreal Tramways Co.—A dividend of \$2.50 for the quarter ended Sept. 30, 1918, was declared recently to be paid Mar. 30. This is the second dividend paid on account of arrears. A press report states that 12½% of dividends are now in arrears.

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

	Jan., 1920	Jan., 1919
Gross	\$1,130,486	\$1,106,840
Expenses	750,478	635,298
Net	380,008	471,542

Winnipeg Electric Ry. and allied companies—

	Jan., 1920	Jan., 1919
Gross	\$498,837	\$390,539
Expenses	365,031	291,016
Net	133,806	99,523

The Edmonton Radial Ry. is reported to be selling by tender approximately 25 tons of old rolled steel car wheels.

Z. A. Thibodeau, formerly secretary and chief clerk of the Montreal Tramways Employes Mutual Benefit Association, was committed for trial in the Montreal Enquette Court, Mar. 16, on charges of embezzling \$19,688.89 of the association's funds, and forgery.

The Quebec Superior Court gave judgment recently for \$330 damages and costs against the Montreal Tramways Co. in an action brought in the name of Joseph Parent, by his mother. The boy, who is 12 years of age, was a passenger on a Papineau ave. car, July 25, 1918, when the conductor tickled him in the ribs, causing him to lose his hold of the rail and to fall off. His head struck the pavement, causing injuries. The conductor claimed that the boy was trying to get off the car when it was in motion, and he tapped him on the hand with a pad of tickets to warn him, but notwithstanding this the boy jumped off the car before it came to a halt and fell on the street. Justice Tallier held that it was the conductor's fault that the boy lost his hold on the hand rail and fell from the car, and that the company was liable for the fault of its servant.

CHART SHOWING NUMBER OF PASSENGERS CARRIED (IN HALF-HOURLY PERIODS) BY CARS PASSING COLONY & PORTAGE EASTBOUND

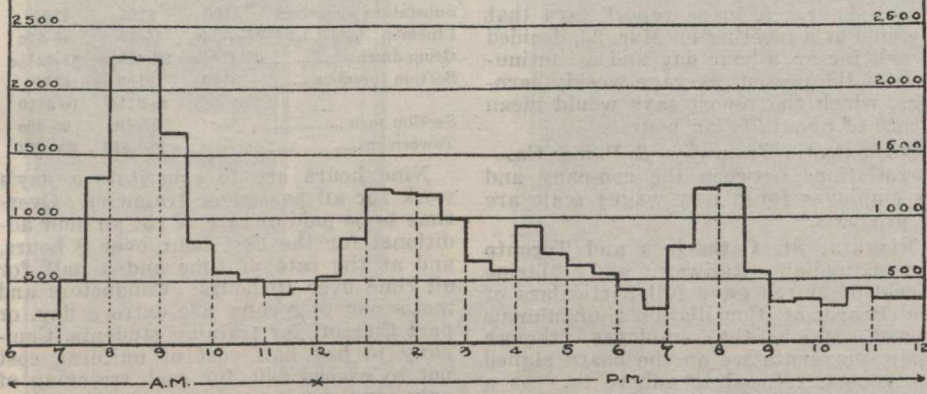
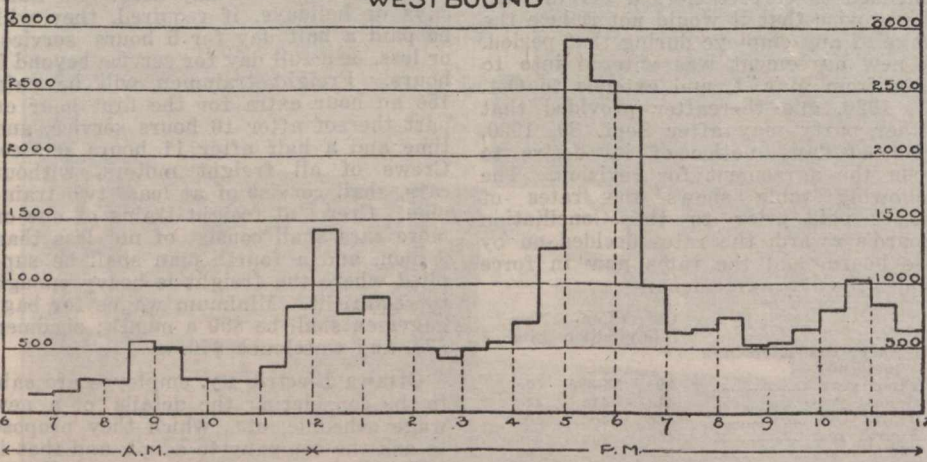


CHART SHOWING NUMBER OF PASSENGERS CARRIED (IN HALF-HOURLY PERIODS) BY CARS PASSING COLONY & PORTAGE WESTBOUND



man in the service is required to handle the traffic during the rush hours. The "sea" of street car traffic, with its regular ebb and flow, is graphically shown by these charts. On the east-bound chart—people coming into the city on Portage Ave.—that high water mark is reached by this tide between 8 and 9 a.m., while from 1 to 3 p.m. there is a rise consequent upon the office people returning from lunch, and the "invasion" of the shoppers. The only other rise is between 7.30 and 8.30 p.m. when the people are going to the theatres. On the westbound chart the first substantial rise is recorded at the noon hour, while at 5 p.m. the record high water mark is reached with a suddenness almost overwhelming. Between 5 and 6.15 p.m. tradesmen and employes who came

age Ave., a similar condition prevails on practically all routes in the city. The problem the company is up against in properly taking care of the extreme situations indicated on the charts, and adjusting service to meet this ebb and flow in traffic, must be apparent to all. With the abnormal weather conditions in Winnipeg in winter, the company's difficulties are accentuated. Little wonder then, that its officials are continually appealing to shoppers to start their homeward journey before 4.30 p.m., and so leave the company free to provide service for the workers and those who must use cars between 5 and 6.30. The company's hands are full in attending to the requirements of the latter, and shoppers who linger down town until 5 and 5.30 p.m. are adding to an already diffi-

Mainly About Electric Railway People.

R. A. Brown, heretofore City Electrical Engineer and Superintendent of the Electric Light Department, Calgary, Alta., has been appointed Superintendent of the Calgary Municipal Ry., and will retain his duties as Electrical Engineer for the city. He has been in the city's service for the past 10 years.

Geo. Cameron, one of the first motormen employed by British Columbia Electric Ry., and latterly in charge of the company's mail service, died in Vancouver, Mar. 11.

T. Clarke, heretofore Inspector, Niagara, St. Catharines & Toronto Ry., has been appointed Assistant Superintendent, succeeding A. F. McGill, resigned to enter the Hydro Electric Power Commission of Ontario's service.

G. Combra, heretofore general foreman, Calgary Municipal Ry., has been appointed Assistant Superintendent.

H. Francis, heretofore conductor Niagara, St. Catharines & Toronto Ry., has been appointed dispatcher, succeeding H. Brooker, resigned to enter the Hydro Electric Power Commission of Ontario's service.

Ernest P. Fredericks, who was appointed Publicity Director of the Association of Holders of Public Utilities Securities, at Toronto, in 1919, and who subsequently opened an office in Ottawa as advisor of public utilities, operating and rate investigation, and for making reports, surveys, appraisals, etc., has been appointed Secretary of the Board of Trade, Belleville, Ont.

A. G. Graves, one of the Calgary, Alta., city commissioners, who, among other things, has charge of Calgary Municipal Ry., has had his salary advanced to \$4,250.

W. C. Hawkins, Managing Director & Secretary, Dominion Power & Transmission Co., Hamilton, Ont., who has not been very well for some time, left there Mar. 15, to spend some time in the south, but became worse on reaching Washington, D.C., and had to return to Philadelphia for treatment.

J. A. House, of St. Catharines, Ont., has been appointed Manager, Guelph Radial Ry., at a salary of \$2,400 a year from Mar. 1. He was nominated by the Hydro Electric Power Commission of Ontario, and will operate the line for it after it takes control on July 1.

L. M. Jones, heretofore City Engineer, Port Arthur, Ont., and formerly on the staff, is reported to have been appointed Chief Engineer of a paving construction company.

William Oscar LeBar, who has been appointed Superintendent, Montreal and Southern Counties Ry., St. Lambert, Que., was born at Ste. Ursule Falls, Que., April 26, 1879, and entered railway service April 5, 1897, since when he has been to May 1, 1899, conductor, Montreal Terminal Ry., Pointe aux Trembles, Que.; May 1, 1899 to Feb. 3, 1902, depot clerk, same road, Maisonneuve, Que.; Feb. 15 1902, to May 15, 1903 motorman, Union Rd., Providence, R.I.; May 20, 1903 to Aug. 1, 1904, agent, Montreal Terminal Ry., Montreal; Aug. 1, 1904 to June 1, 1906, Assistant Superintendent, same road, Montreal; June 1, 1906 to Dec. 15, 1907, Superintendent and Accountant, same road, Montreal; Sept.

15, 1907 to Feb. 1, 1913 in freight department, Montreal Tramways Co., Montreal; Mar. 17, 1913 to Jan. 19, 1920, Chief Dispatcher, Montreal and Southern Counties Ry., St. Lambert, Que.

H. R. Mallison, formerly Managing Director & Secretary Treasurer, Nova Scotia Tramways & Power Co., has been appointed Purchasing Agent, and Secretary to President, Montreal Tramways Co.

T. H. McCauley, whose appointment as General Manager, New Brunswick Power Co., St. John, N.B., was announced in our last issue, was born in Peel County, Ont., in 1872 and moved to Prince Arthurs Landing, now Port Arthur, Ont., in 1880. He entered Bell Telephone Co.'s service at Port Arthur in 1889, and served as lineman, and from 1891 to 1902 as local manager, for Port Arthur and



T. H. McCauley.
General Manager, New Brunswick Power Co.

Fort William, and from 1894 to 1902 was also Superintendent, Port Arthur St. Ry. and Electric Light Co., the first named position being relinquished in 1902. In 1902 he installed the Port Arthur municipal telephone system and continued to 1909 as superintendent of the street railway light, power and telephone systems there. In 1909 he was appointed General Superintendent of Construction, Calgary Municipal Ry., Calgary, Alta., and on completion of the line he was appointed Superintendent, which position he occupied to the date of his resignation, Feb. 20, 1920. In 1914 he began the operation of what are known as the McCauley type one-man safety cars, and by 1917 all of 75 municipal railway cars, varying from 32 to 46 ft. long, were converted to that system. He was also the founder of the Bowness Amusement Park at Calgary, which, apart from making a profit on its operation, contributed considerable extra revenue to the municipal railway. On leaving Calgary, he was presented, on behalf of the city council

and the street railway commissioners, with an address, a cheque for \$2,500 for extra services rendered, and an engraved silver tray, and on behalf of the street railway employes with a canteen of silver. Mrs. McCauley was presented with a silver vanity case by the regent and members of the Col. Macleod Chapter, I. O. D. E.

W. E. Massie, heretofore General Superintendent, Sudbury-Copper Cliff Suburban Electric Ry., and formerly in the Toronto Ry. and Toronto and York Radial Ry. mechanical departments has been appointed Master Mechanic, Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont.

Alexander Montgomery has been appointed acting superintendent, Nipissing Central Ry., Cobalt, Ont., vice Kenneth McDonald, resigned.

Donald Stuart Robertson, purchasing agent and secretary to the President, Montreal Tramways Co., died at Westmount, Que., Feb. 27, aged 69, from pneumonia. He was born in Glasgow, Scotland, and came to Montreal when 24 years old. He was in the G.T.R. service at Point St. Charles, Montreal, for 25 years, and then went to the Montreal St. Ry. A daughter died of influenza a fortnight before he died. Another daughter is the wife of F. M. McRobie, General Manager, Canadian Transfer Co., and a son, Maxwell, is in the C.T.C. real estate department.

J. Weller, heretofore motorman, Niagara, St. Catharines & Toronto Ry., has been appointed Inspector, succeeding T. Clarke, promoted to Assistant Superintendent.

Hydro Electric Railway Construction Plans.

With the return of Sir Adam Beck, Chairman of the Hydro Electric Power Commission of Ontario, from England, it is expected that the plans for the building of electric railways in the province will be pushed forward, and a definite construction programme laid out. Sir Adam landed in New York Mar. 13, and came direct to Canada, and went on to London, Ont. A Toronto paper Mar. 15 published an article purporting to give his plans for the immediate construction of electric railways, under the bylaws passed by the various municipalities in regard to which he is reported to have said in London: "It is the Hydro-Electric Power Commission's wish to work in friendly co-operation with the Dominion Government and to avoid unnecessary duplication by acquiring lines which Dominion cabinet ministers have said will be made available to the Hydro through amicable negotiations."

Sir Adam subsequently went to Toronto, where he was the chief guest at a luncheon given by the city council. He is reported to have said that the Hydro Electric enterprise is so deep-rooted in the hearts of the people that there could be no fear for its success. He regarded the vote of 15 to 1 for the Toronto Eastern Ry. as a clear indication of this. All that is asked for the people is their moral support.

There is no need for worry by the government as to the financing of hydro-radial railways. That is the duty and province of the commission, through

whom \$105,000,000 has been invested in Hydro power, and which is backed by 125 municipalities. He also referred to the negotiations which had been going on with the Toronto and York Radial Ry.

since 1918 for the acquirement of its Metropolitan division, and stated that the commission insists that the deal shall include the whole of the Toronto and York Radial lines, and that the matter

would be taken up during the following week. The Premier of Ontario in the course of an address, promised the government's support in the developing of water power.

Electric Railway Projects, Construction, Betterments, Etc.

Brantford Municipal Ry.—A press report states that it is proposed to build an extension of the Holmedale Line in Brantford, Ont. (Dec. 1919, pg. 670.)

British Columbia Electric Ry.—We are officially advised that the extension on Granville St. south, Vancouver, to connect with Kerrisdale, will be a single track, one mile long, laid with 60 lb. A.S.C.E., on gravel balast, with fir ties. Granville St. is paved over this route, ut the new track will be laid on the sbouth side of the paving. It is expected that this line will be in operation by April 15. A press report states that track laying was started Mar. 16.

The double tracking of Hastings St. East, from Renfrew St. to Boundary Road, will be one mile long, laid with 60 lb. A.S.C.E. rail, on gravel ballast with fir ties. This street is not paved.

On the Fraser River Valley Line the company is spending about \$100,000 upon betterments. Those wooden trestles, which have been in use since the line was built, are being filled. We are advised that nothing has been decided with regard to the electrical equipment of this line. In 1913, the cars operated on the line were equipped for 1,200 volt operation, but the change was not completed. A recent press report stated that it was proposed to extend this line to White Rock, B.C., and Blaine, Wash., involving the use of about 8 miles of the Great Northern Ry's. abandoned tracks. We are advised that in response to the petition asking for the time the company had a survey made, with a view of ascertaining the cost and probability of making the extension, and that this is as far as the matter has gone.

We are further advised that complete plans for the expenditure of the \$1,000,000, which, according to a recent interview with Geo. Kidd, General Manager, is appropriated for the year, are too indefinite at present to say anything about. (Mar. pg. 145.)

Calgary Municipal Ry.—Tenders will be received to April 15 for the construction of manganese points and crossings for the Calgary Municipal Ry. (Mar. pg. 145.)

Calgary Municipal Ry.—A press report states that R. A. Brown, the new superintendent, has been going over the lines to settle on the repair work that will have to be done during the summer. Another press report states new rails are about to be bought for the extensions on the North Hill, and also for some further extensions on Centre St., near the heart of the city. (Mar. pg. 145.)

Edmonton Radial Ry.—A press report, states it is generally admitted that the Radial Railway tracks and the rolling stock are in bad condition, and that a large expenditure is necessary to improve them.

Edmonton Radial Ry.—A press report states that tenders are under consideration for the supply of 7,000 jack pine or tamarac ties. (Jan., pg. 34.)

Fort William Municipal Ry.—We are officially advised that tenders are about to be invited for rebuilding car barns on

the old site recently destroyed by fire. The new buildings will be practically of the same dimensions as the old, with the exception that a stores building will be built as an addition to the barn. The plans and specifications for the new buildings call for fireproof construction throughout; no steel will be used, all roof trusses, columns, window frames, etc., will be of re-inforced concrete, and the roof will be of sheet corrugated asbestos. A. L. Farquharson, Fort William, Ont., is manager. (Dec., 1919, pg. 690.)

Hull Electric Co.—We are officially advised that the company is remodelling its power substation at Hull, Que. The plant to be installed consists of two 1,200-k.v.a., 3-phase, on installed water cooled transformers, primary voltage 11,000, secondary voltage 2,200. These transformers, together with high tension and low tension switchboards, are being manufactured by the Canadian General Electric Co. It is expected that the apparatus will be installed and in operation early in May. (Mar., pg. 145.)

London and Port Stanley Ry.—Sir Adam Beck attended a meeting of the London, Ont., City Council, Mar. 15, and referred to projected expenses for the improvement of the railway. He is reported to have said: "We must have \$5,700 to rebuild an overhead bridge at St. Thomas. Then for laying 80 lb. rails to replace some lighter ones on some of our switches an expenditure of at least \$14,000 will be necessary, and \$4,000 is needed for some other track repairs in connection with the switches. The double tracking which we must do in some congested portions of our line will entail an outlay of \$15,000. New scales will cost us \$8,500; the repairs to the ferry slip dock at Port Stanley will cost \$8,500, and a new locomotive will necessitate an outlay of \$75,000."

P. Pocock, Vice Chairman London Railway Commission, is reported to have stated Mar. 16 that the building of a second track through St. Thomas and laying 80 lb. rails in those parts where there are now 55 lb. rails, will be gone on with as soon as the necessary material can be obtained. The line in St. Thomas will be provided with a second track as far as Pinafore Park, and it is proposed eventually to carry it as far as White's Station. The work will be done by the company's own forces. (Mar., pg. 145.)

London St. Ry.—The London, Ont. City Council is applying to the Ontario Legislature in an omnibus bill, for authority to enter into an agreement with the company to change its present track on Central Ave., between Richmond St., and Wellington St., to the centre line of Central Ave. (Mar., pg. 145.)

Montreal Tramways Co.—A press report states that the company will start construction this spring on an extension of a line on Park Ave. This report is somewhat premature as the proposed extension is part of a plan for a line to serve Mount Royal in place of the old incline railway. The project was before the Montreal Tramways Commission in

February, when it was left over for further consideration, and the preparation of plans and estimates for an alternative project. The Montreal Administrative Commission was reported Mar. 5 to have had before it plans for a new incline railway of 370 ft., with an approach from Park Ave., and a projected line of the Montreal Tramways Co., from Park Ave. is reported to have been considered on Mar. 8. It was stated on the latter occasion that owing to the winter conditions on Mount Royal it was impossible for surveys to be made, but that they would be made as early as possible in the spring, after which the commission would be in a position to decide what to do.

A delegation from St. Michel de Laval waited on the Montreal Tramways Commission Mar. 11, to urge the building of an extension of the line on Iberville St., for about a mile. The commission is reported to have advised the delegation that before any such undertaking could be assured by the Montreal Tramways Co. there would have to be a guarantee that any loss would be made good. Article 36 of the company's contract is as follows: "Outside of the uniform-tariff territory, the cost of construction of any new line or of the extension of any existing line, or of their operation, shall not be a burden on the revenues of the company, in the sense that the revenues of such new lines must be sufficient so as not to affect unjustly the passenger and freight tariff on the other parts of the company's system." (Mar., pg. 145.)

A press report states that a contract has been let to F. A. Grothe for building a sub-power station near the car sheds on Cote St., Montreal, at an estimated cost of \$60,000. It is reported that on the completion of this substation the Williams St. steam plant will be done away with, thereby affecting an annual saving of about \$70,000.

Quebec Ry., Light and Power Co.—We are officially advised that negotiations are in progress in connection with the following extensions, but that no decision has yet been reached. An extension from the present line on Lamontagne Ave., Jacques Cartier Ward, Quebec, on Charlesbourg Rd. as far as the city limits, 0.87 mile, and for the continuance of the line from the city limits to Charlesbourg church, 1.74 miles. It is suggested that the line, at a later date should be continued to Loretteville, Que. (Mar., pg. 81, see also Quebec Country, Mar. pg. 87.)

Nipissing Central Ry.—We are officially advised that the projected extension from Liskeard, Ont., to the Quinze River, Que., if built, will be an extension of the Nipissing Central Ry., and not of the Timiskaming and Northern Ontario Ry., as recent press reports stated. Another press report states that the Ontario government, which owns both lines, has decided to make the extension as soon as the owners of the pulpwood limits are prepared to develop the water power and establish a paper mill. (Mar., pg. 145.)

The Port Arthur Civic Ry. work shops portion of the car barn at Port Arthur,

Ont., was destroyed by fire Mar. 9, together with three single end, double truck cars, and a single truck, one man car. We are officially advised that no definite plans have been made as to rebuilding the portion of the barn destroyed, and that no additional cars will be purchased for the present, as there is sufficient rolling stock on hand to meet existing requirements. A press report states that a consultation will be held with the Fort William authorities as to the building of joint barn facilities. The Fort William Municipal Ry. car barn was burned a few months ago. (Feb., pg. 81.)

St. Thomas Municipal Ry.—A press report states that the St. Thomas, Ont., City Council proposes to extend the municipal railway built in the city.

Toronto Civic Ry.—After having been before the Toronto City Council on several occasions recently, the question of the construction of the proposed Mount Pleasant car line was again held up on Mar. 22. The Council decided by a vote of 15 to 10 to build the line at an estimated cost of \$1,060,000, thus reversing its decision of Mar. 8. Application is being made to the Ontario Legislature for authority to issue debentures to pro-

vide funds for building the line.

Transcona and Winnipeg.—The Manitoba Legislature has under consideration a bill authorizing the town of Transcona to build a street railway, or establish a motorbus service to Winnipeg. The building of an electric railway between Transcona and Winnipeg has been under discussion for some years, and one or two contracts were entered into for construction, but nothing further was done. A press report states that at a public meeting held Mar. 12, it was decided to arrange for building an electric railway at a cost of about \$300,000. It is proposed to ask the Manitoba Government for a subsidy in aid of construction. The Winnipeg Electric Ry. will, it is stated, provide the cars, and will operate the line, but the town of Transcona will pay half the deficit, if the net earnings do not meet the expenses. The projected line would be about six miles long, and would enter Winnipeg over the Provencher Bridge.

A press report of Mar. 20 states the Canadian National Railways is overhauling a gasoline electric car, which, it is stated, it will run between Transcona and Winnipeg.

The Waterloo-Wellington Ry. Co. is asking the Ontario Legislature to pass a bill to authorize the building of a line from the existing line near Bridgeport to Guelph, Ont., and to give the company power to issue bonds for \$40,000 a mile of its railway constructed, or under construction. We are advised that the cities of Kitchener and Guelph and the intervening municipalities of Bridgeport, Bloomingdale, New Germany, Waterloo Tp. and Guelph Tp are favorable to the building of the line. The tributary population is about 52,000 and the receipts should, it is claimed, make it a paying proposition in a short time. Grades would be easy all along, hardly exceeding 2% anywhere. There would, however, be a bridge required across the Grand River at Bloomingdale. Otherwise the line with 85 lb. rail and good construction throughout, would present no difficulties nor great cost. From Bloomingdale to New Germany, about five miles, the grading to subgrade was done some years ago by the People's Ry.

Windsor, Essex and Lake Shore Rapid Ry.—We are officially advised that the company expects to order in the near future one car of 80 lb. steel rails.

Increases in Canadian Electric Railway Passenger Fares.

London St. Ry.—At London, Ont., City Council recommended that the council in its omnibus bill before the Ontario Legislature, should ask for power to grant an increase of fares to the London St. Ry., subject to the ratepayers approval. This recommendation was on Mar. 15, referred back to the committee by the council for further consideration.

Montreal and Southern Counties Ry.—The Board of Railway Commissioners heard at Montreal, Mar. 9, the company's application for an increase of 20% in its passenger fares. St. Lambert and other municipalities opposed the application and judgment was reserved.

The Board of Railway Commissioners concluded on Mar. 17 its hearing of the company's application for authority to file tariffs providing for an increase of 20% on its passenger fares. The application was opposed by residents of St. Lambert, Greenfield Park, Longueuil, Chambly and other points on the line. Judgment was reserved.

Ottawa Electric Ry.—The Supreme Court of Canada gave judgment Mar. 8, granting the company's appeal re the proposed increase of fares on its Britannia Line. Objection was taken to the proposed increase by the municipalities interested, and after a hearing the Board of Railway Commissioners refused to sanction the proposed new schedule of fares. An appeal was taken to the Supreme Court and arguments were heard at the end of 1919. Subsequently the court submitted three questions to the parties interested, upon which it desired to hear further arguments. These arguments were concluded Feb. 5, and judgment was given Mar. 5 by Justice Duff and concurred in by Justice Anglin, Migault and Brodeur; Chief Justice Sir Louis Davies and Justice Iddington dissented. The questions submitted and the answers to each as given in the judgment, are as follows:

"1. Whether upon the proper construction of the agreements with the City of Ottawa and the Village of Hintonburg, the statutes relating to the Ottawa Electric Ry. Co. and the relevant provisions

of the railway acts, the board was right in disallowing the tariff of the company filed, providing for payment of additional fare for carriage upon the extension from Holland Ave., notwithstanding that the board has found as a fact that the company did not require additional revenue." Judgment: "This question is not answered since it involves questions of fact within the exclusive competence of the Board of Railway Commissioners. So far as it involves a question of law it is covered by the answer given to the first part of the third question."

"2. Also, whether upon the proper construction of the said agreements and statutes, for the purpose of computing the toll to be charged to passengers upon the said extension the point of commencement of the said extension should be considered to be at Holland Ave., or at the former westerly limit of the Village of Hintonburg, now the City of Ottawa. Judgment: "At Holland Ave."

"3. Has the board the right to treat the company's operations as a whole and continue the existing tariff?" Judgment: "No."

"Or must the board permit the filing of tariffs on a mileage basis covering services on the Britannia line without reference to the larger part of the system covered by municipal agreements?" Judgment: "Yes; though not necessarily on a mileage basis."

Mr. Justice Duff added: "My reasons for these conclusions can be stated briefly. They are based upon two propositions which appear to me clearly established. First. I concur fully with the opinion of the Chief Railway Commissioner as to the effect of the statute of 1894. By force of that statute and the scheduled agreements, the rights and obligations of the Ottawa Electric Ry. Co. in relation to the fares chargeable in respect of the services provided for or contemplated by the agreement between the street railway companies and the city—services which may with sufficient accuracy be referred to as city services—were to be governed by the agreement itself, and consequently the Ottawa Elec-

tric Ry. Co. did not on the passing of the Railway Act of 1903 (see sec. 3) become in respect of such fares subject to the Board of Railway Commissioners jurisdiction touching the matter of the regulation of rates.

"Second. As regards the Britannia extension, on the other hand, authorized by the act of 1899, I can find nothing in that statute excluding this line from this jurisdiction of the board and I think that on the passing of the Railway Act of 1903, the provision of that enactment on the subject of the regulation of rates became applicable to it. The first of these propositions seem to involve this consequence: The fares exigible under the statute and agreement of 1894 must be taken to be a just remuneration, neither too much, nor too little, for the city services; and it seems to follow that in determining what is a just and reasonable remuneration for the services performed on the Britannia lines the proceeds derived from the city services must be left out of account. That is to say that in determining what is just and reasonable in respect of the Britannia lines, you must start with the hypothesis that everything paid in respect of city services has been fully earned by the performance of those services. The point may be illustrated by a reference to one example of the manner in which the existing tariff operates. Under the tariff the company is entitled to charge a maximum fare of 5c for transport from the corner of Laurier Ave., and Charlotte St. to Britannia, a charge which the company, by the act and agreement of 1894, is nevertheless entitled to make for that part of the service which is performed within the city. In other words, under existing conditions, so long as the Britannia line is kept in operation and this service is maintained, the company is obliged to give, for a fare of 5c the city service (for which by law it is entitled to receive a fare of 5c) plus the service from Holland Ave. to Britannia; and that appears to be the necessary consequence of treating the operations of the company as a whole

and maintaining the existing tariff. I think it is not permissible to do this, because thereby full effect is denied to the company's legal rights under the statute and agreements of 1894. "I must mention that in answering these questions we are governed by the law as it stood before the enactment of the Railway Act of 1919."

The company's superintendent, F. D. Burpee, in announcing on Mar. 9 that the company would file with the Board of Railway Commissioners a tariff for its lines outside of the boundaries fixed by its agreement with the city, is reported to have said: "The new tariff will probably compare with that approved by the Board of Railway Commissioners for the Hull Electric Co.'s lines, but our company may decide in actual practice to make a somewhat lower rate than the Hull company. The latter's rate from Ottawa or Hull to the Royal Ottawa Golf Club is 10c. The rate to Rivermead is 15c straight, or 2 tickets for 25c. The rate from Ottawa or Hull to Aylmer is 20c or 3 tickets for 50c. In all of these cases Ottawa residents pay in addition to the above rates the regular fares on the Ottawa cars to the points where they board the Hull cars."

The Board of Railway Commissioners passed order 29467 Mar. 17 as follows: The application of Ottawa Electric Ry. under section 334 of the Railway Act, 1919, for approval of Supplement 1 to its Standard Passenger Tariff C.R.C. 1. Upon its appearing that the territorial description in the company's Standard Passenger Tariff C.R.C. 1, approved by order 4418, Mar. 8, 1908, differs from that given in the Supreme Court of Canada's decision delivered Mar. 8, 1920, in the appeal from the board's order, holding, in effect, that the operation of the different portions of the company's system should be treated as one line, and the company having now filed an amending supplement to its Standard Passenger Tariff C.R.C. 1, for the purpose of making such territorial description agree with the Supreme Court's decision. It is ordered that the said supplement 1, filled to become effective April 5, be approved, provided that the supplement, together with reference to this order, be published in at least two consecutive weekly issues of The Canada Gazette, prior to the effective date.

On Mar. 18 the company gave notice in the Canada Gazette that its supplement 1 to Standard Passenger Tariff C.R.C. 1, effective April 5, had been approved by the Board of Railway Commissioners. It is as follows: Co. Standard Passenger Tariff C.R.C. 1 shall conform to the judgment of the Supreme Court of Canada of Mar. 8, 1920, the following words 'the area defined by Holland avenue, in the west, the City of Hull in the north, Cloverdale road in the east, and Grove street in the south, shall be substituted for the words 'the City of Ottawa,' wherever they appear in the company's Standard Passenger Tariff C.R.C. 1."

The company then filed with the board a Special Passenger Tariff effective April 5, C.R.C. 6, cancelling C.R.C. 4 as follows:

"Between points within the area defined by Holland Ave., in the west, the City of Hull in the north, Cloverdale Road in the east, and Grove St. in the south; and between points therein and the Experimental Farm and intermediate points.

"Between 5.30 a.m. and 12 midnight, 5c.
"Children under 10 years of age 3c

"To working men and others 33 tickets for \$1, or 8 tickets for 25c, good from first trip in the morning until 7.30 a.m., and between 5 and 6.30 p.m.

"Seven tickets for 25c, good only on Sundays.
"School children under 14 years to and from school at the rate of 40 tickets for \$1, good between 7 and 9.30 a.m., 11.30 a.m. and 1.30 p.m., and 3.30 and 5 p.m.

"Between 12 midnight and 5.30 a.m., 10c.
"Between 5.30 a.m. and 12 midnight between Holland Ave. and McKellar, and intermediate points. Five cents for each passenger one way; three cents for each child under 10 years of age, one way.

"Between McKellar and Britannia-on-the-Bay, and intermediate points. Five cents for each passenger one way; three cents for each child under 10 years of age one way.

"Between Cloverdale Road and the Rifle Range, and intermediate points. Five cents for each passenger one way; three cents for each child under 10 years of age, one way.

"Between 12 midnight and 5.30 a.m. in each of the above zones, 10c."

Nepean Tp. Council decided Mar. 18 to apply to the Supreme Court for leave to appeal against its decision to the Imperial Privy Council. The Ottawa City Council, on the same day voted 8 to 8 on a motion to join in the appeal which was therefore lost. An application in respect to the matter comes before Justice Mignault, of the Supreme Court in Chambers, Mar. 22, Nepean Tp. asking of a stay of proceedings until Mar. 29. The judge suggested that the company should give coupons or refund checks to passengers on the Britannia line, so that in the event of the Privy Council reversing the judgment, the township could collect from the company the extra fares paid. The company was given time to decide what it would do in that connection.

St. Thomas Municipal Ry.—The St. Thomas, Ont. City Council's Street Railway Committee considered at a recent meeting the question of increasing fares on the St. Thomas Municipal Ry., and left it over for further discussion.

Legislation for Taking Over Ottawa Electric Railway.

Ottawa City Council is applying to the Ontario Legislature for an act to authorize it to pass a bylaw to establish the Ottawa City Transportation Commission to consist of three members who shall be resident electors of the city, shall hold office for three years, and be paid salaries to be determined by the council. The members of the commission to be nominated by the board of control and appointed by the council, but that no member of the council be appointed a member of the commission. Upon the city council acquiring the Ottawa Electric Ry. and the company's real and personal property used in connection with the working of the railway, it shall be vested in the commission, which shall have its control and management. The property to be acquired is described in the statutes of 1895. Power is asked to take over any lines outside the city, but within the province, by agreement with the company, but subject to the Ontario Railway and Municipal Board's approval. The commission is to have full power to make, complete, alter, extend, maintain and operate a railway, tramway and other means or system of local transportation worked by any power except steam, in Ottawa, the County of Carleton, Ont., and in the City of Hull, Que., to acquire rolling stock and equipment for it to carry passengers and freight and to fix tolls to be charged; to provide and maintain a pension fund, and to procure advances not exceeding \$200,000 at any one time to meet operating and maintenance expenses. To carry

out these objects the commission shall regulate tolls and fares so that they shall produce in each year a sufficient sum for operating expenses, the cost of maintenance, renewals and replacements, and for the principal and interest of all fixed and floating charges it shall prepare a yearly statement of its affairs and a report upon its operations for the preceding year, together with an estimate of expenditures and revenue for the then current year for presentation to the council; shall pay to the council such monies as may be required to meet interest and sinking fund of debentures; shall submit its books for audit by auditors appointed by the council; shall furnish the council with estimates of expenditures it desires to be authorized to make out of debentures to be issued, and shall keep a banking account.

Power is also asked to authorize the council to provide by bylaws to be passed without obtaining the ratepayers' assent, for borrowing upon debentures the money required for the purchase of the existing railway in Ottawa, and the lines within the province outside the city. In order to meet any expenditure of the commission the council may, on a two-thirds vote, pass a bylaw to raise the same by debentures without obtaining the ratepayers assent, but in the event of such a vote not being obtained a bylaw may be submitted to the ratepayers, and, if approved by them, shall be passed by the council. Provision is made for fixing the value of the railway by arbitration under the terms of the agreement of 1893, and for other matters connected with the taking over of the line.

French tramways and bus fares have been advanced 75%

Motor Omnibus, Toronto—The Toronto Board of Control is reported to have asked the Works Commissioner to prepare a report on the establishment of a motor omnibus transportation service in parts of the city where they could be used to advantage.

Extra Cars for Toronto Ry.—The Ontario Railway and Municipal Board on Mar. 16 heard the City of Toronto's application in reference to the proceedings to compel the Toronto Ry. to provide 200 additional cars. After some discussion the further hearing of evidence and arguments was adjourned to April 9.

Montreal Pole Tax.—The Quebec Legislature passed an act last session amending the City of Montreal's charter one of the provisions of which authorizes the city to levy a surtax on poles and materials of public utility companies on the street, the Montreal Tramways Co. and the Montreal Water and Power Co. being excepted. Before the bill was passed it was decided that the levy of this special tax should not be made after 1921.

The Ottawa, Ont., Board of Control is reported to have approved of the stop plan for improving the Ottawa Electric Ry. service. The Ontario Motor Club asked that the stops be on the near, instead of the far side of the street crossings, but F. D. Burpee, Superintendent Ottawa Electric Ry., stated that the company is absolutely against this system, on the ground that the railway is being operated for the benefit of the thousands, and that under the near side stop system it would take eight cars to do the work that six do under the far stop plan.

Marine Department

Canadian Government Merchant Marine, Ltd., Shipbuilding, Operation, Etc.

Orders for Steamships.—The following questions were asked in the House of Commons, Mar. 10, by J. Archambault, M.P. Chambly-Vercheres, and answered by the Minister of Marine.

How many contracts for shipbuilding were given by the government since Jan. 1, 1918? Answer: Fifty-six.

To what firms were the contracts given and what were the respective amounts? Answer: Canadian Vickers, Ltd., Montreal, 12; Collingwood Shipbuilding Co., Collingwood, Ont., 7; Wallace Shipyards, Vancouver, B.C., 4; Tide-water Shipbuilders, Three Rivers, Que., 4; Davie Shipbuilding and Repairing Co., Lauzon, Que., 3; Port Arthur Shipbuilding Co., Port Arthur, Ont., 7; Halifax Shipyards, Halifax, N.S., 4; Victoria Machinery Depot Co., Victoria, B.C., 2; J. Coughlan & Sons, Vancouver, B.C., 4; Nova Scotia Steel & Coal Co., New Glasgow, N.S., 2; Prince Rupert Dry Dock & Engineering Co., Prince Rupert, B.C., 2; British American Shipbuilding Co., Ltd., Welland, Ont., 2; Dominion Shipbuilding Co. Toronto, Ont., 2; Midland Shipbuilding Co., Midland, Ont., 1.

Were all of the contracts given after proper tender? Answer: Contracts were placed after offers had been received from the several yards and prices and other details agreed upon.

If so, were they given to the lowest tenders? If not, why? Answer: Answered by answer to previous question.

Editor's note:—The statement quoted above, that contracts for 56 ships have been awarded, evidently refers to the number of contracts actually signed up to Mar. 10. Canadian Railway & Marine World's information, as given in the table on page 207 of this issue, is that contracts for 63 ships have been arranged.

A Montreal press dispatch of Mar. 21 credits the Minister of Marine with having stated that day, in a speech before the Canadian Workers' Federation of Returned Soldiers and Sailors, that with the completion of 62 cargo steamships that part of the government's shipbuilding programme would be at an end, and that a final conclusion had not been reached in regard to building passenger steamships.

Deliveries of Steamships.—In addition to the steamships mentioned in Canadian Railway & Marine World previously, the following delivery has been made:

Mar. 6, s.s. Canadian Exporter; Marine Department contract 35; builder's yard no. 12; approximately 8,390 d.w tons; J. Coughlan & Sons, Vancouver, B.C.; delivered to Marine Department, transferred to Canadian Government Merchant Marine, Ltd., and loaded with general cargo for Sydney and Melbourne, Australia; and Auckland and Wellington, New Zealand.

The s.s. Canadian Inventor; Marine Department contract 36, builder's yard no. 13; approximately 8,390 d.w tons; built by J. Coughlan & Sons, Vancouver, B.C.; was expected to be delivered to the Marine Department about the end of March.

The s.s. Canadian Prospector; Marine Department contract 37; builder's yard no. 14; approximately 8,390 d.w. tons; being built by J. Coughlan & Sons, Vancouver; will probably be delivered early in April.

Steamships in Operation.—The Minister of Railways stated in the House of Commons, Mar. 11, in answer to questions by G. Parent, M.P. for Quebec West, that the Canadian National Rys. had at that time 25 steamships plying on various routes, the same being operated

Appointments.—B. C. Keeley has been appointed General Agent, C.G.M.M., Ltd., at Vancouver, B. C.

Steamship Canadian Recruit. The following questions were asked in the House of Commons, Mar. 10, by W. Duff, M.P., for Lunenburg, the answers being given by the Minister of Railways:

Does the Government own a ship named the Canadian Recruit? Answer: Yes.

If so, what is her gross, net, and deadweight tonnage? Answer: Gross, 2,409; net, 1,451; deadweight 3,964.

What did she cost ready for sea? Answer: \$813,252.

Where is the said ship at the present time? Answer: Stranded on Vache reef, in the St. Lawrence, at the mouth of the Saguenay.

What amount of insurance is carried on the ship's hull? Answer: Insurance on hull, \$578,571; other insurance, \$231,429; total insurance on ship, \$810,000.

What is the ship's valuation as appears in her hull policies? Answer: \$578,571.

What insurance is carried on the ship's freight? Answer: Freight charges are prepaid and not insured. Cargo is at shipper's risk, and each cargo owner carries at discretion his own insurance.

While the ship is in her present position and condition are the government's interests being properly protected? If so, how? Answer: Yes. Notice of abandonment has been tendered to the underwriters. Necessary steps to prevent further damage have been taken by underwriters' representatives.

Editor's note: As stated above, the d.w. tonnage of this ship is 3,964 tons, which at the contract price of \$205 a ton, comes to \$812,620. The difference of \$632 between this and the price paid was, we are officially advised, for minor extras.

British-American Shipbuilding Co. Welland, Ont., advised us Mar. 16, that it expected to launch the s.s. Canadian Otter; Marine Department contract 44; builder's yard no. 4; approximately 4,575 d.w. tons, for Canadian Government Merchant Marine, Ltd., during the week beginning Mar. 22. The s.s. Canadian Squatter; Marine Department contract 45; builder's yard no. 5; approximately 4,575 d.w. tons, is scheduled to be launched in April. We have since been advised that the afterpart of the s.s. Canadian Otter, which is being built in two sections, was launched Mar. 25, and that it was expected to launch the forepart a few days thereafter.

J. Coughlan & Sons, Vancouver, B.C. The s.s. Canadian Exporter; Marine Department contract 35; builder's yard no. 12; approximately 8,390 d.w tons; built by this company, made her trial trips on Mar. 5, was delivered to the Marine Department, and transferred to Canadian Government Merchant Marine Ltd., on Mar. 6. She was loaded with general cargo for Sydney and Melbourne, Australia, and Auckland and Wellington, New Zealand.

This company advised us recently that it expected to deliver the s.s. Canadian Inventor; Marine Department contract

Dominion Marine Association.

President, A. E. Mathews, Managing Director, Mathews Steamship Co., Toronto.

First Vice President, H. W. Cowan, Director of Operation, Canada Steamship Lines, Montreal.

Second Vice President, A. A. Larocque, President, Sincennes-McNaughton Line, Montreal.

Executive Committee, E. H. Beazley, Union Steamship Co. of British Columbia, Vancouver; W. E. Burke, Canada Steamship Lines, Montreal; T. R. Enderby, Montreal Transportation Co., Montreal; L. Henderson, Montreal Transportation Co., Montreal; W. J. McCormack, Algoma Central Steamship Line, Sault Ste. Marie, Ont.; G. J. Madden, George Hall Coal Co. of Canada, Montreal; E. W. Oliver, Niagara, St. Catharines & Toronto Navigation Co., Toronto; W. H. Smith, Ontario Car Ferry Co., Montreal; J. F. Sowards, Sowards Coal Co., Kingston, Ont.; J. F. M. Stewart, Point Anne Quarries Ltd., Toronto; Jno. Waller, Keystone Transportation Co., Montreal; Lorne C. Webster, Webster Steamship Co., Montreal; J. Wilkie, Imperial Oil Ltd., Toronto; A. A. Wright, honorary member, Toronto.

General Counsel, Francis King, M.A., Kingston, Ont.

Official Organ, Canadian Railway and Marine World, Toronto.

under order-in-Council of June 2, 1919, the names of the ships, their approximate deadweight tonnage, their routes, and their ownership being as follows:

Name	Approx. d.w. tons	Trade Route.
Canadian		
Voyageur	4,575	St. John-London.
Pioneer	8,408	Halifax-S. America.
Warrior	3,995	St. John-West Indies.
Ranger	8,382	St. John-Liverpool
Recruit	3,964	Stranded account ice St. Lawrence.
Volunteer	4,485	Laid up at Quebec.
Trader	3,341	Halifax-West Indies.
Sailor	3,357	Halifax-West Indies.
Seigneur	8,391	Halifax-London.
Signaller	3,990	Halifax-West Indies.
Miller	8,390	Halifax-Liverpool.
Adventurer	3,408	Halifax-West Indies.
Gunner	3,990	Halifax-West Indies.
Aviator	5,100	Halifax-West Indies.
Sower	3,400	St. John-West Indies.
Navigator	4,575	St. John-London.
Settler	5,100	Halifax-Glasgow.
Spinner	8,393	Halifax-S. America.
Raider	5,100	Vancouver-Australia, N.Z.
Importer	8,390	Vancouver-Australia, N.Z.
Exporter	8,390	Vancouver-Australia, N.Z.

The above are owned by the King, represented by the Minister of Marine.

T. J. Drummond 3,000 St. John-West Indies.
Sheba 3,500 Halifax-West Indies.
J. A. McKee 3,000 St. John-West Indies.

The last three mentioned above are owned by the King, represented by the Minister of Railways.

36; builder's yard no. 13; approximately 8,390 d.w. tons; to the Marine Department, about the end of March.

This company expects to deliver to the Marine Department early in April the s.s. Canadian Prospector; Marine Department contract 37; builder's yard no. 14; approximately 8,390 d.w. tons.

Midland Shipbuilding Co., Midland, Ont. As stated in Canadian Railway & Marine World for Dec., 1919, this company was given an order by the Marine Department for a steel cargo steamship for Canadian Government Merchant Marine Ltd., approximately 3,950 d.w. tons, at \$180 a long ton, aggregating \$718,200. The contract was signed Feb. 26, its number being 54, and the builder's yard no. 10. It is quite problematical when the keel will be laid, steel deliveries being so uncertain.

Nova Scotia Steel and Coal Co., New Glasgow, N.S. The steel cargo steamship Canadian Miner; Marine Department contract 41; builder's yard no. 6; approximately 2,800 d.w. tons; which this company is building for Canadian Government Merchant Marine, Ltd., will probably be launched early in April and delivered in May.

The keel for the third steel cargo steamship, of approximately 2,800 d.w. tons; builder's yard no. 8; which this company has under contract from the Marine Department, for Canadian Government Merchant Marine, Ltd., will probably be laid some time in April, or as soon as the bottom shell plates are received.

Port Arthur Shipbuilding Co., Port Arthur, Ont., which received an additional contract from the Marine Department recently, for a steel cargo steamship of approximately 3,890 d.w. tons, builder's yard no. 45, advises us that the date for laying the keel has not been decided on, and that it will depend largely upon steel deliveries.

The Lord Strathcona Steamship Co., Ltd., the incorporation of which, with \$1,500,000 capital, and office at Montreal, was announced in our last issue was formed to acquire and operate the s.s. Lord Strathcona, formerly owned and operated by the Century Shipping Co., London, Eng. The ship, which has been transferred to the Canadian register, was built of steel, at Sunderland, Eng., in 1915 her dimensions being, length 455ft., breadth 58ft. depth 31ft.; tonnage, 7,335 gross, 4,184 registered. She is screw driven by engine of 613 h.p.

Kingston Harbor Improvements.—J. Archambault, M.P., for Chambly-Vercheres, said in the House of Commons, Mar. 16: "I would draw the attention of the government to a dispatch from Kingston appearing in the Montreal Standard of Mar. 13, which states that the Canadian Government has given the City of Kingston the assurance that \$2,500,000 will be spent on harbor improvements there. I would ask the Minister of Finance, who is also representative of Kingston in this house, if the report is true, and if so, whether these improvements are to be made in fulfilment of an election promise." Sir Henry Drayton, Minister of Finance, replied as follows: "The report is absolutely incorrect. That also answers my hon. friend's second question, but in order to make it a little more emphatic, I might say that there was no election promise."

Compulsory Equipment of Ships with Radiotelegraph Apparatus.

The Defence of the Realm Regulation 23A, passed by Dominion order-in-Council, Jan. 15, 1918, calling for the compulsory equipment, with radio apparatus of all Canadian steamships of 1,600 tons and over, when plying to Europe, was automatically cancelled as from Jan. 1, 1920. The only Canadian legislation now in effect calling for the compulsory equipment of certain ships, with radio apparatus, is that prescribed in the Radiotelegraph Act, Dominion Statutes, 1913, chap. 43, sec. 4, which provides that after Jan. 1, 1914, no passenger steamship, whether registered in Canada or not, (a) licensed to carry 50 or more persons, including passengers and crew, and going on any voyage, which is, or which includes a voyage of more than 200 nautical miles, from one port or place, to another port or place, or (b) licensed to carry 250 or more persons, including passengers and crew, and going on any voyage which is, or which includes a voyage of more than 90 nautical miles, from one port or place, to another port or place, or (c) licensed to carry 500 or more persons, including passengers and crew, and going on any voyage which is, or which includes a voyage of more than 20 nautical miles, from one port or place, to another port or place, shall leave any Canadian port, unless it is equipped with an efficient radiotelegraph apparatus, in good working order, capable of transmitting and receiving messages over a distance of at least 100 nautical miles, by night and by day, and in charge of a person fully qualified to take charge of and operate the apparatus. Any person in charge of any passenger steamship which leaves any Canadian port, contrary to the provisions of this section, shall be liable to a fine not exceeding \$1,000 and cosst, which shall be a lien upon the steamship. This section does not apply to passenger steamships plying on Canadian rivers, including the River St. Lawrence as far seaward as a line drawn from Father Point to Point Orient, or on Northumberland Straits, or on Georgian Bay, or on Canadian lakes other than Ontario, Huron and Superior, and the provisions of paragraph (c) above, does not apply to steamships making voyages on Lakes Ontario, Erie, Huron, and Superior, the regular route for which is not at any point more than seven miles from the shore. This section does not apply to steamships calling at Canadian ports,

solely for the purpose of obtaining bunker coal, or provisions, for the use of such steamship, or through stress of weather, or for repairs.

We are advised, in regard to British legislation that an act to make further provisions with regard to wireless telegraphy in ships has become law, but we are not informed as to whether these provisions have been put in effect or not. This is dependant on the date the Defence of the Realm Regulation (British 37B) is cancelled.

The Victoria Dock Case Decided.

Ottawa press dispatch, Mar. 9.—Sir Walter Cassels has rendered judgment in the Exchequer Court for the Dominion Government in the petition of right of Grant Smith & Co. and MacDonnell, Ltd., against the King, for sums totalling \$333,812, in connection with excavation work performed by the suppliants in Victoria, B. C., and popularly known as the Victoria dock case. The contractors claimed \$292,110 for rock excavation, \$14,703 for earth excavation, and \$27,000 for filling under their contract with the Public Works Department. There was no conflict of opinion as to the totals of excavation, the disagreement between the two parties being wholly as to the classification, the government claiming that rock prices were charged for material which should come under a lower classification. The entire claim was thrown out, Sir Walter Cassels finding that the resident engineer was in collusion with the contractors, and that anything he certified should be set aside and that an attempted fraud was intended by him and those representing the contractors. Sir Walter also found that the estimate of the work as prepared by the Public Works Department was correct.

Senate Committee on Railways, Telephones and Harbors.—The Senate on Mar. 3, appointed the following committee: Barnard, Beaubien, Béique, Belcourt, Blain, Bostock, Bourque, Bradbury, Casgrain, Crosby, Dandurand, David, Daniel, De Veber, Domville, Donnelly, Douglas, Edwards, Farrell, Foster, Fowler, Girroir, Godbout, Gordon, King, Laid, Lavergne, Lougheed, Lynch, Staunton Macdonell, McCall, McHugh, Michener Milne, Mitchell, Murphy, O'Brien, Poirier, Pope, Power, Robertson Ross (Middleton), Ross (Moosejaw), Sharpe, Tessier, Thompson, Watson, Webster (Stadacona) and White (Inkerman).—49.

Vessels Added to and Deducted From the Canadian Register During December, 1919.

	Steam.		Sailings.	
	No.	Tonnage—Registered.	No.	Tonnage—Registered.
Added.				
Built in Canada	9	20,718 12,555	23	5,771 2,738
Purchased from foreigners.....	1	281 93	8	2,327
Transferred from United Kingdom.....	2	14,835 9,396	—	—
New registers	3	68 65	3	124 87
Tonnage alterations without reregistry.....	—	—	—	—
Totals	15	35,852 22,109	39	8,809 8,050
Deducted.				
Wrecked or otherwise lost.....	5	5,349 3,472	27	3,168 2,961
Broken up or unfit for use.....	13	987 612	40	2,909 10
Converted to store ships (not navigable).....	1	16 8	—	—
Used as light ships, etc.....	—	—	1	10 40
Sold to foreigners.....	2	2,777 1,688	2	57 615
Transferred to United Kingdom.....	—	—	—	—
Transferred to British possessions.....	1	276 161	3	678 236
New registers	—	—	8	239 814
Tonnage alterations, without reregistry.....	—	—	—	—
Totals	22	9,405 5,941	81	7,625 7,537

Orders for Steel Cargo Steamships for Canadian Government Merchant Marine Ltd.

The following is a complete list of steel cargo steamships which the Dominion Marine Department has been authorized, by order in council, to place orders for, and which orders are to be carried out. The figures given in the column headed "Long tons d.w." and which are preceded by an asterisk (*) show the total deadweight capacities as determined after the ships have been completed. The other figures in that column, not preceded by an asterisk, show the approximate total deadweights, subject to modification as they may vary above or below the figures given and as may be ascertained after the ships are completed, and of course, the total prices will vary accordingly.

The following contractions are used in the column giving the type of the vessels to be built: s.d., single deck; 2.d., two deck; 3.d., three deck; lake, lake type; p. poop; b., bridge; f'c's'le, forecastle.

Contract	Contract date	Name	Builder	Yard no.	Long tons d.w.	Price per ton d.w.	Total price	Type	Classification	Speed knots	Keel laid	Launched	Delivered.
1	Mar. 4, 1918	Canadian Voyageur	Canadian Vickers Ltd.	66	*4,575	\$207.	\$ 947,025	S.d., p., b. and f'c's'le.....	Lloyd's	11	June 11, 1918	Nov. 23, 1918	Feb. 22, 1919
2	May 22, 1918	Canadian Pioneer	"	67	*8,408	180.	1,513,440	2.d., p., b and f'c's'le.....	"	11	July 17, 1918	Dec. 3, 1918	May 9, 1919
3	May 18, 1918	Canadian Warrior	Collingwood Shipbuilding Co.	61	*3,995	205.	818,975	Lake, s.d., p., b. and f'c's'le	Bri. Corp.	9	Not stated	Dec. 21, 1918	Apr. 26, 1919
4	Mar. 15, 1918	Canadian Volunteer	Wallace Shipyards Ltd.	100	4,485	207.	928,395	S.d., p., b. and f'c's'le.....	Lloyd's	11	Oct. 1, 1918	Apr. 5, 1919	June 19, 1919
5	Nov. 25, 1918	Canadian Trooper	"	106	4,540	217.	985,180	S.d., p., b. and f'c's'le.....	"	11	Nov. 15, 1918	May 31, 1919	Aug. 7, 1919
6	Nov. 25, 1918	Canadian Aviator	"	101	5,100	210.	1,071,000	S.d., p., b. and f'c's'le.....	"	11	Apr. 5, 1919	Oct. 9, 1919	Nov. 15, 1919
7	Nov. 25, 1918	Canadian Raider	"	102	5,100	210.	1,071,000	S.d., p., b. and f'c's'le.....	"	11	May 31, 1919	Dec. 11, 1919	Jan. 17, 1920
10	July 5, 1918	Canadian Recruit	Collingwood Shipbuilding Co.	62	*3,964	205.	812,620	Lake, s.d., p., b. and f'c's'le	Bri. Corp.	9	June 3, 1918	May 3, 1919	June 7, 1919
11	Oct. 17, 1918	Canadian Signaller	"	63	3,990	205.	817,950	Lake, s.d., p., b. and f'c's'le	"	9	Jan. 16, 1919	June 28, 1919	Aug. 30, 1919
12	Oct. 17, 1918	Canadian Gunner	"	64	3,990	205.	817,950	Lake, s.d., p., b. and f'c's'le	"	9	Feb. 10, 1919	Oct. 4, 1919	Nov. 6, 1919
13	Aug. 9, 1918	Canadian Settler	Tidewater Shipbuilders Ltd.	5	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	Lloyd's	11	Jan. 8, 1919	Sept. 20, 1919	Dec. 2, 1919
14	Aug. 9, 1918	Canadian Rancher	"	6	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Jan. 10, 1919	Nov. 1, 1919	Dec. 27, 1919
15	Jan. 24, 1919	Canadian Fisher	"	7	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Sept. 20, 1919	.....	.....
16	Jan. 24, 1919	Canadian Forester	"	8	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Nov. 1, 1919	.....	.....
17	Sept. 4, 1918	Canadian Trapper	Davie Shipbuilding & Repairing Co.	459	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Mar. 11, 1919	Oct. 9, 1919	.....
18	Sept. 4, 1918	Canadian Hunter	"	460	5,100	200.	1,020,000	S.d., p., b. and f'c's'le.....	"	11	Mar. 28, 1919	.....	.....
19	Sept. 4, 1918	Canadian Trader	Port Arthur Shipbuilding Co.	39	*3,341	205.	684,905	Lake, s.d., p., b. and f'c's'le	"	9	Dec. 9, 1918	May 5, 1919	July 18, 1919
19a	Mar. 1, 1919	Canadian Adventurer	"	41	*3,408	210.	715,680	Lake, s.d., p., b. and f'c's'le	"	9	Mar. 31, 1919	Sept. 8, 1919	Oct. 29, 1919
20	Sept. 4, 1918	Canadian Sailor	"	40	*3,357	205.	688,185	Lake, s.d., p., b. and f'c's'le	"	9	Dec. 10, 1918	May 31, 1919	Aug. 7, 1919
20a	Mar. 1, 1919	Canadian Sower	"	42	*3,405 3/4	210.	715,207.50	Lake, s.d., p., b. and f'c's'le	"	9	Mar. 31, 1919	Oct. 9, 1919	Nov. 18, 1919
21	Sept. 13, 1918	Canadian Mariner	Halifax Shipyards Ltd.	1	8,390	195.	1,636,050	2.d., p., b and f'c's'le.....	"	10	Feb. 24, 1919	.....	.....
22	Sept. 13, 1918	Canadian Explorer	"	2	8,390	195.	1,636,050	2.d., p., b and f'c's'le.....	"	10	Mar. 15, 1919	.....	.....
23	Oct. 11, 1918	Canadian Navigator	Canadian Vickers Ltd.	73	4,575	215.	983,625	S.d., p., b. and f'c's'le.....	"	11	Jan. 22 1919	Oct. 18, 1919	Nov. 22, 1919
24	Oct. 11, 1918	Canadian Ranger	"	68	*8,382	188.	1,575,816	2.d., p., b and f'c's'le.....	"	11	Aug. 26, 1918	Apr. 19, 1919	May 23, 1919
25	Oct. 11, 1918	Canadian Seigneur	"	69	*8,391	188.	1,577,508	2.d., p., b and f'c's'le.....	"	11	Nov. 30, 1918	May 7, 1919	Aug. 14, 1919
26	Oct. 11, 1918	Canadian Miller	"	70	8,390	188.	1,577,320	2.d., p., b and f'c's'le.....	"	11	Dec. 2, 1918	Aug. 16, 1919	Sept. 24, 1919
27	Oct. 11, 1918	Canadian Spinner	"	71	*8,393	188.	1,577,884	2.d., p., b and f'c's'le.....	"	11	Apr. 23, 1919	Nov. 8, 1919	Dec. 6, 1919
28	Oct. 11, 1918	Canadian Planter	"	72	8,390	188.	1,577,320	2.d., p., b and f'c's'le.....	"	11	May 10, 1919	Nov. 22, 1919	Dec. 27, 1919
29	Jan. 24, 1919	Canadian Armourer	Harbor Marine Co. Ltd.	1	8,390	198.	1,661,220	2.d., p., b and f'c's'le.....	"	11	July 14, 1919	.....	.....
30	Jan. 24, 1919	Canadian Composer	"	2	8,390	198.	1,661,220	2.d., p., b and f'c's'le.....	"	11	Aug. 9, 1919	.....	.....
31	Dec. 11, 1918	Canadian Beaver	Collingwood Shipbldg. Co., Kingston	15	3,990	205.	817,950	Lake, s.d., p., b. and f'c's'le	Bri. Corp.	9	Apr. 7, 1919	Dec. 10, 1919	.....
32	Mar. 1, 1919	Canadian Runner	Port Arthur Shipbuilding Co.	43	4,575	215.	983,625	S.d., p., b. and f'c's'le.....	Lloyd's	10 1/2	Aug. 29, 1919	.....	.....
33	Mar. 1, 1919	Canadian Carrier	"	44	4,575	215.	983,625	S.d., p., b. and f'c's'le.....	"	10 1/2	Aug. 29, 1919	.....	.....
34	Nov. 22, 1918	Canadian Importer	J. Coughlan & Sons	11	8,390	198.	1,661,220	2.d., p., b and f'c's'le.....	"	11	Apr. 26, 1919	Dec. 6, 1919	Feb. 5, 1920
35	Nov. 22, 1918	Canadian Exporter	"	12	8,390	198.	1,661,220	2.d., p., b and f'c's'le.....	"	11	May 3, 1919	Dec. 27, 1919	.....
36	Nov. 22, 1918	Canadian Inventor	"	13	8,390	198.	1,661,220	2.d., p., b and f'c's'le.....	"	11	July 24, 1919	Jan. 24, 1920	.....
37	Nov. 22, 1918	Canadian Inspector	"	14	8,390	198.	1,661,220	2.d., p., b and f'c's'le.....	"	11	Sept. 26, 1919	Feb. 24, 1920	.....
38	Dec. 10, 1918	Canadian Cruiser	Halifax Shipyards Ltd.	3	10,500	197.50	2,073,750	3.d., p., b and f'c's'le.....	"	12	Oct. 2, 1919	.....	.....
39	Dec. 10, 1918	Canadian Constructor	"	4	10,500	197.50	2,073,750	3.d., p., b and f'c's'le.....	"	12	Oct. 6, 1919	.....	.....
40	Mar. 31, 1919	Canadian Sealer	Nova Scotia Steel & Coal Co.	5	2,800	210.	588,000	S.d., p., b. and f'c's'le.....	"	8 1/2	Mar. 27, 1919	Oct. 8, 1919	Dec. 20, 1920
41	Mar. 31, 1919	Canadian Miner	"	6	2,800	210.	588,000	S.d., p., b. and f'c's'le.....	"	8 1/2	Mar. 31, 1919	.....	.....
42	Feb. 21, 1919	Canadian Reaper	Prince Rupert Dry Dock & Eng. Co.	1	8,390	198.	1,661,220	2.d., p., b and f'c's'le.....	"	11	Sept. 27, 1919	.....	.....
43	Feb. 21, 1919	Canadian Thrasher	"	2	8,390	198.	1,661,220	2.d., p., b and f'c's'le.....	"	11	Oct. 20, 1919	.....	.....
44	Jan. 23, 1919	Canadian Otter	British American Shipbuilding Co.	4	4,575	215.	983,625	S.d., p., b. and f'c's'le.....	Bri. Corp.	10	Mar. 29, 1919	.....	.....
45	Jan. 23, 1919	Canadian Squatter	"	5	4,575	215.	983,625	S.d., p., b. and f'c's'le.....	"	10	July 14, 1919	.....	.....
46	Sept. 11, 1919	Canadian Farmer	Collingwood Shipbuilding Co.	65	3,990	180.	718,200	Lake, s.d., p., b., and f'c's'le	Lloyd's	11	Sept. 3, 1919	Dec. 27, 1919	.....
47	Sept. 11, 1919	Canadian Observer	"	66	3,990	180.	718,200	Lake, s.d., p., b. and f'c's'le	"	11	Sept. 12, 1919	.....	.....
48	Sept. 2, 1919	Canadian Artificer	Dominion Shipbuilding Co.	10	3,500	180.	630,000	Lake, s.d., p., b. and f'c's'le	"	11	Nov. 8, 1919	.....	.....
49	Sept. 2, 1919	Canadian Engineer	"	11	3,500	180.	630,000	Lake, s.d., p., b. and f'c's'le	"	11	Nov. 8, 1919	.....	.....
50	Sept. 18, 1919	Canadian Victor	Canadian Vickers Ltd.	77	8,390	170.	1,426,300	2.d. p., b. and f'c's'le.....	Lloyd's	11	Dec. 10, 1919	.....	.....
51	Sept. 18, 1919	Canadian Conqueror	"	78	8,390	170.	1,426,300	2.d. p., b. and f'c's'le.....	"	11	.....	.....	.....
52	Sept. 18, 1919	Canadian Commander	"	79	8,390	170.	1,426,300	2.d. p., b. and f'c's'le.....	"	11	.....	.....	.....
53	Sept. 18, 1919	Canadian Leader	"	80	8,390	170.	1,426,300	2.d. p., b. and f'c's'le.....	"	11	.....	.....	.....
54	Feb. 26, 1920	.....	Midland Shipbuilding Co.	10	3,990	180.	718,200	Lake, s.d., p., b. and f'c's'le	Lloyd's	11	.....	.....	.....
.....	.....	.....	Wallace Shipyards Ltd.	103	8,390	167.50	1,405,325	2.d. p., b. and f'c's'le.....	"	11	.....	.....	.....
.....	.....	.....	"	104	8,390	167.50	1,405,325	2.d. p., b. and f'c's'le.....	"	11	.....	.....	.....
.....	.....	.....	Collingwood Shipbuilding Co.	.....	3,890	182.50	709,925	Lake, s.d., p., b. and f'c's'le	Lloyd's	11	.....	.....	.....
.....	.....	.....	Collingwood Shipbldg. Co., Kingston	.....	3,890	185.50	709,925	Lake, s.d., p., b. and f'c's'le	"	11	.....	.....	.....
.....	.....	.....	Nova Scotia Steel & Coal Co.	8	2,800	190.	532,000	2.d. p., b. and f'c's'le.....	"	8 1/2	.....	.....	.....
.....	.....	.....	Davie Shipbuilding & Repairing Co.	476	8,390	167.50	1,405,325	2.d. p., b. and f'c's'le.....	"	11	.....	.....	.....
.....	.....	.....	Port Arthur Shipbuilding Co.	45	3,890	182.50	709,925	Lake, s.d., p., b. and f'c's'le	"	11	.....	.....	.....
.....	.....	.....	J. Coughlan & Sons	20	8,390	167.50	1,405,325	2.d. p., b. and f'c's'le.....	"	11	.....	.....	.....
.....	.....	.....	"	21	8,390	167.50	1,405,325	2.d. p., b. and f'c's'le.....	"	11	.....	.....	.....

383,519 3/4 \$73,022,995.50

Ocean, Coast, Lake and River Steamship Officers for 1920.

The following appointments made by Canadian companies engaged in navigation, for their various steamships and tugs, have been reported to Canadian Railway and Marine World. The first column contains the names of the ships, the second those of the captains, and the third those of the chief engineers:

Algoma Central Steamship Line, Sault Ste. Marie, Ont.		
Agawa	M. A. Livingstone	J. L. Smith
Home Smith	A. McIntyre	D. McLeod
J. Frater Taylor	J. D. Montgomery	W. T. Rennie
W. C. Franz	W. C. Jordan	A. M. MacInnes
Bathurst Lumber Co., Bathurst, N.B.		
Betty B.	A. Hains	R. Kane
Nipisiguit	F. Curwin	P. Adams
Peggy L.	E. Chamberlain	A. Lavigne
Canada Atlantic Transit Co., Montreal.		
Arthur Orr	J. Simons	D. E. Mance
Kearsarge	N. Jaenke	F. Walker
Canada Steamship Lines Ltd., Montreal.		
Belleville	J. J. Farrell	G. A. Sauve
Bickerdike	T. H. Johnston	H. W. Fletcher
Cadillac	W. Beatty	H. Myler
Cayuga	C. J. Smith	W. Taylor
Chippewa	W. Malcolm	E. A. Prince
City of Hamilton	O. Patenaude	W. Dungan
City of Ottawa	J. L. Baxter	John Kennedy
Collingwood	P. McKay	H. J. Jack
Corona	B. A. Bongard	Joe Kennedy
E. B. Osler	J. H. Hudson	R. R. Foote
Emperor	D. W. Burke	G. N. Smith
Fairfax	M. Heffernan	F. Patterson
Haddington	R. J. Wilson	A. E. Kennedy
Ionic	A. Wilson	A. E. Crosthwaite
J. H. G. Hagarty	G. W. Pearson	C. Robertson
Kingston	A. E. Stinson	G. MacDonald
Longueuil	H. Mandeville	H. Noel
Macassa	F. J. Corson	J. A. Gunn
Maplegrove	H. Brian	C. Gray
Maplehill	H. A. Leaney	W. Keith
Martian	R. McIntyre	J. B. McLaren
Midland King	N. McLennan	C. Leriche
Midland Prince	A. B. McIntyre	J. A. Pickard
Modjeska	J. Henderson	.....
Montreal	F. X. La France	N. Beaudoin
Murray Bay	W. Gagne	O. Bonin
Omaha	K. LaRush	John Holler
Quebec	.....	J. Matte
Rapids King	G. Batten	W. Hazlett
Rapids Prince	S. Putnam	G. M. Hazlett
Saguenay	J. Simard	G. Gagnon
Sarnian	R. Pyette	I. J. Boynton
Seguin	W. Brian	F. A. McCauley
Sir Trevor	Dawson	H. Hinslea
Stadacona	G. H. Page	N. L. Shay
Syracuse	.....	J. A. Boulanger
T. P. Phelan	E. J. Shannon	T. H. Hazlett
Three Rivers	.....	G. Gagnon Jr.
Toiler	W. H. Montgomery	E. Scott
Toronto	E. A. Booth	J. E. Readman
W. D. Matthews	A. F. MacLennan	W. Reid
W. Grant Morden	C. E. Robinson	Jas. McGregor
Wyoming	E. Walkinshaw	J. Kirk
Canadian Government Merchant Marine Ltd., Montreal.		
Aviator	H. S. Hilton	J. F. Brown
Canadian	.....	.....
Exporter	W. Bradley	H. J. Robinson
Canadian	.....	.....
Importer	A. O. Cooper	J. D. Robinson
Canadian Miller	J. G. Randell	J. M. Roche
Canadian	.....	.....
Navigator	E. C. Sears	R. Downie
Canadian Pioneer	T. R. Coffin	P. C. Bennett
Canadian Planter	.....	J. Young
Canadian Raider	R. Winter	M. Honour
Canadian	.....	.....
Rancher	W. Bradley	.....
Canadian Ranger	A. L. Starratt	W. D. McGregor
Canadian Recruit	P. J. Murphy	W. Byers
Canadian Sailor	W. E. Baker	A. Cunningham
Canadian	.....	.....
Seigneur	F. Ferguson	J. Gladstone
Canadian Settler	M. Robertson	S. Evans
Canadian	.....	.....
Signaller	J. E. Faulkner	F. C. Brown
Canadian Sower	F. Nelson	L. Cunningham
Canadian	.....	.....
Spinner	J. Reith	J. R. Pringle
Canadian Trader	J. Murray	C. Thompson
Canadian	.....	.....
Trooper	R. J. Fisher	F. W. Wilson
Canadian	.....	.....
Volunteer	.....	J. Campbell
Canadian	.....	.....
Voyageur	J. D. McKenzie	W. G. Beaver
Canadian	.....	.....
Warrior	C. R. Bissett	T. Hoey
Canadian National Railways, Montreal.		
Thomas J.	.....	.....
Drummond	T. J. Davies	A. F. Hamelin
J. A. McKee	J. Lintlop	J. Cann
Sheba	J. C. Shaw	H. McNichol

Canadian National Rys., Vancouver, B.C.		
Canora	J. Brown	J. E. Blackaller
Germania	J. Colborne	P. Thorp
Sebastian	J. McKiernan	D. Martin
Canadian Pacific Car and Passenger Transfer Co., Prescott, Ont.		
Charles Lyon	W. Henry	L. Black
Canadian Pacific Ocean Services Ltd., Montreal.		
Batsford	W. Henderson	J. Jamieson
Corsican	A. Rennie	J. R. Nelson
Dunbridge	A. Stewart	A. Clark
Empress of Asia	A. J. Hailey	J. Lamb
Empress of Britain	G. Webster	A. E. Philp
Empress of France	E. Cook	R. Wilson
Empress of Japan	W. D. Hopercroft	D. G. R. Smith
Empress of Russia	A. Robinson	W. J. P. Davies
Grampian	G. Hamilton	H. G. Donald
Holbrook	A. H. Sargent	A. Ritchie
Mattawa	H. Lewis	C. W. Hall
Melita	H. Parry	R. G. Hughes
Metagama	J. Turnbull	E. MacFadyen
Methven	H. James	E. T. Painter
Minnedosa	G. C. Evans	E. H. Stanley
Montcalm	E. Landy	A. McLellan
Monteagle	A. J. Hosken	W. H. Frouse
Montezuma	A. H. Clews	W. H. Vine
Mottisfont	J. McDonald	T. Heggie
Pretorian	J. Hall	J. S. Cummings
Sardinian	R. McKillop	R. S. Cragg
Scandinavian	E. Griffiths	J. E. Thearle
Scotian	W. P. Hains	J. Orme
Sicilian	H. Latta	W. Stark
Tunisian	C. W. Hodder	J. Cassidy
Victorian	.....	.....
War Beryl	A. Ogilvie	B. R. Hood
War Peridot	J. N. Griffiths	H. Craig
Canadian Pacific Ry., Bay of Fundy Service.		
Empress	A. MacDonald	J. W. Pendrith
Canadian Pacific Ry., Detroit River Car Ferries.		
Michigan	R. Brown	C. A. Sullivan
Ontario	H. Farrow	F. Merrill
Canadian Pacific Ry., British Columbia Lake and River Service, Nelson, B.C.		
Hosmer	N. McKinnon	P. H. Pearse
Kuskanook	L. McKinnon	J. G. Cameron
Minto	W. H. Wright	N. Hawthorne
Moyie	F. L. Orr	J. Donaldson
Naramata	J. B. Weeks	T. W. Bracewell
Nasookin	W. Seaman	T. F. McKechnie
Sandson	M. P. Reid	J. P. Sutherland
Sicamous	J. A. McDonald	H. Biggan
Slocan	W. Kirby	T. C. I'Anson
Valhalla	J. Ferguson	D. McLeod
Whatshan	W. J. Fraser	G. E. Lodge
Canadian Pacific Ry., Great Lakes Steamship Service.		
Alberta	John McIntyre	C. Butterworth
Assiniboia	Jas. McConnell	A. A. Cameron
Athabasca	M. McKay	G. Rae
Keewatin	M. McPhee	W. Louis
Manitoba	F. J. Davis	G. A. Adam
Central Railway Co. of Canada Ltd., Montreal.		
Empress	A. Blondin	.....
Cape Breton Electric Co., Sydney, N.S.		
Electronic	I. H. Lewis	E. H. Hanson
Hygeia	A. McLeod	J. Cogan
Peerless	G. Dicks	D. Reid
Chicago, Duluth and Georgian Bay Transit Co., Chicago, Ill.		
North American	R. H. Nutting	H. Hawkens
South American	E. E. Taylor	J. F. Burtz
Cie. Canadienne Transatlantique, Montreal.		
Bilbster	W. H. Venning	J. A. Turner
Iver Heath	G. Green	J. Williamson
Kamarina	F. Scott	B. Thomas
Lord Dufferin	J. C. McCarty	A. Clarke
Wisley	J. Tregarthen	R. H. Howes
Hugh Cann and Sons, Yarmouth, N.S.		
Keith Cann	A. L. MacKinnon	J. B. Greig
La Tour	F. E. Smith	J. C. Cumming
Mary H. Cann	E. F. Peters	H. L. Goodwin
Percy Cann	I. A. Banks	J. Nixon
Robert G. Cann	W. E. Morris	B. A. Lumsden
Wanda	F. L. Nickerson	F. Hitchen
Crystal Stream Steamship Co., St. John, N.B.		
D. J. Purdy	John Gilerist	H. Allen
Majestic	H. Crabb	W. Hurdon
Dartmouth Ferry Commission, Dartmouth, N.S.		
Chebucto	M. F. Murphy	C. E. Pearce
.....	W. Myers	.....
Dartmouth	F. Williams	W. Case
.....	.....	J. Clark
Halifax	C. A. Ozon	S. Stevenson
.....	.....	C. Shortt
Dominion Transportation Co., Sault Ste. Marie, Ont.		
Caribou	A. A. Batten	J. W. alters
Manitou	N. J. McCoy	.....
Grand Trunk Ry., Detroit River Car Ferries.		
Great Western	M. Bausette	W. Balsam, Jr.
Huron	O. Lalonde	A. Cook
Lansdowne	John Jackson	W. Balsam

Grand Trunk Pacific Steamship Co., Vancouver, B.C.		
Lorne	J. McKernan	A. S. Cameron
Prince Albert	H. L. Roberson	R. Knox
Prince George	D. Donald	R. Bell
Prince John	W. S. Morehouse	D. H. Cochrane
Prince Rupert	D. Mackenzie	A. S. Munro
Tillamook (motorship)	E. Thornton	C. W. Miller
Grand Trunk Ry., Wabash Ry., Detroit River Car Ferries.		
Detroit	F. A. Huntoon	H. Loury
Transfer	G. W. Honner	W. Taylor
Transport	W. Nowell	F. A. Robinson
Great Lakes Transportation Co., Midland, Ont.		
Glenbrae	R. Burke	R. Knight
Glencairn	B. Garvie	John Gilbert
Glenfinnan	W. Taylor	J. Silverthorne
Glenisle	J. Tindall	P. Eagles
Glenlivet	M. Stalker	J. A. McChristie
Glenlyon	A. A. Hudson	D. Sinclair
Glenorchy	F. Burke	G. Price
Glenushee	W. A. Lavigne	F. Goodwin
Glenstriven	.....	E. Hurl
Gulf of St. Lawrence Shipping and Trading Co., Quebec, Que.		
Champlain	A. Fournier	J. Costin
Guide	A. Caron	J. Bernier
Labrador	A. Dube	J. Ruel
Lady Evelyn	J. Campbell	J. Boulanger
George Hall Coal Co. of Canada, Montreal.		
Compton	E. Groulx	G. Fitzpatrick
Florence	V. Gendron	S. Legendre
Fred Meurcur	W. Mills	H. Lamoureux
J. H. Hackett	J. Thibault	T. Frigere
James	.....	.....
W. Follette	W. Liddell	M. J. McFaul
John	.....	.....
B. Ketchum	W. J. Jewitt	T. Normandeau
John Rugee	J. B. Gamache	O. D. Thurston
Lehigh	W. H. Ransom	F. A. Collier
Margaret	.....	.....
Hackett	M. Allison	O. Croteau
Robt. R. Rhodes	J. B. Leboeuf	T. Toupin
Rockferry	C. A. Mahoney	A. Carrier
Senator	.....	.....
Derbyshire	R. Chatel	U. Hamelin
Halifax and Canso Steamship Co., Halifax, N.S.		
Scotia	J. Cooper	C. B. Scott
W. Hanna & Co., Port Carling, Ont.		
Mink	W. H. McCulley	.....
Newminko	J. J. McCulley	S. W. Lambert
Huntsville Lake and Bays and Lake Simcoe Navigation Co., Huntsville, Ont.		
Algonquin	W. N. Sangster	J. T. Smith
Iroquois	J. St. Amour	E. E. Goldthorpe
Mohawk Belle	U. P. Tinkiss	W. G. Murray
Phoenix	J. T. Burke	H. Cookman
Ramona	A. T. Corbett	R. Robertson
Imperial Oil Ltd., Toronto.		
Imperial	G. Mackay	E. Brishin
Imperoyal	D. Sutherland	J. P. Davidson
Impoco	W. G. Tudor	E. Jones
Icolite	C. H. Harmanson	H. V. Welch
Iocoma	H. C. Mimmis	C. Arnberg
Reginolite	W. R. Smelter	J. G. Ellis
Royalite	F. F. Foote	G. H. Stallworthy
Sarnolite	A. Geddes	A. McLaren
International Transit Co., Sault Ste. Marie, Ont.		
Algoma	M. Griffith	S. Burgess
Keystone Transportation Co., Montreal.		
Keybell	L. Beupre	R. J. Mutchmore
Keynor	W. V. Smith	J. M. Robertson
Keyport	G. Bunting	G. Jarrell
Keyvive	John Guy	G. Baker
Keywest	A. Barrett	A. Horton
La Have Steamship Co., West La Have, N.S.		
Tussle	G. D. Pentz	F. Gregg
Lake Erie Navigation Co., Walkerville, Ont.		
Marquette and Bessemer No. 1.	James Patterson	H. Culp
Leonard Steam Trawlers Ltd., Montreal.		
Baleine	G. Kristianson	W. B. McNitt
Magagnetawan River and Lake Steamboat Co., Burks Falls, Ont.		
Armour	W. M. Kennedy	R. Johnson
Glenada	E. Pink	J. Kennedy
Mike	T. Kennedy	M. Pritchard
Wanita	W. Keatch	C. McArthur
Mandy Mining Co., Pas., Man.		
City of Prince	Albert John MacLeod	W. Taylor
Minasin	S. Simpson	H. Carefoot
Notin	H. Parker	E. Russell
Sam Brisbin	V. Walker	J. Nicholls
Maritime Steamship Co., Blacks Harbor, N.B.		
Connors Bros.	E. H. Warnock	G. W. Cowie
Marquette and Bessemer Dock and Navigation Co., Walkerville, Ont.		
Marquette and Bessemer No. 2.	J. Vanbuskirk	J. J. Stevens
Memphremagog Navigation Co., Georgeville, Que.		
Anthemis	A. Clarke	F. Murray

Midland Transportation Co., Midland, Ont.
 Lucknow J. Rutherford J. Gilbert
 Luckport C. Lynn J. Bellmore

Montreal Transportation Co., Montreal.
 Advance J. V. Norris G. W. Clark
 Alert F. Mahaffey J. Anderson
 Arabian W. A. Blackwell G. Stokes
 Atikokan J. A. Brown E. Boucher
 Cataract J. J. Lawrence M. J. Sherman
 D. G. Thomson G. Willard H. Paus
 Escort W. Wright W. Bush
 Glenmount W. Brown G. Fleming
 H. F. Bronson Jas. Cochrane T. Nichols
 India N. Menard J. Lamoureux
 Joyland H. A. Patterson L. E. Spencer
 Manola T. S. Patterson J. McMillen
 Mary P. Hall A. Lepine T. Brabant
 Niagara W. A. Tullock J. A. Hawman
 Otland A. N. Hogue S. Ashie
 R. G. A. Weaver H. Degroessillier G. Haines
 Simla C. E. Coons M. S. Symons
 Stormount E. Smith A. Stilson
 Valcartier Jas. Reoch W. E. Spencer
 Yimount J. A. Fergusson F. Moyle
 Westmount J. F. Davis F. Norris
 Windsor John Doyle A. Dunn

Niagara Ferry and Transportation Co., Erie Beach Amusements Ltd., Buffalo, N.Y.
 Chicora J. P. Fontaine E. E. Chapin
 Orleans D. C. Christie T. Ralfe

North American Bent Chair Co., Owen Sound, Ont.
 Michipicoten G. Waugh John Barrett

Northern Trading Co., Edmonton, Alta.
 Northland Echo L. R. Morton J. A. Patterson
 Northland Trader E. L. Davis S. T. Hubbard

Ontario Car Ferry Co., Montreal.
 Ontario No. 1.....S. McCaig D. L. Smyth
 Ontario No. 2.....F. D. Forrest J. A. Nicoll

Ontario Transportation and Pulp Co., Thorold, Ont.
 Lindere H. Redfern E. W. Sparling
 Mary H. Boyce P. J. Shaw A. Jenkins

P. Q. Towing Co., Dalhousie, N.B.
 Grande Ligne A. Nadeau

Pacific Salvage Co., Victoria, B.C.
 Alaskan J. McLeod G. Wilson
 Algerine J. M. Hewison T. W. Allan

Pembroke Transportation Co., Pembroke, Ont.
 Oiseau J. Tessier J. Trottier

Port Huron and Sarnia Ferry Co., Port Huron, Mich.
 City of Cheboygan G. Waugh M. Jamieson
 Hiawatha E. M. Thomas H. Myers
 O. D. Conger U. S. Major R. A. Campbell

Prescott and Ogdensburg Ferry Co., Prescott, Ont.
 Ferdinand E. P. McGannon W. J. Jento
 Miss Vandenberg H. Black F. Lavery
 S. J. Delaney

Quadra Steamship Co., Britannia Beach, B.C.
 Quadra M. F. Cutler R. C. W. Macquarrie

Quebec Salvage and Wrecking Co., Quebec, Que.
 Lord Strathcona O. Scherrer R. Casey

Rideau Steamboat Co., Ottawa, Ont.
 Wanakewan G. Depencier A. W. Campsall

River Lievre Navigation Co., Buckingham, Que.
 George Bothwell G. N. Bothwell G. Bothwell

Ross Navigation Co., Pas, Man.
 Nipawin A. A. Deacon W. Venables

Severn River and Lake Couchiching Navigation Co., Orillia, Ont.
 Modello T. W. Wood H. A. Wood

Sparrow Lake Steamer Line, Sparrow Lake, Ont.
 Glympse F. Stanton G. T. Stanton

John Tackaberry, Lionshead, Ont.
 Henry Pedwell W. Holler A. Glendinning

City of Three Rivers, Que.
 Le Proges H. Duval A. Frenette

Toronto, Hamilton and Buffalo Navigation Co., Hamilton, Ont.
 Maitland No. 1 J. W. Keeley C. E. Sylvester

Union Steamship Co. of British Columbia, Vancouver, B.C.
 Camosun A. E. Dickson A. Beattie
 Cassiar J. Boden P. J. V. Farina
 Chasina N. Gray J. Maitland
 Cheakamus R. Wilson R. M. Logan
 Chelohsin H. Stacey G. H. Foster
 Chilco H. F. Lawrey A. T. Roy
 Chilliwack C. B. Smith J. Hogan
 Cowichan J. Findlay J. Rodgers
 Cooquitlam G. Gaisford L. P. Thomas
 Venture J. E. Noel C. Arthur

Valley Steamship Co., Annapolis Royal, N.S.
 Granville III B. S. Collins H. Logan

Victoria Navigation Co., Thurso, Que.
 Victoria F. Elliott A. Shaver

Ville Marie Navigation Co., Ville Marie, Que.
 Meteor H. A. Kelly J. E. Sauvageau
 Silverland A. Kelly R. Kelly
 Temiscamingue M. C. Burns E. Vezina

Walkerville and Detroit Ferry Co., Walkerville, Ont.
 Aerial W. Corr J. Roy
 Essex J. E. Rathbun P. McLaren

Webster Steamship Co., Montreal.
 Colin W. J. E. Ouellette A. Godin
 Eric W. T. Marchand E. Sauvageau
 Howard W. J. A. Lepine A. Cote
 Richard W. J. B. Haymond J. T. Brunelle
 Stuart W. E. Tremblay E. Cantin

West Coast Towing and Salvaging Co., Vancouver, B.C.
 Masset A. Brown J. G. Muir
 Moresby H. S. McLellan A. Gill

Western Transport Co., Nanaimo, B.C.
 We Two D. Martin D. D. Mackie

Windsor and Pelee Island Steamship Co., Pelee Island, Ont.
 Pelee J. N. Sheats J. R. Ferguson

United States Shipping and Shipbuilding Notes.

The U.S. Shipping Board announces that its tanker fleet consists of 48 ships of 438,445 d.w. tons.

The U.S. Shipping Board on Mar. 4, withdrew all freight tariffs published thereafter, and left rates in the hands of individual operators of Shipping Board vessels.

The U.S. Shipping Board's Chairman told the Senate Merchant Marine Committee, on Mar. 10, that government operations in shipping business resulted in a net profit of \$166,493,990, up to June 30, 1919.

The U.S. Shipping Board's s.s. Guilford, en route from Norfolk, Va., to Boston, Mass., was reported disabled, 15 miles off Nantuckett, Mar. 7, was later abandoned and reported as a menace to navigation. The officers and crew were taken off by the s.s. Pocahontas, transferred to the U.S. destroyer Dale and taken to Newport, R.I.

The U.S. Shipping Board has, it was announced in Washington, Mar. 4, under consideration the appointment of a Board of Survey to pass upon all questions of repairing cargo ships belonging to the government. Under the proposed plan, operators and managers of shipping board vessels would submit repair jobs for study and expert advice by a board of competent men.

More activity in shipbuilding for private enterprise is claimed for U.S. shipyards. Entirely exclusive of tonnage building for the shipping board, there are 263 ships, aggregating 1,256,573 gross tons in hand for private business interests. The government will complete its programme within the next few months, and the shipbuilding plants expect to remain in a position to meet whatever calls may be made upon them. The present building figure attained in the United States is slightly under the British production of 1918 and about 75% of the output of British yards in 1919. The tonnage of freight being built is given at 620,000 gross, comparing with 588,000 tons of tankers. The U.S. Shipping Board is in possession of about 13,000,000 d.w. tons of ships, the bulk of which is composed of cargo-carriers, the sale of which at low terms is being urged in congress. The increase in private orders for freighters may be taken to indicate that the industrial and trading enterprises prefer to have ships built to their own designs rather than wait to select from a comparatively few types of ready made ships.

The Australian Navigation Act.

It was stated recently that certain sections of the Australian Navigation Act, which was passed in 1914, and held in abeyance during the war, would be proclaimed and go into operation at an early date, and that the proclamation put into effect sections of the act relating to vessels that engage in the Australian coastal trade. These will require that all foreign, British, or Australian ships, which carry passengers or cargo between Australian ports, shall be manned, according to the scale set out in the act, shall pay Australian rates of wages and shall provide for the crew the accommodation that is laid down in the act. Under the act the provisions which govern the coastal trade will be operative also in regard to trade between Australian ports and the territories which come under the Commonwealth's peace conference mandate. Therefore, foreign ships carrying cargo, say, from any Commonwealth port to Rabaul or any other of the ex-German possessions would be affected. The sections in question further set out that ships drawing a subsidy from any government, other than a British or Dominion Government, shall not in any circumstances engage in the coastal trade. It was said that regulations relating to the act were being drafted by the Commonwealth authorities in readiness to be put into operation as soon as the sections of the act come into force.

Since the above was put in type the Commonwealth's Commissioner in New York has announced that he has received the following cablegram from the Australian Government: "Government have decided on account of unsettled conditions of shipping generally to postpone commencement of proclaimed portions Navigation Act from Mar. 2, as originally proposed to some later date, not yet definitely fixed, but not earlier than July 1 next."

Canadian Notices to Mariners.

British Columbia—Chatham Sound, entrance to Prince Rupert Harbor.—Error in position of light on east Kinihan Island; correct position, on north-east extreme of east Kinihan Island, lat. N. 54° 12' 45" Long. W. 130° 23' 45".

British Columbia, Victoria Harbor—On or about April 15, the red sector showing over an arc of 15° from 347° (N. 38° 30' W. mag.) through N. to 2° (N. 23° 30' W. mag.) placed at the west side of the entrance to Victoria harbor, will be removed. Beren island light, in line with the light on the outer end of Ogden point breakwater, clears the western extremity of Brothie ledge.

Lighthouse Board of Canada.—Thos. Robb, Manager and Secretary, Shipping Federation of Canada, has been appointed a member of this board to represent the Atlantic division and take the place of the President of the Shipping Federation. The other members of the board are: A. Johnston, Deputy Minister of Marine, Chairman; B. H. Fraser, Chief Engineer, Marine Department; J. G. Macphail, Commissioner of Lights, Marine Department; V. F. W. Forneret, Superintending Engineer, River St. Lawrence Ship Channel, Marine Department; A. E. Mathews, President, Dominion Marine Association, representing the inland division; J. W. Troup, Manager British Columbia Coast Steamships, C.P.R., representing the Pacific division.

Proposed Navigation and Power Development on St. Lawrence River.

The question of the development of navigation on the St. Lawrence River, by the provision of a deep waterway between Montreal and Lake Ontario, and the incidental development of electric power, which has been discussed in various quarters for several years, and which has been referred to the International Joint Waterways Commission for enquiry and report, came before it at a meeting at Buffalo, N.Y., early in March. The proposals involve the canalization of the river at certain points, and the dredging of a deep channel at others, to enable ocean going vessels to navigate with safety through to Lake Ontario, and, on the completion of the Welland Ship Canal, through to the head of the lakes, without breaking bulk, and also considerable electric power development. The scheme has strong backing, both in Canada and the United States, chiefly from the west, while many interests in the east are either opposed to the plans, or are non-committal.

At different times, for a number of years, various U.S. companies have sought powers to enable them to build dams in the St. Lawrence River to develop electric power, but all such proposals have been strenuously opposed by the marine interests, backed by the Dominion Government, on the ground that they would interfere with the free and safe navigation of the river, and that navigation interests are paramount. In 1918, one of the proposals was renewed, and strongly supported by the U.S. Government, on the ground that the power was required for war time emergencies, and by agreement, it was arranged that such construction should be allowed, purely as a war measure, but nothing of any moment was done, as the war was concluded before any large construction could be carried out. The experience gained during the war, as to the restrictions, and the possibilities of lake to ocean navigation, no doubt caused some action on the part of both governments, and in 1919 they co-operated in the study of the St. Lawrence River, above Montreal, W. J. Stewart, Hydrographer, Naval Service Department, representing Canada, and Col. C. Keller, of the Corps of Engineers, representing the United States. As a result of their work the two governments wrote the International Joint Commission early this year to the following effect:

The Canadian and United States governments, under the provisions of the treaty of Jan. 11, 1909, between the British and U.S. Governments, Article 9, herewith refer certain questions, as set forth below, involving the beneficial use of the waters of the St. Lawrence River, between Montreal and Lake Ontario, in the interests of both countries, and in general, the rights, obligations, or interests of either in relation to the other, or to the inhabitants of the other along their common frontier. It is desired that the said questions be made the basis on an investigation to be carried out by the International Joint Commission, to the end that the commission may submit a report to the two countries, covering the subject matter of this reference, together with such conclusions and recommendations as may be considered pertinent in the premises. The questions follow:

What further improvement in the St. Lawrence River, between Montreal and Lake Ontario, is necessary to make it

navigable for deep draft vessels of either the lake or ocean-going type; what draft of water is recommended; and what is the estimated cost?

In answering this question the commission is requested to consider: (a) Navigation interests alone, whether by the construction of locks and dams in the river; by side canals with the necessary locks; or by a combination of the two. (b) The combination of navigation and power interests to obtain the greatest beneficial use of the waters of the river.

Which of the schemes submitted to the government or other engineers is preferred and why?

Under what general method of procedure and in what general order shall the various physical and administrative features of the improvement be carried out?

Upon what basis shall the capital cost of the completed improvement be apportioned to each country?

Upon what basis shall the costs of operation and maintenance be apportioned to each country?

What method of control is recommended for the operation of the improved waterway to secure its most beneficial use?

Will regulating Lake Ontario increase the low water flow in the St. Lawrence Ship Channel below Montreal, and if so, to what extent and at what additional cost?

To what extent will the improvement develop the resources, commerce and industry of each country?

What traffic, both coming and outgoing, in kind and quantity, is likely to be carried, upon the proposed route both at its inception and in the future? Consideration to be given not only to present conditions, but to probable changes therein resulting from the development of industrial activities due to availability of large quantities of hydraulic power?

Pending the receipt of plans, estimates and other engineering data necessary for the final consideration of this reference, the commission is requested to hold such public hearings as may be considered necessary or advisable in order to obtain all information bearing, directly or indirectly, on the physical, commercial and economic feasibility of the project as a whole.

To facilitate the preparation of the desired report each government will from its official engineering personnel, appoint an engineer with full authority to confer with a similar officer of the other government for the purpose, first, of acquiring, each in his own country, such data as may be found necessary to supplement the existing engineering data and surveys, and, second, of preparing complete outline plans for and estimates of the cost of the proposed improvement, including the value of all property, easements, damages and rights connected therewith. These plans and estimates are to be submitted to the commission as soon as practicable, but not later than one year from the date of appointment, and the commission is requested to forward to the two governments its final report, with recommendation, not later than three months thereafter.

The proposal, upon which joint action is desired, is divided into two parts, the improvement of navigation, and the development of electric power. From the

navigation point of view, there is no doubt whatever that the development of the route from the head of the lakes to Montreal, so that vessels might carry grain direct to ocean going ships without breaking bulk, would be a distinct advantage; also, the power development, which might be carried on, incidentally, would be a considerable asset, and so long as this can be achieved without in any way endangering the safe navigation of the St. Lawrence, there is little fear of any great opposition. The international boundary runs from the commencement of the St. Lawrence at Lake Ontario, between Wolfe Island, Ont., and Cape Vincent, N.Y., to Lake St. Francis, opposite River Beaudette, Que., and is under the International Joint Waterways Commission's jurisdiction. Any opposition which has developed in Canada has been aimed solely at the construction of obstructions in the river, which might have a tendency to obstruct navigation, or to cause any decrease in the water levels, which, at certain periods, for many years past, has caused difficulty. Opposition to the proposals, emanating from the U.S., are of an entirely different complexion, and appears to be mainly due to the geographical fact that the Lower St. Lawrence, the only outlet to the ocean, is within Canadian territory, and that, if carried out, the project would to quote an U.S. objection "take the control of the waterway out of the hands of the U.S., and would aid Canada far more than it would benefit any section of the U.S., for it might divert from our own metropolis the commerce which has long been the bulwark of our growth and prosperity."

The chief opposition, so far as the U.S. is concerned, comes from New York State, it being claimed that the Erie barge canal can effectively handle the traffic and provides an efficient and economical means of dealing with the freight situation, between the Great Lakes and the Atlantic, at New York. The New York State Legislature, early in March, passed a resolution condemning the proposals, as being inimical to the state's interests, as well as to those of the U.S. generally, and urging that every possible influence be used with Congress to vote against the project. The western states, as a whole, are heartily in accord with the scheme, and are making strong representations as to the desirability of pushing forward with all possible speed, so that the west may be provided with cheaper transportation between the lakes and the seaboard.

The Canadian members of the Commission, C. A. Magrath, Vice Chairman, H. A. Powell, and Sir William Hearst, took considerable part in the general discussion at the Buffalo hearing, and asked numerous questions. Among Canadian interests represented at the hearing, were the Hydro Electric Power Commission of Ontario, Canadian Deep Waterway and Power Association, Toronto Harbor Commission, Dominion Marine Association, Canada Steamship Lines, Toronto and Hamilton Boards of Trade, and delegates from a number of Ontario municipalities.

The scheme provides for four dams as power concentration centers, located near Morrisburg, Cornwall, at the foot of Lake St. Francis, and below the Lachine Rapids. The two first named would be international, as between Ontario and

New York, and the latter two would pertain to Quebec. Associated with this power development scheme, is the canalization, the dams making the necessary deep water channel, and requiring locks of equal size to those being built in the new Welland Ship Canal, and in addition, a new canal system near Montreal. The cost of the canals is proposed to be apportioned between Canada and the U.S., the question as to whether the latter would be financially responsible for only those parts of the scheme within international waters, or for its portion of the whole, being left over. The expense of the scheme is variously estimated at from \$100,000,000 to \$300,000,000.

The commission intends holding sittings at other points, commencing May 1, to discuss the proposals from various standpoints, and to hear evidence from different localities affected.

In connection with this scheme, the following extracts from the address of the then President of the Canadian Society of Civil Engineers, M. J. Butler, C.M.G., at that society's annual meeting early in 1915, is of interest. "We have as a nation undertaken the task of forcing our outlets against the line of least resistance. The Atlantic seaboard is the outlet for the products of the prairies situated some 1,500 miles inland. Our efforts in building railways with easy curves and grades, the enlargement of our canal system and the improvement of rivers, and particularly of the St. Lawrence route, have but one object of putting a few more cents a bushel into the pockets of the farmers. The enlargement of the Welland Canal will allow the larger type of vessel of 300,000 bush. capacity to pass down Lake Ontario and the St. Lawrence River to within 120 miles of Montreal. Storage elevators will be erected at or near Prescott, and 1,000 ton barges will be towed through the present canal system to Montreal. Ultimately the larger lake vessel will come through to Montreal, as it is quite practicable and within the resources of the country to convert the St. Lawrence into slack water navigation by the building of eight dams with duplicate locks, and, as an incident, develop the greatest water power in the world, aggregating over 4,000,000 h.p., eliminate the ice jams, and make practicable the navigation of the river in winter by the aid of powerful icebreakers. It is a duty which our government may well undertake at the earliest possible moment, to secure a hydrographic and topographic survey of the St. Lawrence, so that accurate estimates of cost may be made and proper regulations may be drawn up, so to regulate proposed power developments owned by private corporations that each may be brought into a component part of the completed whole."

Rescue of Lighthouse Crews.—Senator Boyer enquired in the Senate, Mar. 12, what was the cost of sending a sealing ship from Newfoundland to Labrador, to rescue the crews of the different lighthouses in Belle Isle Strait. Sir Jas. Lougheed replied: "Arrangements were made for this work by the acting Minister of Shipping, St. John's, Nfld., at the request of the Dominion Deputy Minister of Marine. Accounts in connection therewith have not yet come to hand. I have no doubt that at a later date we shall have them." The question was therefore allowed to stand.

Ice Conditions on the Great Lakes.

The second ice report of the season, compiled by the regular and display stations of the U.S. Department of Agriculture's Weather Bureau, and the Canadian Meteorological Service, issued at Detroit, Mar. 16, states that an ice field extends from Duluth to Two Harbors in Lake Superior, and beyond this open water is reported along the north shore to beyond Grand Marais. Ice fields are reported from Apostle Island eastward to Whitefish Bay. There had been some movement in the fields during the week.

The ice conditions in St. Marys River are about the same as the previous week. The ice is very heavy, and covered with snow. In Green Bay the ice fields are unchanged. In Lake Michigan the winds have moved the fields from the west shore and open water is reported from Kewaunee south to Chicago, while on the east shore the fields extend beyond vision from Michigan City to the Straits of Mackinaw.

In Lake Huron, open water is reported off Detour, with ice fields stretching beyond vision from Cheboygan, south to below Thunder Bay Island, and open water from there to below Harbor Beach, and extensive fields over the southern portion.

St. Clair River is open to between Marysville and St. Clair. There is about five miles of open water at the lower end of Lake St. Clair, and Detroit River is open to Lake Erie.

Considerable open water is reported over the western portion of Lake Erie to just west of Cleveland, and from there east to Buffalo fields are extensive, but moving with the winds. In Lake Ontario the fields are apparently confined to the eastern portion.

In comparison with last season there is more ice in all of the lakes. In comparison with the 12-year normal, it is 3 in. below average at Duluth, 4 in. above at Sault Ste. Marie, 8 in. at the Straits, and 11 in. at Escanaba.

Port Arthur, Ont., press dispatch, Mar. 21.—Ice conditions here indicate a late opening of navigation. Tugs, which were stationed 18 miles out, have commenced breaking a channel to Port Arthur, and should reach here by April 1.

House of Commons Committee on Marine and Fisheries.

The House of Commons committee on marine and fisheries for the current session, is comprised as follows: E. K. Spinnery, M.P. for Yarmouth, N.S., chairman, the other members being Messrs Ballantyne, Butts, Caldwell, Cardin, Chisholm, Clark (Bruce), Clements, Duff, Fielding, Gauvreau, Gladu, Hartt, Hay, Lang, Léger, Loggie, Manion, Martin, Munson, McIntosh, McKenzie, McQuarrie, Nicholson (Queens), Papineau, Pelletier, Rowell, Sinclair (Antigonish), Sinclair (Queens, P.E.I.), Stevens, Trahan, Truax, Tudhope, Turgeon and Wigmore. There are 55 members of the committee and the quorum is 10.

Contracts for Marine Public Works. The Dominion Public Works Department has let the following contracts,—renewal of superstructure of part of the eastern breakwater at Collingwood, Ont., York Construction Co. Feb. 27; construction of grain conveyor, St. John, N.B., Grant and Horne, St. John, N.B.; overhauling and repairing of dredge Ajax, British Columbia Marine, Ltd.

The Vancouver Drydock.

As announced in Canadian Railway and Marine World for March, the Dominion Government is entering into a contract with J. Coughlan & Sons, Ltd., under the Drydock Subsidies Act, granting aid in the construction of a drydock and appurtenant works at Vancouver. The company announces that, in addition to the construction of a graving dock on Burrard Inlet, it intends to build large marine repair shops, and a marine railway with all necessary repair units. The entire plant will not be completed for nearly three years, but it is expected that the marine railway and repair shops will be ready for operation about 15 months from the commencement of construction, which was expected to start during March.

The drydock plans, which have been passed by the government, show a dock 750 ft. long overall, and large enough to accommodate any ship that passes through the Panama Canal. It is so designed regarding width, that it can be extended longitudinally when occasion requires, sufficient to provide a length of 1,200 ft. According to specifications, the length of the dock from caisson stop to dead wall will be 725 ft., with an inside length from back sill to dead wall of 700 ft. The clear width at the entrance will be 106 ft. 2½ in. and 100 ft. at the bottom. The width at proper cope level will be 119 ft. with 100 ft. clear from altar at sill level. In preparing foundations for the dock, there will be an excavation of approximately 114,000 cu. yd. of material, of which over 80,000 cu. yd. will be solid rock.

The marine railway will parallel the graving dock and will have a lifting capacity of 3,500 tons, sufficient to handle a ship of 3,800 d.w. tons. The basin of the slipway cradle will be excavated from sandstone, with a length of 750 ft. and a width of 72 ft. The clear depth for the cradle at the lower end will be 18 ft., and the cradle will operate on 4 roller paths. The plant equipment will include a 10 ton locomotive jib crane, a number of smaller hoists, and a 12 ton cylinder yard locomotive of 50 tons capacity.

C. G. S. Simcoe.—The Minister of Marine gave the following information in the House of Commons, Mar. 15, in answer to questions by A. T. Leger, M.P., for Kent., N. B. The C. G. S. Simcoe was built at Newcastle-on-Tyne, Eng., in 1909, her tonnage being gross 913.38, net 437.63. She last underwent overhauling and repairs in Oct., 1917, was a fit ship for ocean navigation, was a seaworthy ship for the purpose which she was put to, and was lost Dec. 7, 1917, southwest of Magdalen Islands, Gulf of St. Lawrence.

Freight Rates to England.—It was announced in New York, Mar. 12, that freight rates on foodstuffs shipped to England on British vessels had been increased 30c per 100 lb., from 45 to 75c. As the British Minister of Food has 300,000,000 lb. of pig in warehouses in America the increase means that the English public will be obliged to pay \$90,000,000 more for them under the new shipping rates.

St. Lawrence River Pilotage.—Both the Dominion Marine Association and the Shipping Federation of Canada are urging the Marine Department to abolish compulsory payment of pilotage dues on the St. Lawrence, but no decision has been announced.

General Shipbuilding Matters Throughout Canada.

The Alma Shipbuilding Co., Ltd., has been incorporated under the New Brunswick Companies Act, with \$24,000 authorized capital and office at Sussex, N. B., to take over the shipbuilding business, heretofore carried on by C. T. White & Son, Ltd., at Alma, N. B., together with all stock in trade, machinery, equipment, etc. The company has power to build, own, navigate and deal in steam and other ships and to carry on business as a common carrier. The incorporators are: M. G. White, H. H. Reid, Sussex, N. B.; J. A. Cleveland, Alma, N. B.

The Collingwood Shipbuilding Co. held its annual meeting at Collingwood, Ont., Mar. 5. The directors for this year are as follows: H. B. Smith, Owen Sound, Ont., President; J. W. Norcross and R. M. Wolvin, Montreal, Vice Presidents; J. S. Leitch, Collingwood, Managing Director; S. Dymont, Barrie, Ont.; H. W. Cowan and F. S. Izard, Montreal. Alex McDougal, Duluth, Minn., was not a candidate for re-election, his place on the board being taken by J. S. Leitch, formerly General Manager.

J. Coughlan and Sons, Vancouver, B. C., which organized its shipbuilding department in 1917, have built 120,400 d.w. tons of steel ships, each of 8,800 d.w. tons. Ten of these were for the British Government, ordered through the Imperial Munitions Board. The firm has also built four steel steamships of 8,100 d.w. tons each for Canadian Government Merchant Marine, Ltd., and is still active on additional orders, which will keep the yards busy for some time. The first ship built was the s.s. Alaska, which was under construction for Norwegian interests at the outbreak of war, and which was eventually taken over on behalf of the British Government and delivered to owner in June, 1918. The business has recently been re-organized as a joint stock company under the title J. Coughlan and Sons, Ltd.

Foundation Co. of British Columbia, Victoria.—Reports as to the future of this company's shipbuilding yards at Victoria are conflicting. It was stated originally that the negotiations which has been proceeding for some time between a representative of French interests and the company for the leasing of the yards to undertake the building of a large number of wooden steamships for French registry, have been broken off, and that the company had given instructions for the dismantling of the plant, which was stated to be proceeding. A Victoria press dispatch of March 11, states that Capt. E. V. Argon, who is conducting negotiations for the French interests, had stated that he was going ahead with the programme and expected to make a definite announcement shortly as to the close of the negotiations, and that he was awaiting the arrival of a French official, when he expected the negotiations would be successfully concluded. It is stated that the French programme covers the building of 40 wooden steamships of a similar type to those built for the British Government under orders from the Imperial Munitions Board, and that this would necessitate the employment of about 2,500 men. It is said that the lease would be arranged for two years, with the option of renewal, and that should the negotiations be successful, the Dominion Government is willing to lease accommodation at Ogden Point for outfitting the ships.

The B. C. Minister of Finance is reported to have stated at Victoria, Mar. 12, that a written application was made for a lease of the portion of the Songhees Indian reserve occupied by the Foundation Co.'s yard, by Capt. E. V. Argon, acting for French interests, and he was informed that the Foundation Co.'s lease had not expired, and had not been terminated, but that upon receipt by the government of satisfactory assurance when he was in a position to carry out his shipbuilding programme, the government would take up the question of terminating the Foundation Co.'s lease and entering into a new lease with him. The Minister also stated that there were two other applications under the government's consideration for portions of the same area.

National Shipbuilding Corporation. Three Rivers Shipyards, Ltd., Division, Three Rivers, Que., as reported in our Feb. issue is building 10 freight steamships for French interests. Two of these, of approximately 300 ft. long, are said to have been ordered by La Societe Maritime Francaise, and four, of 310 ft. long, by La Societe de Gerance et d'Armenant.

Nova Scotia Shipbuilding and Transportation Co., Liverpool, N.S., launched the schooner Manuata March 6, for fishing service. Her dimensions are, length 138 ft., breadth 26 ft., depth of hold 11½ ft. The company is building two other similar vessels for summer delivery.

The Nova Scotia Steel & Coal Co. has received an order for a steel exploring yacht, builder's yard No. 9, for The Baron Bliss, Bahamas, B. W. I. It will be 137 ft. between perpendiculars, 28½ ft. moulded depth, and will be driven by two 250 h.p. Vickers-Petters semi-Diesel oil engines. All the auxiliaries will be electrically driven, including anchor windlass, and capstan.

The company is building a ship, builder's yard No. 10, for its own account, to be delivered in the early spring of 1921. It will be exactly the same as the s.s. Canadian Sealer, already built for Canadian Government Merchant Marine, Ltd., approximately 2,800 d.w. tons, and the two others under contract from the Marine Department, viz: Canadian Miner, now being built, and another one not yet named.

Tidewater Shipbuilders, Ltd., Three Rivers, Que. D. C. McKean, heretofore General Superintendent, National Shipbuilding Corporation, Three Rivers, has been appointed Manager, Tidewater Shipbuilders, Ltd., vice Robt. Duguid.

Victoria (B.C.) Shipowners, Ltd., which was incorporated recently under the British Columbia Companies Act, with \$500,000 authorized capital and office at Victoria, has for its main object the building and operating of four wooden auxiliary powered schooners which are being built at the Cholberg Ship Co.'s yard, at Victoria, under special aid granted by the Dominion Government details of which have been outlined in previous issues. The directors are: J. W. Spencer, C. Hoard, J. O. Cameron, W. Meed, F. B. Pemberton, Capt. H. C. Hansen and Capt. M. D. Harbord.

Wallace Shipyards, Ltd., North Vancouver, B. C., has received from the Dominion Public Works Department a contract for overhauling and repairing the dredge Fruhling (P.W.D. No. 303) at schedule of prices.

British Ministry of Shipping (Canada) Winds up Business.

The British Ministry of Shipping (Canada) ceased its control of Canadian export shipping Mar. 31, and all correspondence relating to its affairs is now addressed to E. M. Raeburn, Director General, British Ministry of Shipping, 165 Broadway, New York. During its existence the ministry practically controlled the export trade of Canada, both inland and overseas, and this was carried on with practically no friction between shippers and carriers, and with a minimum of disturbance of the general business of the country. The following figures show the number of ships cleared from Canadian ports and Portland, Me., between Aug. 25, 1914, and Dec. 31, 1919, during the ministry's control:

1914	40	transports
1915	132	"
1916	362	"
1917	787	transports and freighters
1918	875	"
1919	975	"

During that period the tonnage exported from Canada exceeded 16,000,000 tons of munitions, war material and supplies covering shipments inland as well as overseas.

A report of the British Government's select committee on national expenditure in a white paper issued Jan. 5, pays tribute to the effective and economical administration of the affairs of the Ministry of Shipping, not only in the United Kingdom but in the various outports to which the shipping control was extended. At the outbreak of war, it was considered desirable that the overseas transport should be placed in the hands of a competent organization under control of the Dominion Government, working in conjunction with the Imperial Government, and for this purpose the C.P.R. loaned A. H. Harris, its Special Traffic Representative to the government, and he was appointed Director of Overseas Transport. This continued until Sept. 5, 1918, when a change was made, and the staff hitherto under the Dominion Government, was transferred to the Imperial Government, the organization being known as the British Ministry of Shipping (Canada) with headquarters at Montreal, and consisting of the following: Director General, Sir Arthur Harris; Deputy Director General, W. T. Marlow; Accountant, G. Wood, Ships' Movements and Bunkers, Capt. D. Green-shields; Technical Department, F. Sidgwick; Ocean Transports and Timber, W. A. Wainwright; Ocean Liner Department, G. D. Robinson; Superintendent Inland Transportation, D. O. Wood; Assistant Superintendent Inland Transportation, J. A. Glassford; all of whom were then in C.P.R. service and loaned to the government.

Although the world's tonnage of ocean passenger steamships is now greater than at the outbreak of war in 1914, and is increasing more rapidly than at any former period in maritime history, the losses of trans-oceanic passenger ships have not yet been made good by new construction.

Comeau Navigation Co. Ltd., has been incorporated under the Dominion Companies Act, with \$20,000 authorized capital and office at Montreal, to own and operate steam and other ships, aeroplanes, etc., for the carriage of passengers, mail and general merchandise. The incorporators are: S. H. R. Bush, B. Robinson, C. F. McCaffrey, G. R. Leblanc and T. C. Travers, Montreal.

Mainly About Marine People.

Capt. R. C. Brown, master of the Anchor-Donaldson Line s.s. *Cassandra*, has been appointed by the Montreal Board of Trade as port warden for Montreal, vice, D. Stewart, deceased. He has been in the Anchor-Donaldson Line's Canadian service for the past 22 years, 15 of which have been spent as master of the s.s. *Cassandra*.

Duncan D'Eyncourt Cooper, whose appointment as General Agent, Import and Export, Canada Steamship Lines, Ltd., Toronto, was announced in our last issue, was born at Buffalo, N. Y., July 8, 1862, and entered transportation service in Sept., 1881, since when he has been, to 1882, freight clerk, G.T.R., Montreal; 1882 to 1884, freight clerk, G.T.R., Toronto; 1884 to 1885, chief clerk to District Freight Agent, G.T.R., Toronto; 1885 to 1889, City Freight Agent, G.T.R., Montreal, 1889, to the closing of U.S. railway offices in Canada by the U.S. Railroad Administration in 1917, Canadian Freight Agent, Lehigh Valley Rd., Toronto; July 1919 to March 1, 1920, Agent, Export and Import Traffic, Canada Steamship Lines, Ltd., Toronto.

Capt. S. J. Corson, a well known Great Lakes mariner, and during 1919 master of the Great Lakes Transportation Co.'s s.s. *Major*, died at Toronto, Mar. 8, as a result of injuries through falling on a slippery sidewalk there. He was buried at Collingwood, Ont.

E. L. Cousins, General Manager and Chief Engineer, Toronto Harbor Commission, is expected to return, about the end of April, from Europe, where he is investigating harbor facilities at many of the principal ports.

D. W. Crow, who died at Chatham, Ont., March 8, aged 90, claimed to have built the first steamboat, the *Owen*, on the River Thames there, in 1883. This boat was used to lay the first telephone cable between the mainland and Pelee Island.

Mrs. Davie, wife of G. T. Davie, of the Davie Shipbuilding and Repairing Co., Levis, Que., died at Quebec, Que., recently.

Alfred R. Dean, whose appointment as Travelling Passenger Agent, Canadian Pacific Ocean Services, Ltd., Chicago, Ill., was announced in our last issue, was born at Springfield, Utah, Mar. 2, 1895, and entered transportation service June 16, 1914, since when he has been, to Feb. 13, 1916, stenographer and ticket stock clerk, Pennsylvania Rd.; Feb. 14, 1916, to April 9, 1917, ticket agent Central Pacific Ry.; April 10, 1917, to Jan. 1, 1918, stenographer and rate clerk, Minneapolis, St. Paul and Sault Ste. Marie Ry.; Jan. 2 to June 10, 1918, rate clerk, Chicago and Northwestern Ry., all at Chicago, Ill.; June 13 to Dec. 15, 1918, in U. S. Navy; Dec. 10, 1918, to March 31, 1919, rate clerk, Chicago, and Northwestern Ry., Chicago Ill.; April 1, 1919, to Feb. 27, 1920, clerk and chief clerk, Canadian Pacific Ocean Services, Ltd., Chicago.

W. A. Duff, who died at Montreal recently, aged 46, was a brother of M. McD. Duff, Manager, Great Lakes Steamships Service, C. P. R., Montreal.

Sir E. Mackay Edgar, who is taking an active part in the revival of commercial shipbuilding in Great Britain, through the recent amalgamation of several of the larger shipbuilding companies there, under the title of the North-

umberland Shipbuilding Co., with a capital of £7,000,000, was born at Montreal in 1876 and educated there, and was, for some time, engaged in the office of Senator Robt. Mackay. He removed to London, Eng., in 1908, and entered the firm of Sperling & Co., bankers, etc.

B. C. Keeley has been appointed General Agent, Canadian Government Merchant Marine, Ltd., at Vancouver, B. C.

Herbert P. Heywood, who has been appointed Engineer of Sewers and Drainage, Toronto Harbor Commission, was born in Lincoln, Eng., in 1889, and educated there. He came to Canada in 1911, and was engaged as engineer in charge of construction of divisional buildings at Regina, Sask., for Canadian Northern Ry., and on the completion of that work, was Assistant Engineer Maintenance of Way; and draftsman on masonry structures, Bridge Engineer's office, C. N. R., Winnipeg, to 1913, and from 1913 to 1916, he was engaged on road and bridge work for the Manitoba



Major W. G. Swan, D.S.O., B.A.Sc., C.E.
Chief Engineer, Vancouver Harbor Commission.

Government, and as concrete inspector for the Greater Winnipeg Water District. He enlisted in 1916, and went overseas July 4, as sergeant in the 3d Canadian Railway Troops, and until Mar. 28, 1919, was in France, engaged in building light and standard gauge railways.

C. H. Nicholson, Manager, Grand Trunk Pacific Coast Steamship Co., Vancouver, B. C., has been elected President Vancouver Golf and Country Club.

J. W. Norcross, President and Managing Director, Canada Steamship Lines; President, Halifax Shipyards; and a Director of Canadian Vickers; and R. M. Wolvin, President, Montreal Transportation Co., and Vice President, Halifax Shipyards; are directors of Chase Tractor Corporation, Ltd., organized recently to take over the tractor business end of the Chase Motor Truck Co., Syracuse,

N. Y., with the world's patent rights and good will, and which has established a plant in Toronto.

Wm. Phillips, heretofore Representative, Cunard Line Steamships, and a director of the Robt. Reford Co., Montreal, has been appointed European Manager, Canadian National Rys. and Canadian Government Merchant Marine Ltd., with office at Orient House, London, Eng. He left Canada Mar. 19 and sailed from New York on the s.s. *Mauretania* Mar. 20, to take over his new duties. Biographical information about him is given under "Mainly About Railway People" on another page of this issue.

John Franklin Pierce, whose appointment as Passenger Traffic Manager, Canada Steamship Lines, Ltd., Montreal, was announced in our last issue, was born at Chatham, Ont., Sept. 6, 1877, and entered transportation service, Oct. 14, 1896, since when he has been, to Oct. 1904, clerk, Richelieu and Ontario Navigation Co., Montreal; Oct. 1904 to Oct. 1910, chief clerk, same company, Montreal; 1910 to 1912, Travelling Passenger Agent, same company, Boston, Mass.; 1912 to 1913, District Passenger Agent, same company, Boston, Mass.; 1913 to Dec. 1, 1914, Assistant General Passenger Agent, and General Baggage Agent, Canada Steamship Lines, Ltd., Montreal; Dec. 1, 1914 to April 1916, General Passenger Agent and General Baggage Agent, same company, Montreal; April 1916 to April 23, 1917, Assistant Passenger Traffic Manager, same company, Montreal; April 23, 1917, to Mar. 1, 1920, Assistant Traffic Manager, Prescott and east, same company, Montreal.

Thomas Robb, Manager, Shipping Federation of Canada, has been appointed a member of the Lighthouse Board of Canada, representing the shipping interests in the Atlantic division.

Major William George Swan, D.S.O., B.A.Sc., C.E. who was appointed Chief Engineer, Vancouver Harbor Commission, Vancouver, B. C., recently, was born at Kincardine, Ont., Sept. 27, 1884, and was educated at the public and high schools there and Toronto University. He entered transportation service in 1904 with the Canadian Northern Ry. and acted consecutively as transit man, Resident Engineer, Bridge Engineer, Division Engineer, Terminal Engineer, and District Engineer. He was for three terms an instructor in Toronto University Engineering Faculty. He served in France during the war for 27 months as Major, 2nd Battalion, Canadian Railway Troops, and later as Light Railways and Tramways Engineer for the 2nd British Army. He was mentioned in dispatches twice and has received the Distinguished Service Order and the French Croix de Guerre.

Cost of Ship Coal in the United Kingdom—London, Eng., press dispatch, Mar. 8.—Freight rates on ocean shipping from England would be increased at least 50% by a movement now in progress in order to meet the high cost of bunker coal here. Coal in the port of London this week will cost 155 shillings a ton, compared with 15 to 18 shillings before the war. This coal can be secured by industrial plants in the United Kingdom for 40 shillings a ton. So heavy is the cost of coal that some owners assert they may have to seriously consider the question of laying up their ships.

Halifax Graving Dock Expropriation.

The Senate on Mar. 5, on motion of Senator Dennis, passed an order for all correspondence, reports, documents, etc., between any department of the government and other persons regarding the expropriation of the property at Halifax of the Halifax Graving Dock Co., and the transfer of same to Halifax Shipyards, Ltd.; for all correspondence, reports, etc., in connection with order in council, 56, of Jan. 15, 1918, and of 1291, of May 27, 1918.

Senator Dennis has given notice that on April 6, he will enquire of the government as follows:

Has the government taken possession of the property of the Halifax Graving Dock Co., Ltd.?

If so, on what date, and was it by lease, tender, purchase, expropriation, or by order in council under the War Measures Act?

Has any sum been paid for or on account of the property, and if so how much and on what date or dates?

Is the Halifax graving dock and adjunct ship repairing plant being operated by any department of the government? If so, for how long has it been so operated?

If not now operated as a public work by the government, has it been rented,

sold, loaned, or given to a private company?

If so (a) on what date, (b) on what terms and conditions, and (c) for what period?

The name of the private company to which the Halifax graving dock property has been so transferred, its capitalization, and the names of its directors.

How much, if anything, has been paid to Mar. 1, 1920, by said private company on account of the rental, or purchase, or for the use of said graving dock property?

The amount paid by the government to the Halifax Graving Dock Co. for its property at Halifax, taken possession of by the government, and if nothing, the reason for withholding payment; and has any effort been made, and if so, what, to effect an amicable settlement with the Halifax Graving Dock Co.?

The number of square feet of land and land covered with water taken by the government from the Halifax Graving Dock Co. on (or in connection with) which the dock and plant was located.

Was any land, and land covered with water, additional to that taken from the Halifax Graving Dock Co., sold, leased, or given to Halifax Shipyards, Ltd.? If so (a) how many square feet, (b) was it acquired by purchase or expropriation, (c) what was the cost thereof to the government, and (d) if sold or leased to Halifax Shipyards, at what price?

Has the government expended any money upon the property taken from the

Halifax Graving Dock Co., or upon any land or other property acquired in connection therewith, since its acquisition? If so, state the amount so expended and the nature of the work done.

Has the government been asked to make any further expenditures in this connection? If so, how much, and does it propose to do so?

Is the government to be fully reimbursed for all its expenditures for the Halifax graving dock property and in connection therewith by Halifax Shipyards, Ltd., and if not all, what proportion and upon what conditions; and whether or not any deferred payments carry interest charges?

Sure Proof of the Aberdeen Boat.

Donald and Sandy were standing on the seashore watching the steamboats passing to and fro, when Sandy remarked: "There goes the Aberdeen boat, Donald."

"It's no the Aberdeen boat," replied Donald.

"It is," asserted Sandy.

"I suppose you think because it's painted grey and going north it must be the Aberdeen boat? vouchsafed Donald

"I know it's the Aberdeen boat," said Sandy.

Then Donald sarcastically queried:

"And how do you know?"

"Because there's no gulls followin' it," quoth Sandy.

Vessels Registered in Canada During December, 1919.

In compiling the following lists of vessels registered, steamboats and motor boats, operated by engines of less than 10 n.h.p., are eliminated, as also are sailing vessels of less than 100 tons register.

STEAM.

No.	Name	Port of Registry	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc. N.h.p.	Owners or managing owners
141486	Canadian Adventurer*	Montreal	Port Arthur, Ont. 1919	251.3	43.9	20.3	2069	1201	113 Sc.	Minister of Marine and Fisheries, Ottawa.
141547	Canadian Aviator*	"	North Vancouver, B.C. 1919	331.0	46.7	23.2	3388	2057	235 Sc.	"
141489	Canadian Rancher*	"	Three Rivers, Que. 1919	331.6	46.8	23.3	3551	2159	231 Sc.	"
141581	Canadian Sealer*	"	Trenton, N.S. 1919	270.0	38.2	17.9	1766	1044	116 Sc.	"
141488	Canadian Settler*	"	Three Rivers, Que. 1919	331.3	46.8	22.9	3548	2155	231 Sc.	"
141481	Canadian Spinner*	"	Montreal 1919	400.0	52.4	23.5	5404	3331	266 Sc.	"
141452	Edmund Donald	Halifax, N.S.	Shad Bay, N.S. 1919	183.7	31.3	18.9	848	531	80 Sc.	Bayside Steamship Co., Halifax, N.S.
141255	Granville III	Yarmouth, N.S.	Meteghan River, N.S. 1919	95.0	23.0	8.7	125	64	18 Sc.	Valley Steam Ship Co., Granville Ferry, N.S.
138466	John Hunsader	Sault Ste. Marie, Ont.	Sturgeon Bay, Wis. 1910	96.0	26.0	12.4	231	93	65 Sc.	Spanish River Pulp and Paper Mills, Ltd., Sault Ste. Marie, Ont.
113379	Monmouth*	Montreal	Middlesbrough, Eng. 1900	375.1	48.1	25.7	4078	2569	236 Sc.	C.P.R. Co., Montreal.
121219	Virginian*	"	Glasgow, Scotland 1905	520.4	60.3	30.0	10757	6827	12,000 Sc.†	Allan Line Steamship Co., Glasgow, Scotland.

*Equipped with wireless.

†Turbines

SAILING.

No.	Name	Port of Registry	Rig	Where and when built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Owner or Managing Owner.
141415	Alcala	Lunenburg, N.S.	Schr	Lunenburg, N.S. 1919	125.6	27.0	10.6	174	112	R. Knickle, M.O., Lunenburg, N.S.
138654	Annabel Cameron	Pictou, N.S.	"	New Glasgow, N.S. 1919	156.7	34.5	13.0	506	458	W. and C. McNeil, J.O., New Glasgow, N.S.
141495	Cutty Sark	St. John, N.B.	"	St. John, N.B. 1919	181.6	36.0	13.5	686	609	New Brunswick Shipbuilding Co., St. John, N.B.
141520	Edward A. Cohan	Parrsboro, N.S.	"	Rexton, N.B. 1919	171.2	37.4	13.0	664	597	J. H. Solery, Toronto.
141234	Barbara Macdonald	Charlottetown, P.E.I.	"	Cardigan, P.E.I. 1919	96.1	25.5	9.8	164	162	J. A. Macdonald, Cardigan, P.E.I.
141548	C.S.T.	Vancouver, B.C.	Scow	Vancouver, B.C. 1912	80.1	30.0	6.5	133	133	W. J. Thicke, Vancouver, B.C.
141387	Douglas E. Parks	La Have, N.S.	Schr	East La Have, N.S. 1919	122.5	27.3	10.6	178	136	M. J. Parks, M.O., La Have, N.S.
141571	E. P. Theriault	Weymouth, N.S.	"	Belleveau's Cove, N.S. 1919	140.0	32.2	11.5	403	369	Theriault Shipbuilding Co., Belleveau's Cove, N.S.
141413	Elsie II	Lunenburg, N.S.	"	Essex, Mass. 1910	106.5	25.0	11.5	137	98	W. C. Smith & Co., Lunenburg, N.S.
141490	Fred F. Farmer	Montreal	Barge	Champlain, N.Y. 1892	95.6	17.8	8.0	131	114	Richelieu Transportation Co., Montreal.
141503	Germain L.	Quebec	Schr	Ste. Anne des Monts, Que. 1919	96.3	26.7	9.3	145	145	G. Leclerc, M.O., Ste. Anne des Monts, Que.
87185	Granco	Vancouver, B.C.	Barge	Glasgow, Scotland 1883	275.0	35.1	19.9	2114	2114	Coastwise Steamship and Barge Co., Vancouver, B.C.
141552	Griffnip	"	Scow	Winslow, Wash. 1917	100.0	32.2	9.8	271	271	"
141338	Little Princess	La Have, N.S.	Schr	Dayspring, N.S. 1919	122.4	27.0	10.9	229	199	F. Gray, La Have, N.S.
141573	Maid of England	Weymouth, N.S.	Bktn	Grosses Coques, N.S. 1919	174.7	37.6	13.0	751	696	F. K. Warren, Halifax, N.S.
141414	Ruby and Dorothy	Lunenburg, N.S.	Schr	Conquerall Bank, N.S. 1919	120.6	26.0	11.2	194	160	L. Inkpen, Burin, Nfld.
141257	W. L. Mackenzie King	Yarmouth, N.S.	"	Wedgeport, N.S. 1919	107.0	25.6	10.9	147	147	R. E. LeBlanc, Wedgeport, N.S.
138655	William McL. Borden	Pictou, N.S.	"	Pugwash, N.S. 1919	125.5	30.3	11.4	365	336	Cumberland Shipbuilding Co., Pugwash, N.S.
141621	Hiram D. MacLean	Parrsboro, N.S.	"	Economy, N.S. 1919	152.0	35.5	12.8	490	447	H. C. MacKay, et al, Economy, N.S.
141549	M.W.W. No. V	Vancouver, B.C.	Scow	New Westminster, B.C. 1919	96.2	34.0	8.1	252	252	McNeil, Welch & Wilson, Vancouver, B.C.

Atlantic and Pacific Ocean.

The New Zealand Shipping Co.'s s.s. Durham, which was to have sailed from West St. John, N. B., for Australasian ports, was withdrawn and replaced by the s.s. Somerset, which sailed Mar. 20.

The British s.s. Tewkesbury, bound from Hampton Roads to England, ran ashore about 4 miles northwest of Cape Pine, Nfld., and was reported to have broken up shortly after striking. The crew took to the boats and were saved.

The French s.s. Mont Cervin, which arrived at Vancouver, B. C., with 5,000 tons of sugar from Cuba, returned with a cargo of 2,000,000 ft. of spruce, said to be the first cargo of lumber sent from British Columbia to Cuba for a number of years.

The U. S. Shipping Board's s.s. Ellithorpe reported disabled and drifting towards the rocks at Sable Island, Mar. 7, eventually weathered the storm and cleared the reef. She was later picked up by the s.s. Maplemore, when she reported she had lost her propeller.

A Liverpool, Eng., dispatch states that a further surcharge of 13 1/3% in passenger fares has been decided on by North Atlantic steamship companies, making the increase in the cost of a voyage between Great Britain and North America, 33 1/3% since July 1919.

The Portuguese s.s. Albatross, which sailed from Halifax, N. S., Mar. 8, for Portugal, was reported ashore, Mar. 9, near Egg Island, 28 miles east of Halifax, where she is reported as a total loss. In abandoning the ship, two of the crew lost their lives, the remaining eight suffering severely from exposure.

The Gulf of St. Lawrence Shipping and Trading Co. is making arrangements for operating 2 steamships on the route between Montreal and St. John's, Nfld., and another steamship between Montreal and Prince Edward Island, during the forthcoming St. Lawrence navigation season.

The Nippon Yusen Kaisha is reported to be arranging to build 60 freight steamships within the next few years for its trans-Pacific and European services, and it is stated that 7 passenger steamships, of approximately 20,000 tons each and a speed of 20 knots an hour, will be built for the service between Japan, China, Victoria, B. C., and Seattle, Wash.

Canadian Pacific Ocean Services, Ltd., has transferred the s.s. Virginian from the British register to the Canadian register. She was built at Glasgow, Scotland, in 1905, and is screw driven by turbines of 12,000 i.h.p. Her dimensions are: Length 520.4 ft.; breadth 60.3 ft.; depth 30 ft.; tonnage 10,757 gross, 6,827 registered. It is probable that some of the company's other vessels will be similarly transferred.

The Donald Steamship Co., Ltd., of Montreal, is reported to have ordered 2 steel steamships of about 8,000 tons capacity each for fruit and passenger trade between New York and the West Indies, with the Todd Shipyard Corporation, Brooklyn, N.Y. The keel of the first ship was reported to have been laid Mar. 10, and it is stated, that both ships will be oil burners, with a speed of 14 knots an hour. C. I. de Sola and W. R. Eakins, Montreal, are directors of the Donald Steamship Co., and McLean Kennedy & Co., Montreal, are agents.

The Isthmian Steamship Lines is op-

erating a freight service between New York, Vancouver, B. C., and United Kingdom ports, via the Panama Canal. The first sailing was with the s.s. Steelmaker, from New York, Feb. 3, and after discharging cargo at Vancouver, she sailed for the United Kingdom about the middle of March, on a tramp voyage, the ports of call depending on the cargo offering. The s.s. Steel Voyager sailed from New York, Feb. 23, for Vancouver, with the intention of returning to New York, thus maintaining one service between New York and Vancouver, and another service between New York, Vancouver and United Kingdom ports.

Maritime Provinces and Newfoundland.

The Dominion Public Works Department received tenders Mar. 23, for an extension to the wharf at Sober Island, Halifax county, N. S.

The s.s. Bessie M. Dugan, owned in Boston, Mass., is reported to have been sold to Newfoundland parties for service in that Dominion. It is stated that she is to be completely rebuilt, and refitted, and that she will be ready for service in the spring.

Eastern Steamship Lines, Ltd., announces the resumption of its service between St. John, N. B., and Maine and Boston ports, April 1. The service was suspended early in January, so that the ships engaged might be converted into oil burners.

The Dominion Government s.s. Montcalm, which had a lot of heavy ice navigation in the Gulf of St. Lawrence, during the winter, in breaking the way for the Canadian Government Merchant Marine's s.s. Canadian Spinner, and in taking supplies to the Magdalen Islands, was ordered, during March, to cruise along the Nova Scotia coast, break up ice at the entrances to small harbors, and visit the buoys in the Bay of Fundy.

The Dominion Coal Co.'s s.s. Cape Breton was wrecked in the ice at Scatar Island, Mar. 7. She sailed from Halifax, Mar. 5, encountered heavy ice and was blown ashore, after being completely disabled. The crew landed without difficulty and proceeded to Louisburg. She was built at Hylton, Eng., in 1890, and was screw driven by engine of 160 n.h.p. Her dimensions were: length 258 ft.; breadth 37 ft.; depth 16.8 ft.; tonnage 1,764 gross, 1,109 registered.

Province of Quebec.

The Lachine Canal was emptied Mar. 25, for the usual overhaul and repairs. It is expected that it will be reopened for traffic about April 15.

The Dominion Public Works Department will receive tenders to Apr. 7, for a license to operate a ferry across the Ottawa River between Sand Point, Ont., and Norway Bay, Que.

Capt. Donaldson, Quebec, is reported to have ordered from Davie Shipbuilding and Repairing Co., Lauzon, a steel steamboat 90 ft. long overall, for service on Lake St. John, between Peribonka and Roberval.

The Gulf of St. Lawrence Shipping and Trading Co.'s s.s. Labrador arrived at Quebec, from Murray Bay, Mar. 10, and sailed again on Mar. 17, for Seven Islands. She is reported to have had some difficulty in navigating, on account of ice, the section between Murray Bay

and Quebec being considered the worst part of the river during winter.

The Central Railway of Canada's s.s. Empress was offered for sale by tender Mar. 31, under an order of the Exchequer Court of Canada in the matter of the City Safe Deposit and Agency Co. vs. Central Ry. Co. of Canada. The s.s. Empress was built at Ottawa in 1873, originally named Peerless, and was rebuilt at Montreal in 1886. Her dimensions are: length 185.3 ft., breadth 27.6 ft., depth 8.1 ft., tonnage 678 gross, 372 registered. She has an iron hull, and is paddle wheel driven by engine of 152 h.p. She was owned formerly by the Ottawa River Navigation Co., and last year was operated by the Central Ry. of Canada, between Montreal and Carillon. She has capacity for about 800 passengers, is said to be in good condition, and is lying in the basin near the first lock of the Lachine canal.

Ontario and the Great Lakes.

The Western Navigation Co., Fort William, Ont., advises us that it does not intend operating any steamships on the Great Lakes this year.

The Keystone Transportation Co. will operate its steamships Keybell, Keynor, Keyport and Keywest in the lake trade during the forthcoming season. Its s.s. Keyvive is at present engaged in the West Indies trade.

Passenger fares on the ferry boats between Windsor and Detroit were raised Mar. 1, round trip tickets being now 10c, and strip tickets 7 for 25c. Rates on motor cars, trucks, etc., are arranged on a sliding scale.

The American Transit Co., Sarnia, Ont., which operated the s.s. Frank B. Stevens in 1919, in connection with the Cleveland-Sarnia Sawmills Co., Ltd., of which it is a subsidiary, does not propose to operate the ship this year, and is offering it for sale.

The Dominion Transportation Co., Sault Ste. Marie, Ont., purposes operating its steamships, Caribou and Manitou this year, between Sault Ste. Marie and Owen Sound, and Sault Ste. Marie and Michipicoten. J. J. Noble is Superintendent at Sault Ste. Marie, and G. D. Stewart is agent at Owen Sound.

The U.S. Lake Survey reports the stages of the Great Lakes in feet above mean sea level for February as follows: Superior 601.91; Michigan and Huron 579.95; St. Clair 573.41; Erie 570.80; Ontario 245.01. Compared with the average stages for the past 10 years, Superior was 0.09 ft. above; Michigan and Huron 0.01 ft. above; Erie 0.80 ft. below; Ontario 0.47 ft. below.

The oil tank steamship G. R. Crowe, owned by the Montezuma Transportation Co., Toronto, and operating between New York and Tampico, was reported disabled in the Gulf of Mexico, Mar. 21, and was towed into Mobile, Ala., for repairs. She was owned formerly by the St. Lawrence and Chicago Steam Navigation Co., Toronto.

The Collingwood Steamship Co.'s s.s. City of Meaford has been dismantled, and her register closed. She was rebuilt at Meaford, Ont., in 1906, was originally named Seaman, and was owned by Pearks Bros., Meaford, when she was acquired by her later owners, in 1917, for service between Collingwood and Sault Ste. Marie. Her hull is of oak, and she has the following dimensions, length

111ft., breadth 24ft., depth 8ft. 5ins.; tonnage, 328 gross, 223 registered.

Canada Steamship Lines, which runs a steamboat service between Hamilton and Wabasso Park, Ont., under an agreement with the city, applied to the Hamilton Parks Board, Mar. 17, for permission to increase adult return fares from 15c to 20c for 1920, and 25c for 1921, leaving children's fares of 10c unchanged. The company claimed that its operating cost had risen by 150% during the past few years, and that the receipts for last year were \$2,000 less than the expenses, but permission to make an increase was refused.

The s.s. Chicora, owned formerly by Canada Steamship Lines, Ltd., and sold recently in Toronto, after having sunk at her berth there, and having been raised, will, it is said, be operated during the forthcoming season, by the Niagara Ferry and Transportation Co., and the Erie Beach Amusements, Ltd., between Buffalo, N.Y., and Fort Erie, Ont. She is at present figuring in an action at Toronto, to settle her ownership, one of the parties disputing the ownership being stated to be an alien, and therefore incapable, legally, of owning a British registered vessel.

Canada Steamship Lines' s.s. H. M. Pellatt has been sold to Belgian parties. She was built at Glasgow, Scotland in 1903, of steel, her dimensions being, length 239ft., breadth 37ft., depth 24ft.; tonnage, 1,591 gross, 1,038 registered. She is equipped with triple expansion engines, with cylinders 21, 35 and 57 in. diam., by 36in. stroke, 1,250 i.h.p. at 83 r.p.m., supplied with steam by 2 Scotch boilers, each 13½ft. diam. by 10¼ ft. long at 180 lb. She was built originally for the Canadian Lake & Ocean Navigation Co., and eventually passed to the Merchants Mutual Line, Ltd., Toronto, and thence to Canada Steamship Lines, Ltd.

The Toronto Ferry Co. has applied to Toronto City Council for permission to increase its fares from 10c to 15c. It is the intention that residents on the island and children travel at the old fare, and that combination tickets, including admission to baseball games be issued at the old price of 50c plus war tax. A similar application was made in 1919 and was refused. It is said that increased cost of fuel and labor have added \$18,000 a year to the operating cost, and that there has been a considerable expenditure for new equipment and repairs. The company is reported to have stated that if the increase is refused, it will be compelled to reduce its service to the lowest limit permitted by the city's by-law.

An order in council has been passed making regulations for the ferry service across the St. Clair River, between Sombra, Ont., and Marine City, Mich., providing that boats to be used for passengers must not be less than 24 ft. long, 6 ft. beam, for automobiles 34 ft. long, 11 ft. beam, and that during the season when ice is in the river, 2 rowboats, registered and inspected by the Dominion Inspector of Steamboats are to be used. The fares are fixed for adults in summer at 15c one way and return the same day, and 25c in winter; children 10c return, tickets, 8 trips for \$1, automobiles \$1 a trip, trucks \$1.50 light, \$2.50 loaded. A license will be granted for 10 years on an annual payment of \$1.

Canadian Maritime Co.'s s.s. J. H. Plummer, registered at Montreal, has

been sold to Belgian parties. She was built at Newcastle upon Tyne, Eng., in 1903, of steel, her dimensions being, length 246ft., breadth 37ft., depth 24ft.; tonnage, 1,582 gross, 992 registered. She is equipped with triple expansion engines with cylinders 20½, 33 and 54 in. diam. by 36in. stroke, 1,250 i.h.p. at 81 r.p.m., and supplied with steam by 2 Scotch boilers each 13½ft. diam. by 10¼ ft. long at 180 lb. She was built originally for Canadian Lake and Ocean Navigation Co., Toronto, and later passed to the Merchants Mutual Line, Ltd., under the management of Canada Steamship Lines, Ltd.

Lake Ports Navigation Co., Ltd., Sarnia, has bought the s.s. Conestoga from the Crosby Transportation Co., of Milwaukee, Wis., and has transferred her to the Canadian register. She was built at Cleveland, Ohio, in 1878, of oak, her dimensions being, length 252 ft., breadth 36ft., depth 26ft. 3in.; tonnage, 1,726 gross, 1,562 registered. She was originally named Susquehanna, and is of the awning or hurricane deck type of ship, with steel arches, steam pump wells, the hull divided by a single watertight bulkhead, and equipped with electric lighting. The propelling machinery consists of a Steeple compound engine with cylinders 17 and 34in. diam. by 32in. stroke, supplied with steam by a firebox boiler 9ft. diam. by 16 ft. long at 90 lb.

The Webster Steamship Co.'s s.s. Marian W, was practically destroyed by fire at the Louise Basin, Quebec, Mar. 6. Her estimated value was \$60,000, which is partly covered by insurance. She was built at Mount Clemens, Mich., in 1890, and was originally named Byron Whitaker. Her hull was of oak, and she was built with diagonal strapping on frame, steel boiler house, steam pump wells and bow sheathed for navigation in ice. Her dimensions were,—length b.p., 220 ft., breadth moulded 38 ft., depth moulded 21 ft., tonnage 1,539 gross, 959 net. She was equipped with fore and aft compound engine, with cylinders 24 and 46 in. diam., by 40 in. stroke, 750 h.p., at 90 r.p.m., and supplied with steam by a Scotch boiler 12 x 12 ft. at 130 lb. She was owned formerly in Chicago, Ill., and was bought a few years ago by F. E. Hall & Co., Montreal, and subsequently sold to L. C. Webster, President, Webster Steamship Co.

Manitoba, Saskatchewan and Alberta.

The Hudson's Bay Co.'s paddle wheel steamboat Athabasca River, which was built at Athabasca Landing, Alta., in 1912, has been dismantled and re-registered as a scow. Her dimensions are, length 136ft., breadth 28ft., depth 3.6 ft.; tonnage, 341 registered.

The Manitoba Gypsum Co.'s steamboat Marvyl, registered at Winnipeg has been dismantled, re-registered as a barge and sold to Northern Fish Co., Selkirk, Man. She was built at The Landing, Man., in 1905, and was screw driven by engine of 27 h.p. Her dimensions are: length 120 ft., breadth 26 ft., depth 8 ft.; tonnage 225, registered.

The Lamson and Hubbard Canadian Co., which operates in northern waters, and which purchased the assets of the Peace River Trading Co. recently, has made a number of amendments to its by-law, respecting directors, etc., providing that the business shall be managed by 11

directors who must be shareholders, and be elected at each annual meeting for one year; meetings to be held at the place to be determined by the directors, and directors as such are not to be paid any stated sum for their services. The head office is at Boston, Mass., S. St. J. Morgan being President, and J. C. Bassett, Secretary.

British Columbia and Pacific Coast.

Preparations are being made at Victoria, B.C., for the opening of the whaling season about the middle of April. It is anticipated that 8 ships will open the season, 3 operating from Kyuquot, 3 from Rose Harbor, and 2 from Naden Harbor.

The C. P. R. is, we are officially advised, looking into the question of building an additional steamship for its British Columbia coast service, somewhat larger than its s.s. Princess Alice, and with a dead weight cargo capacity of about 1,000 tons.

The Grand Trunk Pacific Ry. has completed plans for considerable wharf extension at Prince Rupert. The new dock will be 860 ft. long, 173 ft. wide, with travelling cranes and 2 elevators. A two-story freight shed, 820 ft. long, with 25,000 tons storage capacity, will also be built.

A Vancouver press dispatch states that word has been received there from St. Paul, Minn., that the negotiations between the Vancouver Harbor Commission and the Great Northern Ry., for the purchase of water frontage on Burrard Inlet for the site of the projected Dominion Government pier, have been concluded.

It was stated in Canadian Railway & Marine World for March, that the s.s. Nouvelle Ecosse, the last of the wooden steamships to be built for the French Government, by the Foundation Co. of British Columbia, arrived at Fraser River mills early in February, to load lumber for Europe, and that the dispatching of the steamships from British Columbia had been handled by Edward White & Sons, Victoria, the rule to be followed that they called at Queenstown, Ireland, for orders, and after unloading at a British port, proceed to Brest, France. C. Gardner Johnson & Co., ship brokers and general agents, Vancouver, write us the following correction, "Our firm, with agents at Victoria, E. White & Co., appointed by us, were the sole agents for the French High Commission, and handled the 40 steamships built by them in British Columbia, of which the Nouvelle Ecosse was one and the last to sail. We really handled 41 for them, for the s.s. General Pau, though built on the U. S. side, returned from sea on her first voyage with boiler trouble, and had new boilers built in Vancouver, to replace the ones taken out."

Port Colborne Elevator.—The Dominion Marine Association, a deputation from which waited on the Railways & Canals Department, Ottawa, recently, is much disappointed to learn that the Dominion Government grain elevator at Port Colborne, Ont., is not likely to have its trans-shipping facilities restored and in operation before June 1 at the earliest. It was hoped, some little time ago, that trans-shipment would be possible at the opening of navigation and a good deal of storage available.

Shipping Federation of Canada's Annual Report.

Canadian Railway and Marine World for March contained some particulars of the Shipping Federation of Canada's annual meeting, since which we have been supplied with a copy of the President's report, which was signed by Jno. Torrance, who was unable to be present owing to illness. Following are extracts from it:

Navigation opened up much earlier than usual in 1919, the first arrival from the sea being the s.s. War Redcap, on April 22, while the last seagoing vessel to depart was the Elder Dempster liner Bassa, for South African ports, on December 10. The total number of seagoing ships to arrive at the port was 786, with a tonnage of 2,179,280, compared with 674 ships of 1,933,482 for 1918. The trans-Atlantic trade showed a good increase, numbering 702 ships against 644 for 1918, while the coasting trade also showed some recovery, but is still far below the standard of pre-war days. Strikes in the United Kingdom at times greatly interfered with the sailing of ships from this side.

Shipping conditions at the port may be described as good all through the season; there was a plentiful supply of freight offering, and also a good supply of labor available. Passenger traffic, although restricted through the shortage of passenger ships, was very brisk, both on the east and westbound trades. The value of exports from the port was approximately \$700,000,000, which gives Montreal the honor of being the second largest port on the North American continent, being exceeded only by New York. This reflects credit on the port, when one takes into consideration that we are only favored with a seven months season, while our U. S. competitors have an all-year-round service.

Speaking of shipping conditions for the future, I regret to say they do not look anyway too bright, and we may fully expect to see a year or two of depression. At present, freight rates are on the downward grade, while operating expenses still continue to go the opposite way. New tonnage is fast coming on the market, which makes competition very keen for the freight offering, but it is to be hoped with increased trade this surplus will be quickly absorbed.

Cold Storage—For a modern port such as Montreal there has been one facility she has lacked for years, and that is proper cold storage accommodation to care for perishable export produce. In conjunction with the commercial interests, we had occasion to bring this matter before the Harbor Commissioners in the early part of the year, and also took the subject up with the government, and I am pleased to report that the government has advanced the commissioners sufficient funds to commence the erection of a modern plant.

Berthing Accommodation. For years past, we, who have berths in the upper section of the harbor, have suffered considerable inconvenience in loading and discharging our larger size ships through the piers not being long enough to berth two large ships without one overlapping the other. In order to overcome this handicap, we suggested to the commissioners that the piers should be lengthened approximately 250 ft. each, which they concurred in. Construction was commenced during the season and should be completed by the middle of next season.

Wharfage Tariff—The commissioners passed a new wharfage tariff, considerably increasing the rates on import and export commodities. The shipping and commercial interests took exception to this tariff being put in force, as it would seriously affect the trade of the port, which is in direct competition with the ports to the south of us, where every inducement is offered to attract trade. The commissioners, I am pleased to say, have so far withheld putting the new tariff into force, and I trust that with an increased import and export trade, sufficient revenue will be derived to meet the expenses of operating the harbor, without increasing the tariffs further.

Labor—Once again, I am pleased to report that our port was absolutely free from labor disturbances of any kind during the season; the longshoremen, shipliners and checkers carried out the agreements which they entered into at the opening of the season to the letter. It is very gratifying for me to report that, since 1911, our port has been very fortunate to escape the labor disturbances which have visited nearly all the principal ports of the world, and it reflects great credit on the port workers, who have time and again shown themselves to be a levelheaded and non Bolshevik class of people. I trust that the good feeling which now exists between employers and employes will continue for years to come. At St. John, N. B., agreements were entered into with the longshoremen, shipliners and coal handlers' associations, covering wages and labor conditions up to Dec. 1, 1920, which I hope will be faithfully carried out.

Pilotage—I regret to report that pilotage conditions on the St. Lawrence were very unsatisfactory during the year, especially in the Montreal district. For years past, the shipping interests have been vainly trying to have the pooling of earnings abolished in the Quebec district, on the grounds that it destroys the incentive of the pilots and encourages slothfulness. The Montreal pilots (a body of men who for years have enjoyed the confidence of the shipping interests) submitted a similar scheme for our approval, which, needless to say, was refused. Not being satisfied with a negative answer, the pilots formed themselves into an association known as the United Montreal Pilots, and commenced pooling their earnings. Matters then went from bad to worse, and finally ended by the shipping interests petitioning the government to throw open the pilotage districts of Montreal and Quebec by abolishing the compulsory payment of pilotage dues, which would give us permission to employ men in whom we would have absolute confidence. Owing to the shortness of the last session of parliament, no action was taken, but it is our intention to take this matter up further during the coming year, and see if some improvement can be made.

St. Lawrence Ship Channel.—Dredging operations were again greatly curtailed during the season. Considerable work, however, was accomplished at Cap-a-la-Roche, where the widening on the north side of the channel was completed. Some dredging and deepening was also done at the Longueuil curve, where it is proposed to widen the curve to 850 ft. and deepen it to 35 feet at E.L.W. When this work is completed, it will be a great improvement in this part of the channel. The usual sweeping of the channel was

done thoroughly during the season, and no serious obstructions were found. Some sand bars were found to have formed in the Champlain channel, but these were immediately removed by dredges.

Conclusion—I would like to take the opportunity, now that I am leaving active business life, and severing my official connection with the federation, of saying how much its success and efforts are due to the loyal co-operation and friendly spirit of its different members and of hoping that this co-operation may continue in the future, as I am satisfied that this federation has been, and will continue to be, a great force for the good of the shipping interests, not only of the port of Montreal, but of Canada at large. During the time of my connection with the federation, all important Canadian shipping questions have been considered by its council and by its members, including legislation, rules, pilotage, navigation of the river, and other matters which directly affect the shipping interests. In all these questions the federation has made its influence felt. Its committee have taken cognizance of all the legislation which has affected the interests of the board, and have studied and influenced and in many cases taken the initiative where they thought it was in the interest of shipping that they should do so. I desire to take the opportunity of expressing my appreciation (which I think will be felt by all the members of the federation) for the work which has been done by your Secretary, Thos. Robb. He has been most devoted to the interests of the association and of the members of it, and has been indefatigable always in his efforts to please and assist us, and his complete knowledge of the affairs of the association render him, in my opinion, practically indispensable to us.

Questions are now under consideration which affect the interests of the board and all shipowners, which require your attention, and which I trust will be solved at an early date in a manner entirely satisfactory to us all. There never was a time when there was greater need for the loyal co-operation of all the different shipping interests in this country. In this connection, it is a subject of congratulation that for the first time, I think, since Confederation, Canada has as Minister of Marine, a Montreal merchant, and one, too, who is thoroughly familiar with the requirements of the port. Our relations with the various government departments have been most cordial, and I wish to extend our thanks to Hon. C. C. Ballantyne, Minister of Marine, A. Johnston, Deputy Minister of Marine, and G. J. Desbarats, C.M.G., Deputy Minister of the Naval Service, for their courteous attention given to the many matters which we have had occasion to bring to their attention. Our thanks are also due to the officers of the Militia Department, especially to Major-General J. Lyons Biggar, C.M.G., Quartermaster-General, who has now retired, after long and faithful service, and to Col. E. E. Clarke, Director of Supply and Transport.

The Canadian registered tonnage entered with the federation in 1919 was 108,000 tons, an increase of 30 tons over 1918.

Sea Going Safety—Only one passenger in each 1,600,582 loses life at sea.

Canada Shipping Act Amendment Discussed in House of Commons.

The Minister of Marine, Hon. C. C. Ballantyne, on Mar. 12, moved that the House of Commons go into committee on the following proposed resolution: "Resolved that it is expedient to repeal the Canada Shipping Act, Revised Statutes of Canada 1906, chap. 113, secs. 85 to 89, both inclusive, and sec. 91, and to re-enact in lieu thereof as follows: 1. That every British subject who—(a) served as a master or mate of a seagoing or coasting sailing vessel of over 75 tons, gross tonnage, before Jan. 1, 1920, for a full period of 12 months within 10 years immediately next preceding the date of his application for certificate of service, (b) produces satisfactory evidence of his sobriety, experience, ability and general good conduct on board ship, and (c) passes the sight test and the prescribed examination in signalling, shall be entitled, on payment of the prescribed fee, to a certificate of service as a master or mate of a square rigged or fore-and-aft rigged sea-going or coasting sailing vessel not exceeding 750 tons, registered tonnage, according as his service has been (a) as master or as mate, (b) on a sea-going or on a coasting sailing vessel, (c) on a square rigged sailing ship or on a fore-and-aft rigged sailing vessel. 2. That in every such certificate of service the name, place and date of birth of the person to whom the same is issued shall be stated, and each certificate shall specify whether the holder is entitled to act as master or mate, whether the certificate is for sea-going vessels or for vessels in the coasting trade, and whether for square rigged sailing vessels or for fore-and-aft sailing vessels, and that it is not for any vessel exceeding 750 tons, registered tonnage.

The proposed resolution was discussed as follows:

D. D. McKenzie, M.P. for North Cape Breton and Victoria, N. S.: "Legislation very much akin to what is aimed at by this resolution was introduced in the latter part of one of the sessions last year by the member for Halifax (Hon. A. K. Maclean), but it met with such vigorous opposition from members, including myself, that the acting minister thought proper to withdraw the bill. Now the Minister of Marine comes forward with a resolution, not exactly word for word, but on almost precisely the same lines as the legislation introduced last year. We all know that a certain standard of education, experience and ability is required of professional men in this country. In the case of lawyers, doctors, engineers, or any other professional men, certain educational requirements have to be met, and certain experience must have been had before they are permitted to practice. I venture to say that captaincy and charge of ships has been regarded not merely as a profession in this country, but as a very honorable and very onerous profession for the last hundred years and more. The Minister of Marine and Fisheries now brings before this Parliament legislation that would do away entirely with educational requirements in the case of a man whose duty it is to take charge of a ship. According to this resolution, if a man obtained a certificate 10 years ago stating that he had served on board ship for 12 months somewhere in Canada, now, after the lapse of that time, during which he may

have done anything else and may have forgotten all about seamanship, he can claim a license as a captain qualified to put to sea with a crew. The sections in the Revised Statutes of Canada, chap. 113, and also secs. 85 to 89 inclusive, are very simple in their requirements, and are not, I think, too exacting. If this proposed legislation were restricted to coasting ships there would not be so much danger. But it is also contemplated to license such men as I have mentioned to go across the ocean. What would happen to such a captain if he went to Liverpool? He might take his ship there, but he would never be able to leave, because his certificate would be regarded as a mere scrap of paper. He would have to show a certificate recognized on the other side by the Board of Trade. It is possible that the minister may have consulted the English Board of Trade and obtained its approval of the bill. If he has not done so, I fear that the captains who might possess these unsatisfactory certificates would find themselves in difficulty in the old country. We know of instances in which engineers have gone from Canada to the old country, with certificates that were good enough here, but were rejected on the other side, and in this predicament competent engineers had to be secured to clear the ships of the ports in England. I earnestly submit that in order to take charge of an ocean ship a man must have adequate knowledge of seafaring and be able to ascertain his position by the use of the proper instruments. So far as I am concerned, I desire it to be distinctly understood that I repudiate any responsibility that might accrue by the enacting of such legislation as this, for I think it is a most dangerous thing to put life and property in the hands of incompetent captains. The insurance companies of this country, I think, would refuse to insure ships or cargoes intended to be sent to sea under the control of men who were palpably incompetent in every sense, at least in the matter of training. The minister was not in the house when the bill to which I have made reference was introduced. If he had been, he would recall that both our own law and the English law on the subject were cited, and that after due consideration of the facts the member who introduced the bill deemed it wise to withdraw it. I am therefore surprised that within such a short time the minister should seek to establish such a low standard of seamanship in this country. In conclusion, I can only emphasize my protest and leave the responsibility entirely with the minister and those who may be disposed to implement this resolution by an act of Parliament."

Hon. C. C. Ballantyne, Minister of Marine, said: "I was not present at the special session of the house when the then acting minister introduced the bill in question, which was not similar to, but different from this. That bill applied to sailing ships propelled by auxiliary power, but this resolution does not apply to such ships. It applies only to sailing ships of a certain tonnage. Under the Shipping Act any master who served on a sailing ship prior to 1870, if he were alive today, and were sober, experienced and of adequate ability and general good conduct, would be entitled to a certifi-

cate on the payment of the prescribed fee. The member for North Cape Breton will at once realize that we could not expect men to be fit captains of sailing ships who had served prior to 1870, and this resolution seeks to repeal sec. 85 of the Shipping Act, and to enact that any man who has served on a sailing vessel for 12 months within the past 10 years and possesses the qualifications to which I have referred, in addition to a knowledge of signalling, shall be granted a service certificate. This is nothing new. We are merely bringing the Shipping Act up to date, and it is difficult for me to apprehend the reasoning of the member for North Cape Breton and Victoria in his argument that the legislation proposed is unusual and hazardous. I wish to say to him that the service certificate that shall be granted to an officer who desires to become a master of a sailing ship, should this resolution and the bill that is to be based upon it pass, is a service certificate that will be recognized just the same as a competency certificate. There is absolutely no difference so far as recognition by the English authorities is concerned between the service certificate and the competency certificate.

"With regard to the other clause, I wish to have sec. 86 of the act repealed also because a mate cannot obtain a service certificate without going back as far as 1883. Surely members will not object to the changes that the resolution calls for, in order that both a master and a mate, instead of having to go back to 1870 for the master, and 1883 for the mate, may, upon a service of 10 years be capable of obtaining a service certificate. During the last few years captains and mates of sailing ships have become very scarce; in fact, they were so difficult to get that during the war I had to take the necessary authority under the War Measures Act to grant service certificates to masters and mates of sailing ships. My object in bringing forward this resolution now is to meet the absolute necessity that exists for more masters and mates, by enabling them to get service certificates for sailing ships. The act introduced at the special session of the house was for sailing ships driven by auxiliary power. This resolution is confined to sailing craft only. There is another section of the Shipping Act—sec. 87—that I desire to have repealed. It provides that a ship shall be only 100 registered tons and not over 150. The resolution stipulates that the tonnage may be increased to 750 tons. The member from North Cape Breton comes from a maritime province, and I am sure that he appreciates better than I do the fact that those experienced men who have been on sailing ships for a number of years, while they may not be able, owing to lack of education, to pass the competency test, and therefore obtain competency certificates, are just as good men and just as competent, providing that their eyesight is all right and that they understand signalling, as others who may be better equipped as far as education goes. But we cannot put men on sailing ships who are 70 years of age. I therefore wish to repeal the clause so as to provide that masters and mates who have served, within the past 10 years, for 12 months on board a sailing ship

may be granted a certificate providing they have the qualifications that I have referred to."

The debate was continued on Mar. 18 by D. D. McKenzie, who again protested against its passage, the Minister of Marine replying. On Mar. 19 W. Duff,

M.P. for Lunenburg, N.S., and C. A. Fournier, M.P. for Bellechasse, Que., and R. H. Butts, M.P. for Cape Breton South, and Richmond, N.S., spoke in support of the resolution, which was adopted, and a bill founded on it was introduced and read a first time.

Loss of the Leyland Line s. s. Bohemian.

An enquiry into the loss of the Leyland Line s.s. Bohemian, on the Sambro Ledges, near Halifax, N.S., on Mar. 1, when six of the crew were drowned, was held at Halifax, Mar. 5, before Capt. J. B. Henry, commissioner, assisted by Capt. N. Hall and C. O. Allan as nautical assessors. The evidence showed that the Bohemian left Boston, Mass., Feb. 28, with 65 passengers and 115 of a crew for Liverpool, Eng., via Halifax. At 5.10 p.m. Feb. 29, Brazil rock was passed, a mile distant, on a course n. 55 e. true, and at 8 p.m. Little Hope Island was 6½ miles off by a 4 point bearing. The ship continued on the same course until 1.30 a.m., Mar. 1, when the master was called according to his instructions, and at 1.58, the direction finding station at Chebucto Head was asked for a radiotelegraph bearing, which was given at 2.5, as Chebucto Head approximate bearing from 207 deg. east of true north. After consulting the chart, the master considered the radio bearing incorrect, and without verifying his position by soundings, continued on his dead reckoning, as he considered he had a visibility of 5 or 6 miles. At 2 a.m., the speed was reduced to slow, approximately 4 to 5 knots, the master intending to continue for 2 or 3 miles before hauling up for pilot station, but at 2.40 a.m. the course was altered to n. 10 e. true, without any soundings being taken, or the ship's position otherwise verified, and as the course was being altered, Sambro light was sighted at a presumed distance of 5 to 6 miles. The explosive signal at Sambro was heard about the same time, followed a little later by the Chebucto fog horn. Still no soundings were taken though the Sambro light vessel was not sighted, as it might be expected to have been from a ship in the position the Bohemian was presumed by her master to be, with the assumed visibility. The ship struck on Broad Breaker at 2.50 a.m., and though efforts were made by engine movements to float her, they were unsuccessful and she broke in two about 3 a.m., Mar. 2. Assistance arrived from Halifax, and all passengers were landed on the morning of the stranding, and during that day some of the crew were engaged to work for the salvage company, but this work was completed the same evening. It was the unanimous opinion of the master, surveyors and salvage experts, that the ship was quite safe for two or three days, but unexpected circumstances developed. There were about 100 men on board, including master, officers, crew and salvage men, and the transfer of these was made by rope ladders and lines from the Bohemian to the tug Roebbing, which was alongside. During the transfer in the early hours of a very cold morning, six lives were lost, the victims apparently not being able to maintain their hold of the ice coated lines, either through frost bite, or burning through sliding down the ropes. Five of those lost were from the steward's department, none being firemen, who might have

been more affected through the cold weather than the deck staff.

In commenting on the evidence, the court stated that the master, without taking the necessary steps to obtain an accurate estimate of the distance off Sambro light, which is surrounded by such dangerous outlying ledges, either thoughtlessly, or for some unexplained reason, except over confidence, as expressed by him, continued to haul the ship on her northerly course and into danger. He had plenty of time to have another bearing from the direction finding station before assuming his northerly course. The court expressed its appreciation of the difficulties experienced by navigators during the war, through mine and submarine zones, and other enemy dangers, and could not but consider the excellent war services of the master, Capt. E. C. Hiscoe, who, from the evidence, was successful in evading disaster to his vessel from submarines, though attacked on three occasions. Taking into consideration the facts as presented, the court found that he should have taken soundings when he received his radio bearing, before rejecting it as incorrect, again before he altered his course, and still again immediately he saw Sambro light, and also should have availed himself of further bearings from the radio station. He might easily have hauled away from the light, which was the proper thing to do under the circumstances. Therefore, the court, while finding him at fault for the casualty, crediting him with his war record and past career as a master, took a lenient view of the case and suspended his certificate, 00551, for three months from Mar. 8. The court also found that the second officer, S. Blackmore, master's certificate 039,432, in whom the master, apparently had implicit confidence, was lacking in his sense of responsibility and duty, and censured him for not suggesting the necessity for verifying the ship's position by soundings and further radio bearings. The court considered that the deplorable loss of life was not in any way due to the neglect of any individual or individuals, but was caused during the transfer to the tug in the dark hours of a very cold morning, owing to the condition of the rope ladders and ice coated davits, etc. The court impressed upon navigators the desirability of more extensive use of the direction finding stations, which are undoubtedly a distinct advantage to mariners as a further means of checking their positions. The court also stated that it might have looked askance upon the disappearance of the log books and other papers, had it not been for the master's sworn statement that he also lost his certificate at the same time.

The Pullman Co. is reported to have applied to the Interstate Commerce Commission for permission to increase its fares about 20% with a minimum of 50c for seats and \$2 for lower berths.

St. Lawrence River Ice Conditions.

J. Archambault, M.P., for Chambly-Verchères, said in the House of Commons Mar. 9:—"I wish to call the attention of the government to a most important and urgent matter. I am informed from reliable sources that the ice jam on the St. Lawrence is much deeper this year than ever before. At Cap Rouge, above Quebec, there is a gorge, and I am informed the ice has frozen 40 ft. deep, and that the water behind has risen 6 ft. higher in some places. There is an ice barrage. If this barrage is not broken up immediately there will be serious floods from that point up to Montreal. We had ice breakers that were built for that purpose. I understand that the steamships Earl Grey, Minto and John D. Hazen were sent to Russia in 1915-1916 and 1917. The Montcalm is at Halifax and I understand the Lady Grey is not powerful enough to break the ice there. I am informed that unless dynamite is used to break the ice very serious floods will occur with resulting damage. I wish to know if the Minister of Marine and Fisheries is aware of the facts, and what steps he intends to take."

Hon. C. C. Ballantyne, Minister of Marine and Fisheries, said: "I am afraid that the information that has reached the member is not accurate, and I shall be very glad indeed to give the information that he asks for. The first part of the winter was not very cold, and no ice bridge formed on the St. Lawrence up to Nicolet Traverse, 90 miles above Quebec, until the last week in January. The ice jammed several times during the winter at Cap Rouge, the Quebec Bridge site, which is considered the key of the ice situation, but was successfully broken up by the ice breaker Lady Grey. With no ice bridge formed at this point, there is no fear of disastrous floods occurring above. The channel is now clear if ice up to near Portneuf, 35 miles above Quebec, where the Lady Grey is working today, and is making good progress. The conditions this year are not much different from those of former years. The Lady Grey hopes to reach Cap Charles, 50 miles above Quebec, very shortly. The Montcalm first of all had to go to Belle Isle to take the place of the Arranmore that was wrecked, and to relieve the lighthouse people there. She afterwards had to go to the assistance of the Canadian Government s.s. Spinner, that was stuck in the ice below Father Point. After releasing that ship she proceeded to the Magdalen Islands, carrying provisions for the distressed people there. Owing to the severity of the weather and the thickness of the ice, she was delayed a month in making that voyage. She returned to Halifax requiring repairs, especially propeller blades, but owing to the wreck of the s.s. Bohemian, she had to go to her assistance. The Montcalm is now in Halifax and will go on the drydock as soon as possible. I do not anticipate any serious results from floods this spring—no one can accurately tell—but I am pleased to say that the Lady Grey is working well and that the ice bridge is broken."

Great Lakes Mariners Votes.—A deputation of masters and mates in the Great Lakes trade has asked the Dominion Minister of Labor that the same consideration be granted to them at elections as is given to railway men, so that they may vote in a similar way.

Superintendent of Pilots for Montreal-Quebec Pilotage District.

The Civil Service Commission advertised recently for applications for appointment as Superintendent of Pilots for the Marine Department of Marine for the Montreal-Quebec Pilotage District, at an initial salary of \$3,060 a year, which will be increased on recommendation for efficient service at the rate of \$180 a year until a maximum of \$3,600 has been reached.

Duties—Under direction, to supervise the pilotage service in a pilotage district of the Marine Department; to call and assign pilots to ships, receive pilotage dues, and make the required reports and returns to the department; to conduct investigations, when required, into wrecks, collisions, and strandings; to make recommendations and handle correspondence in connection with such work; and to perform other related work as required. **Qualifications**.—A master's certificate of competency; must have been actually master of a seagoing ship, or a passenger ship in the coasting trade, for at least one year; must be thoroughly familiar with all shipping matters, especially those of the Gulf and River St. Lawrence and have a knowledge of the English and French languages. While no definite age limit has been fixed, age may be a determining factor when making a selection. **Examination**.—Subjects and weights as follows:—Education and experience, 100; oral interview, if necessary in the opinion of the commissioners, 100.

Ice Breakers in the St. Lawrence.

The following questions were asked in the House of Commons, Mar. 10, by M. S. Delisle, M.P. for Portneuf, Que., the answers being given by the Minister of Marine.

Is the government aware that there is an insufficient number of ice breakers operating in the St. Lawrence? Answer: The only ice breaker operating in the St. Lawrence River at present is the C.G.S. Lady Grey.

If so, does the government propose to order the construction of new ice breakers, how many and of what type? Answer: Under consideration.

If the government has not been made aware of such a condition, is it the intention to order the construction of one or several of such ice breakers? Answer: Under consideration.

British Shipbuilding in 1919.

The most notable British vessels launched during 1919: The Arundel Castle, 22,150 tons; the Cameronia, 16,000 tons, the Oropesa, 14,000 tons and the San Fernando, 13,056 tons. Of that remainder, 127 were between 5,000 and 6,000 tons; 47 between 6,000 and 8,000 tons, and 11 between 8,000 and 10,000 tons. It is a remarkable fact that not a single sailing ship was launched in Great Britain during the year, and only 17, with a total tonnage of 148,188, are fitted with turbine machinery. The four largest vessels, above mentioned, are all propelled by geared turbines, and five ships making 32,926 tons together, are provided with Diesel engines; the largest motor ship is a vessel of 6,980 tons.

The Clyde, including Glasgow and Greenock, accounts for 525,747 tons, which is over 32% of the whole British

production. Glasgow yards show an increased production of nearly 80% compared with 1918. Next in order of magnitude of production comes Sunderland, with 274,283 tons, which is a slight improvement on 1918, while Newcastle follows with 239,836 tons, or rather less than 1918. At Belfast and Londonderry, which take fourth place in the list the tonnage launched was 213,720, an increase of over 42% from 1918. The only other district with more than 100,000 tons to its credit is Middlesbrough, Stockton and Whitby, for which the figure is 119,943, nearly 10% more than in 1918.

Proposed Control of Inland Navigation Rules Etc.

The Dominion Parliament has given a first reading to a bill introduced by J. E. Armstrong to amend the Railway Act, 1919, by adding sections to give the Board of Railway Commissioners jurisdiction over ships trading on inland waters, and in coasting business. In explaining the bill Mr. Armstrong said it is similar to the one he brought before the House in 1919, and is intended to bring such ships under the Board of Railway Commissioner's control as to rates, tolls, tariff agreements and arrangements, time of call, duration of stay and so forth. The last section of the bill seeks to amend Sec. 358 of the Railway Act in order that it may harmonize with the principles of this bill. The Winnipeg Board of Trade is reported to have passed a resolution Mar. 13, opposing the bill and it was further stated that other boards of trade in the west would be asked to also oppose it.

Steamship Service to Gaspé Points.—Sir George Foster, acting Prime Minister, gave the following information in the House of Commons, Mar. 11, in answer to questions by C. Marcell, M.P., for Bonaventure. The government does not intend to offer a subsidy this year for a steamship service between Campbellton, N.B., and Gaspé, Que., which was discontinued at the close of navigation in 1917. No requests have been received for the revival of the service this year. The Gulf of St. Lawrence Shipping & Trading Co., Quebec, has a contract for a steamship service this year between Montreal and Quebec and Gaspé, or Paspébiac, Que. The same company ran fortnightly trips last year between Montreal, Quebec, Gaspé and Paspébiac. There was no service to Campbellton.

The Eastern Canada Stevedoring and General Contracting Co. Ltd. has been incorporated under the Quebec Companies Act with \$100,000 authorized capital, and office at Quebec, Que., to take over the business carried on formerly by L. Couture, to conduct a general contracting and stevedoring business, and to own and operate steam and other ships of every description. The incorporators are: L. Couture, M.L., M.J.S., V.K., and W. B. W. Mahon, Quebec, Que.

Motor Transport, Ltd. has been incorporated under the Dominion Companies Act, with \$25,000 authorized capital, and office at Montreal, to carry on the transportation of merchandise and passengers upon land and water, towing, wrecking and salvaging, in all its branches, on navigable waters in Canada to or from any foreign port. The incorporators are: F. W. Tofield, B. S. Crombie, A. M. Murray, F. H. Robertson and E. Paul, Montreal.

Canadian Government Steamboat Champlain.

The following questions by P. F. Casgrain, M.P. for Charlevoix-Montmorency, were asked in the House of Commons Mar. 10, and answered by the Minister of Marine:

Has the government disposed of the steamboat Champlain? Answer: No, but intends doing so.

If so, why? Answer: No further use for her.

What price was realized by the sale? Answer: \$61,050.

Is it the Government's intention to buy or build another steamboat to replace the Champlain? Answer: No.

If not, why? Answer: No necessity for replacing her.

Is there any steamboat at present replacing the Champlain, along the route Murray Bay-Tadousac? Answer: The Champlain is still at Murray Bay.

The answers given to the questions, as reproduced from the official report of the House of Commons debates, do not agree, one answer stating that the government had not disposed of the ship, but intended doing so, while another stated that \$61,050 was realized by the sale.

Canadian Government Steamship Stanley.

The following questions were asked in the House of Commons Mar. 10, by D. W. Duff, M.P., for Lunenburg, N.S., and answered by the Minister of Marine:

Does the government own a steamer named the Stanley? Answer: Yes.

If so, when did she last undergo overhauling and repairs? Answer: At present under repair.

Have said repairs been completed, and what was their nature? Answer: No, general overhaul of the hull, boilers and machinery, including removal and refitting of certain shell plating, renewal of defective double bottom tank tops under boilers. General overhaul of the main and auxiliary machinery and boilers, overhaul of underwater fittings, also overhaul of the electric light installation including the rewiring of the ship.

What did said repairs cost? Answer: Amounts of contracts let, \$23,507.85.

How long was the ship out of commission, giving dates? Answer: Dec. 12, still under repair.

Gaspé Steamship Service. Sir George Foster stated in the House of Commons, Mar. 22, that the government had not given any thought to putting on some of its steamships on the Montreal-Quebec-Gaspé route, in lieu of the steamships subsidized formerly, and that the government had no special information as to residents of Matane, Gaspé and Bonaventure counties having to rely on sailing craft to transact their business, as in the old days, but that there might be some cases of the kind. In answer to another question: "Owing to the government's refusal to grant a subsidy for a steamship service between Campbellton, N.B., and Gaspé, Que., is the government prepared to offer a subsidy of \$3,000 for a steamship service between Dalhousie, N.B., St. Homer and Carleton, Que.?" Sir George Foster replied: "The answer is in the negative."

Tide Tables for Nelson, Hudson Bay and tidal data for Hudson's Strait and James Bay, for 1920 season, July to October both inclusive, have been issued by the Naval Service Department.

Canada Steamship Lines, Limited, Annual Meeting.

Canada Steamship Lines Ltd. annual report for the calendar year 1919 was published in Canadian Railway and Marine World for March. The annual meeting was held in Montreal, Mar. 2. The President, J. W. Norcross, in moving the report's adoption, said:

"The report and financial statements have a special interest this year, as they afford an opportunity of gauging the possibilities of the enlarged system of the company's operations under peace conditions. During the past few years so many important developments have occurred that it might be of interest to shareholders to know how the various undertakings have gradually been rounded out into one complete unit of operation. At the time the consolidation was effected, the operations of the company were confined largely to freight and passenger business on the St. Lawrence and Canadian and inland waters. The various classes of tonnage owned by the companies at the time made it difficult to operate them to advantage under one central management. Today, as the result of carefully mapped out plans, the company operates a complete international trans-Atlantic and all-Canadian service. Its Atlantic, West Indies and South American lines are closely related to the inland services, and it has been clearly proved that the earnings of each department have benefitted by the new ones that have been established. The results obtained from the trans-Atlantic services have more than justified the important plans carried out in this field. While substantial revenue producers, these ocean services have been established at comparatively small capital outlay, and it has been possible to use in connection with them the company's regular traffic departments. At the same time their operation has necessitated only small additions to the general organization. Of equal importance has been the improvement in the class of tonnage owned and operated. The marked increase in tonnage values enabled your directors to dispose of, at very favorable prices, a large number of the steamships turned over at the time of the consolidation. They have in every instance been replaced by ships of the highest class. As a result, the company today has a fleet of steamers particularly adapted for the services in which they are employed. Notwithstanding the large increase in tonnage values, the entire fleet is carried on the books at a lower per ton rate than before the war. It might also be worthy of mention that while our trust deed only calls for a depreciation allowance of 2½% the board's policy has been to make a more liberal appropriation. The important affiliations made by the company in connection with its trans-Atlantic services are likely to lead to the establishment of other ocean routes. In addition, plans are being considered which may result in a working arrangement between your company and another very large undertaking. Both of these possible extensions should have a direct bearing on the growth of the import and export trade of the Dominion—a development which is so strongly urged, owing to its important bearing on the adjustment of the trade balance of the country. While we are passing through a period when it is somewhat difficult to see very far ahead, we feel that the results achieved

under peace conditions justify confidence in the future. The broadening out of the organization makes the company less dependent on any one class of traffic and tends to stabilize, as a whole, the operations of the entire year. The company's various departments are co-related in a manner that permits of all your undertakings supplementing one another to advantage. With the inland and trans-Atlantic services, your agents can take delivery of freight at any port on the Great Lakes in Canada and the United States and issue to the shipper a through bill of lading to European ports. This is a particularly strong position to be in. Advantage was also taken of the special conditions that prevailed during the war period and as a result your company made a number of favorable long-term contracts which will greatly strengthen its position during the next few years. Your directors feel that gradually, but steadily, an efficient and complete system of transportation has been built up, which enables it to pre-eminently meet the demands of the growth of Canada's export and import trade. On this account your company is in a position to render a great service to the Dominion. This should be a matter of pride to every Canadian, as it will undoubtedly be to every shareholder."

M. J. Haney, of Toronto, Vice President, in seconding the adoption of the report, said: "The results reflect an achievement that is altogether exceptional for a Canadian corporation. Mr. Norcross, in his address, has been kind enough to give to the board of directors a considerable portion of the merit for the policy that has brought these eminently satisfactory results to the shareholders. Speaking on behalf of the board, I think it is only fair to point out that while we have given the management every co-operation at all times, the credit for the great organization built up and the satisfactory returns that are being obtained from the different departments must of necessity go to the management and the strong organization that has been rounded out. It must be a matter of considerable pride to the shareholders to note that their undertaking, by careful management, has been gradually rounded out from an inland undertaking, operating barely six months in the year, to a trans-Atlantic transportation system that operates in every month of the year, and covers such a multitude of services that any reduction in one department is likely in time to be offset by the increased revenues from others. It is surprising that the management has been able to do this without any increase in capital and with very small additions to the company's general organization. It only goes to show what a good organization the company has. Where before, the various agents were securing cargoes for the inland routes, they are now out in the different fields, filling up the ocean vessels in the various services of the company. Canada is every day becoming more of a factor in export trade to different parts of the world and with its substantial fleet of steamers, Canada Steamship Lines can assure to the Canadian shipper that his goods can be delivered in Canadian ships to the leading ports of Europe."

The following are the officers and directors for this year: Commander Sir

Trevor Dawson, R.N., Honorary President; J. W. Norcross, President and Managing Director; M. J. Haney, Vice President; C. A. Barnard, K.C., Vice President. Other directors: E. Bristol, K.C., M.P.; W. E. Burke, Hon. Frank Carrel, Hon. J. P. B. Casgrain, H. W. Cowan, J. E. Dalrymple, D. B. Hanna, F. S. Isard, Sir Henry M. Pellatt, H. B. Smith, Geo. H. Smithers, J. P. Steedman.

London Advisory Committee: Commander Sir Trevor Dawson, Chairman; Sir Vincent Caillard, W. Grant Morden, M.P.; C. G. Bryan, Sir Francis Barker, Sir Frederick Orr-Lewis.

Steamship J. A. McKee. The Minister of Railways gave the following information in the House of Commons, Mar. 22. The s.s. McKee, approximately 1,373 net tons, and 3,000 d.w. tons, was bought by the government, from Algoma Steel Corporation, April 18, 1917, for \$500,000, and \$342,660 has since been expended on repairs and refitting. She is engaged in the St. John, N.B.-West Indies trade. There was a deficit of \$269,354 on her operation to Dec. 31, 1919, on account of serious damage sustained through the Halifax explosion, and also on account of her running aground at New York. As she was uninsured at that time, repairs were charged largely to operating expenses.

British Docks—A large number of important improvement schemes are being carried out by dock and harbor authorities in Great Britain. At the London port a new dock of 43 acres and with a water depth of 38 ft. is nearing completion. The scheme includes a graving dock to accommodate vessels of the largest class. A 2 story river jetty, with a frontage of 1,000 ft. and a low water depth of 30 ft. is also being built. At Liverpool the works in progress will cost £10,000,000, and include a large half tide dock and an extensive series of storage tanks for oil. On the Clyde new berthing basins large enough for the biggest vessels are being laid out, and important extensions are also being made at Leith and Dundee. Bristol Channel ports are increasing their equipment for handling coal, and at Plymouth, Dover, Grimsby, Sunderland, the Tyne, and the Tees, many improvements are being carried out.

Tribute to C. Gardner Johnson.—The Vancouver Pilot Board, just prior to quitting office recently, sent the following letter to the Secretary, C. Gardner Johnson: "We the undersigned members of the Vancouver Pilot Board now retiring (owing to the Dominion Government changing the head office to Ottawa), take the present opportunity to convey to you, by letter, our heartfelt thanks in appreciation of the excellent service you have given to the pilot commissioners at all times, in performing their respective duties for a period of over 30 years, in the capacity of Secretary of the Pilot Board, for the benefit of the shipping interest and pilot service of the Port of Vancouver. We also thank you for the courteous manner in which we have been treated by you during our business meetings, and we have pleasure in wishing you long life and prosperity in the future years to come. Yours sincerely, C. G. Major, Chairman; Frank Burnett, H. G. Ross, W. Harvey Copp."

Durability of Piles in Intertidal Space.

How far above low water are untreated wood piles protected by saturation? This question has been asked a number of engineers by the Forest Products Laboratory, at Madison, Wis. In tidal waters the portions of piles above mean low tide, although completely immersed only part of the time, may be practically saturated all the time. Wood constantly saturated with water is not subject to decay, and this fact makes the height to which saturation extends above low tide a question of considerable interest to the designing engineer. The opinion of most of the engineers asked is that untreated piling in water not infested with marine wood borers will remain sound indefinitely if cut off at half-tide. This height ranges in various ports from 2.3 to 4.5 ft. above low water. At certain places on the Atlantic coast, piles cut off at the height of half-tide are still sound after from 50 to 100 years of service. Untreated piling is destroyed by marine borers more rapidly than by decay, and the information given would, of course, have no practical use where these organisms are active.

A Ship Repairing Case in the Supreme Court.

An Ottawa press dispatch of Mar. 3 states that the appeal of Montreal Dry Docks vs. Halifax Shipyards, Ltd., was argued that day before the Supreme Court. The respondent was making repairs to the ship *Westerian* in Halifax, N.S., when it was put under arrest by appellants, who claimed liens for supply of materials. After the arrest the repairs were proceeded with at a cost of \$15,000. The ship was sold under a court order, producing a sum slightly in excess of appellants' combined claim, and the latter took action in the Admiralty Court, claiming priority over respondent's claim for the cost of repairs after the arrest. The local judge at Halifax held that appellants had priority. His judgment was reversed by the Exchequer Court, on the grounds that the repairs had increased the selling value of the ship, and it would be inequitable to refuse full payment for the same; that the arrest had no effect on the lien of the shipwrights, whose possession was not interrupted thereby, and that respondent was in the same position as if permission of the court to continue the repairs had been obtained.

Shipments of Goods to Roumania Through U.S. Ports.

W. Duff, M.P., for Lunenburg, N.S., asked the following questions in the House of Commons, Mar. 11: "Are Canadian goods, purchased by Roumanians on the credit of the \$25,000,000, established by the government, and destined for Roumania, still being shipped through a U. S. port? If so, why does not the government insist that such goods, destined for Roumania, be forwarded through a Canadian port? Will the government give this important matter its most serious consideration?"

Sir George Foster, acting Prime Minister, replied: "Shipments to Roumania are being forwarded from Canadian ports. The total quantity shipped via Canadian ports has been 32,881 cubic

tons, and via New York 2,850 tons. The traffic from Canadian ports has been handled in full ship loads. At the close of navigation last autumn it was necessary to relieve the various manufacturers of their accumulation of goods packed ready for shipment, although this quantity was not nearly sufficient to make up a cargo. About 75% of the material consisted of roofing, a comparatively low-priced commodity, which made the cost of storage, insurance and other charges prohibitive. There is no regular steamship service from Canadian ports to the Black Sea, but the Furness-Withy Co. has a regular sailing from New York. In order to relieve the accumulation of goods in the manufacturers stores, it was necessary to forward these goods through New York, where they could be shipped without storage or insurance charges being incurred. Meanwhile, the remainder of the goods to be shipped are being accumulated at Sydney, N. S., and St. John, N. B., and as soon as there is a sufficient quantity to warrant chartering a ship the remainder of the shipments will be made from these ports."

Harbor Tunnel for Victoria, B.C.—

There has been some press discussion recently in regard to the building of a tunnel in connection with the railway and harbor development works in progress in Victoria, B.C. Apparently at the request of the Minister of Agriculture, a Public Works Department engineer has made some investigations in the matter, the result of which has, a press report states, been communicated to the Victoria Board of Trade. The plan accompanying the letter shows a tunnel under the inner harbor of 5,600 ft. long, and 2,310 ft. of open cut, necessary to link up the ocean docks with the Canadian National Rys. terminals, the estimated cost of which is \$2,000,000.

Victoria Wharf Contract Suit—Grant Smith and Co. and McDonnell Limited, have been given permission to enter suit against the Dominion Government for approximately \$300,000 for work done in connection with the building of two wharves. The contractors' claim for the excavation of 28,276 cubic yards of earth and 32,100 cubic yards of rock at contract prices. There is a dispute as to what percentage of the excavation was rock and what earth. Earth excavation was paid for at 52c a cubic yard, and rock excavation at \$9.10 a yard.

The MacMillan River Exploration Co. Ltd. has been incorporated under the Dominion Companies Act, with \$30,000 authorized capital, and office at Ottawa, to carry on a general exploration and development business, and to own and operate steam and other ships, wharves, docks, elevators and other navigation facilities, and to act as common carriers. The incorporators are,—A. Haydon, D. R. Kennedy, E. R. Jackson, I. H. Doherty, E. Valois, E. H. O'Malley and L. Brennan, all of Ottawa.

Sorel Shipyard Superintendency.—The Minister of Marine stated in the House of Commons, Mar. 11, in answer to questions by T. Gervais, M.P., for Berthier, Que., that no permanent appointment of a Superintendent of the Sorel, Que., shipyard had been made, to replace W. S. Jackson. Louis Lacouture is acting officer in charge, at a salary of \$2,100, plus bonus of \$228 a year. He has a practical knowledge of the English and French languages.

Too Late for Classification.

The Polson Iron Works Shipbuilding Plant and other assets at Toronto are offered for judicial sale, tenders to be in by May 1.

Major-General Sir David Watson, proprietor of the *Quebec Chronicle*, is reported to have been appointed Chairman Quebec Harbor Commission, Vice Hon. D. O. L'Esperance, resigned owing to ill health.

A Vancouver, B.C., press dispatch states that negotiations between the Vancouver Harbor Board, on behalf of the Dominion Government, and the Great Northern Ry., for the purchase of water frontage on Burrard Inlet, for the site of a new government pier, have been completed.

Roy M. Wolvin, who has been elected President Dominion Steel Corporation, was born at St. Clair, Mich., Jan. 21, 1880. He was in the Western Transit Co.'s service at Duluth in 1896 and 1897. He then became General Manager, Great Lakes & St. Lawrence Transportation Co. and Standard Steamship Co., occupying those position till 1910. He next became President of the Standard Shipping Co., Winnipeg, the Duluth Shipping Co., and the Central Shipping Co., Chicago. He later became President Montreal Transportation Co., Montreal; Vice President and Managing Director Halifax Shipyards; Vice President Collingwood Shipbuilding; President Reid Towing & Wrecking Co., as well as occupying several other responsible positions. He has worked in close contact with J. W. Norcross, President Canada Steamship Lines. He was elected a director of the Dominion Steel Corporation in New York.

Sales of British Government Ships—

The steamships War Company and War Storm, steel steamships built by J. Coughlan & Sons, Vancouver, B.C., and Wallace Shipyards, North Vancouver, B.C., respectively, for the British Government, under orders from the Imperial Munitions Board, are reported to have been sold to Italian interests. The s.s. War Company sailed from Vancouver some time ago from England, with a cargo of lumber, and reached Hull in 45 days, having met exceptionally bad weather, during which she is reported to have behaved remarkably well. The name of the s.s. War Storm has been changed to *Laura*. The wooden s.s. War Haida, built for the British Government by Cameron-Genoa Mills Shipyards, Ltd., Victoria, B.C., is also reported to have been sold to Italian interests, and to have been renamed *Rodosto*.

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.

Whiting Foundry Equipment Co. Harvey, Ill., has issued its crane catalogue 151, describing and illustrating electric, travelling, bucket, handling, gantry, transfer, hand, power, gib pillar and bracket cranes also bulletin 152, giving a list of users of the Whiting cupola.