

# Canadian Railway and Marine World

April, 1918.

## Locomotive Maintenance and Repairs.

By E. R. Battley, Master Mechanic, G.T.R., Montreal.

Repairing and maintaining running repairs on locomotives are two of the great problems with which railways have to deal. On account of the abnormal conditions and the vast amount of freight waiting to be moved, it is essential that railways keep their locomotives in constant service, which means a special effort must be made by shop forces to complete repair work as quickly as possible. Due to the demand for locomotives in the allied countries, our locomotive builders cannot supply sufficient new ones for export and for home use, therefore it has been deemed advisable to ship a large part of the output abroad, using our present power to its capacity. By so doing we must expect the outlay for repairs will be in excess of that of former years. The wages paid today are high, and in the majority of repair shops, railways are forced to employ mechanics inexperienced in regard to railway work, which necessarily follows repairs take longer and the work requires closer supervision. For the past few years the Government has exercised considerable authority over the railways in regard to the building and maintenance of power, having made rules and regulations concerning standards, defects, etc., and having assigned inspectors to certain districts to see that rules are observed. While these laws added considerable extra work to most roads it has, no doubt, been the means of improving the power and prolonging the life as well. As previously stated, one of the great trials of all railways is to keep up the repairs on their motive power. To accomplish this, we must provide facilities for repairing and handling, at locomotive houses and general repair shops.

**Locomotive Houses.**—It is difficult to do quick work at terminals unless we provide proper facilities, such as suitable locomotive houses and equipment. The key to the power handling situation of the locomotive houses is the ashpit, therefore we must provide large pits, equipped with a sure and quick means of handling the accumulation of cinders. Ample room must be provided on both sides of the pit, so that in rush hours fires can be cleaned or dumped and locomotives moved along out of the way to await their turn on the turntable. If this space is not provided, and after a locomotive or two has been dumped, it means the work on the locomotives following is at a standstill until those ahead have been moved. Conditions of this kind cause ashpits to be idle and at a busy terminal a large waiting list is the result.

In close relation to the ashpit is the turntable and shop leads. The former should be of rigid construction and power operated. The leads should be of sufficient length to accommodate outgoing locomotives, and provided with suitable crossovers and water cranes to facilitate the dispatching of power.

A valuable addition to any roundhouse is good machinery. A great mistake sometimes made by railways is filling up locomotive house machine shops with anti-

quated tools. When a machine job is required in a back shop it is usually a rush order, therefore speed and accuracy is required. If modern tools are used, you get what is desired without delay. All our terminals of importance have been equipped with portable oxy-acetylene welding and cutting outfits, and needless to say they have proved invaluable.

Organization is another valuable asset to the shop. One may have a splendid layout, good tools, etc., but without sys-

may mention an important item that contributes to shop efficiency, but which is sometimes treated lightly, and that is, cleanliness. We have found by experience, that in keeping our premises clean and tidy, better work is produced and time saved, as spare material can be quickly located. Accidents due to employees falling over old material are reduced to a minimum. In addition to these beneficial results, it looks well and gives one the impression that the foreman in charge is master of the situation.

During the busy season, when locomotives are at a premium, the cripples at roundhouses accumulate quickly, unless a close check is kept on the shipment of repair parts. We have a system of checking up and forwarding repair parts to out stations that has proved very satisfactory, and has been the means of keeping our locomotives in service during the past severe winter. Foremen at each station send a joint message to the road and shop master mechanics as soon as he finds he requires repair parts. In addition to this, he sends in a daily report of locomotives undergoing repairs which will take over 24 hours, stating when locomotive was taken out of service, what material is required and on whom ordered. This gives the master mechanic an excellent opportunity of keeping in close touch with the situation on his division. To ensure requisitions being filled promptly, and to avoid delays in shipment, or at transfer points, a material man is appointed by the road master mechanic. His duties are to check requisitions, receive telegrams for material, consult shop master mechanics and subordinates, as to when material can be secured, see that there is no delay in handling, also advise out stations on what train material is going forward so that he can be prepared to have it removed promptly on arrival.

**General repair shops** should be of sufficient size to care for the power assigned to the division and centrally located. When a locomotive is to be shopped and the nature of repairs is mainly controlled by the road master mechanic, any unusual repairs are decided upon, after a boiler inspection and hydrostatic test has been applied. After the locomotive has been stripped, the shop inspector makes out a final report and repairs are made accordingly. Accompanying each locomotive to the shop is the locomotive foreman's report of repairs, which forms the basis from which the shop master mechanic works.

There is approximately 10% of our power under repairs at all times, this is necessary to keep our locomotives in good condition, and also provides sufficient work in advance for the shop staff, who work entirely on the bonus system. Our output and bonus system are so closely related that in speaking of one it is necessary to mention the other. The subject of this paper being repairs, the bonus system will only be mentioned when necessary to show why we handle certain operations in certain ways.



E. R. Battley

Master Mechanic, Eastern Lines, Grand Trunk Railway.

tem, efficiency is reduced. We have found by arranging our locomotive house staff in special gangs good results have been obtained. These gangs are grouped as follows: passenger, freight and switch, air brake, spring and brake gear, rod and box packing, lighting up, and, last but not least, the boiler gang. The different gangs are controlled by chargemen, who report to the shop foreman.

Locomotive men upon arrival book the necessary work in a book provided for the purpose. A competent inspector also makes an examination of the locomotive and records defects found. The work is then copied by a man assigned to this work, who distributes the slips to the respective charge hands. When the work is completed, a notation is made in the report book on the opposite page to the one in which the engineer placed his report.

In dealing with locomotive houses, I

Our methods are practically the same over the entire system, but as the Stratford shop was the first to try this system, we will use it as an illustration. The repairs required are designated by a letter, which is in itself a symbol and indicates what kind of repairs are necessary, also approximately how many days the locomotive will be in the shop. The following are the letters used, with a brief explanation:

B.S.—Boiler to be converted to superheat and will be 24 working days in the shop. (Spare boiler and cylinders are ready before locomotive comes in.)

B.—New firebox to be applied. 21 working days allowed.

C.—Firebox will receive new half side and possibly new flue sheet. 21 working days allowed.

D.—Boiler to be retubed and machinery given a general repair. 18 working days allowed.

D.C.—Same as D, except new cylinder or cylinders will be applied. 21 working days allowed.

E.—Wheels removed, tires turned, boxes and rods repaired. 12 working days allowed.

L.—Light repairs such as replacing broken rods, light patch in firebox, or any work which locomotive house cannot conveniently handle.

S.—Specific repairs. Some special job which is really locomotive house work, but for some legitimate reason is handled in the main shop.

As each kind of repair is allowed a certain number of days in the shop, the list of locomotives turned out weekly has to bear a certain relationship to this, in order that output may be regular, both as to quantity and weight of repairs. The foremen meet in the master mechanic's office each Friday and incoming locomotives are assigned to their proper places on the outgoing list. A new list is issued each week. The locomotives are booked in, in such a manner that each week's output will represent about the same weight of repairs on the whole, although the number of locomotives may be more or less.

As space is limited, I cannot describe the methods as applied in all departments, but will take it for granted the various parts have been repaired and are in the erecting shop. This department was formerly handled with nine regular gangs, consisting of approximately 10 men per gang, controlled by a chargehand, who was responsible for three pits. In addition to the nine gangs we had three or four special gangs, such as shoe and wedge, guide bar, and steampipe. Our regular pit gangs carried the locomotive through from the time it was stripped, with the exception of the detailed work above mentioned. Under this system we accomplished good work until our forces became depleted through enlistments, and upon looking carefully into the situation we found where a gang usually had five or six mechanics, it would probably have one or two, the remainder being unskilled. It was, therefore, necessary for us to meet the new conditions in order to keep up the repairs. To do this we re-arranged our men into special gangs, mainly to centralize our machinists on work that really required mechanics, and use the unskilled labor on the coarser work. With this arrangement, instead of a gang having three pits on which to work, they have the entire erecting shop, therefore delays were reduced to a minimum. The gangs were arranged as follows:

Stripping gang.—Strip engine complete, with the exception of mountings

and pipes. These are taken off by the strippers of the steampipe department.

Frame gang.—Main frame applied and rebolted, front frames applying and rebolting complete (when cylinders are not off) back and front deck castings, waste sheet and cross tie casting. Furnace bearers back, front or side renewed or bolted, furnace bearer brackets on frame, friction casting and wedge, lining up boiler when locomotive is rebuilt when the original cylinders are used, steel running boards and brackets with all necessary studs.

Shoe and wedge gang.—Line up, mark off, machine and fit up all shoes and wedges.

Guide bar gang.—Set all guides, face all valve seats, apply steam chests and bore cylinders in erecting shop.

Brake and spring gear gang.—All brake and spring gear complete, fitting up and applying, including brake hangers, brackets, etc.

Motion gang.—Pistons, motion plate and motion plate knees, piston valves, cylinder covers and studs for same, rocker boxes, tumbling shaft and brackets, transmission bars, links, etc., eccentrics, valve rods and other necessary motion work.

Front end gang.—Buffer beams complete, draw casting, coupler and connections, hand railings and columns for same.

Steam pipe gang.—Stripping the mountings and pipes from locomotives and grind throttles, steam pipes, headers and units, and apply same complete.

Trimming gang.—Air pump and other air brake work, inspirators and all small jobs.

Cylinder gang.—Apply all new cylinders.

The foregoing covers practically all operations in the erecting shop. Other work, such as carpentering, tinsmithing and painting, is done by the respective departments.

One special feature of our bonus system, is the key to the success of that system; viz., the demonstrating end of the bonus department. The prices, set by demonstration when possible, are known to be fair and correct. The chief demonstrator and his assistants have charge of this work over the entire system, and travel continuously from shop to shop. These men do not worry a great deal about prices, as this has been efficiently handled by the bonus department of each shop, which sets the prices according to the peculiar conditions surrounding the different plants, but being our most expert men, they concentrate their efforts in bringing each department in all shops to a higher state of efficiency by transferring best methods, and, if necessary, men from one shop to another. As a result of this method, workmen are free from the worry of price cutting, therefore the standard of work has shown a steady improvement. This department also controls the method of applying the bonus system, with the result that the method of application is the same at all shops. It is needless to say the results obtained from this system have been highly satisfactory, and in spite of the unfavorable labor conditions, we have maintained repairs on our locomotives, and in addition to keeping up the ordinary repairs we have been able to convert 57 locomotives from saturated to superheated steam.

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

The Canadian Ticket Agents' Association will hold its annual meeting at Buffalo, N.Y., Oct. 9.

## The Poor Stores Department.

A railway storekeeper writes as follows:—Canadian Railway and Marine World had the following in its February issue:

"Great Northern Ry.—The old frame building on Pender St., Vancouver, B.C., formerly used by the G.N.R. as a passenger station, and which has been closed since the opening of the new building on False Creek, is to be renovated and used for a stores building."

We do not know at this distance how important the G.N.R. stores at Vancouver may be, how many miles of line they must supply, how many and size of shops, etc. But even so, we ask ourselves, "How long, good Lord, how long?"

Since the first railway came into existence in America, with everything provided, except the place to store its supplies, the story has been the same. First the effort to sidestep the question of supply, then failing that, as they must, the makeshift. "It seems we cannot get along without a store. Here is an old building that cannot be used for anything else. Make that a store." And they do, and go on using it, and waste the value of several buildings.

I met a railway storekeeper at a convention some years ago and he showed me a photograph of his store building. It was an old log and board shanty, that the graders had left standing when they had finished their work. He also told me he was in trouble, as his people were after him about his stock figures, which figures showed that he had \$200 worth of supplies per mile of road, and his was a fairly busy road, though poor. He wanted to know what he should do, and I told him to go home and tell his people that they did not know as much about railway stores and stock figures as a dog knows about his father, and point out to them that some of the railways that were railways had good store buildings and their figures were \$1,600 worth of stock per mile of road, and that there was only one other road in America that could equal his figures, and it was about being sold out. I suppose he told them that, or words to that effect, for he had a new job shortly after. And I have always hoped that the gang he left would learn a little about stores and supplies, before they got another unfortunate into that old shack.

It is a wonderful thing to me that it took the world war to teach the people of the world that supply is, was, and always will be, the greatest question in the world. It must have been a fearful shock to people who had always looked on themselves as of the very greatest importance, to learn that the man who planted a few potatoes and dug them was of more importance to their country than they were.

But we learn, at a price, and what a price. Even the railways learn, after paying the price. Today, when big railway people lay out big shops, they lay out the stores, build them first, the boiler shop next, and then build the other units around them. A few do this, anyway, and it always should have been so. And yet we still see now and then such news items as the one at the head of this letter.

Railway Employes Organization.—The Systems Federation of the Mechanical Employes of all Canadian Railways, which is united with the American Federation of Labor, has elected the following as its first officers:—President, R. J. Talton, Calgary, Alta.; Vice President, F. McKenna, Cranbrook, B.C.; Secretary, Treasurer, C. Dickie, Montreal. The headquarters of the new organization is to be at Winnipeg.

## Canadian Pacific Railway's Honor Roll 32.

Beattie, William	Coal passer	Weyburn	Died of wounds
Blenkin, James Stephen	Car cleaner	Toronto	Wounded
Buckham, Andrew Gilchrist	Sleeping car conductor	Montreal	Wounded
Cadden, Wm.	Painter's helper	Angus	Wounded
Chittenden, Alfred	Blacksmith's helper	Winnipeg	Killed in action
Clark, Percy Wm.	Inspector	Glen Yard	Wounded
Conkling, Orin Lucius	Operator	Sintaluta	Wounded
Crawford, Thomas Merrill	Brakeman	British Columbia Dist.	Wounded
Courtney, Arthur Wm.	Wiper	East Calgary	Wounded
Copland, David Arthur	Locomotive fireman	Moose Jaw	Wounded
Davidson, Richard	Clerk	Winnipeg	Killed in action
Dove, Ronald Charles	Clerk	Montreal	Wounded
Dunning, Clarence Singleton	Chief clerk	Montreal	Wounded
Dorward, James Currie	Car cleaner	Winnipeg	Wounded
Ferguson, John	Baggage man	Kamloops	Wounded
Evans, James Ross	Clerk	Regina	Killed in action
Forsyth, Arthur E.	Clerk	Toronto	Wounded
Franklin, Thos. E.	Fitter's apprentice	Sutherland	Wounded
Gaff, Percy Sterling	Clerk	Winnipeg	Gassed
Grinton, David	Fitter's helper	Chapleau	Wounded
Haldane, James	Laborer	London	Wounded
Harris, Ronald	Fitter's helper	Lambton	Gassed
Hart, Robert	Porter	Vancouver	Wounded
Hathaway, Albert	Wiper	Moose Jaw	Wounded
Howe, James W.	Apprentice	Winnipeg	Wounded
Hunnisett, Fredk. Chas.	Shipper	Glen Yard	Wounded
Jacklin, Ernest	Apprentice	Winnipeg	Wounded
Jackson, Samuel Roy	Section laborer	British Columbia Dist.	Wounded
Jones, Robert Harold	Yardman	McAdam Junction	Wounded
Keith, James	Locomotive fireman	Fort William	Concussion
Latimer, John	Carpenter	West Toronto	Wounded
Lea, Stanley Thos.	Locomotive fireman	British Columbia Dist.	Wounded
Levitt, James	Signalman	Saskatoon	Wounded
Linning, Hamilton	Drill boy	Lethbridge	Wounded
Lucas, James	Floorman	Montreal	Killed in action
McColloch, Hugh	Tinsmith's helper	Winnipeg	Wounded
MacDuff, George	Car repairer	Lethbridge	Died of wounds
McPhee, Dougall	Clerk	Montreal	Wounded
McSporran, Duncan	Locomotive fireman	Moose Jaw	Wounded
Maddocks, Wm.	Locomotive fireman	Lambton	Wounded
Main, Thomas	Towerman	Calgary	Wounded
Matte, Adalard	Agent	Mont Tremblant	Wounded
Mayers, Joseph	Cleaner	Glen Yard	Wounded
Medlicott, Thomas	Painter	Medicine Hat	Wounded
Mein, Fred	Operator	Carberry	Wounded
Mills, Philip	Hostler	Broadview	Wounded
Milner, George	Painter	Ogden Shops	Shell shock
Mitchell, Wm. John	Wiper	Victoria	Wounded
Morrrell, George	Painter	West Toronto	Wounded
Morrison, Jesse Edwin	Section foreman	Ronalane	Wounded
Morton, James Henderson	Deck hand	B.C. lake steamers	Wounded
Mudd, Lloyd K.	Trainman	Winnipeg	Wounded
Munro, Jas. Robert	Clerk	Calgary	Killed in action
Nicoll, George	Waiter	Toronto	Wounded
Noakes, Burt	Inspector	Glen Yard	Wounded
Nokes, John Hy.	Car inspector	Toronto	Wounded
Oakes, Bertram James	Pantryman	Montreal	Killed in action
Olliver, David Bertram	Trainman	Winnipeg	Died of wounds
Oshourne, Archie	Fireman	Winnipeg	Wounded
Owen, Hugh	Patternmaker's appren.	Ogden shops	Killed in action
Oxborough, John Campbell	Train baggageman	Calgary	Killed in action
Padgham, Bert	Porter	B.C. coast steamers	Wounded
Parkinson, Askew	Locomotive fireman	London	Wounded
Peagram, Arthur George	Clerk	Montreal	Wounded
Perkins, Stephen G.	Clerk	Winnipeg	Wounded
Peterson, David Edgood	Operator	Gladstone	Wounded
Petrie, William	Checker	Winnipeg	Presumed dead
Phillips, Frederick	Bridgeman	Brandon	Wounded
Phillips, Percy Woodville	Miner	Calgary	Killed in action
Pickering, Thomas	Locomotive fireman	Red Deer	Wounded
Ralph, Harry Robert	Clerk	Montreal	Wounded
Razzell, Edwin	Waiter	Winnipeg	Wounded
Rutherford, Albert	Operator	Toronto	Wounded
Sanger, Herbert George	Furnace helper	Angus	Killed in action
Shackell, Samuel Willis	Transitman	Montreal	Wounded
Sigurdson, Ollie	Locomotive fireman	Kenora	Wounded
Sinnoek, Samuel	Fitter's helper	Winnipeg	Wounded
Stenson, Francis Wilfred	Draftsman	Montreal	Wounded
Scrachan, Andrew Ritchie	Stenographer	Winnipeg	Wounded
Taylor, William	Maintainer	Winnipeg	Wounded
Tilson, Wm.	Car cleaner	Ottawa	Died of wounds
Treller, Jas.	Boilermaker's helper	Winnipeg	Wounded
Watt, Donald M.	Cleaner	North Transcona	Wounded
Whitehead, Alfred	Stower	Vancouver	Wounded
Whyles, Joseph	Locomotive fireman	Toronto	Died of wounds

Shown on Honor Lists to date: Killed, 592; wounded, 1,326; total, 1,918.

capacity of the boiler, and, consequently, reduces the degree of superheat. For instance, if the damper failed to open, it would obstruct the passage of gases through the tubes and flues above it, thus reducing the boiler evaporation considerably and preventing the effective superheating of the steam passing through the units.

It is also bad practice to wire up or block open the damper. If the damper is kept open continuously it is equivalent to having no damper at all. The firebox gases passing through the large flues and around the units, when no steam is in them, is very likely to burn the ends, warp the units and cause leaks, and generally shorten the life of the units.

Locomotive men have been known to deliberately tie up the damper, although it had proved to be in working condition when the locomotive left the locomotive house. Locomotive house employes have been known to do the same thing when firing up, and it is just such practices as these that lead to locomotive failures.

Dampers and rigging should be given a careful inspection at frequent intervals. This requires but little time. Search for irregularities. One of the first things to ascertain is whether the damper closes tightly, and, also, whether it has its proper opening. See that the damper cylinder piston has a full stroke, and be particular to see that the connecting link between the damper shaft and the cylinder arm is of the correct length and that there is no lost motion in any part of the rigging that would tend to prevent full opening or closing. Keep the small copper steam pipe leading from the steam chest or steam pipe to the damper cylinder well protected against the effects of cold weather. This can readily be done by wrapping it with 1/4 in. asbestos rope and covering it with canvas. See that there are no pockets in this pipe, where water can accumulate and freeze. Pipe the drain from the damper cylinder to the exhaust passage of the locomotive cylinders and cover it in the same manner as the steam pipe. See that the cylinder and the connections in the rigging are lubricated. Paint the counterweight white, so that it is easily visible to the locomotive men. If the damper cylinder is so located that the counterweight is not visible, use a small target of any description on the counterweight arm and place it above the running board where it can easily be seen. Bring home to the locomotive man that the correct functioning of the damper is essential, if the hands on the steam gauge and pyrometer are to indicate the correct steam pressure, and temperature, because the proper steaming of the locomotive depends largely on the proper action of the damper.

**G.T.R. Pensioned Employees.**—There are now 1,233 former G.T.R. officials and employes drawing pensions, 79 having been added to the list during 1917. Of the recent additions, 28 had seen 40 years service and over, 9 had seen 45 years service, and 3 had seen over 50 years service. The present pension plan was adopted in 1908, since which the company has contributed \$1,750,000 to the fund, its present rate of contribution being over \$225,000 a year.

**Punished for Fraud.**—A. H. Strickland, a Mountain View, Alta., school teacher, was sentenced to three months imprisonment at Lethbridge, Mar. 5, for attempting to defraud the C.P.R. He made a trip to Cardston, taking with him a trunk, which he secured on arrival, without the station agent's knowledge, and then put in a claim for \$300 for loss of the trunk.

### The Proper Operation of the Superheater Damper.

One of the most important requirements in obtaining the full effectiveness of a superheater is the proper operation at all times of the damper and its rigging. Attention has often been called to the damage done, and the failures caused, because of plugged flues, leaky steam joints and other defects which affect the steaming of the locomotive, and to the fact that these conditions reduce superheat, but very little has been said about the trouble arising from a damper working improperly. It may be just as detrimental to the locomotive as any of the foregoing.

The damper controls the draft, and, therefore, the flow of gases through the large flues. It is located just below the bottom row of large flues, usually on the same level with the table plate, and is operated by a small cylinder bolted on the side of the smoke box. This cylinder is connected either to the steam pipe or blower, as the case may be, by a 1/2 in. copper pipe, and works automatically upon the opening of the throttle or blower valve. Its operation opens the damper, which is held in the closed position by a counterweight when the throttle is closed. The damper, as thus operated, protects the superheater units from overheating when there is no steam passing through them. Failure of the damper to operate properly materially reduces the steaming

# The Erection of Kettle Rapids Bridge, Hudson Bay Railway.

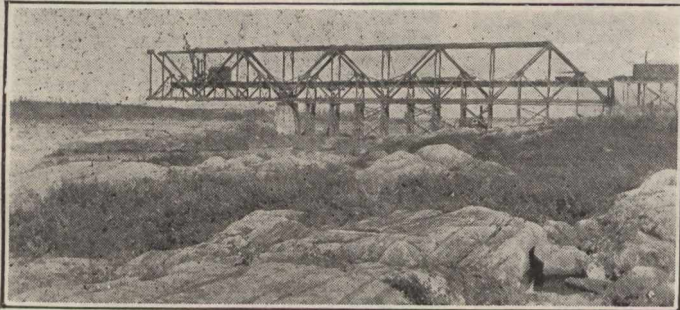
The Kettle Rapids Bridge, on the Hudson Bay Ry., crosses the Nelson River about 332 miles north of Pas, Man. The Nelson River, at this point, forms a deep, narrow gorge, through which flow swift rapids, directly in the way of the site chosen for the crossing. The banks on both sides consist of solid rock for a considerable distance back of the shores, and were a determining factor in selecting the continuous girder type of truss adopted. The design consists of a single track through truss structure, 1,000 ft. long, continuous over 4 supports. These piers are built on small islets of rock, between

and in place economically, formed one of the chief considerations. The following erection programme was adopted:—

The south arm, between piers 1 and 2 was erected on wooden staging, with an ordinary derrick car, the only unusual features being that L0 was erected 10 in. lower than its normal elevation in order to allow for deflection in cantilevering. The truss, as a whole, was also erected on the permanent pier member rollers, about 5 ins. closer to the shore than its normal position. The main joints were then completely riveted, and the derrick car erected the balance of the south half

ler until L-0 was reached. The traveller was then jacked up, so as to bring the trucks level with the top chord of the span, and the balance of the steel for the north anchor arm completed, going forward from U-2 to U-12. After riveting this anchor arm, the cantilever portion of the truss between panels 12 and 20 was easily completed, with the traveller running out on the top chord.

The whole of the south half of the bridge was then jacked forward on the permanent pier member rollers, and a coupling made at L-20. After this joint was riveted, jacks were applied at the



Kettle Rapids Bridge. The completed structure.

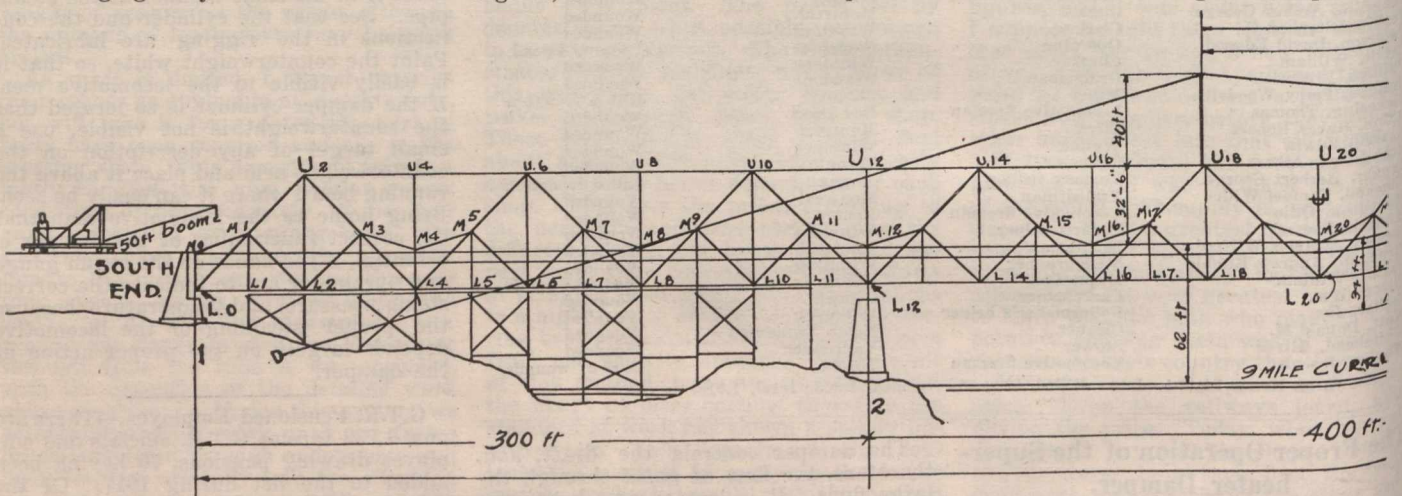
which and the adjacent shores the stream is shallow, with a slow current. The channel span is 400 ft. long, c. to c. of pier members, and the two flanking arms 300 ft. each. The trusses are the Warren type, having 50 ft. main panels, subdivided to form two 25 ft. stringer panels. They are 50 ft. deep, c. to c. of chords, and are spaced 24 ft. apart. All truss joints are riveted throughout. The floor system is the ordinary open floor type, having wooden ties carried on two lines of built up stringers, which frame into the webs of the floor beams. The simplicity of the design greatly facilitated the fabri-

cation and erection and has many commendable points.

The method of erecting the bridge is of special interest, as it was out of the question to use staging of any kind for the channel span; the channel being of great depth, with a current of 9 miles an hour. Furthermore, the remoteness of the site, being at the end of a long construction line leading from Pas, precluded the possibility of bringing material for the north end in from that side, and the problem of getting this half of the structure across,

two extreme ends of the bridge, points L-0 north and south ends. These ends were raised until the joint at U-20 was closed, after which the four corners were raised simultaneously until a load of 118½ tons was registered on each of the 4 jacks, which fixed the distribution of the dead load stresses throughout the entire structure.

Work on the piers was started in 1916 by the general contractors for the whole line from Pas to Port Nelson, but owing to floods, but little work was done until February and March, 1917. The entire work was under the general supervision



Kettle Rapids Bridge. General erection diagram.

designed for lifting fifteen tons. The materials for the north end were then taken out on cars to the extreme end of the cantilever truss on the south side, and materials transferred by means of this cableway to the north side.

The staging for the north anchor arm was erected first and on this a light double boom traveller assembled. The steel work was then transferred and placed with this traveller, starting at L-12, and erecting the lower half of the anchor truss, backing up with the travel-

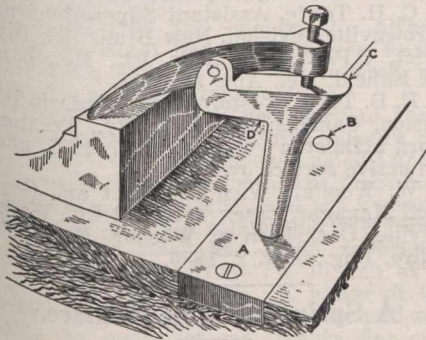
of W. A. Bowden, M.Can.Soc.C.E., Chief Engineer, Railways and Canals Department, Ottawa. The bridge was designed by W. Chase Thomson, M.Can.Soc.C.E., Montreal. The superstructure was fabricated and erected by Canadian Bridge Co., Ltd., Walkerville, Ont.

Quebec & Saguenay Ry.—A press report states that construction on this railway was resumed Mar. 15, and that it is hoped to complete the section to Baie St. Paul, by the end of May.

### A Bench Clamp.

A very useful and simple form of bench clamp or holdfast came to my notice during a recent visit to a small shop. It is shown in the illustration.

A piece of 1/2 x 2 in. steel stock A was set into the centre of the bench, and ran its full length. A series of holes B were drilled to permit the clamp being used at the most convenient places. A few taps with a hand hammer at C made the device secure in the hole where needed, and when it was desirable to change it, a few taps under D released it.



A Bench Clamp.

There is a wide variety of work that cannot be satisfactorily held in a bench vise. This class of work is easily secured to the bench with this device.—C. H. Willey, in American Machinist.

### Track Section Prize Competition on Eastern Lines, Canadian Pacific Railway.

Canadian Railway and Marine World for January contained general particulars of the above mentioned competition for 1917, and gave the names of the section foremen who won the General Manager's and general superintendent's prizes. We have since been provided with particulars of the awards of the superintendent's and roadmaster's prizes. Following is a com-

plete list of the successful section foremen: General Manager's prize, H. Hoyst, section 6, Havelock Subdivision, Ontario District.

New Brunswick District:—General Superintendent's prize, \$50, Wm. Hunter, section 12, St. John Subdivision; Superintendent's prize, Brownville Division, \$25, O. Zelkan, section 9, Moosehead Subdivision; Superintendent's prize, Woodstock Division, \$25, A. Peluse, section 4, Aroostook Subdivision; roadmaster's prizes, \$10 each, J. Conley, section 8, Moosehead Subdivision; W. Alexander, section 2, Fredericton Subdivision; T. Gidden, section 2, Shore Line Subdivision; J. H. Bogler, section 6, Shogomoc South Subdivision; S. Tompkins, section 13, Shogomoc North Subdivision; J. Mockler, section 3, Aroostook Subdivision.

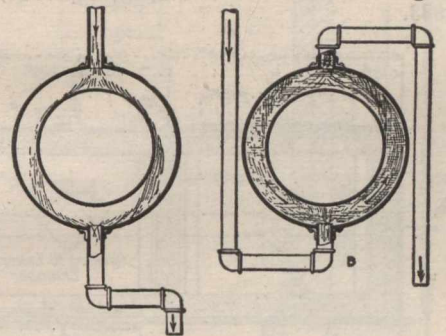
Quebec District:—General Superintendent's prize, T. Mattingly, section 3, Chalk River Subdivision. Farnham Division—Superintendent's prize, A. St. Louis, section 8, Drummondville Subdivision; roadmaster's prizes, A. Cloutier, section 21, Sherbrooke Subdivision; P. W. Delaire, section 17, Megantic Subdivision; J. Partidge, section 7, Newport Subdivision; F. Gauthier, section 5, St. Guillaume Subdivision. Montreal Terminals Division—Superintendent's prize, D. Lavoie, Mile End; roadmaster's prize, A. Belec, Montreal West. Laurentian Division—Superintendent's prize, D. Proteau, section 18, Trois Rivieres Subdivision; roadmaster's prizes, J. Rochon, section 1, St. Lin Subdivision; O. Geroux, section 8, Ste. Agathe Subdivision; A. Fisette, section 3, Trois Rivieres Subdivision; J. Bureau, section 25, Trois Rivieres Subdivision. Ottawa Division—Superintendent's prize, R. Re-sauriers, section 5, M. & O. Subdivision; roadmaster's prizes, N. Huno, section 11, M. & O. Subdivision; M. Daly, section 4, Maniwaki Subdivision; P. Cassidy, section 9, Waltham Subdivision. Smiths Falls Division—Superintendent's prize, D. J. McMillan, section 11, Winchester Subdivision; roadmaster's prizes, J. Cochrane, section 14, Chalk River Subdivision; H. Timleck, section 10, Brockville Subdivision; J. Rioux, section 10, Winchester Subdivision.

Ontario District:—General Superintendent's prize, G. Muma, section 11, Galt Subdivision. Trenton Division—Superintendent's prize, W. Lowes, section 7, Peterboro; roadmaster's prizes, R. Crawford, section 7, Kingston Subdivision; J. Dowdell, section 14, Belleville Subdivision; M. Connors, section 8, Oshawa Subdivision; L. Linton, section 12, Peterboro Subdivision; W. Lillie, section 2, Havelock Subdivision; B. Locking, section 5, Port McNicholl Subdivision. London Divi-

section 10, O. & T. Subdivision. Toronto Terminals—Superintendent's prize, L. Francis, section 1, Don; roadmaster's prize, R. Gollinger, section 9, Hamilton. Lake Superior District:—General Superintendent's prize, J. Purich, section 6, White River Subdivision. Superintendent's prizes—North Bay Subdivision, section 3, H. Gunning; Nemegos Subdivision, section 24, M. Hakkinen; Heron Bay Subdivision, section 12, L. Lerwill. Roadmaster's prizes—Thessalon Subdivision, section 16, A. Archambault; Parry Sound Subdivision, section 18, H. G. Roefs; Cartier Subdivision, section 13, P. Ross; North Bay Subdivision, section 12, E. Morin; Nemegos Subdivision, section 4, C. Asialia; White River Subdivision, G. Kusik; Heron Bay Subdivision, section 16, J. Milani; Nipigon Subdivision, section 19, B. Michaud.

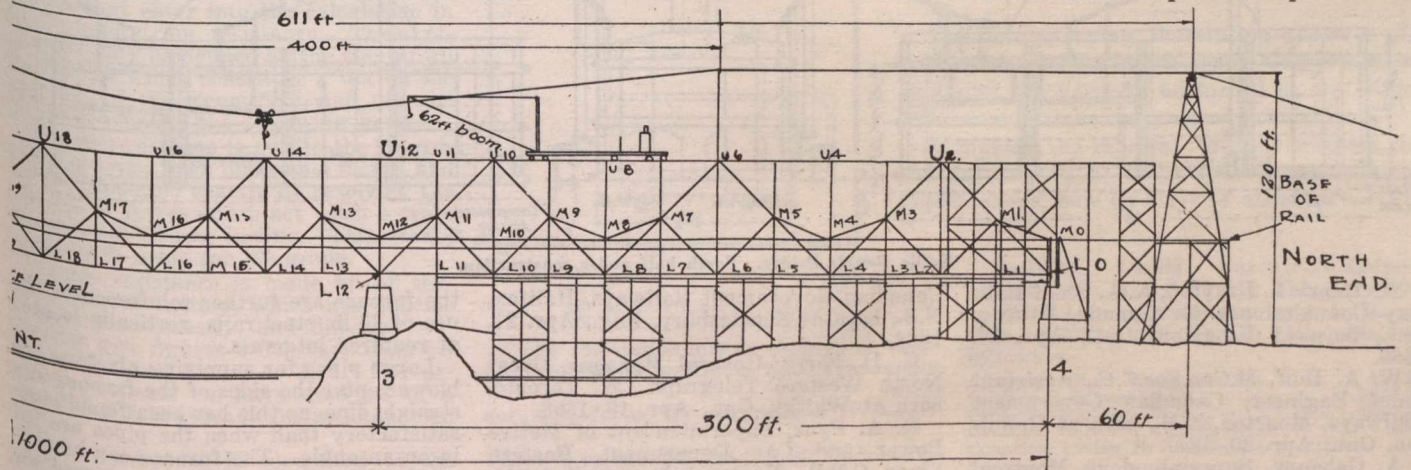
### Cooling a Small Air Compressor.

In a small machine shop with which the writer was connected, considerable difficulty was encountered in maintaining a



Original and rearranged piping.

sufficient supply of air because the compressor persisted in heating up. We had decided that the compressor was too small, and were about to order a larger unit when the writer decided to make a more complete investigation. While going over the water-cooling connections an air compressor erector stopped in, and after a brief inspection explained the



Kettle Rapids Bridge. General erection diagram.

cause of our trouble.

The original water connection was made as per sketch A. With this system of piping, a body of cooling water could not be maintained around the cylinder, but instead merely ran over the cylinder in a thin film, and out to waste. The compressor erector advised revising the water cooling connection as per sketch B, from which it will be observed that the water jacket would be completely filled with water at all times.—W. A. Lailer, in American Machinist.

plete list of the successful section foremen: General Manager's prize, H. Hoyst, section 6, Havelock Subdivision, Ontario District. New Brunswick District:—General Superintendent's prize, \$50, Wm. Hunter, section 12, St. John Subdivision; Superintendent's prize, Brownville Division, \$25, O. Zelkan, section 9, Moosehead Subdivision; Superintendent's prize, Woodstock Division, \$25, A. Peluse, section 4, Aroostook Subdivision; roadmaster's prizes, \$10 each, J. Conley, section 8,

—Superintendent's prize, A. Fairbanks, section 4, Windsor Subdivision; roadmaster's prize, T. Wilson, section 7, Windsor Subdivision; G. Muma, section 15, Galt Subdivision; J. Schmidt, section 9, H. & G. Subdivision; E. Allen, section 8, St. Thomas Subdivision; F. Broadbent, section 3, Galt Subdivision. Bruce Division—Superintendent's prize, W. Nealy, section 11, Owen Sound Division; roadmaster's prizes, H. Crowther, section 14, Owen Sound Subdivision; L. D'Angio, section 19, MacTier Subdivision; R. Hewett,

## Birthdays of Transportation Men in April.

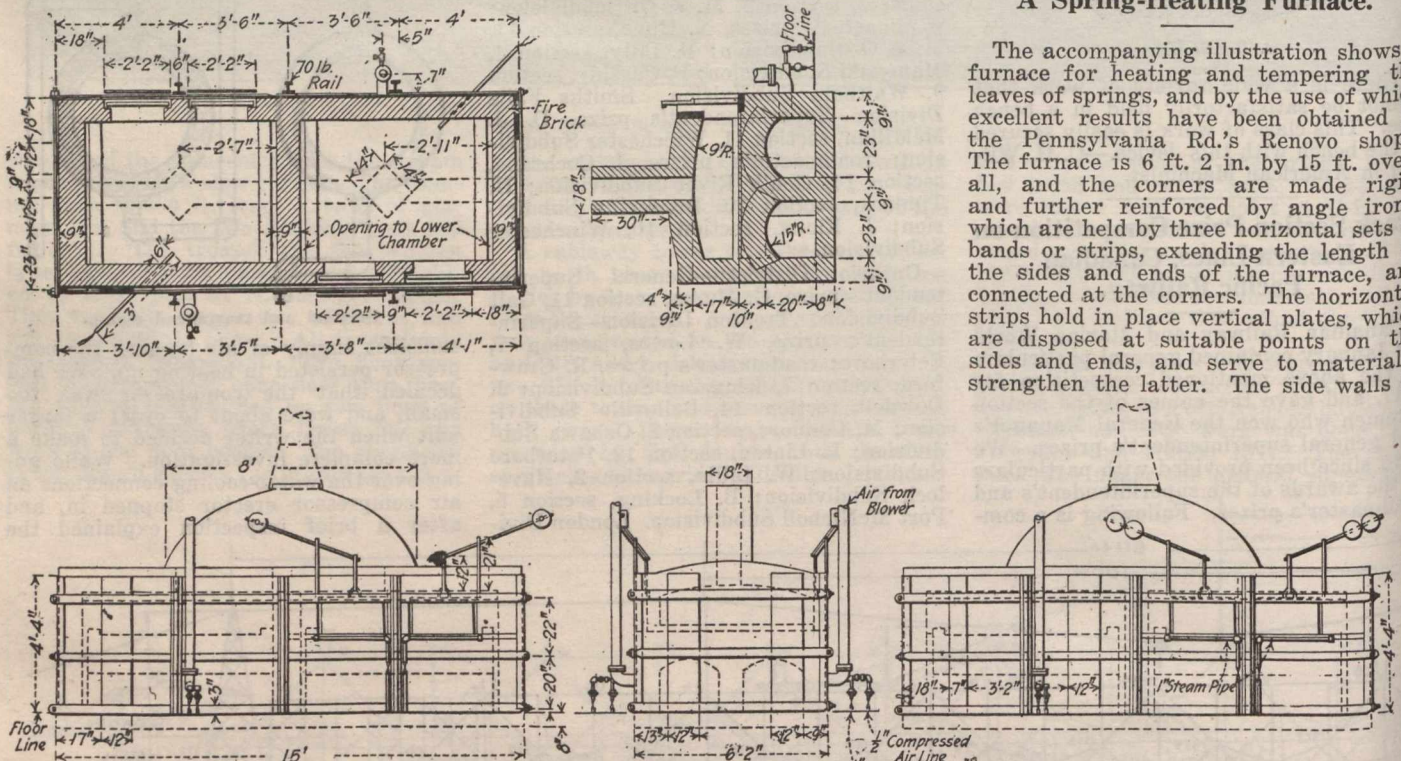
Many happy returns of the day to:—  
 F. G. Adams, Commercial Agent, G.T.R., and Division Freight Agent, Grand Trunk Pacific Ry., Winnipeg, born at St. John's, Nfld., Apr. 6, 1878.  
 W. H. Ardley, Comptroller, G.T.R., and Grand Trunk Pacific Ry., Montreal, born at London, Eng., Apr. 24, 1858.  
 Jas. Black, Freight Claim Agent, C.P.R., Vancouver, B.C., born near Seaforth, Ont., Apr. 19, 1858.  
 C. G. Bowker, General Superintendent Eastern Lines, G.T.R., Montreal, born at Medford, N.J., Apr. 21, 1871.  
 G. C. Briegs, Supervisor of Buildings, Eastern Lines, Canadian Northern Ry., Toronto, born at Cockermouth, Eng., Apr. 23, 1886.  
 A. V. Collins, Travelling Auditor, Canada Steamship Lines, Ltd., Toronto, born at Island Pond, Vt., Apr. 21, 1868.  
 R. J. Collins, Chief Dispatcher, Edmonton Division, Alberta District, C.P.R., Edmonton, born at Winnipeg, Apr. 30, 1883.

G.T.R., Montreal, born at Uxbridge, Ont., Apr. 22, 1866.  
 G. W. Lee, Commissioner, Timiskaming & Northern Ontario Ry., North Bay, Ont., born at Renfrew, Ont., Apr. 15, 1871.  
 J. D. McMillan, acting Superintendent, Belleville Division, Ontario Lines, G.T.R., Belleville, born in Eldon Tp., Ont., Apr. 5, 1858.  
 J. A. Macgregor, Superintendent, Edmonton Division, Alberta District, C.P.R., Edmonton, born at Dufftown, Scotland, Apr. 5, 1873.  
 B. R. Marsales, District Freight Agent, Canadian Northern Ry., Calgary, Alta., born at Guelph, Ont., Apr. 13, 1887.  
 P. Mooney, General Freight and Passenger Agent, Halifax & South Western Ry., Halifax, N.S., born at St. Catharines, Que., Apr. 19, 1871.  
 Paul J. Myler, President, Canadian Westinghouse Co., Ltd., Hamilton, Ont., born at Pittsburg, Pa., Apr. 24, 1869.  
 J. H. Norton, Division Freight Agent,

E. W. Smith, Superintendent, Dining and Parlor Car Service, G.T.R., Toronto, born at North Bridge, Mass., Apr. 21, 1869.  
 David A. Starr, M.I.E.E., General Manager, Clyde Valley Electrical Power Co., Glasgow, Scotland, born at Halifax, N.S., Apr. 11, 1858.  
 D. F. Thomas, ex-General Manager, Algoma Eastern Ry., now at Sault Ste. Marie, Mich., born in Halton County, Ont., Apr. 20, 1867.  
 W. S. Tilston, Chief of Montreal Board of Trade Transportation Bureau, born at Manchester, Eng., Apr. 14, 1877.  
 C. H. Towle, Assistant Superintendent, Brownville Division, New Brunswick District, C.P.R., Brownville Jct., Me., born at Enfield, Me., Apr. 13, 1878.  
 E. D. Toye, ex-Storekeeper, Ontario Division, Canadian Northern Ry., Trenton, born at Dalston, Ont., Apr. 27, 1891, now on active service overseas.  
 W. Woollatt, Vice President and General Manager, Essex Terminal Ry., Walkerville, Ont., born at Weedon, Hertfordshire, Eng., Apr. 2, 1855.

### A Spring-Heating Furnace.

The accompanying illustration shows a furnace for heating and tempering the leaves of springs, and by the use of which excellent results have been obtained in the Pennsylvania Rd.'s Renovo shops. The furnace is 6 ft. 2 in. by 15 ft. overall, and the corners are made rigid, and further reinforced by angle irons, which are held by three horizontal sets of bands or strips, extending the length of the sides and ends of the furnace, and connected at the corners. The horizontal strips hold in place vertical plates, which are disposed at suitable points on the sides and ends, and serve to materially strengthen the latter. The side walls of



Kettle Rapids Bridge. South half under construction.

Sir Henry L. Drayton, K.C., Chief Railway Commissioner for Canada, Ottawa, Ont., born at Kingston, Ont., Apr. 27, 1869.  
 W. A. Duff, M.Can.Soc.C.E., Assistant Chief Engineer, Canadian Government Railways, Moncton, N.B., born at Hamilton, Ont., Apr. 20, 1877.  
 A. Gaboury, Superintendent, Montreal Tramways Co., Montreal, born there, Apr. 6, 1875.  
 B. C. Gesner, Moncton, N.B., formerly Air Brake Inspector, I.R.C., now Eastern Sales Agent, Galena Signal Oil Co., born at Cornwallis, N.S., April 23, 1859.  
 J. Murray Gibbon, General Publicity Agent, C.P.R., Montreal, born at Ude-wella, Ceylon, Apr. 12, 1875.  
 V. A. Harshaw, Manager, Fredericton & Grand Lake Coal & Ry. Co., and New Brunswick Coal & Ry. Co., Fredericton, N.B., born at Mono, Ont., Apr. 26, 1865.  
 J. H. Johnston, Superintendent of Bridges and Buildings, Eastern Lines,

Canadian Government Railways, Halifax, N.S., born at Shaftesbury, Eng., Apr. 21, 1884.  
 G. D. Perry, General Manager, Great North Western Telegraph Co., Toronto, born at Whitby, Ont., Apr. 19, 1858.  
 R. A. Pyne, Superintendent of Motive Power and Car Department, Eastern Lines, C.P.R., Montreal, born at Toronto, Apr. 10, 1874.  
 Lieut. R. S. Richardson, formerly Superintendent, District 3, Transcontinental Division, Canadian Government Railways, Fort William, Ont., now of No. 13 Light Railway Company, Royal Engineers, British Expeditionary Force, born at Napanee, Ont., Apr. 9, 1865.  
 F. Rioux, Assistant to President, Reid Newfoundland Co., St. John's, Nfld., born at Trois Pistoles, Que., April 18, 1867, now on active service overseas.  
 W. A. Ritchie, District Superintendent, Pullman Co., Montreal, born at Edinburgh, Scotland, Apr. 13, 1854.

the furnace are further reinforced by the use of 70 lb. steel rails, vertically located at required intervals.  
 Large pipes for supplying air from the blower enter the sides of the furnace in a straight line, as this has been found more satisfactory than when the pipes are led in on an angle. The furnace can be supplied with air from the compressed air system, by means of a connection entering at the same point as the fuel oil. This arrangement is made to provide against a possible breakdown of the blower system. The blower pipe line is 3 in., and the oil and compressed air lines, each 1/2 in.  
 The doors of the compartments, of which there are two on each side and at opposite ends of the furnace, are raised and lowered by pivoted levers having ball weights, and which hold the doors in an open position when raised. Each of the compartments is equipped with an electrical pyrometer.

## Questions About Draw-Bar Pull.

A Canadian Railway and Marine World subscriber wrote recently asking the following questions:

"How much power applied at the draw-bar is necessary to move a train of given weight on a level track?"

"How much more power is required to start this train in motion?"

"How much should be added to the above for variations in the track i.e., if the track has been roughly laid or improperly ballasted?"

We referred the enquiry to Alfred Price, Assistant General Manager, Eastern Lines, C.P.R., who has favored us with the following information:

"The draw-bar pull necessary to keep a train moving at a uniform velocity on straight, level track depends chiefly upon the nature and condition of the track and equipment, the velocity, and the average weight of the cars comprising the train."

"On good track and under favorable conditions, the draw-bar pull required may vary from 7 3/4 lb. ton at 5 miles an hour, to 12 1/4 lb. a ton at 35 miles an hour, for an empty flat car weighing 15 tons, and from about 3 lb a ton at 5 miles an hour to 5 lb. a ton at 35 miles an hour, for a loaded car having a total weight of 75 tons."

"The draw-bar pull necessary to start a train is even more variable than that required to keep it in motion. On level track the pull may vary from about 6 1/2 lb a ton to over 20 lb. a ton for the individual cars. A locomotive will not usually have to start the whole at the same moment, and therefore the starting resistance per ton for the whole train may be somewhat less."

"Poor track may increase train resistance 100%."

H. D. Cameron, Mechanical Engineer, Canadian Northern Ry., to whom the questions were also referred, has favored us with the following replies:—"In order to reply intelligently to these questions it will be advisable to recall the principal factors that enter into the calculation in determining train resistance. Train resistance may be defined as the sum of all resistances which constitute a tax on the adhesion of the locomotive, and may be considered under the following heads:—

"Grade resistance is due to the retarding of gravity, is an invariable factor, and can be calculated exactly by resolving the triangle of forces which act when a train moves up a known incline. This works out to 20 lb. a ton for 1% grade."

"Curve resistance is made up of several different factors, which are difficult to determine exactly, and different authorities give figures which vary from 0.5 of a pound per degree to 1.75. For ordinary purposes we have used 0.8 of a pound as a fair average for resistance on curves."

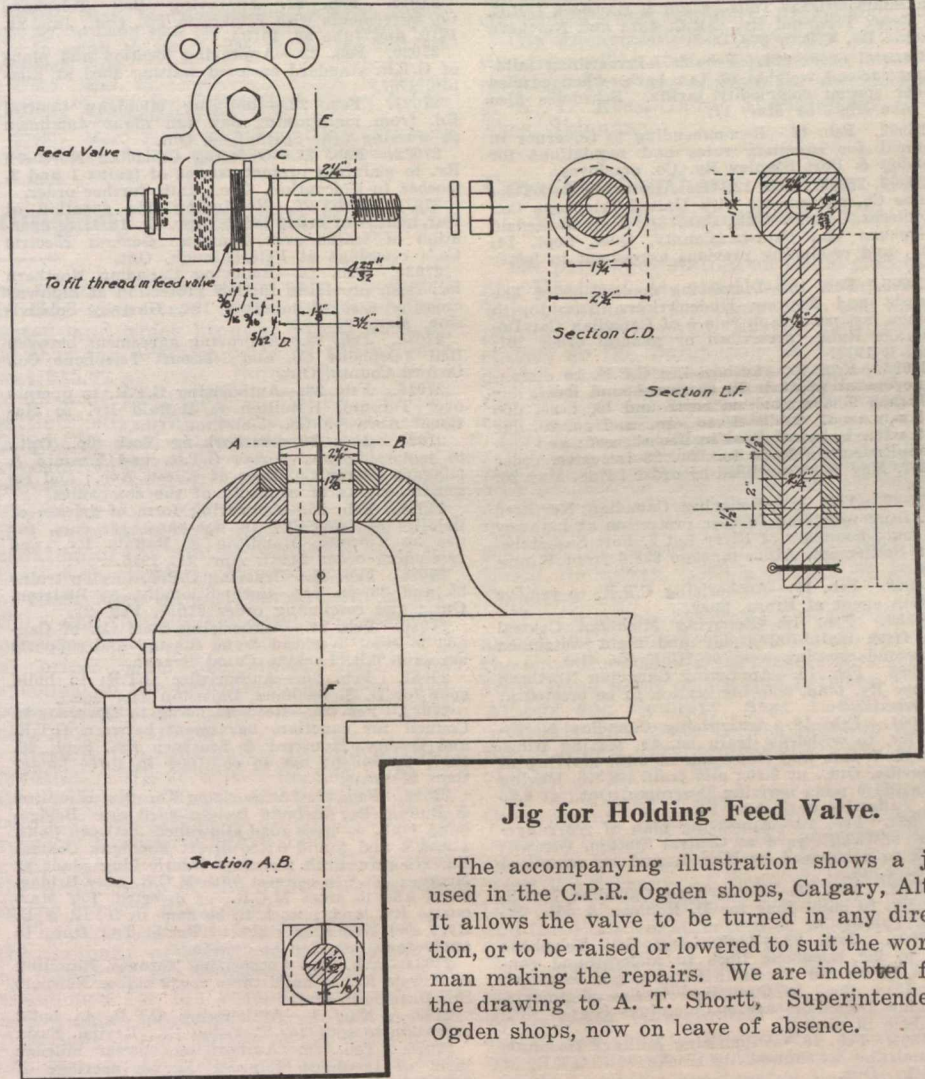
Speed resistance is comprised of the following variable factors which always act together, and are, therefore, usually considered under the one heading of speed resistance. These factors are:—1, Journal friction, between journal and bearing; 2, Rolling friction, between rail and wheel; 3, Resistance due to weather conditions; 4, Flange friction, due to oscillation and concussion; 5, Resistance due to change in velocity. These variables, with the exception of resistance due to change in velocity, are rather hard to isolate and determine accurately, and for ordinary rough calculation we assume about 6 lb. per ton for speed resistance other than that required for change in velocity. The

latest tables on speed resistance, compiled by the American Locomotive Co., show the resistance of freight cars comparatively constant between 5 and 30 miles an hour, and varying only according to the weights of car as follows:—

Weight of car in tons (tare & contents)	Resistance (pounds per ton)
20 .....	7.84
25 .....	6.62
30 .....	5.78
40 .....	4.65

"To summarize, the power required, in pounds per ton, to move a train on straight level track would have to be sufficient to overcome rolling resistance and resistance due to change in velocity. For example, a train composed of 50 units started from rest, and brought to a speed of 20 miles an hour in a distance of 2,000 ft. requires:—

"Resistance to overcome inertia = $\frac{10 \times 20^2}{2000}$	20 lb. per ton
"Speed resistance (see table =	4 lb. per ton
"Total power required = ...	24 lb. per ton



Jig for Holding Feed Valve.

The accompanying illustration shows a jig used in the C.P.R. Ogden shops, Calgary, Alta. It allows the valve to be turned in any direction, or to be raised or lowered to suit the workman making the repairs. We are indebted for the drawing to A. T. Shortt, Superintendent Ogden shops, now on leave of absence.

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

	Acre
Alberta & Great Waterways Ry.....	246.20
Calgary & Edmonton Ry.....	2,533.00
Canadian Northern Ry.....	3,864.39
Canadian Northern Alberta Ry.....	6.00
Canadian Pacific Ry. roadbed and station grounds.....	9.73
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.....	1,122.00
Total .....	7,781.38

Nova Scotia Society of Civil Engineers.—Subject to the approval of both societies, a resolution has been adopted by this society favoring its amalgamation with the Canadian Society of Civil Engineers. It has also been decided to make application for the formation of a branch of the C.S.C.E. in Halifax, N.S.

Ontario Railway and Municipal Board. The Ontario Legislature has voted \$41,200 for the board's estimates for this fiscal year.

50 .....	3.94
60 .....	3.44
70 .....	3.06
70 .....	3.00

"The resistance due to change in velocity can be determined with reasonable accuracy from the formula  $P = \frac{70V^2}{S}$

where V represents the change in velocity in miles per hour, and S the distance in which it is acquired.

"Referring again to questions 1 and 2. The writer is not very clear as to the difference between power required 'to move' a train on level track and power required 'to start this train in motion.' Probably your correspondent wanted to distinguish between speed resistance, and resistance required to overcome inertia or change in velocity. The other question regarding allowance for variation in track is liable to vary between such wide limits that it is not possible to give a definite answer. In practice it would be determined by experiment."

# Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed the paper have a continuous record of the Board's proceedings. No other paper has done this.

General order 214-C. Feb. 25.—Approving, subject to provisions of order in council P.C. 229, Jan. 30, following Standard Tariffs of Maximum Mileage Tolls for passengers,—Elgin & Havelock Ry. C.R.C. 5, and Northern Pacific Ry. C.R.C. 317.

General order 215-B. Feb. 25.—Approving, subject to provisions of order in council P.C. 229, Jan. 30, following Standard Freight Tariffs of Maximum Mileage Tolls—Elgin & Havelock C.R.C. 5; Essex Terminal Ry. C.R.C. 457; and Northern Pacific Ry. C.R.C. 376.

General order 221. Feb. 26.—Prescribing minimum carload weights of tan bark, when carried under special commodity tariffs. Schedules filed to take effect by Mar. 11.

26992. Feb. 16.—Recommending to Governor in Council for sanction, rules and regulations for London & Port Stanley Ry. Co. employes.

26993, 26994. Feb. 12, 18.—Approving Bell Telephone Co. agreements with United Telephone Co., Middlesex County, Ont., Jan. 31; East Wakefield Telephone Co., Ottawa County, Que., Sept. 14, 1917, and rescinding previous agreement in latter case.

26995. Feb. 18.—Dismissing application of The Freight and Express Underwriters, Toronto, to change last paragraph rule 6 of Canadian Car Demurrage Rules, prescribed by general order 201, Aug. 1, 1917.

26996. Feb. 16.—Authorizing C.P.R. to discontinue operation of train 35, westbound local, due at Finch 9.35 a.m.; and eastbound local 36, due 5.53 p.m.; no. 19, due 10.46 a.m., and no. 20, due 5.02 p.m., to be operated in lieu thereof; and suspending from Feb. 24 to Apr. 28 inclusive, order 23657, May 4, as amended by order 23738, May 25, 1915.

26997. Feb. 18.—Relieving Canadian Northern Ry. from providing further protection at highway on south boundary of River Lot 7, Fort Saskatchewan Settlement, Alta., mileage 808.6 from Winnipeg.

26998. Feb. 19.—Authorizing C.P.R. to remove station agent at Brora, Sask.

26999. Feb. 18.—Relieving Michigan Central Rd. from maintaining day and night watchmen at second crossing west of Highgate, Ont.

27000. Feb. 19.—Approving Canadian Northern Quebec Ry. plan, showing station to be erected at St. Alexis.

27001. Feb. 18.—Authorizing Canadian Northern Ry. to withdraw train no. 15, leaving Kingston at 7 p.m. and Deseronto at 9.15, arriving at Belleville, Ont., at 9.45; and train no. 18, leaving Belleville 6 p.m., arriving Deseronto, Ont., at 6.35 p.m.; effective until Apr. 28.

27002. Feb. 19.—Approving plan of rearrangement of G.T.R. yard at Central Station, Ottawa; work to commence by May 1, and be completed by Sept. 15.

27003. Feb. 18.—Authorizing Canadian Northern Ry. to build spur for D. Rouleau & Fils, St. Tite, Parish Co.

27004. Jan. 28.—Authorizing Bell Telephone Co. to lay telephone lines in underground conduits, in certain streets in Ottawa, and to attach two iron pipes to Cummings Bridge abutments, and lay 6 conduits across Cummings Island, with manhole in centre.

27005. Feb. 18.—Authorizing Military Hospitals Commission to connect its tracks with G.T.R. at Whitby, Ont.

27006. Feb. 18.—Authorizing C.P.R. to build spur for Pembroke Machinery Co., Pembroke, Ont.

27007. Feb. 18.—Authorizing Canadian Northern Ry. to build spur for M. Lacombe, St. Canut Parish.

27008. Feb. 12.—Authorizing C.P.R. to divert road allowances on eastern boundary of n. e. ¼ Sec. 5, Tp. 22, Range 7, and on west boundary of sec. 35, Tp. 21, Range 8, w. 4th meridian, Alta.

27009. Feb. 18.—Approving Michigan Central Rd. plan V-56, showing changes to be made in interlocking tower at Windsor, Ont.

27010. Feb. 20.—Authorizing Canadian Northern Ry. to cross and divert highway between Secs. 21 and 22, Tp. 38, Range 26, west 2nd meridian, Sask.

27011. Feb. 20.—Authorizing British Columbia Public Works Department to build highway over Esquimalt & Nanaimo Ry. 1 mile north of Colwood, Vancouver Island.

27012. Feb. 20.—Authorizing G.T.R. to build sidings and spurs for Dominion Shipbuilding Co., Toronto.

27013. Feb. 20.—Authorizing Esquimalt & Nanaimo Ry. to build spur for Granby Consolidated Mining, Smelting & Power Co. at mileage 64.8, Victoria Subdivision, Vancouver Island, B.C.

27014. Feb. 20.—Authorizing Canadian Northern Ry. to build spur for Capital Coal & Wood Co., Regina, Sask.

27015. Feb. 20.—Ordering G.T.R. to install facilities at Brockville or Prescott, Ont., for housing and repairing locomotives; plans be filed for approval within 15 days from date; work to be

commenced by Mar. 25 and completed by September.

27016. Feb. 21.—Ordering that telephone be installed by Union Station Co., in Union Station, Toronto, for direct communication between upper waiting room and train sheds, to enable depot master to furnish gateman and train announcer with information as to location and movement of trains and when ready to receive passengers.

27017. Feb. 21.—Ordering C.P.R. to stop all passenger trains on flag, unconditionally, at Blairton, Ont. See also order 27029.

27018. Feb. 20.—Authorizing Canadian Northern Ry. to open for traffic its line from Victoria to Patricia Bay, B.C., 15.49 miles.

27019. Feb. 21.—Approving Bell Telephone Co. agreements with Euphrasia Tp., Ont., Jan. 21, 1910, and June 30, 1916.

27020. Feb. 22.—Approving location and plans of G.T.R. standard enclosed waiting shed at Ellenton, Ont.

27021. Feb. 22.—Relieving Michigan Central Rd. from maintaining day and night watchmen at crossing near Springfield, Ont.

27022. Feb. 21.—Ordering Canadian Northern Ry. to maintain present service of trains 1 and 2, Quebec to Chicoutimi, Que., until further order.

27023. Feb. 22.—Rescinding, for duration of war, par. 8 of order 13605, Apr. 24, 1911, re operation of trains over Canadian General Electric Co.'s crossings at Peterborough, Ont.

27024. Feb. 23.—Relieving Canadian Northern Ry. from providing further protection at highway crossing east of milepost 194, Hartney Subdivision, Man.

27025. Feb. 23.—Approving agreement between Bell Telephone Co. and Nissouri Telephone Co., Oxford County, Ont.

27026. Feb. 23.—Authorizing G.T.R. to operate over Toronto, Hamilton & Buffalo Ry. to National Abrasive Co., Hamilton, Ont.

27027. Feb. 22.—Authorizing York Tp., Ont., to make highway across G.T.R. and Toronto & Niagara Power Co. lines at Eileen Ave.; and reserving rights of seniority of the companies.

27028. Feb. 25.—Approving form of release of liability of travelling in non-passenger cars, for use by Toronto, Hamilton & Buffalo Ry., and rescinding order 24887, Apr. 11, 1916.

27029. Feb. 26.—Ordering C.P.R. to stop trains 35 and 36 on flag, unconditionally, at Blairton, Ont.; and rescinding order 27017, Feb. 21.

27030. Feb. 26.—Authorizing Steel Co. of Canada to erect overhead crane runway and supports across G.T.R. Lachine Canal Branch.

27031. Feb. 25.—Authorizing G.T.R. to build spur for D. S. Bachand, Barnston Tp., Que.

27032. Feb. 25.—Recommending to Governor in Council for sanction, agreement between G.T.R. and Quebec, Montreal & Southern Ry., Sept. 26, 1917, agreement not to continue in force longer than 21 years.

27033. Feb. 22.—Authorizing Toronto, Hamilton & Buffalo Ry. to build freight yard near Bridgeburg, Ont., to cross road allowances between Cons. 4 and 5 and 6 and 6; to divert Michigan Central Rd. Niagara Brch.; to connect with M.C.R. near Bridgeburg, and to cross M.C.R., as diverted, Per Marquette Ry. lands; work to be done by T. H. & B. Ry.; and reserving right to Bertie Tp., Ont., to apply for protection at crossings.

27034. Feb. 22.—Authorizing Toronto, Hamilton & Buffalo Ry. to build three spurs across Newport St., Brantford, Ont.

27035. Mar. 1.—Authorizing C.P.R. to build extension to spur for T. Eaton Co., Regina, Sask.

27036. Feb. 26.—Authorizing special mileage tariff of Dominion Express Co. for carriage of cream in British Columbia. This order is given fully on another page under "Among the Express Companies."

27037. Mar. 1.—Relieving C.P.R. from providing further protection at 11th Ave. East, Swift Current, Sask.

27038. Mar. 1.—Amending order 26991, Feb. 18, to provide that C.P.R. train 509 leave Montreal for Ottawa at 4.45 p.m. instead of 4.30 p.m.; and that morning train leave Montreal at 8.20 instead of 8.15 a.m.

27039. Mar. 1.—Relieving G.T.R. from providing further protection at crossing between Beaver-ton and Lorneville Jct., Ont.

27040. Feb. 25.—Ordering G.T.R. to lower culvert near St. Francois-Xavier St., Farnham, Que., at expense of Dominion Agriculture Department; to be completed within 60 days from date.

27041. Mar. 2.—Relieving G.T.R. from providing further protection at Edward St., Stirling, Ont.

27042. Mar. 1.—Authorizing New York Central Rd. to rebuild bridge A-46 over Trout River, near Huntingdon, Que.

27043. Mar. 2.—Amending order 27019, Feb. 21, 1918, re Bell Telephone Co.'s agreements with Euphrasia Tp., Ont.

27044. Mar. 4.—Authorizing Hull Electric Co. to build spur for Electric Smelting Co. of Brantford, Ltd., Hull, Que.

27045. Mar. 5.—Authorizing Hull Electric Co. to build Y at Deschenes, Que.

27046. Mar. 4.—Authorizing Canadian Northern Quebec Ry. to build extension to spur on Sixth St., Charlesburg Parish, Que.

27047. Mar. 4.—Authorizing G.T.R. to use bridge 112 across Sauble River, Arran Tp., Ont.

27048. Mar. 6.—Authorizing C.P.R. to cross Sixth Ave., Regina, Sask., with temporary spur for T. Eaton Co. during building construction.

27049. Mar. 6.—Authorizing Alberta Public Works Department to build highway over Edmonton, Dunvegan & British Columbia Ry. on north boundary of n. w. ¼ Sec. 13, Tp. 72, Range 6, west 6th meridian; cost to be paid by rural municipality 740.

27050. Mar. 6.—Amending order 15149, Sept. 8, 1911, re express collection and delivery in Calgary, Alta.

27051. Mar. 7.—Authorizing Canadian Northern Ry. to cross and divert Rosebud River, in n. e. ¼ Sec. 12, Tp. 27, Range 22, west 4th meridian, Alta.

27052. Mar. 7.—Approving form of release of liability in respect of travelling in non-passenger cars, for use by Kettle Valley Ry.

27053. Mar. 6.—Authorizing G.T.R. to build spur for Hunt Bros., London Tp., Ont.

27054. Mar. 7.—Authorizing G.T.R. to rebuild bridge over its tracks at Laurier Ave., Ottawa.

27055. Mar. 8.—Authorizing G.T.R. to rebuild bridge 68, over public road between Lots 28 and 29, Con. 2, Sauguen Tp., Ont.

27056. Mar. 7.—Authorizing Saskatchewan Highways Department, for Harris rural municipality 316, to make highway over Canadian Northern Ry. Goose Lake Branch surveyed road through Sec. 20, Tp. 31, Range 12, west 3rd meridian.

27057. Mar. 8.—Authorizing Canadian Northern Ry. to cross and divert highway between Secs. 22 and 23, Tp. 26, Range 23, west 3rd meridian, Sask., and rescinding order 19968, Aug. 6, 1913.

27058. Mar. 6.—Ordering Algoma Central & Hudson Bay Ry. to amend special local commodity tariff, C.R.C. 388, applying on cordwood; authorizing it on due notice to cancel special local freight tariff on charcoal wood, C.R.C. 417.

27059. Feb. 10.—Authorizing British Columbia Public Works Department to make highway over Esquimalt & Nanaimo Ry. at mileage 28.12, Vancouver Island.

27060. Mar. 8.—Amending order 27040, Feb. 25, 1918, re changes in culvert at Farnham, Que., by G.T.R. by substituting Central Vermont Ry. for G.T.R.

27061. Mar. 9.—Ordering G.T.R. to build elevated cabin at Barton St., Hamilton, Ont., as per order 24029, July 28, 1915.

27062. Mar. 9.—Dismissing Canadian Northern Ry. application to make certain reductions in passenger service between Quebec and Chicoutimi.

27063. Mar. 15.—Ordering G.T.R. to flag all trains over Toronto St., Port Credit, Ont.

27064. Mar. 15.—Approving agreement, Feb. 25, between Bell Telephone Co. and Boat Lake Telephone Co., Bruce County, Ont.

27065. Mar. 15.—Approving Canadian Northern Pacific Ry. plans of July 11, 1917, showing station layout at Vancouver, B.C.

27066. Mar. 15.—Relieving G.T.R. from providing further protection at second crossing east of Ingersoll station, Ont.

27067. Mar. 15.—Ordering Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) to install box car body as shelter at Manning Siding, B.C., to be completed by May 1, and rescinding order 26990, Feb. 16.

27068. Mar. 16.—Ordering Pere Marquette Ry. to file joint commodity tariff applying third-class rates from Wallaceburg, Ont., to Toronto and Montreal on cut glass.

27069. Mar. 16.—Authorizing Pere Marquette Ry. to cancel Canadian Northern Ry. as party to tariff C.R.C. 2048.

27070. Mar. 15.—Extending, for 30 days from date, time within which New York Central Rd. shall install bell at highway near St. Stanislas, Que.

27071. Mar. 15.—Extending, for 60 days from date, time within which C.P.R. shall install bell at crossing at McAdam Jct., N.B.

27072. Mar. 18.—Extending to Nov., 1919, time within which G.T.R. shall provide suitable accommodation for handling all traffic offered at Summerstown, Ont., as required by order 21549, Mar. 24, 1914.

27073. Mar. 18.—Ordering Great Northern Ry. to rebuild and repair right of way fence and install cattle guards at crossings in use on Victoria & Sidney Ry., from northern boundary of Victoria to McKenzie Ave.; and make necessary repairs between McKenzie Ave. north and Sidney, to be completed by May 31.

27074. Mar. 18.—Authorizing C.P.R. to build spur on Pardee Ave., Toronto, for E. W. Gillett Co.

27075. Mar. 18.—Authorizing Sandwich West Tp., Ont., to build crossings over Essex Terminal Ry. at Maple and Gladstone Aves.

27076. Mar. 19.—Amending order 8408, Oct. 20, 1909, by substituting John McMillan for James Kent, in order.

27077. Mar. 15.—Authorizing Emo municipality, Ont., to build crossing over Canadian Northern Ry. at Jessie St.

27078. Mar. 15.—Authorizing Alberta Public Works Dept. to build crossing over Edmonton, Dunvegan & British Columbia Ry. in River Lot 49, Tp. 77, R. 5, w. 6th meridian, Alta.



27079. Mar. 19.—Dismissing application of R. W. Hannah, Toronto, for cancellation of clause on order bill of lading approved by Board, re inspection of goods covered by bill not permitted unless provided by law or unless permission is endorsed on original bill or given in writing by shipper. The order is given in full on another page.

27080. Mar. 20.—Authorizing Laval Electric Co. of erect wires along C.P.R., at mileage 17 of Lachute Subdivision, Que.

27081. Mar. 21.—Disallowing rates on coal, in earloads, from Buffalo, Black Rock and Suspension Bridge, N.Y., to Preston, Hespeler and Guelph, Ont., in G.T.R. tariff, C.R.C. no. E-3766, and M.C. R. tariff, C.R.C. no. 2478, effective Mar. 15, and ordering other following rates in lieu thereof. This order is given in full on another page.

27082. Mar. 21.—Amending order 26219, June 18, 1918, re watchmen's wages at G.T.R. crossing at Winchester Ave., Toronto.

27083. Mar. 20.—Authorizing Bank of British North America, West Toronto, to repay to Gibson, McCormack, Irvin Co., \$400 deposited to board's credit, with interest, if any.

27084. Mar. 19.—Disallowing stop-over charge of \$5 a car for completion of loading of live stock; and ordering Pere Marquette Ry. to file new tariff showing stop-over charge of \$3 a car. This order is given in full on another page.

27085. Mar. 18.—Re transit arrangements at

Montreal applicable to grain from Western Canada handled by C.P.R. via all rail, or lake and rail routes, products of which are reshipped to destinations on or via Intercolonial Ry., or for export via Halifax. This order is given in full on another page.

27086. Mar. 21.—Relieving C.P.R. from providing further protection at Prince de Galles St., at Laval Rapids, Que.

27087. Mar. 23.—Ordering C.P.R. not to exceed 10 miles an hour over highway crossing near station at Lacombe, Alta.; no cars to be left standing closer than 50 ft. from highway on tracks 2 and 3, and 100 ft. on track 1; if trains are cut closer, highway to be protected by employe while train is standing; sign posts to be erected on each side of crossing, showing clearances to be observed.

27088. Mar. 23.—Approving clearances of platform shelter at Manitoba Cold Storage Co.'s spur, Winnipeg.

27089. Mar. 23.—Authorizing Canadian Northern Ry. to build spur for Henderson & Shaw Coal Co. in south 1/2 sec. 7, Tp. 28, R. 19, west 4th meridian, Alta.

27090. Mar. 23.—Authorizing G.T.R. to change location of spur for Clifton Sand, Gravel & Construction Co., Stamford Tp., Ont.

27091. Mar. 22.—Authorizing C.P.R. to build two spurs for Polson Iron Works at Toronto.

in wages and in the cost of fuel and materials of every description.

Subject to your approval, your directors have authorized expenditures on capital account during the present year of \$3,200,000, apportioned to the following works, viz.:—Replacement of temporary structures on branch lines by permanent work, \$512,000; transfer slip at Vancouver, additional coaling plants, small stations and section houses, \$815,000; interlocking and protective signal apparatus, \$160,000; additional terminal and side track accommodation, \$450,000; and a variety of additions and improvements to the property designed to secure greater convenience and economy, \$1,263,000.

The undermentioned directors will retire from office at the approaching annual meeting. They are eligible for re-election. J. K. L. Ross, Lord Shaughnessy, Sir Thos. Skinner.

### Canadian Northern Railway Construction, Betterments, Etc.

The passenger station on Lagauchetiere St., Montreal, is practically completed. This building is for temporary use only, pending the erection of the permanent station on the Dorchester St. side of the block. It is expected that trains will be run through the tunnel into the new station in the autumn.

The Toronto, Niagara & Western Ry. is applying to the Dominion Parliament for an extension of time for the construction of its projected railway from Toronto to Hamilton, and an extension from Hamilton, via St. Catharines, to the International Boundary, with a branch to Port Colborne, Ont.

The Canadian Northern Ontario Ry. is asking the Dominion Parliament to extend the time for building its projected railway from some point on its line between Port Arthur and Sudbury, near Long Lake, northerly and westerly to a junction with the National Transcontinental Ry. east of Lake Nepigon, Ont.

A delegation waited on the Alberta Government, Mar. 12, and urged that steps be taken to have the company lay track on the branch line from Onoway, from the present rail head at Robinson's Crossing to Rochford, 3.5 miles, at once, and the early construction of an extension to the Peace River. The Premier advised the delegation to apply to the Minister of Railways at Ottawa, and stated that the Alberta Government had \$3,000,000 of the proceeds of guaranteed securities lying in a bank for the completion of certain partially constructed lines in the province.

The British Columbia Railways Department report states \$1,864,808 were spent on the company's projected terminals during the year. The amount of work completed on each terminal at the date of the report was: Vancouver, 59%; New Westminster, 80%; Port Mann, 93%; Steveston, 81%; Patricia Bay, 98%.

In connection with the provincially owned bridge over the Fraser River at New Westminster, an extension of the interlocking system had been arranged for and will be installed during April. The cost, \$3,043, will be borne jointly by the B.C. Government, the C.N.P. Ry. and the Great Northern Ry. During the year 26,745 passenger cars, 48,231 freight cars, and 9,230 cars in mixed trains crossed the bridge. (Mar., pg. 102.)

Timiskaming & Northern Ontario Ry. The Ontario Legislature has voted \$686,711.82 to defray the expenses of the T. & N.O.R. Commission.

## Canadian Pacific Railway Company's Annual Report.

Following are extracts from the report for the year ended Dec. 31, 1917. The accounts show the following results:—

Gross earnings .....	\$152,389,334.95
Working expenses .....	105,843,316.50
Net earnings .....	\$46,546,018.45
Deduct fixed charges.....	10,229,154.43
Surplus .....	\$36,316,875.02
Contribution to pension fund.....	500,000.00
	<hr/>
	\$35,816,875.02
Deduct net earnings of Pacific Coast steamships, commercial telegraph, and news department, transferred to special income account.....	1,968,682.56
	<hr/>
	\$33,848,192.46

From this there has been charged a half-yearly dividend on preference stock of 2%, paid Oct. 1, 1917 \$1,613,638.42

And three quarterly dividends on ordinary stock of 1 3/4% each, paid June 30, 1917, Oct. 1, 1917, and Dec. 31, 1917..... 13,650,000.00

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15,263,638.42

From this there has been declared a second half-yearly dividend on preference stock, payable April 1, 1918..... \$1,613,638.42

And a fourth quarterly dividend on ordinary stock of 1 3/4%, payable April 1, 1918 4,550,000.00

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6,163,638.42

Leaving net surplus for the year... \$12,420,915.42

In addition to the above dividends on ordinary stock, 3% was paid from special income.

**Special Income Account.**

Balance at Dec. 31, 1916 .....	\$12,872,451.54
Less dividend paid Mar. 31, 1917.....	1,950,000.00
Net revenue from investments and available resources .....	\$10,922,451.54
Interest on deposits, and interest and dividends on other securities.....	2,010,911.76
Net earnings ocean and coastal steamship lines .....	2,697,087.20
Net earnings commercial telegraph and news department, rentals and miscellaneous .....	3,724,720.27
	<hr/>
	2,280,580.09
Less payments to shareholders in dividends, 1917 .....	\$21,635,750.86
	<hr/>
	5,850,000.00
	<hr/>
	\$15,785,750.86

From this a dividend has been declared payable April 1st, 1918.... \$1,950,000.00

The working expenses for the year were 69.46% of the gross earnings, and the net earnings 30.54%, as compared with 63.88 and 36.12%, respectively, in 1916.

The sales of agricultural land in the year were 789,055 acres for \$14,330,811,

an average of \$18.16 an acre. Included in this area were 58,681 acres of irrigated land which brought \$45.99 an acre, so that the average price of the balance was \$15.92 an acre. Before the adoption in 1913 of the policy of selling lands to settlers only, considerable areas had been bought by land companies and others for speculative purposes. Nearly all of these purchasers were in default and nothing was being done with the lands. To remedy this your directors negotiated the cancellation of the contracts and the restoration of the lands to the company. Some of these have already been resold to settlers, and through the company's agency, purchasers will be found for the balance at prices somewhat better than those specified in the cancelled contracts. The cancellations have been adjusted in the accounts submitted.

Besides the substantial amount already invested in the securities of, and loans to, Great Britain, Canada and the allies, your company subscribed to \$10,000,000 of the recent Canadian Victory Loan. A sufficient amount has been set aside to meet the instalments of the allotment payable in the current fiscal year.

The arrangement for the creation by the company of collateral trust bonds to be loaned to the Imperial Treasury was abandoned for the reasons given at the last annual meeting. As stated by the President in his address to the shareholders, the company did, however, with due authority, issue and deposit by way of loan with the nominees of the Imperial Treasury, \$40,000,000 currency 4% consolidated debenture stock. The loan is for 5 years from Jan. 1, 1917, but the Lords of the Treasury reserved the right to return the stock to the company at any time after Jan. 1, 1919, on giving three months' notice, or to purchase the stock in whole or in part at 80% of its face value in New York funds or their equivalent. The annual premium of 1/2% resulting from this transaction was not taken into the revenue of the year, but was written off against the face value of the security. Apart from this, the capital account remains unchanged, all capital expenditures during the year having been met from surplus revenue.

The gross earnings of your transportation system in the fiscal year 1917 exceeded those of the previous year by \$13,000,000, but the net earnings were less by \$4,000,000. This large addition of \$17,000,000 to the working expenses may be attributed almost entirely to the advance

# Railway Rolling Stock Notes.

The Timiskaming & Northern Ontario Ry. has received 100 box cars from Canadian Car & Foundry Co.

The G.T.R. received the following additions to rolling stock during February: 3 snow ploughs from Russell Snow Plow Co., and 34 box cars, 80,000 lbs. capacity, from American Car & Foundry Co.

The C.P.R., between Feb. 14 and Mar. 14, received the following additions to rolling stock from its Angus shops, Montreal: 59 steel underframe coal cars, 1 steel underframe stores supply car, and 2 decapod locomotives.

The Timiskaming & Northern Ontario Ry. has been voted by the Ontario Legislature as follows:—\$50,000 for betterments to locomotives, superheaters, brick arches, etc., and \$10,000 for betterments to passenger cars, etc.

New York reports indicate that the U. S. Government will place some large rolling stock orders during the current year, probably covering 300,000 cars, and that the first instalment of about 60,000 will be placed during April. It is stated that master car builders have been devoting their time to the standardization of

bataan or Mexican mahogany. The window screens, sash locks, heating system, trap doors, steel vestibules, platforms, trucks and two-piece berth curtains, are all of the Pullman standard type. Following are other details:—

Length over end sills.....	73 ft. 6 in.
Length between truck centres.....	57 ft. 6 in.
Length over buffers.....	82 ft. 4½ in.
Hoppers.....	Duner Co.
Lighting.....	Electric and gas
Train connector.....	2 finger type, 30 voltage
Brakes.....	Westinghouse clasp type
Brake beams.....	Simplex clasp
Trucks.....	6 wheel
Journals.....	5 x 9 in.
Journal boxes.....	McCord

The illustration on this page shows one of the 10 consolidation locomotives being built for the Canadian Northern Ry., by Canadian Allis-Chalmers, Ltd., Toronto, some details of which have been given in previous issues. Four of these locomotives have already been delivered and the balance is expected to be delivered shortly. Following are the chief details:

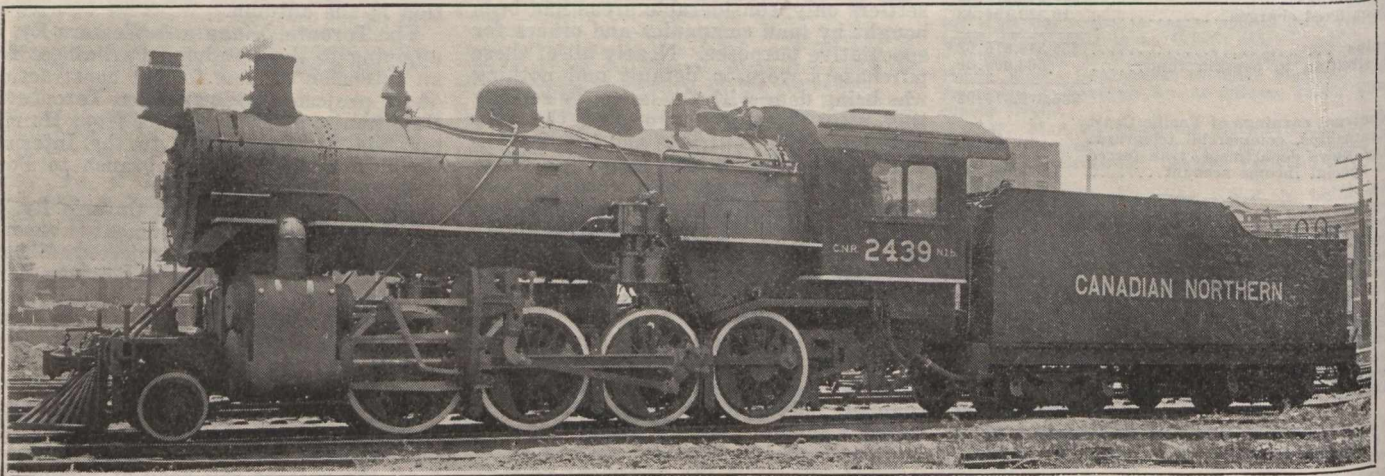
Total weight.....	220,000 lb.
Weight on drivers.....	195,000 lb.
Tractive effort.....	39,684 lb.
Boiler, type.....	Extended wagon top
Boiler pressure.....	180 lb.
Firebox.....	64¼ by 110 13/16 in.
Grate area.....	49 sq. ft.

truck with McCord tender boxes, Simplex high speed tender brake beam, Westinghouse ET 6 brake with cross compound air pump and special air strainer. Other details are as follows:—

Weight on drivers.....	213,500 lb.
Weight, total.....	283,000 lb.
Wheel base of engine, rigid.....	16 ft. 6 in.
Wheel base of engine, total.....	35 ft. 1 in.
Wheel base of engine and tender.....	68 ft.
Heating surface, firebox.....	242 sq. ft.
Heating surface, tubes.....	3,398 sq. ft.
Heating surface, total.....	3,640 sq. ft.
Driving wheels, diar.....	.63 in.
Journals, main.....	11 x 20 in.
Journals, others.....	10 x 20 in.
Cylinders, diar. and stroke.....	27 x 30 in.
Boiler, type.....	Extended wagon top, radial stay
Boiler pressure.....	180 lb.
Tubes, no. and diar.....	240—2 in.; 32—5½ in.
Tubes, length.....	20 ft.
Grate area.....	56.5 sq. ft.
Weight of tender loaded.....	166,000 lb.
Water capacity.....	9,000 U.S. gall.
Coal capacity.....	12 tons
Tank, type.....	Water bottom with vestibule connections
Truck wheel diar.....	.34 in.
Journals.....	.6 x 11 in.
Brake beam.....	High speed, M.C.B. heads

## Dominion Government Orders for Rolling Stock.

The Minister of Railways has been devoting considerable time recently, to se-



Consolidation Locomotive for Canadian Northern Railway

freight cars, and that eight different types, known as M.C.B. cars, have been agreed upon, with a view to evolving one standard type of car suitable to all roads. The average price of the standard types agreed upon at present, is given as \$3,000 each.

The Canadian Government Railways dining cars, 7 of which have been ordered from the Pullman Co., will be of steel, underframe, superstructure and exterior, and the interior finish will be of quarter cut oak with steel plates in the pantry and kitchen, and there will be seating capacity for 30 persons. Following are the chief details:—

Length over end sills.....	73 ft. 6 in.
Length between truck centres.....	57 ft. 6 in.
Length over buffers.....	81 ft. 10½ in.
Heating system.....	Pullman standard
Lighting.....	Electric and gas
Platforms.....	Pullman standard
Brakes.....	Westinghouse clasp type
Brake beams.....	Simplex clasp
Trucks.....	6 wheel Pullman standard
Journals.....	5 x 9 in.
Journal boxes.....	McCord malleable

The Canadian Government Railways sleeping cars, 14 of which have been ordered from the Pullman Co., as mentioned in our last issue, will contain 10 sections and 2 drawing rooms. They will be of steel, underframe, superstructure and exterior, and the interior finish will be of

Tubes, no. and diar.....	262-2 in.; 26-5½ in.
Tubes, length.....	15 ft. 3 in.
Heating surface, firebox.....	180 sq. ft.
Heating surface, tubes.....	2,946 sq. ft.
Superheater type.....	Locomotive Superheater
Co.'s top header	
Driving wheel base.....	16 ft. 6 in.
Wheel base, engine and tender total.....	60 ft. 27½ in.
Length, engine and tender over all.....	68 ft. 7½ in.
Cylinder, diar. and stroke.....	24 x 32 in.
Driving wheels, diar.....	.63 in.
Journals, main.....	10 x 14 in.
Journals, others.....	5½ x 10 in.
Coal capacity.....	10 tons
Water capacity.....	6,500 imp. gall.

Canadian Government Railways have recently received 34 Mikado (2-8-2) locomotives from Canadian Locomotive Co. These are a portion of an order for 50 placed in the autumn, and some of them are being rented to the C.N.R. and G.T.R., to relieve the pressure on these companies motive power. The illustration given on pg. 145 is from one of those recently delivered, and the type built includes a number of the latest devices, covering, the Locomotive Superheater Co.'s latest type of superheater, Tate flexible staybolts, brick arch, vanadium steel frames, metallic packing, Walschaert valve gear, power reverse gear, Franklin hard grease cellars, Franklin fire door, radial buffers, extended driving box, vestibule cab, detroit lubricator, incandescent headlight, side boiler checks, pedestal type tender

curing extra rolling stock necessary, not only for the Canadian Government Railways, but also for the Canadian Northern Ry., which is now owned by the government. The latter road, owing to its financial difficulties, has not been in a position to make any purchases for some time past, and is in fact more in want of rolling stock than the Canadian Government Railways, so that the bulk of the orders placed recently, and to be placed in the near future, are for the C.N.R. Early in March, a series of conferences were held in Ottawa between the Minister and various officials, the Railways Department being represented by G. A. Bell, Assistant to the Minister; A. E. Warren, Chief Operating Officer; and L. Lavoie, Purchasing Agent; the Canadian Northern Ry., by D. B. Hanna, Third Vice President; A. J. Mitchell, Assistant to Vice President; S. J. Hungerford, General Manager, Eastern Lines; and A. L. Grubb, Assistant Superintendent of Motive Power, and the Canadian Government Railways, by W. U. Appleton, Superintendent of Motive Power, and G. E. Smart, Superintendent of Car Department. W. D. Robb, Vice President, G.T.R., also attended, as that company is to lease some of the locomotives to be ordered. Since then, a large number of orders have been

placed and others are being put through. Under the system in vogue at Ottawa, the Minister decides on the orders to be given, subject to ratification by the Privy Council, and no official announcement is made until the passing of the necessary orders in council.

We are officially advised that up to Mar. 20 orders in council had been passed authorizing the following orders:

Canadian Car & Foundry Co., Montreal, 5,000, forty-ton, standard, steel frame, single sheathed, box cars, \$2,750 each, total \$13,750,000.

Eastern Car Co., New Glasgow, N.S., 750, steel underframe, 41 ft., 40 ton, flat cars, \$2,370.40 each, total \$1,777,800.

Eastern Car Co., 650, fifty-ton, enterprise composite coal cars, \$3,179.50 each, total \$2,066,675.

Hart-Otis Car Co., Montreal, 250 ballast cars, with side dump only, \$3,040 each, total \$760,000.

Hart-Otis Car Co., 200 ballast cars, with side and centre dump, etc., \$3,125 each, total \$625,000.

National Steel Car Co., Hamilton, Ont., 1,000, forty-ton steel frame box cars,

that, expeditiously. Full details of what we propose will be given at a later date."

### Meritorious Services by Canadian Pacific Railway Employes.

The educational bulletins issued by the general superintendents of the company's various districts, record the following meritorious services performed by employes recently:—

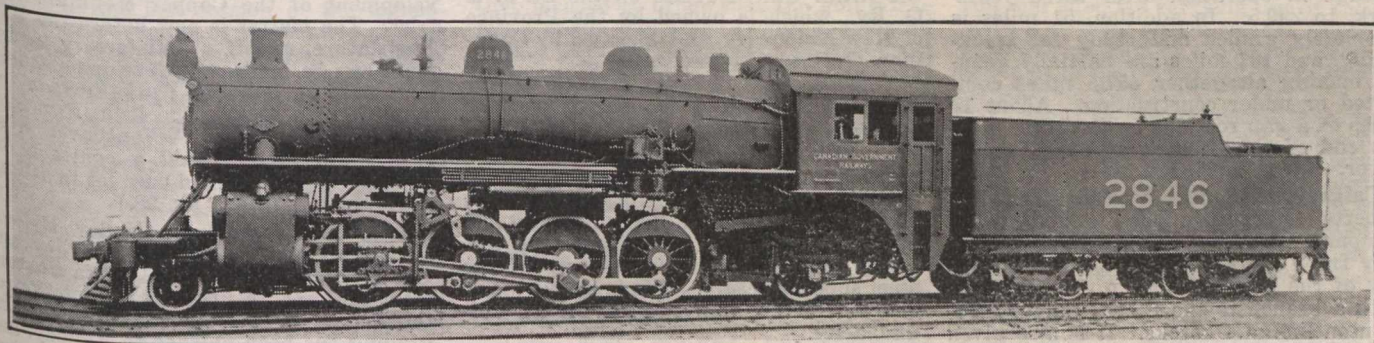
Conductor F. V. Perry ran a snow plough during a heavy storm recently, when the regular man deserted the plough. His action is commendable.

Conductor Knapp, while in charge of a freight train recently, discovered 10 in. broken off switchpoint at Spicer siding. He immediately reported it to the section foreman and dispatcher in order that special attention could be given.

Locomotive man P. McLaren, Kenora Division, while running locomotive on passenger train, observed on opposite track what seemed to be a broken rail. He slowed down an approaching train, which he met, and told the crew to look

man Lyons, when approaching Tompkins station, noticed coal shed opposite station on fire. On arrival in yard, locomotive was cut off train and with assistance of conductor Simmons and trainman MacDonald, coupled on to flat car and dump car of coal that were standing in front of shed and they were hauled out of danger. A hole was chopped in the side of the building and locomotive spotted with blow-off cock opposite, blow-off cock opened, and this, together with aid of squirt hose and by shoveling snow on the roof, fire was brought under control, and almost extinguished before the citizens arrived to assist. It is almost certain that the building, as well as the two cars and contents, would have been completely destroyed had it not been for the prompt action on the part of the locomotive and train crew, as with the wind that was blowing at the time it would have been impossible for the citizens to have extinguished the fire.

**False Creek Seawall Suit.**—The Imperial Privy Council, according to a press cable of Mar. 20, has dismissed the Van-



Mikado Locomotive for Canadian Government Railways

\$2,750 each, total \$2,750,000.

Pressed Steel Car Co., New York, 50 tank cars, 8,000 imp. gal., with 50-ton trucks, etc., 25 for general service, \$3,926 each, total \$98,150, and 25 for water service, \$3,770 each, total \$94,250.

The orders above mentioned aggregate \$22,603,175.

The Canadian Car & Foundry Co. has an order for 250 standard, all wood, refrigerator cars, with metal draft arms, at \$4,097 each, and further orders are to be placed for both freight and passenger cars.

Canadian Locomotive Co., Kingston, Ont., has orders for 60 Mikado freight locomotives at \$62,000 each, and 10 switching locomotives at \$40,500 each.

Montreal Locomotive Works has orders for 50 consolidation freight locomotives at \$58,000 each, and 30 Pacific passenger locomotives at \$60,000 each.

The consolidation locomotives will be assigned to the Canadian Northern Ry., and the Mikado locomotives will be rented to the G.T.R., with the option of buying them.

Sir Robert Borden, in speaking in the House of Commons, on Mar. 19, said: "The Minister of Railways has had under very serious consideration the provision of rolling stock and equipment for railways. We are confronted with the immediate acquisition of some 10,000 miles of railway, which will bring the total state railway mileage of this country up to about 15,000. It is useless for us to have that railway unless it is properly equipped. The great crops that we hope for during the present year and next year, which are so essential for war purposes, must be transported—and, more than

out for the spot indicated. They did so and found a broken rail. His judgment and interest are commendable.

Conductor R. F. Nixon, Woodstock Division, while walking over the top of his train, noticed a car badly canted. He went down the side ladder of the car to investigate, and upon finding an arch bar broken, immediately stopped the train, removed the brake and rigging, and had the car moved carefully to the next siding, where it was set out. His vigilance and prompt action doubtless prevented an accident.

Conductor C. R. Rupp, Brandon Division, noticed corner of baggage car take a slight drop when train moving. He pulled the air and on examination it was found that bolt which holds spring hanger had broken, and allowed sand board to drop to rail. With the assistance of locomotive man W. L. Glendenning, the sand board was jacked up and car taker through to terminal. If the conductor had not been attentive and had not taken prompt action, a serious derailment might have occurred.

The valve crank and rod on low pressure side broke accidentally at noon hour, resulting in compressor getting beyond control (or in common terms, running away). The 8 ft. fly wheel was turning 500 revolutions a minute (normal 80 revolutions a minute). The noise, which was terrific, attracted Geo. Singleton, aged 18, formerly call boy, now hostler's helper at Schreiber, Ont., who immediately ran to the engine room and had to face the large fly wheel and turned off the steam, thus avoiding the possible loss of life of others and also the destruction of compressor, engine, dynamos and building.

Locomotive man Jas. Wilks and fire-

cover City Council's petition for leave to appeal the Supreme Court of Canada's decision in the action by Champion & White relative to the False Creek flats site. This was an action in which the Supreme Court held that the building of the sea wall by the Canadian Northern Pacific Ry. on an area granted by the city, had cut off entrance to plaintiffs' wharf. The reclamation work at this point was held up during the hearing of the action, and will be stopped entirely unless some arrangement can be made.

**Railways & Canals Department Salaries.** The estimates submitted in the House of Commons recently provided for the following increases in salaries, among others: Graham A. Bell, C.M.G., Assistant to Minister, and Financial Comptroller of Department, from \$4,500 to \$5,000; E. E. Fairweather, Solicitor, from \$4,500 to \$5,000. Alex. Ferguson, Inspecting Engineer, has been transferred from the outside to the inside service, at his previous salary, \$4,000.

**U. S. Exports through Canada.**—A St. John, N.B., press dispatch of Mar. 14 states that it is reported that the U. S. Government has asked the C.P.R. if it will be able to handle 200,000 tons of export freight a month during the coming summer, and haul it to St. John for shipment. The C.P.R. is stated to have replied in the affirmative.

The Northern Ex. Co. has been registered under the British Columbia Companies Act, as an extra provincial corporation, to carry on business within that province, with head office at Vancouver, and H. Swinford, General Agent, Northern Pacific Ry., Vancouver, as its attorney.

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

**Alaska Ry.**—Since the United States Government undertook the build a railway in Alaska, the railway mileage of that district has been considerably increased. The Susitna route, which has been adopted, extends from Seward, on Resurrection Bay, to Fairbanks, on the Tanana River, 471 miles. This route includes the existing Alaska Northern Ry., which runs from Seward through the Kanai Peninsula, for 71 miles, to Turnagain Arm. The Alaska Northern Ry. has been purchased by the government for \$1,150,000. From Turnagain Arm, the route extends through the Susitna Valley and across Broad Pass to the Tanana River, and from there to Happy Station, at mile 460, where it connects with the Tanana Valley Rd., and from there on to Fairbanks. The Tanana Valley Rd. is being operated by the government under lease, pending its purchase. The work done to date includes the renovation of the old railways, and the construction of additional mileage, bringing the total mileage in operation after three years' work, to 299.5. In addition, 51 miles is completely graded and ready for track-laying, and 107 miles are partially graded, making altogether 457.5 miles completed or under construction. About 14 miles of a gap remains between the present end of construction and the Tanana River. (Oct., 1917, pg. 395.)

**Calgary & South Western Ry.**—The Alberta Legislature has incorporated a company with this title to build a railway from Calgary to the western boundary of the province, in Tp. 18, 19 or 20, with a branch to the C.P.R. Calgary-Edmonton line at Okotoks. It is also given power to acquire by purchase, lease or otherwise, the portion of the right of way of the projected Alberta-Hudson Bay Ry., covering generally the authorized route of the C. & S.W. Ry., together with any plans of surveys, and any authorization of the Government for the building of any line owned by the A. & H. B. Ry. The company's authorized capital is fixed at \$2,500,000; its office is at Calgary, and its provisional directors are: A. L. Smith, W. C. Robertson, R. E. Manning, all barristers of Calgary.

When the measure was before the legislature Mar. 5, it was stated that the route of the projected railway would be from Calgary via Priddis, to Millarville, thence through the oil fields district to Black Diamond, and from there westerly to the anthracite coal fields, the leases for which were held by P. Burns; that in order to avoid unnecessary duplication of railways in the vicinity, it was proposed to purchase the rights of the Alberta-Hudson Bay Ry. where the two routes coincided, or to arrange for the joint use of tracks; that it was not desired that any provincial aid be given the line; that the money for construction was already available, and that the line would be built as speedily as possible.

P. Burns is reported to have stated in Calgary, Mar. 8, that the coal areas would be definitely opened during the summer, and the railway located; that during next winter the rock work and side hill cuts on the right of way would be done, so as to have things ready for finishing up the grading and track laying in the spring of 1919. The coal mines which would be first opened up would be those at the head waters of Sheep Creek. (Mar., pg. 98.)

**Canadian Niagara Bridge Co.**—The Dominion Parliament is being asked to

incorporate a company with this title to construct a railway and general traffic bridge across the Niagara River, with the necessary approaches and terminal facilities. The proposed starting point of the bridge in Canada is not more definitely located, than from some point in Bertie or Welland Townships. Cahill & Soule, Hamilton, Ont., are solicitors for the applicants.

**Canadian Government Railways.**—Tenders are under consideration for the construction of a frame station building at Belledune, N.B.

A press report states that some additional siding facilities are to be provided at Sackville, N.B., to take care of mail, express and baggage traffic to and from Prince Edward Island by the car ferry route.

It is reported that during this year about 130 miles of light rails on the line are to be taken up and will be replaced with 80 lb. rails at present on the St. John & Quebec Ry. The rails taken up from the I.R.C. will be relaid on the St. J. & Q. Ry., which is owned by the Province of New Brunswick, and operated by Canadian Government Railways.

Tenders were received to Mar. 26 for building 51 section houses at various points between Moncton, N.B., and Winnipeg, Man. (Jan., pg. 12.)

**Central Canada Ry.**—A press report of Mar. 18, stated that the work on the piers of the bridge at Peace River Landing had been completed, and that everything was being got ready for the starting of the steel superstructure. (Mar., pg. 98.) See also Edmonton, Dunvegan & British Columbia Ry.

**Central Vermont Ry.**—The Board of Railway Commissioners has directed the company to lower a culvert on its line near Farnham, Que., upon the application of the Department of Agriculture to promote the cultivation of land in the vicinity.

**Eastern Maine Rd.**—W. H. Manfield, Bangor, Me., President, was in Fredericton, N.B., Mar. 9, in consultation with the New Brunswick Government with, it is said a view of building a branch line from his projected line to the St. John & Quebec Ry. The report states that the government did not look favorably on the proposal.

**Edmonton, Dunvegan & British Columbia Ry.**—J. D. McArthur, President, is reported to have said in Vancouver, B.C., Mar. 8, that no new construction will be gone on with this year, on the E.D. & B.C.R., nor on the Central Canada Ry. and Alberta & Great Waterways Ry., but that it is intended to finish up all work in hand, and to proceed with betterments and the development of traffic. (Mar., pg. 98.)

**Grand Trunk Pacific Ry.**—The Dominion Government has granted to the G.T.P. Branch Lines Co., lot 11, north side 16th St., east of Central Ave., Battleford, Sask., for terminals for the company's Cutknife Branch. (Feb., pg. 57.)

**Grand Trunk Ry.**—The company has completed its new brick freight shed at the corner of Sandwich St., and Marentelle Ave., Windsor, Ont., and has begun the tearing down of the old shed at Brock St., on the river front. This old building was erected in 1853, by the old Great Western Ry., and was first used for traffic Jan. 31, 1854, it being the company's original passenger station in Windsor. (Feb., pg. 57.)

**Great Northern Ry.**—The company's new cut off along Brunette Creek, near Vancouver, B.C., has been completed, and a train service has been operated over it since Mar. 1. The work included the strengthening of the tracks along the creek, and the building of a steel and concrete bridge to carry the north road at Coquitlam. The cut off eliminates a level crossing and saves half a mile between Vancouver and New Westminster. (Feb., pg. 57.)

**International Bridge & Terminal Co.**—The Dominion Parliament is being asked for power to construct railway lines, not exceeding 6 miles in any one case, to connect the company's projected bridge with the works and railways of other companies. It is also desired that power be given to issue bonds for \$40,000 a mile in respect of the lines to be built. Maccraken, Henderson, Green and Herridge, Ottawa, are solicitors for applicants.

**Kettle Valley Ry.**—The question of taxation is said to be holding up the development of the Copper Mountain district. The matter is now before the B.C. Legislature, and if a satisfactory settlement can be made, the development will, it is said, go on. The works include the building of a branch line from Princeton to Copper Mountain. A Vancouver press report of Mar. 21 said a contract for building the branch had been let to a Vancouver man. (Mar., pg. 98.)

**Lacombe & Blindman Valley Ry.**—A delegation of residents of Rimbey and vicinity waited upon the Alberta Government Mar. 11, to urge the completion of this partially constructed railway. The grading has been finished to Rimbey, and ties have been placed thereon. Track has been laid to Bentley, from Lacombe, but the remaining 17 miles still requires the rails and ballasting in order that the line might be operated. (Oct., 1917, pg. 393.)

**Montreal, Joliette & Transcontinental Jct. Ry.**—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Montreal northerly through the counties of Hochelaga, L'Assomption and Montcalm to Joliette, thence northerly and westerly to St. Michel des Saints, in Berthier county, and thence to the National Transcontinental Ry., a distance of about 180 miles. L. J. Kehoe, Ottawa, is solicitor for applicants.

**Port Canada Docks Ry. Co.**—The New Brunswick Legislature is being asked to extend for two years the time within which this company may build its projected railway. The company was originally incorporated in 1907 as the Canadian Terminal Ry. Co., to build a line from L'Etang Harbor to St. Croix, with branch lines. In 1912 an extension of time for construction was granted to a new set of provisional directors, of whom G. W. Marsh, St. George, N.B., was the most active. A further extension of time for construction was granted in 1915, and the name of the company was changed to Port Canada Docks Ry. (Mar., 1915, pg. 84.)

**Prince Edward Island Ry.**—C. A. Hayes, General Manager, Eastern Lines, Canadian Government Railways, with a number of other officials, returned to Moncton, N.B., Mar. 7, after a trip of inspection over the P.E.I.R. and the car Tormentine. A Charlottetown press report, Mar. 7, stated that Mr. Hayes made a statement there for publication to the effect that some preliminary steps would

be taken this year towards standardizing the gauge of the railway, but he could not say when the main work would be started. Ditching machines would be provided and the whole of the lines on the island would be ditched. The branch line from Emerald to Borden, which now carries the bulk of the traffic, would be practically rebuilt. The shortage of ties and rails would delay the widening of the gauge. (Oct., 1917, pg. 394.)

**St. John & Quebec Ry.**—The Lieutenant Governor in his speech at the opening of the New Brunswick Legislature, Mar. 7, said:—"The construction of the St. John & Quebec Ry. between Gagetown and Westfield has proceeded during the year as rapidly as labor conditions and scarcity of material would permit. On account of the extraordinary demand for steel rails for use overseas, as well as in this country, the Canadian Government Railways were unable to carry out their undertaking to provide the rails necessary for the completion of this section, but arrangements have recently been made preliminary to the taking up of the steel rails upon the Northern New Brunswick & Seaboard Ry., authority for which was given at the last session of the legislature. Construction of the road is at such a stage that with the assurance of steel for the track-laying, the company is able to look forward to completion of the railway, ready for transportation for the next fall and winter."

A press report Mar. 8, stated that arrangements have been made with the Dominion Government, under which 130 miles of the heavy steel rails on this line between Gagetown are to be taken up and handed over for use as relaying rails on the Intercolonial Ry., and that the rails taken up from that line will be laid on the St. J. & Q. Ry. (Jan., pg. 12.)

**Timiskaming & Northern Ontario Ry.** A deputation from the Gowganda district waited on the Ontario Government, Mar. 1, and asked for a grant of about \$7,000 a mile, towards the building of a 50 mile railway from Elk Lake to the Gowganda mining area. The deputation said if the government would not build a branch of the T. & N.O. Ry., it might be possible with such a grant to finance the undertaking privately. It was reported that possibly a grant of \$100,000 could be arranged. The legislature, however, was prorogued without any provision being made.

**British Columbia's Railway Liabilities.** British Columbia's financial statement for 1917, shows its railway liabilities financing under two heads, the first consisting of amounts paid for interest and on loan account, and the second showing the authorized and issued securities for which the province is liable both for principal and interest. The first section shows a total of \$267,056.93, of which are termed "deferred assets," made up as follows:—Nakusp & Slocan Ry., paid for interest, \$296,374.80; Pacific Great Eastern Ry., paid for interest, \$1,053,826.27; P.G.E. Ry., loan account, \$1,319,366.86. The second section comprises the following:—Canadian Northern Pacific Ry., securities due April 2, 1950, authorized \$47,975,000, issued \$40,157,524; Pacific Great Eastern Ry., due July 15, 1942, authorized and issued, \$20,160,000; Nakusp & Slocan Ry., due July 1, 1918, authorized and issued, \$647,072.

The annual tours of circuses round the country will not take place this year, the United States railways having issued notices that they will not handle circus trains.

## Increases in Freight and Passenger Rates Approved by Dominion Government.

The following order in council, P.C. 632, was passed at Ottawa, Mar. 14:—The Governor General in council, pursuant to the provisions of sec. 56 of the Railway Act, chap. 37, Revised Statutes of Canada, 1906, has had under consideration the petitions referred to in the order in council P.C. 229, of Jan. 30, 1918, and other petitions appealing from the Board of Railway Commissioners order, dated Dec. 26, 1917, providing for a general advance in freight and passenger rates, and has heard counsel for the petitioners and others, and has heard a further argument advanced at the adjourned hearing of such appeal on Mar. 1, 1918, and has considered all cases filed and all replies and rejoinders, and is pleased to order that the said order of the Board of Railway Commissioners be amended, by providing that it shall cease to operate one year after the declaration of peace following the present war.

The Governor General in council is further pleased to order that the going into effect of the said order as herein amended be not further postponed. Whereof the Board of Railway Commissioners and all other persons whom it may concern are to take notice and govern themselves accordingly. Certified copies hereof shall forthwith be transmitted to the Board of Railway Commissioners to counsel for the petitioners and other interested parties.

## Freight Rates on Clay, Sand, Gravel and Crushed Stone.

The Chief Railway Commissioner's judgment in the so-called 15% rate case, published in Canadian Railway and Marine World for February, on pg. 51, contained the following paragraph:—"Common clay and sand, gravel and crushed stone are commodities which cannot, in my view, stand a 15% increase. I would, however, permit the companies to increase their rates on these commodities both in eastern and western territories, by adding to existing rates not more than 5c a ton."

A circular issued by the board's secretary says:—"The reference to common clay and sand, gravel and crushed stone . . . was intended to be understood in the collective and not the particular sense; that is to say, the specific increase of not more than 5c a ton is to be understood to apply to all the commodities which have hitherto been carried under the special mileage scale, or under specific commodity items of the tariffs, at the same rates as those particularized in the judgment. Any tariffs in conflict with this announcement which have already been filed to take effect on Mar. 15, 1918, or which, bearing an earlier effective rate, were postponed in compliance with the order in council, must be amended in accordance herewith."

## Special Taxation of Canadian Pacific Railway.

The following order in council, P.C. 661, was passed at Ottawa, Mar. 14:—The Governor General in council, on the recommendation of the Prime Minister, is pleased, under the authority of the War Measures Act 1914, to order as follows:

The Canadian Pacific Ry. Co. shall pay to the Government of Canada, the following special taxes:—

One-half of its net earnings from railway operation, in excess of 7% on its common stock (after paying fixed charges, appropriation for pension fund, and dividends on preferred stock).

Income tax on its special income (inclusive of all its income, except earnings from railway operations), under the provisions of the Income War Tax Act, 1917, or any amendment thereof, hereafter enacted.

Provided, that the total amount to be paid each year by the company shall not be less than its net earnings in such year from railway operations, and from special income as defined above, in excess of 10% on its common stock (after paying fixed charges, appropriation for pension fund and dividends on preferred stock) up to \$7,000,000, or the amount by which its net earnings from railway operations exceed the net earnings from railway operations for the fiscal year ended Dec. 31, 1917, due to the increase in freight and passenger rates granted by the Board of Railway Commissioners order, dated Dec. 26, 1917.

The Governor General in council may make such regulations to provide for the full and effective carrying out of the provisions of these orders and for the collection, periodically, of the taxes herein imposed as to the Governor General in council may seem fit.

Payment in full of special taxes under this order shall in respect of earnings from and after Jan. 1, 1918, relieve the company of liability under the Business Profits War Tax Act, 1916, and any other Dominion act of like nature hereafter enacted, and (save as hereinbefore provided), under the Income War Tax Act, 1917.

This order shall be deemed to have come into force and effect on Jan. 1, 1918, and to continue in force and effect during the present war, and until further ordered.

## Railway Finance, Meetings, Etc.

**Greater Winnipeg Water District Ry.** Following is a report of operations for 1917:—Earnings for carrying freight, etc., \$396,402; cost of operation of railway, \$231,235; interest charges on capital invested in railway construction, \$90,855, and railway equipment, \$11,876, a total of \$102,731. Net credit on operating for the year, \$62,437. The debit balance on Dec. 31, 1916, was \$14,584, and the credit balance at the end of 1917, after paying all costs of operation, maintenance and interest on cost of railway equipment, \$47,851. For the period to Mar. 9, 1918, receipts from freight and passenger traffic are reported to have been \$11,845, and operating expenses \$5,715. There were 878 passengers carried east, and 842 west.

**Lacombe & Blindman Valley Electric Ry.**—The Premier of Alberta is reported to have informed a delegation Mar. 12, that this light railway from Lacombe towards Rimbey was paying operating expenses, and that as soon as it was completed to Rimbey, a profit might be expected.

**Timiskaming & Northern Ontario Ry.** Revenue from passenger traffic for January, \$44,130.48; from freight traffic, \$116,511.24; total revenue, \$160,641.72, against \$44,958.79 passenger, \$101,717.52 freight, and \$146,676.31 total revenue for Jan., 1917.

There was a further rearrangement and reduction of passenger trains on the principal lines Mar. 3 and 10, under the direction of the Canadian Railway Association for National Defence.

# Traffic Orders by Board of Railway Commissioners.

## Minimum Weights of Tan Bark.

General order 221, Feb. 26. Re Canadian Manufacturers' Association's application for an order disallowing increased carload minimum weights of tan bark, published in Supplement 8 to the C.P.R. Tariff C.R.C. no. E-3225, and Supplement 1 to G.T.R. Tariff C.R.C. no. E-3477, heard at Ottawa, Nov. 20, 1917: It is ordered that the minimum carload weights of tan bark, when carried under special commodity tariffs, be as follows: For cars not over 30½ ft. long, inside or platform measurement, 21,000 lb. For cars over 30½ ft. and not over 34½ ft. long, inside or platform measurement, 23,000 lb. For cars over 34½ ft. and not over 36½ ft. long, inside measurement for box and stock cars, and not over 36 ft. 10 in., platform measurement for flat cars, 28,000 lb. The schedules to give effect to this order to be published and filed to take effect not later than Mar. 11, 1918.

## Oleomargarine as a Packing House Product.

General order 222, Mar. 19. Re Canadian Manufacturers' Association's complaint, on behalf of the packing industry, that railway companies refuse to accept oleomargarine as part of minimum weight of packing house products, loaded in so-called pedlar cars on private sidings. Heard at Ottawa, Mar. 19, the Canadian Manufacturers' Association, Canadian Freight Association, Toronto Board of Trade, Pere Marquette Ry. and the Canadian Pacific, Grand Trunk, and Canadian Northern Railways being represented: It is ordered that the tariffs of the said railway companies, providing for the transportation of packing house products, fresh meats, and other articles in pedlar cars, be revised so as to include oleomargarine as packing house products.

## Stop-over for Completion of Live Stock Loading.

27034. Mar. 19. Re complaints of Toronto Board of Trade, the William Davies Co., of Toronto, against charge of \$5 a car by Pere Marquette Ry. for a stop-off for completion of loading of live stock. Heard at Ottawa, Mar. 19: It is ordered that the stop-over charge of \$5 a car for completion of loading of live stock be disallowed; and that the Pere Marquette Ry. be required, within one week from date of this order, to publish and file a new tariff showing a stop-over charge of \$5 a car.

## Express Rates on Cream in British Columbia.

27036. Feb. 26. Re complaints of Beechnut Creamery of Nelson, B.C., Nelson Board of Trade, Associated Boards of Trade of Eastern British Columbia, British Columbia Dairymen's Association, Curlew Creamery Co. of Curlew, Wash., C. Powlett, of Cowley, Alta., and Cranbrook Retail Merchants' Mutual Protective Association, against rates charged by Dominion Express Co. on cream in British Columbia. Heard at Victoria, B.C., June 5, 1917; Nelson, B.C., June 16, 1917, and Calgary, Alta., June 18, 1917: It is ordered that the Dominion Express Co.'s special mileage tariff for carriage of cream in British Columbia be extended beyond 75 miles, as follows:

Miles.	Per can		
	5 gal.	8 gal.	10 gal.
Over 75 and not over 100	40c.	45c.	60c.
Over 100 and not over 150	50c.	55c.	68c.
Over 150 and not over 200	60c.	65c.	75c.

The said new rates to be made effective not later than April 1, 1918. And it is

further ordered that the application for a reduction in the rates for the carriage of cream for distances not over 75 miles in British Columbia be refused.

## Cordwood Rates on A.C. & H.B. Ry.

27058. Mar. 6. Re complaint of Lyons Fuel & Supply Co., Steelton, Ont., against rates charged by Algoma Central & Hudson Bay. Ry. on cordwood. Heard at Toronto Oct. 23, 1917, the A.C. & H.B. Ry. and the Standard Chemical Iron & Lumber Co. of Canada, being represented: It is ordered that the A.C. & H.B. Ry. forthwith amend its special local commodity tariff, C.R.C. 388, in so far as it applies on cordwood, in carloads, to provide the following rates, viz.: For distances not over 11 miles, 2c per 100 lb.; for distances over 11 miles and not over 20 miles, 2½c per 100 lb. That the said company be permitted, on lawful notice, to cancel its special local freight tariff on charcoal wood, C.R.C. 417, applicable only when the product of the said wood is shipped over the company's railway, and in place thereof and subject to the same application, to publish and file a special tariff to provide the following rates, viz.: Over 20 miles and not over 30 miles, 80c a cord; over 30 miles and not over 40 miles, 85c a cord; over 40 miles and not over 50 miles, 90c a cord. And whereas the C.P.R. and G.T.R., under the board's judgment of Dec. 26, 1917, increased their special charcoal wood rates by 15%; and whereas, by order in council P.C. 229, the time when the said increases were to become operative was extended until Mar. 15, 1918—It is therefore further ordered that, subject to the provisions of the said order in council, and such other order or orders in council as may issue in the premises, the A.C. & H.B. Ry. be permitted, on lawful notice, to increase its rates on charcoal wood as follows, viz.: Over 20 miles and not over 30 miles, to 92c a cord; over 30 miles and not over 40 miles, to 98c a cord; over 40 miles and not over 50 miles, to 103½c a cord.

## Cut Glass Rates.

27068. Mar. 16. Re Wallaceburg Cut Glass Works' application for lower rating than provided in Canadian Freight Classification 15 for cut glassware. Heard at Windsor, Ont., Nov. 22, 1917: It is ordered that the Pere Marquette Ry. publish and file a joint commodity tariff, applying the published and filed 3rd class rates from Wallaceburg, Ont., to Toronto and Montreal on cut glass jars, value not exceeding \$5 a doz., and so receipted for; and on cut glass tumblers, value not exceeding \$1 a dozen, and so receipted for, packed in barrels or boxes, and at owner's risk or breakage, in straight or mixed carloads, minimum weight 20,000 lb. a car. That the said tariff become effective not later than April 8, 1918. That the application for a reduction of the less than carload rating of Canadian Freight Classification of cut glassware be refused.

## Pere Marquette Railway Tariff.

27069. Mar. 16. Re Pere Marquette Ry.'s application for permission to cancel Canadian Northern Ry. as a party to its tariff C.R.C. 2048: Upon reading what is filed in support of the application, the Page Wire Fence Co., and the McGregor, Banwell Fence Co. offering no objections; and upon the recommendation of the board's Chief Traffic Officer, it is ordered that the P.M. Ry. be authorized to cancel the Canadian Northern Ry. as a party to its said tariff.

## Inspection of Goods Covered By Bill of Lading.

27079. Mar. 19. Re application of R. W. Hannah, of Toronto, for cancellation of the following clause on the order bill of lading approved by the board: "Inspection of goods covered by this bill of lading will not be permitted, unless provided by law, or unless permission is endorsed on this original bill of lading or given in writing by the shipper." Heard at Toronto, Feb. 15, 1918, the applicant, the Canadian Manufacturers' Association, Canadian Freight Association, the Toronto and Montreal boards of trade, the Grand Trunk, Canadian Pacific, and Canadian Northern Railways, and the Michigan Central Rd. being represented: It is ordered that the application be refused.

## Coal Rates to Preston, Hespeler and Guelph.

27081. Mar. 21. Re complaints of City of Guelph, the Preston, Hespeler, Kitchener, Waterloo, and Elmira boards of trade, and Hall-Zryd Foundry Co. and R. Forbes Co., that the rates on coal from the frontier gateways are excessive and discriminatory: Upon hearing the complaints at Toronto, Dec. 11, 1916, the City of Guelph, the Preston, Kitchener and Montreal boards of trade, the Dominion Sugar Co., Canadian Buffalo Forge Co., Consolidated Rubber Co., Canadian Manufacturers' Association, and Canadian Retail Coal Association being represented; and upon reading the further written submissions filed, and the recommendation of the Board's Chief Traffic Officer, it is ordered that the rates published on coal, in carloads, from Buffalo, Black Rock, and Suspension Bridge, to Preston, Hespeler and Guelph, Ont., in G.T.R. tariff C.R.C. no. E-3766 and Michigan Central Rd. tariff C.R.C. 2748, which became effective Mar. 15, 1918, be disallowed, and that in lieu thereof the following rates per ton of 2,000 lb. be published: To Preston, \$1.03; to Hespeler, \$1.03; to Guelph, \$1.08.

## Milling in Transit Arrangements at Montreal.

27085. Mar. 18. Re application of Montreal Board of Trade, on behalf of Dominion Flour Mills, Ogilvie Flour Mills, and St. Lawrence Flour Mills, for an order disallowing the portion of the following tariffs: Supplement 33 to C.R.C. no. E-1196; supplement 6 to C.R.C. no. E-3120; supplement 1 to C.R.C. no. E-3137; supplement 1 to C.R.C. no. E-3214, cancelling the milling in transit arrangement on grain milled at Montreal, and reshipped to points on the Canadian Government Railways, also to Halifax, N.S., for export; and re order 25904, Feb. 26, 1917: Upon reading what was filed subsequent to the hearing at Ottawa, Feb. 21, 1917, in support of the application, and on behalf of the C.P.R.; and upon the recommendation of the Board's Chief Traffic Officer, it is ordered that the transit arrangements at Montreal, applicable to grain from Western Canada handled by the C.P.R. via the all-rail or lake and rail routes, the products of which are reshipped to destinations on or via the Intercolonial Ry., or for export via Halifax, which were sought to be cancelled and withdrawn by the C.P.R. by certain supplements to its tariffs appearing in the recital hereto, be continued on a uniform basis of a charge of 2c per 100 lb. for the stop-over services at Montreal; the said charge to be an addition to the published tariff rates from Port Arthur and Fort William, or from the lake ports, as the

case may be, to the destinations of the products of the said grain; and it is also ordered that, upon the publication and filing of the tariffs to give effect to this order, order 25904, Feb. 26, 1917, be rescinded.

### Canadian Pacific Railway Construction, Betterments, Etc.

**Manitoba District.**—Tenders were received to Mar. 27, for the construction of reinforced concrete piles and slabs, rail concrete culverts, concrete arches and bridge piers required on the Manitoba District.

**Automatic Protection Signal Installation.**—We are officially advised, in connection with the installation of automatic protection signals at Rosser, Poplar, Bradbury, Winnipeg Beach and Whyte-wold, Man., referred to in Canadian Railway and Marine World for March, that the signals are to be three position, upper right hand quadrant, top of mast, low voltage electric, of the permissive type, designated by pointed end blades and staggered lunar white marker lights. The control will be by continuous track circuits extending through the station limits. The current for each track circuit will be supplied from three cells of primary battery connected in multiple, with a resistance unit in series with positive side of battery and rail, each circuit averaging about 3,000 ft. long. All track relays will be wound to 4 ohms resistance and uniform to Railway Signal Association specifications. Switch boxes at switches will shunt at the relay side of the track circuit and break the continuous circuit when the switch is thrown. No. 9 solid R.C.S.D. copper of the Railway Signal Association's specifications will be used for all leads from battery to track, track to relays, track to switch boxes and battery to signals; No. 14 wire as above will be used for cable from pole line to functions; no. 10 copper clad double braid weather proof wire will be used for line work.

**Saskatchewan District.**—Tenders are under consideration for the erection of a 100 ft. extension to the brick freight shed at Regina; the erection of brick boiler houses at Weyburn and at Swift Current; the erection of frame freight sheds at Varwood and Assiniboia; the extension of the car shops, ice house, and stockyards and the erection of concrete ash pits at Moose Jaw; the erection of a frame locomotive house at Colonsay; the laying of pipe lines at different points in the district, and the construction of three large concrete culverts.

We are officially advised that the present car shop at Moose Jaw is 165 x 65 ft., and that the addition will be a 100 ft. extension at the eastern end, with the necessary additional trackage.

Grant Hall, Vice President and General Manager, Western Lines, was in Regina, Mar. 12, where he was waited upon by a delegation representing various sections of the southwestern part of the province, to urge the construction of a branch line there as a war and greater food production measure. This is the district south of the Weyburn-Lethbridge line, through which a number of surveys have been made, one of them being for a line to the International Boundary.

**Alberta District.**—A press report states that the coaling plant at Lethbridge will be moved to Bow Island. As stated in Canadian Railway and Marine World for March, a new coaling plant is to be erected at Lethbridge.

We are officially advised that it is not contemplated to do anything in the way of the completion of the line between Manyberries and Altawan at present. This is the 32 mile uncompleted link of the Weyburn-Lethbridge line.

**British Columbia District.**—We are officially advised that the details of the projected transfer slip at Vancouver have not yet been decided upon; and that the passenger car repair shop to be built at Vancouver will be a leanto, on one side 225 x 12 ft. wide, and 75 x 25 ft. on the end of the present building, and that the necessary track extensions will also be made. (Mar., pg. 102.)

### Freight Rate Increases in the United States.

Washington, D.C., press dispatch, Mar. 10:—Following the recent 15% increase of class and commodity rates in Canada, the Interstate Commerce Commission has authorized a proportionate increase in rates from points in the U.S. to Canada on the leading railways. The lines affected directly are the Grand Trunk, Minneapolis, St. Paul and Sault Ste. Marie, Great Northern, Canadian Northern Canadian Pacific and Duluth, Winnipeg and Pacific.

Washington, D.C., press dispatch, Mar. 15:—A general increase of 15% in commodity rates was granted today by the Interstate Commerce Commission to railways west of the Mississippi and north of the Ohio and Potomac Rivers, supplementing a similar increase allowed last June in class rates. The order applies only to articles shipped in large quantities, such as coal, brick, grain, food-stuffs, oil, stone, cement, lumber and other staple products shipped under the commodity classification. The new rates will go into effect as soon as railways file new tariffs, probably within a few weeks. The action will add about \$58,000,000 to the revenue of the eastern roads, although it will not actually increase their earnings, since the sum will revert to the government under the system of common operation, and railways will be paid on the basis of a fixed compensation outlined in the railway bill, just passed by Congress.

### Grand Trunk Railway Dividends Discontinued.

London, Eng., cablegram, Mar. 17: The Grand Trunk Ry. has issued a statement deeply regretting their inability to pay dividends on guaranteed or preference stocks owing to the exceedingly unfavorable results of the operations in the past year, arising out of circumstances entirely beyond the control of the management, notwithstanding that the company carried by far the largest traffic in its history. The enormous increase in wages, fuel, and all materials due to war conditions caused an immense increase in working expenses. Every effort was continuously made throughout the year to obtain an increase in rates to meet in some measure these serious conditions. Although these efforts were unsuccessful, the directors are hopeful that looking to the precedent established by Great Britain at the commencement of the war for the protection of British railway interests, and proposed in the legislation now under consideration by Congress regarding U.S. railways. The Canadian Government will in the near future take such action as will enable the companies to meet the present unparalleled war conditions.

### Dominion Aid for Canadian Northern and Grand Trunk Pacific Railways.

In the main estimates presented to the House of Commons, Mar. 22, provision is made for a loan of \$7,500,000 to the Grand Trunk Pacific Ry., \$3,000,000 of which is a revote of the unused portion of the loan voted in 1917. This loan is to be repayable on demand and to bear interest, payable half-yearly, at the rate of 6% a year. It is to be used for the payment of interest on G.T.P.R. and G.T.P.R. branch lines bonds, to meet deficits in the operations of the G.T.P.R., and to pay for betterments and equipment for that system. It is to be secured by a mortgage upon the company's undertaking, and it is to be expended subject to the government's direction. The company has agreed that it will constitute its board of directors as may be required from time to time by the government.

Another item provides for a loan of \$25,000,000 for the Canadian Northern Ry. The appropriation is made by way of loan, because, although the government has acquired the whole of the C.N.R. common stock, it has continued the C.N.R. Co. as a corporate entity. The government is thus making a loan to a company which it controls. The loan is to be made on the same terms as to payment of interest and repayment of principal as that to the G.T.P.R., and is to be secured by a mortgage on the C.N.R. The money is to be used to pay interest on debentures and maturing loans of the C.N.R., and to meet the cost of construction, betterments and equipment. Material for betterments and new equipment is being procured by the government.

The House of Commons, without discussion as to details, has voted one-sixth of the total amount of all the estimates.

In connection with the votes above mentioned, a return has been made by the Department of Railways, showing the distribution of the \$25,000,000 loan to the Canadian Northern Ry. in 1917. The return states that \$1,750,000 was paid to the Central Trust Co., New York, in payment of a loan to the C.N.R. The Guaranty Trust Co., New York, was paid \$300,000 in reduction of a loan, and the Columbia Trust Co., New York, received \$1,500,000.

The railway's rolling stock securities demanded a payment of \$4,976,500 for principal of equipment bonds, and of \$1,075,002, interest on equipment bonds. The remainder of the \$25,000,000, amounting to approximately \$15,400,000, was divided between the 13 companies forming the C.N.R. system. The \$25,000,000 was paid as follows:—

Nov. 19, 1917.....	\$12,500,000.00
Nov. 28, 1917.....	2,540,421.97
Dec. 10, 1917.....	54,750.00
Dec. 27, 1917.....	1,983,503.47
Jan. 9, 1918.....	1,250,000.00
Jan. 18, 1918.....	2,000,000.00
Jan. 24, 1918.....	2,000,000.00
Jan. 30, 1918.....	2,017,460.77
Feb. 4, 1918.....	653,863.79
Total .....	\$26,000,000.00

The Grand Trunk Pacific Ry. started a double weekly steamship service between Seattle, Victoria, Vancouver and Prince Rupert, Mar. 17, and announced that the direct service to Alaska would be resumed June 24.

The C.P.R. has been authorized by the Board of Railway Commissioners to start its morning train 509 from Montreal for Ottawa at 8.20, instead of 8.15 a.m., and to start its afternoon train from Montreal for Ottawa at 4.45 instead of 4.30.

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

Canada Steamship Lines, Ltd., honor roll shows 5 employes to have been killed in action, 9 to have been wounded and 111 as being on active service.

**Grand Trunk Pacific Ry. Employes.**—A press report states that 759 G.T.P.R. employes enlisted for military service; of these 87 have been reported killed or died from wounds, 10 are prisoners and 77 have been discharged from various causes.

**The Timiskaming & Northern Ontario Railwaymen's Patriotic Association**, up to Nov. 30, 1917, had contributed \$19,656.75 to the Red Cross; \$24,534.61 to the Canadian Patriotic Fund, and \$13,765.16 direct

worth of British and German shells and hauled them back to the rear on their now famous light railways. Late one afternoon one large dump caught fire through spontaneous combustion, or perhaps a defective shell, and in the first explosion half a score of men were wounded. A young Canadian locomotive man, a sergeant, who in peaceful days used to drive the C.P.R. Imperial Limited from Moose Jaw to the west, in spite of the bursting ammunition, backed his little locomotive into the middle of the dump where the fire was blazing most fiercely. He connected a hose with his main steam

troops declare with confidence that they will."

The young locomotive man mentioned in Roland Hill's dispatch is said to be Sergeant Jack Manahan of Moose Jaw, Sask., who was mentioned in a previous dispatch for gallantry under fire. He comes from Perth, Ont. His wife and family live in Moose Jaw.

**The March Record.**—The Militia Department issued early in March a summary of the work done by Canadian railway troops in France and Belgium in January, as follows:—"Nine miles of broad gauge track were laid and 33 miles of narrow gauge. The average number of miles of broad gauge track maintained during the month was 49, and of the narrow gauge, 141 miles. The men were employed in locating, grading, ballasting, and laying lines. About 6,100 Canadians were engaged on the narrow gauge and 1,100 on broad gauge lines."

### PERSONAL NOTES.

**Lieut. F. P. V. Cowley**, who has been transferred from junior to associate member of the Canadian Society of Civil Engineers, was, prior to enlistment with the Canadian Expeditionary Forces, in the City Engineer's Department, Victoria, B. C., and was at one time a rodman on District F, National Transcontinental Ry., and later, assistant hydrographic surveyor on the Pacific Coast under the Marine Department.

**Lieut. L. I. Easton**, 14th Field Company, Canadian Engineers, C.E.F., who has been transferred from student to junior member, Canadian Society of Civil Engineers, was, prior to enlistment, Resident Engineer, Hudson Bay Ry., and prior to that was engaged as instrument man on harbor survey at Port Nelson, Man., and had also served with the Canadian Northern Ry. and Grand Trunk Pacific Ry., on preliminary location and construc-



On the Western Battle Front.  
Canadian Railway Troops passing through the ruins of a town after laying track. From Canadian official photograph loaned by C.P.R.

to employes of the railway who have enlisted. The commission operating the railway has, in addition to the foregoing, contributed \$20,000 to the funds named.

### Canadian Railway Troops Work.

Roland Hill has sent the following from the war correspondents' headquarters in France to the Militia Department at Ottawa:—"The men who drive the big locomotives of Canada's ocean-to-ocean trains across the prairies and through the mountains are made of stern stuff and have nerves as steady as the steel roads they travel. You meet many of them here at the war.

"There is the story of one of these men—in charge, too, of a built-in-Canada locomotive—whose great hospital train had just complete loading at a siding when the Huns opened deliberate fire on the casualty clearing station. They said it was a reprisal for the 'bombing of German hospitals' by British airmen (British airmen, of course, do not bomb hospitals). The track ahead had been hit, but not broken, by the shells which were ranging closer to the hospital with every shot. Without hesitation the Canadian locomotive man piloted his train safely over the damaged track to a clear line ahead and hundreds of helpless wounded were carried to safety. If the locomotive had ditched it meant certain destruction for the train.

"Another locomotive man, who had charge of a Canadian construction train at Gouzeaucourt when the Huns broke through after Cambrai, stayed with full steam up until all possible men and material had been loaded, and although the enemy were actually on the track behind him, tore down the grade to a safe siding well behind the new British line.

"The Canadian railway troops in their spare time have been assisting the hard-worked salvage corps. After Passchendaele they collected thousands of pounds

pipe and for half an hour pumped a stream into the burning mass, finally getting the fire under control. His little locomotive was pitted with shrapnel holes and his own escape was nothing short of miraculous. Several of the flying fragments tore his clothes. His example rallied other men and the fire was subdued before very great damage had been done. There was \$200,000 worth of British shells



On the Western Battle Front.  
A Canadian narrow gauge track crossing a French railway near Lens. From Canadian official photograph loaned by C.P.R.

in that dump. We couldn't stand by and see that go up,' he explained afterwards. And when the dump was safe he and his companions gathered the wounded into empty dinky cars and rushed them back along the little line to the safety of a dressing station.

"If the much-advertised German offensive does come there is no branch of the service will be more ready than these little bands of railway pioneers. These seems to be no end to the traffic their lines can carry. For months they have been preparing to play a bigger part than ever on the western front and the fighting

tion, and in the Bridge Department, C.N.R.

**Lieut. J. S. Galbraith**, son of the late John Galbraith, Dean of Applied Science Faculty, Toronto University, who went overseas with the 123rd Battalion, and was awarded the Military Cross, returned to Toronto early in March, with a number of other convalescing officers.

**Sec.-Lieut. R. G. Hall**, Royal Flying Corps, accidentally killed while flying in England recently, was son of the President of the Hall Engineering Works, Montreal, and a nephew of the Minister of Marine.



**Flight-Lieut. Ross Harrison**, who was recently reported to have been killed in a flying accident at Fort Worth, Texas, was at one time an inspector on construction on the Canadian Northern Ontario Ry., and later engaged on munitions work with the Canadian Locomotive Co., Kingston, Ont.

**Sergt. A. Hunter** of the Canadian Railway Troops, was awarded the Distinguished Conduct Medal recently for conspicuous gallantry and devotion to duty. While repairing a light railway line, his party was almost wiped out by heavy shell fire. He removed the wounded, collected another party and returned and repaired the line under heavy fire. He set a splendid example and showed an utter disregard of danger.

**Capt. R. H. Jarvis** of the Royal Flying Corps, who was accidentally killed in England, recently, had seen considerable service in France, having been mentioned in dispatches six times, and received the Military Cross in Nov., 1917. He had been in service at different times with the Grand Trunk Pacific Ry., Canadian Northern Ry. and the Toronto Harbor Commission.

**K. E. McLeod**, City Ticket Agent, Canadian Northern Ry., Victoria, B.C., has enlisted for military service overseas.

**Brig.-General A. D. McRae**, who has been appointed Director of Organization under the recently formed Ministry of Information, in Great Britain, and who was formerly a partner of the firm of Davidson & McRae, Land Agents, Canadian Northern Ry., has been granted a certificate of naturalization by the Dominion Government. He was born in the U.S.

**Sergt. O. Murphy**, Canadian Railway Troops, who has been awarded the Distinguished Conduct Medal for conspicuous gallantry and devotion to duty, took over the work on a light railway under very heavy shell fire when the officer was wounded, and he himself slightly wounded. He carried the line through successfully, so that ammunition could be delivered to the batteries, the wounded evacuated and the working parties disposed where they were required. He has repeatedly shown great skill in his work and an utter disregard of personal danger.

**Lieut. Norman Lowden**, Railway Construction Corps, Royal Engineers, B.E.F., who has been elected an associate member of the Canadian Society of Civil Engineers, was, prior to enlisting in 1916, Assistant Engineer in the City Engineer's office, Victoria, B.C., and was for some time engaged on railway location and construction in Northern Nigeria, as Assistant Engineer of the Public Works Department there. He is at present working on gauge railway construction at the front.

**Lieut. J. Phippen**, son of F. H. Phippen, K.C., General Counsel, Canadian Northern Ry., Toronto, is home on two months leave.

**Lieut.-Col. Blair Ripley**, D.S.O., Officer Commanding 1st Canadian Overseas Railway Construction Battalion, in France, and formerly Engineer of Grade Separation, C.P.R., Toronto, has been elected a member of the Institution of Civil Engineers, of England.

**D. DeC. Ross-Ross**, Assistant Chief Engineer, H.M.C.S. Hochelaga, has been transferred from student to junior member of the Canadian Society of Civil Engineers.

**Sapper G. W. Shanks**, Canadian Railway Troops, was awarded the distinguished conduct medal recently for con-

spicuous gallantry and devotion to duty. When a train load of ammunition had been set on fire by shelling, and severe explosions were taking place, he ran to the burning train, smothered the flames with sandbags, and kept them under control until water was brought, when he completely extinguished the fire. He did this, standing on the burning train, with splendid coolness, and utter disregard of personal danger, and it was due to him that many lives were saved.

**Lieut. J. G. Scott**, R.N.V.R., whose sudden death whilst serving at a Royal Navy depot in England, was reported recently, was educated at St. Catharines, Ont., and Toronto, graduating from the School of Practical Science with honors in 1914. He was subsequently in the office of the Chief Engineer of the Welland Ship Canal for about a year, and then joined the Royal Naval Air Service and took his pilot's certificate at Eastbourne, Eng., in 1916, and transferred to the R.N.V.R.



Major J. J. Sullivan  
Canadian Railway Troops.

**Brig.-General J. W. Stewart**, of Vancouver, B.C., now in the Canadian Railway Troops, gave a dinner in London, Eng., recently while on leave, at which Lord Beaverbrook proposed the health of General Smuts, who was the guest of honor.

**J. J. Sullivan**, formerly Construction Engineer and Roadmaster, C.P.R., who enlisted with the Canadian Railway Troops as a lieutenant, and is now a major, had to leave the front and go to England some little time ago, on account of stomach trouble, and returned to Canada in February on a 10 weeks furlough. Following is an extract from a letter written to his brother, J. G. Sullivan, M. Can.Soc.C.E., Chief Engineer, Western Lines, C.P.R., by a friend at the front:—"Our work is most interesting at times, particularly when the armies are advancing and the Hun is on the run. You can scarcely imagine the situation, and yet our good fellows take up the work just as if they were working on the Canadian prairies, under ordinary conditions. It is

surprising what men will and can do when they make up their minds. There is no one I can speak more highly of than your own brother; he really surprises me, as he is full of energy. Angus was evacuated to England some time ago and was operated on for kidney trouble; he is now in Scotland convalescing. I hardly think that he will be fit to return here any more. Immediately he left, I promoted Jerry to the rank of major and put him in charge of Angus' company. He did splendidly, but owing to the constant strain under shell fire, he broke down later and was evacuated to England about three weeks ago. I called to see him on several occasions and pointed out to him that he was trying to do too much, and told him to let the younger men keep more in the advanced areas, but you know what Jerry is, he wanted to be always at the front, and between shell shock and a general nervous condition, he broke down completely. In his collapse I have no hesitation in saying that Col. Macdonald lost one of his most efficient officers. We hope that with a few months rest he will be fit again, but I am afraid that his age is against him, as this is not an old man's game. I know that I am older than Jerry, but my job is easy, in comparison to the fellows that are constantly under the strain, as I go and come when I like. Barber is another man that has done nobly; I cannot find words that would half tell you of the splendid work he is doing."

**Lieut. J. G. Troup**, M.C., who was recently reported to have been admitted to one of the stationary hospitals in France, was, prior to the war, in C.P.R. service, having been stationed at various places between the Atlantic and Pacific coasts, the latter portion of his service being in the Superintendent's office at Winnipeg.

**G. E. Walkem**, formerly Managing Director, Vancouver Machinery Depot, Vancouver, B.C., received his commission as a lieutenant in the Royal Engineers, July, 1916, and was ordered to Egypt, where he was assigned to work on the railway and water pipe line for the Egypt Expeditionary Force operating in the Sinai desert. He followed up the work of that force and was promoted to captain in 1917, and has now reached the rank of lieutenant-colonel. He is in charge of railway construction with the British force in Palestine. He is a graduate of McGill University, a member of the Institution of Mechanical Engineers, Eng.; the Canadian Society of Civil Engineers, and of the American Institute of Electrical Engineers.

**Fraser River Bridge, New Westminster.** The tolls received by the British Columbia Government as tolls for traffic over the bridge across the Fraser River at New Westminster for the 9 months ended Dec. 31, 1917, were \$32,580.57. The bridge is leased for railway purposes to the Great Northern Ry., and is used also by the Canadian Northern Pacific Ry., those two companies contributing the largest amount of revenue.

**Accident Reports.**—The Board of Railway Commissioners has revised its form, schedule A, of the return required by order 7472, July 8, 1918, and has advised railway companies that the new form is to be used as soon as their existing supply of forms is exhausted.

**Naming of C.P.R. Locomotives.**—It is semi officially announced that the C.P.R. will name a number of its locomotives after locomotive men who have in the management's opinion rendered long and meritorious service.

# Mainly About Railway People Throughout Canada.

**R. S. Elsworthy**, General Agent, C.P.R., Minneapolis, Minn., has been elected President of the Minneapolis Passenger Association.

**John Cameron**, who died at Toronto, Mar. 18, aged 88, was in G.T.R. service for about 45 years, as a car builder, and later as a car inspector.

**Lord Shaughnessy**, President, C.P.R., has presented the Canadian Club, New York, with a number of books, to form the nucleus of a library.

**James Hardwell**, Chief Traffic Officer, Board of Railway Commissioners, Ottawa, and Mrs. Hardwell, are spending a short time at Atlantic City, N.J.

**E. W. Oliver**, B.A.Sc., M.Can.Soc.C.E., Assistant Engineer, Canadian Northern Ry., was in the Toronto General Hospital for about a week during March, for a minor operation.

**Hon. John Oliver**, Minister of Railways, and of Agriculture, for British Columbia, has also been appointed Prime Minister of that province, succeeding Hon. C. H. Brewster, deceased.

**A. D. MacTier**, General Manager, Eastern Lines, C.P.R., returned to Montreal, Mar. 21, after a brief visit to England and France, where his son is with the Canadian Expeditionary Forces.

**James McGeough**, chief clerk, City Ticket Office, C.P.R., Toronto, was presented with a purse of money by his associates, on leaving to take up his new appointment as City Passenger Agent, C.P.R., Boston, Mass.

**H. Stephenson**, shop foreman, Grand Trunk Pacific Ry., Regina, Sask., was presented with a gold watch by the shop staff, Mar. 15, on leaving for Prince George, B.C., where he has been transferred in a similar capacity.

**W. F. Tye**, M.Can.Soc.C.E., has been awarded, by the Canadian Society of Civil Engineers, the Czowski medal for the best contribution to Canadian engineering literature during the past year, viz.: his paper on Canada's railway problems.

**Lord Shaughnessy**, who underwent an operation at the Royal Victoria Hospital, Montreal, March 18, for cataract, was reported, at the time of writing, to be progressing satisfactorily, with excellent prospects of saving the sight of the eye affected.

**Helen Ham**, who died following an attack of appendicitis, and was buried at Whitby, Ont., Mar. 8, was daughter of C. N. Ham, Secretary, Express Traffic Association of Canada, and granddaughter of George Ham, of the C.P.R. headquarters staff, Montreal.

**S. C. Stickney**, Assistant to Vice President, Erie Rd., New York, who died at Englewood, N.J., towards the end of February, aged 53, was son of the late A. B. Stickney, formerly President, Chicago & Great Western Ry., and first General Superintendent of the C.P.R., at Winnipeg, in 1881.

**Herbert R. Yates**, C.E., who died at Brantford, Ont., Mar. 25, aged 63, was the only surviving son of the late Henry Yates, C.E., at one time Chief Engineer of the Grand Trunk Ry. He was born at Hamilton, Ont., and was for some time engaged with his father as a railway contractor, chiefly in Michigan.

**R. J. Swain**, City Electrician, St. Boniface, Man., who was elected an associate member of the Canadian Society of Civil

Engineers, recently, was, at different periods in service with the Toronto Ry., Montana Power & Light Co., Cascade Power & Light Co. in British Columbia, C.P.R. Telegraphs in Manitoba, Bell Telephone Co., and Winnipeg Electric Ry.

**W. W. Butler**, Vice President and Managing Director, Canadian Car & Foundry Co., Montreal, was taken ill in Ottawa early in March, being threatened with pneumonia, and was laid up at the Chateau Laurier for about a week. He was sufficiently recovered to be able to return to Montreal, Mar. 15, and left there shortly afterwards for Florida, intending to be absent some weeks.

**W. P. Brereton**, City Engineer, Winnipeg, who has been transferred from associate member to member of the Canadian

Works; designing substructure and superstructure for Grand Trunk Pacific Ry. bridges between Winnipeg and Prince Rupert, and from 1910 in service of Quebec Bridge Board of Engineers.

**A. E. Foreman**, B.C. Public Works Engineer, Victoria, who has been transferred from associate member to member of the Canadian Society of Civil Engineers, has served with the British Columbia Electric Ry., Vancouver, B.C., the Canadian General Electric Co., Peterborough, Ont., Resident Engineer in charge of the construction of the hydro electric plant at Revelstoke, B.C., Supervising Engineer of the Dallas Road sea wall, Victoria, B.C., and as Assistant City Engineer, Victoria, B.C.

**Frederick A. Rutherford**, who has been appointed Inspector of Transportation, G.T.R., Montreal, was born at Parkhill, Ont., Sept. 16, 1877, and entered G.T.R. service Jan. 18, 1894, since when he has been, to July, 1894, assistant to agent, Aylmer, Ont.; July, 1894, to July, 1900, telegraph operator, at various stations; July, 1900, to Jan., 1908, dispatcher, London, Ont.; Jan., 1908, to Mar., 1914, Chief Dispatcher, London, and Stratford, Ont.; Mar., 1914, to June 1917, Trainmaster, Battle Creek, Mich.; June, 1917, to Feb. 1, 1918, Trainmaster, Durand, Mich.

**Colin D. MacKintosh**, who has been appointed Superintendent, Lethbridge Division, Alberta District, C.P.R., Lethbridge, was born at Auckland, New Zealand, Sept. 24, 1882, and entered C.P.R. service in Sept., 1905, since when he has been, to 1906, in junior positions in the engineering department; 1906 to 1909, transit man on location survey; 1909 to 1910, Resident Engineer; 1910 to 1911, Locating Engineer; 1911 to 1913, Assistant Engineer on Construction; 1913 to June, 1915, Division Engineer; June, 1915, to Mar. 1, 1918, Superintendent, Medicine Hat Division, Alberta District, Medicine Hat.

**Richard H. L'Hommedieu**, formerly General Manager, Michigan Central Rd., who died at Detroit, Mich., Mar. 18, was born at Cincinnati, Ohio, Dec. 29, 1850, and entered railway service in 1870, since when he had been, to 1872, apprentice in locomotive machine shops, Cincinnati, Hamilton & Dayton Ry.; 1872 to 1873, clerk to Division Superintendent, Chicago, Burlington & Quincy Rd.; 1873 to 1887, Trainmaster, Michigan Central Rd.; 1873, chief clerk to Superintendent, same road, Jackson, Mich.; 1877 to 1879, Trainmaster, same road, Jackson, Mich.; 1879 to 1890, Superintendent, Western Division, same road, Chicago, Ill.; Sept., 1890, to Apr., 1896, Assistant General Superintendent, and from Apr., 1896, General Superintendent, and subsequently, to his retirement, General Manager, same road.

**J. M. Jones**, City Engineer, Port Arthur, Ont., who has been transferred from associate member to member of the Canadian Society of Civil Engineers, was born at Dowlais, Wales, Nov. 18, 1882, and entered C.P.R. service in Apr., 1900, since when he spent two months in the Engineering Department, Winnipeg; two months as clerk and draftsman; 13 months as rodman and draftsman, Fort William, Ont.; 1903, instrument man on elevators, Canadian Northern Ry., Port Arthur, Ont.; Oct. to Dec., 1903, on renewal of piers, Broadway bridge, Winnipeg; Dec., 1903, to Mar., 1906, in charge of civil engineering work, Winnipeg Electric Ry.; Apr. to June, 1906, in charge of survey party, Manitoba Lines, C.P.R.; and since



G. E. Smart  
Superintendent of Car Department, Canadian Government Railways

Society of Civil Engineers, is a member of the Winnipeg and St. Boniface Harbor Commission. He was Assistant Engineer, under Smith, Kerry & Chace, on the construction of the hydro electric power plant for Winnipeg, and has had considerable experience in Canada and the U.S.

**A. J. Meyers**, until recently Chief Draftsman, Quebec Bridge Board of Engineers, who has been transferred from associate member to member of the Canadian Society of Civil Engineers, has served at different periods, as draftsman, Dominion Bridge Co., Hamilton Bridge Works, Locomotive & Machine Co., now Montreal Locomotive Works, Structural Steel Co., and from 1909 with the Quebec Bridge Board of Engineers.

**M. B. Atkinson**, until recently assistant chief draftsman, Board of Engineers, Quebec Bridge, who has transferred from associate member to member of the Canadian Society of Civil Engineers, has served at various periods, as follows: in structural department, Locomotive & Machine Co., now Montreal Locomotive

the latter date, associated with municipal engineering at Port, Arthur, Ont.

**Herbert Gates Reid**, who has been appointed Superintendent of Rolling Stock, Canadian Government Railways, Transcona, Man., was born at Pembroke, Ont., Oct. 27, 1863, and entered railway service in 1884, since when he has been, to Nov., 1884, wiper, C.P.R., North Bay, Ont.; Nov., 1884, to Nov., 1887, fireman, C.P.R., North Bay, Ont.; Nov., 1887, to Dec., 1905, locomotive man, C.P.R., North Bay, Ont.; Dec., 1905, to June, 1906, relieving Road Foreman of Locomotives, C.P.R., North Bay, Ont.; June, 1906, to Feb., 1907, locomotive man, C.P.R., North Bay, Ont.; Feb. to Apr., 1907, Locomotive Foreman, C.P.R., Chapleau, Ont.; Sept., 1907 to Oct., 1908, District Master Mechanic, District 1, Lake Superior Division, C.P.R., North Bay, Ont.; Oct., 1908, to Apr., 1915, Master Mechanic, Lake Superior Division, C.P.R., North Bay, Ont.; Apr., 1915, to May, 1916, Master Mechanic, Saskatchewan Division, C.P.R., Moose Jaw; May to Sept. 30, 1916, Master Mechanic, District 3, National Transcontinental Ry., Transcona, Man.; Sept. 30, 1916, to Mar. 15, 1918, Assistant Superintendent of Rolling Stock, Canadian Government Railways, Transcona, Man.

**W. J. Hamilton**, who has been appointed Locomotive Foreman, G.T.R., Brockville, Ont., entered railway service in 1883, since when he has been, to Oct., 1906, laborer, stripper and engine tester, G.T.R., Stratford, Ont.; Oct., 1906, to July 1, 1907, Road Foreman of Locomotives, Central Vermont Ry., St. Albans, Vt.; July 1, 1907, to June 30, 1908, Locomotive Foreman, G.T.R., Palmerston, Ont.; June 30, 1908, to Dec. 31, 1909, Locomotive Foreman, G.T.R., Stratford, Ont.; Dec. 31, 1909, to Oct. 6, 1910, Master Mechanic, G.T.R., Battle Creek, Mich.; Oct. 6, 1910, to Mar. 18, 1911, Master Mechanic, G.T.R., Stratford, Ont.; Mar. 18, 1911, to Dec. 23, 1913, Master Mechanic, Canadian Government Railways, Cochrane, Ont.; Dec. 23, 1913, to Mar. 1, 1914, Night Locomotive Foreman, G.T.R., Stratford, Ont.; Mar. 1 to Nov. 16, 1914, Master Mechanic, Canadian Government Railways, Cochrane, Ont.; Nov. 16, 1914, to May 4, 1915, Machinist, G.T.R., Stratford, Ont.; May 4, 1915, to Aug. 1, 1917, Master Mechanic, Canadian Government Railways, Cochrane, Ont.; Aug. 1, 1917, to Feb. 28, 1918, machinist, G.T.R., Stratford, Ont.

**C. A. Cotterell**, who has been appointed Superintendent, Medicine Hat Division, Alberta District, C.P.R., Medicine Hat, was born at Enden, Eng., Jan. 18, 1877. He entered C.P.R. service as a messenger at Montreal in June, 1888, and in Feb., 1894, was appointed an operator on the Farnham Subdivision, south of Montreal, and until 1898 occupied various positions as operator, relieving agent and station agent on Eastern Lines, after which he transferred to the Crowsnest Subdivision and acted as agent at various points, and as dispatcher at Cranbrook, B.C., until 1901, when he was transferred to Fort William, Ont., as dispatcher, and subsequently served in that capacity at various points on the Western Lines, and as Chief Dispatcher at Fort William, Ont., Regina and Saskatoon, Sask., and Revelstoke, B.C., as Trainmaster at Revelstoke, B.C., Terminal Trainmaster at Vancouver, B.C., acting Superintendent at Revelstoke, Nelson and Vancouver, B.C., until Sept. 1, 1913, when he was appointed Superintendent, District 2, British Columbia Division, Vancouver. From Apr. 1, 1916, to Mar. 1, 1918, he has been Superintendent, Lethbridge Division, Alberta District, Lethbridge.

**John A. Clancy**, who has been appointed Trainmaster, Districts 27 and 28, Detroit Division, Western Lines, G.T.R., Durand, Mich., was born at Walkerton, Ont., June 8, 1884, and entered G.T.R. service June 2, 1901, since when he has been, to Sept. 26, 1901, office boy, Local Freight Office, Toronto; Sept. 26, 1901, to July 1, 1902, stenographer to Terminal Superintendent, Toronto; July 1 to Sept. 23, 1902, stenographer to District Passenger Agent, Toronto; Sept. 23, 1902, to Apr. 6, 1903, stenographer and clerk, Bridge and Building Department, Durand, Mich.; Apr. 6, 1903, to Nov. 21, 1905, chief clerk to Trainmaster, Durand, Mich.; Nov. 21, 1905, to Mar. 1, 1906, clerk to Master of Transportation, Durand, Mich.; Mar. 1, 1906, to July 1, 1910, Car Distributor, Durand, Mich.; July 1, 1910, to Jan. 2, 1911, chief clerk, Car Demurrage Bureau, Detroit, Mich.; Jan. 2, 1911, to Feb. 8,

draftsman, Nine Elm Works, L. & S.W.R., London, Eng.; June, 1906, to Jan., 1907, supervising locomotive statistics and operation, same company; Feb., 1907, to Mar., 1909, fitter, Angus Shops, C.P.R., Montreal; Mar. to Oct., 1908, in tests department, Angus Shops, C.P.R., Montreal; Oct., 1908, to July, 1909, Assistant Locomotive Foreman, C.P.R., North Bay, Ont.; Aug., 1909, Assistant Locomotive Foreman, C.P.R., Chapleau, Ont.; Sept., 1909, to Sept., 1912, Locomotive Foreman, C.P.R., Schreiber, Ont.; Sept., 1912, to July, 1914, Locomotive Foreman, C.P.R., Hochelaga, Que.; July, 1914, to Mar., 1918, Master Mechanic, Montreal Terminals Division, Quebec District, C.P.R., Montreal.

## The Work of the Canadian Railway Association for National Defence.

**Bulletin 3.**—The association issued this bulletin to the public Mar. 1, dealing with the following subjects:—Where the Canadian freight car spends its days. What demurrage figures indicate. New methods of handling l.c.l. freight. Re routing and through billing. Cold weather and car movement.

### City and Town Ticket Offices.

The association's attempt to close all city and town ticket offices and to restrict the sale of tickets to station offices, which appears to have been taken somewhat precipitately and without previous investigation, not having been successful, steps are now being taken to consider the question of a reduction in the number of "uptown" offices, with a view to conserving fuel and man power, and the railways have been asked to furnish the following information as to such offices they maintain:—Name of city or town. Population. Railways. Is office joint with express or telegraph company? Is rent paid by railway company or agent? Is remuneration paid agent by salary or commission?

### Guard Rails, Vestibule Doors and Platforms.

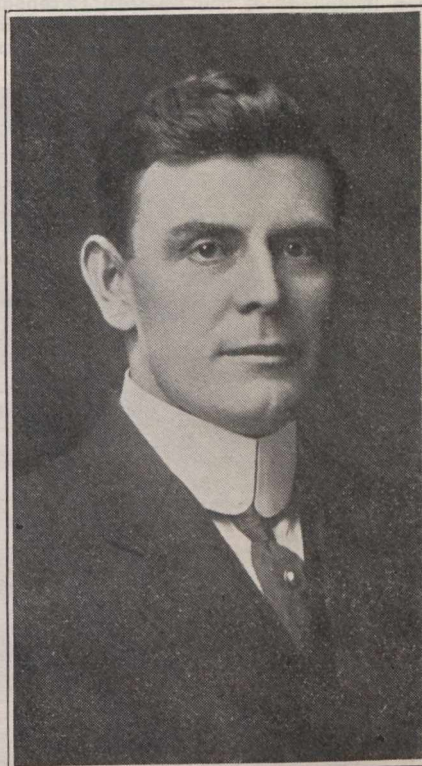
The Board of Railway Commissioners having urged that standard regulations be placed in effect on all railways governing the handling of guard rails, vestibule doors and platforms on passenger cars, the association has had a set of rules drafted which have been submitted to all railways, which have been asked to state whether they are agreeable to same being submitted to the board to be made applicable to all railways.

### Advertising On Cars.

In answer to a proposal that railways extend to certain organizations the privilege of displaying advertisements on railway cars, the applicants have been notified that such permission cannot consistently be given.

### Leasing of Freight Cars to Outside Concerns.

In view of the existing severe shortage of railway freight equipment of all classes, it has been suggested that regulations be promulgated prohibiting the leasing the freight cars to outside concerns, for local or intra-plant service. It has been found, furthermore, that in certain cases, in order to ensure their car requirements being filled, shippers having freight for regular movement between points a short distance apart, have leased cars from the railways, thus placing at a disadvantage other shippers who are unable to adopt this practice. In order that the matter may be fully considered, member lines have been asked to submit to the association a statement of all freight



W. U. Appleton  
Superintendent of Motive Power, Canadian  
Government Railways

1912, Car Distributor, Durand, Mich.; Feb. 8 to Oct. 15, 1912, Travelling Car Service Agent, Detroit, Mich.; Oct. 15, 1912, to Jan. 23, 1913, Assistant Superintendent of Terminals, Detroit, Mich.; Jan. 23, 1913, to Apr. 20, 1914, chief clerk to General Superintendent, Chicago, Ill.; Apr. 20, 1914, to Feb. 1, 1918, Division Agent, Western Lines, Chicago, Ill.

**James Frederick Gildea**, who has been appointed Division Master Mechanic, Pennsylvania Division, Delaware & Hudson Co., Carbondale, Pa., was born at Strood Park, near Horsham, Sussex, Eng., and entered railway service in June, 1900, as an engineering apprentice, Nine Elm Works, London & South Western Ry., and on the conclusion of his apprenticeship, in June, 1904, he was presented by the directors with a special prize for the highest place in the apprentices technical examinations, with 100%. He was, from June, 1904, to June, 1905, fireman, all classes of service, L. & S.W.R., Salisbury, Eng.; June, 1905, to Jan., 1906, on engineering staff, Southampton Docks and R.M.S. Alberta, L. & S.W.R., Southampton, Eng.; Jan. to June, 1906, locomotive

cars leased by them to outside concerns, including the following information:—Number and class of cars leased; name and location of lessee; point or points at which cars being used; rate of rental per car per day; period of lease.

#### Labelling Delayed Freight Cars.

The commission on car service adopted the following resolution recently concerning use of labels on waybills accompanying delayed cars:

"This system of drawing attention to delayed shipments, and calling for preferred movement of such cars, is in vogue on a number of member lines which have submitted samples of labels, used by them. One of the most suitable is that of the New York Central Rd. The label used on this line measures an inch square, printed in red on white paper, as follows:

"D. C.—This car has been delayed and must receive preferred attention."

In the commission's opinion, the adoption of a system of this kind should include means of guarding against indiscriminate or unauthorized use of labels, and local officials should examine waybills bearing labels, as opportunity offers, so as to ensure cars accompanied by same receiving the desired attention.

#### Steel Rail Supplies for Railways.

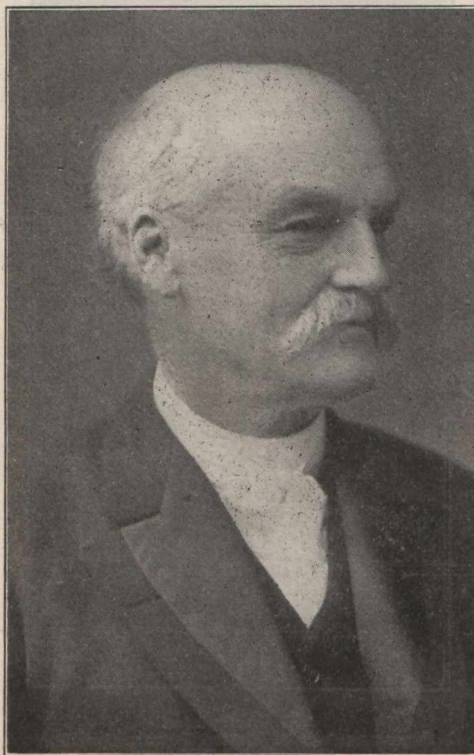
In consequence of the urgent demand for rails, for relaying, by practically all the principal Canadian railways, the Minister of Railways, under the authority of an order in council, has ordered from the Dominion Iron & Steel Co., Sydney, N.S., 1,000 tons, 85 lb. steel rails, Canadian Government Railways standard, delivery to start Apr. 1, and rolling to continue at full capacity of mill until completion of order, the cost of manufacture to be investigated and the price to be fixed at a later date. These rails will be apportioned by the Railways Department as follows: Canadian Government Railways, 140 miles; Canadian Northern Ry., 170 miles; Canadian Pacific Ry., 300 miles; Grand Trunk Ry., 140 miles.

In order to obtain further rails for relaying on the Canadian Government and Canadian Northern main lines, it is proposed to lift about 120 miles of 80 lb. rails from the St. John & Quebec Ry., in New Brunswick, and to replace them with lighter rails, either the Russian ones referred to further on in this article, or other light ones to be taken off the Intercolonial. It is probable that some at least of the heavy rails now laid on the Hudson Bay Ry., between Pas, Man., and the rail head, 340 miles, will be lifted and replaced with lighter rails, probably the Russian ones. A considerable quantity of heavy rails will also probably be lifted from yards and sidings on the National Transcontinental Ry.

The Minister of Railways has bought in the United States, for the Dominion Government, 37,375 tons of steel rails, which were rolled for the Russian Government, but were not delivered to it. They are of a Russian section, 67½ lb. to the yard, and will be sufficient to lay 355 miles of track, at 105 tons to the mile. Delivery is being taken as fast as cars can be obtained. A further supply of some 2,250 tons, sufficient to lay 150 miles, is being negotiated for. The Russian rails will be used on the Canadian Government Railways and the Canadian Northern for relaying branch lines and sidings, from which heavier rails may be lifted for main line purposes, and some may be used to replace heavier rails which may be lifted from the Hudson Bay Ry., as stated above.

#### Death of Sir Collingwood Schreiber.

The death took place at his home, Ottawa, Ont., Mar. 23, of Sir Collingwood Schreiber, K.C.M.G., Hon.M.Can.Soc.C.E., after an illness lasting some months. He was born in Essex, Eng., and came to Canada in 1852. In that year he was engaged on the Toronto & Hamilton Ry. engineering staff, and continued in that service until the completion of the road in 1856. From 1856 to 1860, he was in private engineering practice in the firm of Fleming, Ridout & Schreiber, at Toronto; 1860 to 1863, Superintending Engineer, Northern Ry.; 1863, Division Engineer for the Nova Scotia Government's Pictou Ry., and he remained in charge of that work until its completion in 1867. He was subsequently connected with the Intercolonial Ry., first in charge of the surveys for the route by way of Lake Temiscouata, and then in charge of the Eastern Extension Ry., as Superintending Engineer in 1869, and afterwards as Superintending En-



Sir Collingwood Schreiber, K.C.M.G.  
Consulting Engineer, Dominion Government

gineer and Commissioners' Agent for the entire road; 1873 to 1880, Chief Engineer and General Manager of railways operated by the Dominion Government, succeeding the late Sir Sandford Fleming as Chief Engineer, Canadian Pacific Ry., in 1880; 1892 to 1905, Chief Engineer and Deputy Minister, Department of Railways and Canals. Since July 1, 1905, he was Consulting Engineer to the Dominion Government, and until the completion of the road, Chief Engineer, Western Division, National Transcontinental Ry. He was appointed a member of the Royal Commission on Railways in 1886, and was created a Companion of the Order of St. Michael and St. George in 1893, and a Knight Commander in 1916. He was a member and one of the founders of the Canadian Society of Civil Engineers, of which he was a councillor in 1887 and 1888, and was made an honorary member in 1909. The funeral, which took place at Ottawa, was largely attended by Government officials and members of the engineering profession.

#### Freight and Passenger Traffic Notes.

The Northern Pacific Ry. has arranged with the Campbell Storage Co., Vancouver, to handle its entire cartage and baggage transfer business there.

The Canadian Northern Ry. has been ordered by the Board of Railway Commissioners to continue its present service of trains 1 and 2, Quebec and Chicoutimi, until further order.

The Saskatchewan Commissioner of Labor is reported to have made arrangements with the C.P.R., under which that company will carry farm laborers from Vancouver, New Westminster and Victoria, B.C., to Saskatchewan points at 1c. a mile.

The Newfoundland Government has announced that a passport must be produced, as a condition of entry, by all persons desiring to get into that island. Ticket agents should see that passengers buying tickets to Newfoundland points have the necessary document.

The C.P.R. has been authorized by the Board of Railway Commissioners to discontinue west bound local train 35, due at Finch, Ont., at 9.35 a.m., and east bound local 36, due there at 5.53 p.m., and to operate in lieu thereof train 19, due at 10.46 a.m., and train 20, due at 5.02 p.m.

The Canadian Northern Ry. has been authorized by the Board of Railway Commissioners to withdraw, until April 28, train 15, leaving Kingston, Ont., at 7 a.m., and Deseronto at 9.15 a.m., arriving at Belleville at 9.45 a.m., also train 18, leaving Belleville 6 p.m., arriving at Deseronto at 6.35 p.m.

The C.P.R. train from Montreal to Sault Ste. Marie, Ont., and beyond on the Minneapolis, St. Paul & Sault Ste. Marie Ry., which was taken off Feb. 24, has been again put on the schedule. It was found that no saving was being effected, as the Winnipeg train had to be run in two sections to accommodate the traffic.

The Moncton & Buctouche Ry. announced Feb. 22, that on account of track and other conditions beyond control, the regular movement of trains between Moncton and Buctouche, N.B., 32 miles, had been cancelled. A deputation of residents went to Ottawa early in March, to see if something could not be done to have traffic resumed, and it was reported, Mar. 14, that the Minister of Railways had informed the deputation that the government was working out plans for taking over this line as a branch of the Intercolonial Ry.

Arrangements are said to have been made between the G.T.R. and the Canadian Northern Ry. under which freight originating in Quebec and Ontario and intended for points in the west reached by the C.N.R., will be routed G.T.R. to North, thence C.N.R.; and freight originating on C.N.R. points in the west, intended for G.T.R. points in Ontario and Quebec, will be carried by the C.N.R. to North Bay, and there turned over to the G.T.R. This means that for long distance freight purposes, within certain limits the mileage of the two railways will be calculated as one.

#### Canadian Society of Civil Engineers.

Following are the officers elected for this year for the Montreal branch, which was established recently:—W. J. Francis, Chairman; A. Surveyer, Vice Chairman; F. B. Brown, Secretary-Treasurer; Committee—F. P. Shearwood, W. Chase Thomson, H. G. Hunter, L. G. Papineau, O. Lefebvre and K. B. Thornton.

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NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on application. ADVERTISING COPY must reach the publishers by the 10th of the month preceding the date of publication.

TORONTO, CANADA, APRIL, 1918

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## Passenger Meetings at Buffalo.

The annual meetings of the Niagara Frontier Summer Rate Committee and Great Lakes & St. Lawrence River Rate Committee were held at Buffalo, N.Y., Mar. 12, 13 and 14. The rate representatives met on the first two days and arranged the schedules of rates, which were ratified at the general meetings on Mar. 14. H. J. Cudworth, G.P.A., Eastern Steamship Lines, Boston, Mass., was elected chairman, Niagara Frontier Summer Rate Committee, for this year, and Park Robbins, G.P.A., Goodrich Transit Co., Chicago, was elected chairman, Great Lakes & St. Lawrence River Rate Committee. Jas. Morrison, A.G.P.A., Canadian Northern Railway, Montreal, is permanent secretary of both committees.

The retiring president of the Niagara Frontier Summer Rate Committee, G. C. Wells, Assistant to Passenger Traffic Manager, C.P.R., Montreal, was presented with a gavel, the head of which was made from one of the first chairs placed in the Windsor St. station waiting room, Montreal, and the handle from a piece of the desk at which he worked for many years. The inscription plate and metal finishings were made from a cartridge shell manufactured at the C.P.R.'s Angus shops, Montreal, and the gavel was enclosed in a wooden case made from wood taken from a C.P.R. sleeping car.

The International Water Lines Passenger Association also met at Buffalo, Mar. 14. The following officers and committees were elected:—President, M. J. Powers, G.P.A., Champlain Transportation Co. and Lake George Steamboat Co., Albany, N. Y.; Vice President, W. F. Wasley, Manager, Muskoka Lakes Navigation & Hotel Co., Gravenhurst, Ont. Executive committee: W. H. Snell, G.P.A., C.P.R. Steamship Lines, Montreal; H. H. Cudworth, G.P.A., Eastern Steamship Corporation, Boston, Mass.; L. G. Lewis, G.P.A., Detroit & Cleveland Navigation Co., Detroit, Mich. The retiring president, E. W. Holton, G.P.A., Northern Navigation Co., Sarnia, was presented with a gavel, by the St. Louis & Tennessee River Packet Co.

The next annual meetings of the three organizations will be held at Montreal, probably in January, 1919.

## St. John & Quebec Railway Investigation.

The report on the investigation into certain charges made affecting the financing by the late New Brunswick Government of the construction of this railway, was presented to the Legislature Mar. 13. The commissioner finds "that while the evidence submitted does not warrant him in coming to the conclusion that any member of the government, or of the legislature, was improperly concerned in the negotiations which were carried on with reference to the two contracts awarded to the Nova Scotia Construction Co., and the sub-contracts awarded to Kennedy and McDonald and Smith and Merrithew, yet he has a suspicion that possibly some members of the government, or persons on behalf of the government, and with its approval, were improperly concerned in these negotiations with a view to raising campaign funds." The evidence as reviewed by the commissioner showed that \$100,000 of prospective profits was paid to Mr. Tennant by the Nova Scotia Construction Co., in connection with the securing of the contract; that there were

financial transactions between Tennant and G. B. Jones, M.L.A., for campaign purposes, and that J. D. Palmer, a director of the company (the directors being the nominees of the N. B. Government) handled campaign funds; and that the advance in price on a certain contract which was followed by a further provision of campaign funds, was not justified.

**Zone Fares for Edmonton.**—The section of the act passed by the Alberta Legislature recently granting the Edmonton City Council power to charge fares on the Edmonton Radial Ry. on the zone system, provides that notwithstanding anything to the contrary, the city shall have authority "to divide the territory along, over or through which any of its tramway lines are operated into zones, and charge separate freight and passenger tolls and fares for each zone into or through which freight or passengers may be transported, or may levy and collect such tolls and fares in accordance with the distance freight or passengers are transported."

**Increased Fares for London.**—In connection with the question of the increase of fares which has been brought before the London, Ont., City Council, the local trades and labor council took the matter up recently and passed a resolution favoring the increased asked, on the ground that the company is not in a position to grant any further increase of wages to its employes (and higher wages should be paid), unless its revenues are increased. The fares now charged were fixed by the agreement of 1895.

The C.P.R. has purchased the s.s. Daily from the MacDowell Transportation Co., Seattle, Wash., and she was delivered at Vancouver, about the end of February. There is no berthing accommodation, she being operated as a day boat only. On the passenger deck there is seating accommodation under cover, which runs practically the length of the ship, with accommodation for about 90 passengers, and for excursion traffic on Puget Sound. She was licensed to carry 300 passengers. She is equipped with triple expansion oil burning engine of about 500 h.p., for a speed of about 14 knots under 150 lbs. of steam. Her dimensions are: length 116.2 ft., breadth 25 ft., depth 8.5 ft.; tonnage, 254 gross, 172 register. It is intended to operate her in the Gulf Islands service, and before putting her on the run, she will be thoroughly overhauled and re-named.

**English Channel Car Ferry Service.**—During the war a car ferry service has been put into effect across the English Channel between England and France, for the transportation of loaded cars, thus saving time and expense in loading and unloading cars. For this purpose one or two of the car ferry masters from the Great Lakes were taken across to England, so that their experience might be utilized in getting the service successfully under way. Capt. Isaac Watts, a well known car ferry master, returned to Windsor, Ont., recently, from England, and is reported to have stated that 48 loaded cars, and about 20 guns were, at times, taken across on a trip.

The investigation into the wreck of the s.s. Florizel, near Cape Race, Feb. 24, has been held at St. John's, Nfld. The court consisted of Judge Blackwood of the Supreme Court, Capt. A. McDermott, R. N., attached to the Newfoundland station, and Capt. G. Spracklin, of the Reid Newfoundland Co.'s steamship service.

## The Pacific Great Eastern Railway Settlement in British Columbia.

The long drawn out differences between the British Columbia Government and the promoters of the Pacific Great Eastern Ry., were settled, when an agreement between the parties was signed Feb. 22. The history of the project in brief is:—An agreement was entered into in 1911, under which Foley, Welch and Stewart were to build a railway from Vancouver to Prince George, for which D'Arcy Tate had secured a traffic agreement with the Grand Trunk Pacific Ry., upon a guarantee of bonds by the B.C. Government. The Pacific Great Eastern Ry. was incorporated in 1912 to carry the agreement into effect, the members of the company being Timothy Foley, P. Welch, J. W. Stewart, members of the firm of contractors, and F. Wilson, D'Arcy Tate, and others nominated by them. The company acquired Howe Sound & Northern Ry., a short line running from Squamish, in the direction of Pemberton Meadows, which was overhauled, and extended towards Prince George. Construction was also started on a line from North Vancouver to Squamish, it being intended that this should be the last section of the line to be finished. Some years later the company got into financial difficulties, and obtained further assistance from the government. In 1916 additional assistance was asked for, which was granted, but owing to a political revolution in the province, the new government, instead of carrying out the provisions of the act, held an investigation into the company's affairs, which resulted in a finding, that overpayments in contravention of the statutes estimated at \$5,705,316.50 had been made to the contractors, altogether apart from overpayments from excessive profits, or upon wrong classification, and that it would take \$12,000,000 more to complete the line, which the contractors had undertaken to build upon a guarantee of \$20,160,000 of bonds. Certain of the directors and officers declined to answer questions asked by the commission, and were reported to the legislature. One was placed in the custody of the Sergeant-at-Arms, and some of the others went to the United States, from which they returned only recently.

As a result of the commission's report, the government, in May, 1917, issued writs against the P.G.E. Ry., its subsidiaries, the contractors, and against the individual directors, for an accounting; for an injunction restraining them from proceeding further with the work; for specific performance of the original agreement, and for damages for breach of the agreement. Since the date of issue of the writs, negotiations have been in progress for a settlement, which was only reached Feb. 22.

The agreement signed on Feb. 22, is between the B.C. Minister of Railways, who has since become also Premier, T. Foley, P. Welch and J. W. Stewart, doing business as Foley, Welch & Stewart; F. Wilson, D'Arcy Tate, and E. F. White, who together form the Pacific Great Eastern Ry. Co. and its subsidiary companies. The agreement provides that there shall be transferred to the province all shares not held by the province in the Pacific Great Eastern Ry., the Pacific Great Eastern Equipment Co., and the Pacific Great Eastern Development Co.; that the province shall be put in possession of the entire railway, and of all other properties and credits of the three several companies; that all lands and right of way contracted to be sold by the Development

Co. to the railway, and all land at Squamish, including the wharf, at present occupied as a terminal, shall be forthwith conveyed to the province; that a note for \$800,000 given by the railway to the Development Co. shall be delivered to the government for cancellation; that there shall be paid to the government, inclusive of money lying in the Union Bank, \$500,000 at once, \$250,000 additional in four months, and a further sum, subject to an option, of \$350,000; that all claims by the several parties named against either of the companies shall be released to the government forthwith; that upon the performance of these terms the government will release the other parties from their engagements; that the province, at any time during the continuance of the war, and for two years thereafter, may elect to retain all the shares of the Development Co. and all its assets, in which case the several parties will be released from the payment of the \$350,000 in cash mentioned above; that the several parties shall during the continuance of the war, and for five years thereafter, have the right to pay the province \$150,000 and surrender their rights to all the shares of Development Co. and its lands and assets, whereupon they shall be released from the payment of the \$350,000; no interest shall accrue on the \$150,000 if the option is exercised at any time up to within two years after the war, but 6% interest shall accrue if the option is exercised during the last three years of the option. If the province fails to exercise its option, the other parties to the agreement may, upon payment of the \$350,000 without interest, or with 6% interest, at any time within three years thereafter, elect to take over from the province all the Development Co.'s lands, except those specifically deeded to the province as above provided. If at the expiration of five years after the ceasing of the war, none of the options have been exercised by either party, all the shares of the Development Co. shall be retransferred, and all the lands, except certain ones specified, reconveyed to the parties of the second part, who shall then pay to the province \$350,000 with interest from the expiration of two years after the war; as security for the performance of the agreement, a bond of \$150,000 shall be furnished to the province. The several parties bind themselves to execute all documents necessary to carry the various terms into effect. All the rolling stock, equipment, plant and machinery now on the line, or adjacent thereto, or used for construction or operation of the line, or contracted for to be used on the line, are to be transferred to the government. The agreement is not to become operative until ratified by the legislature. The several parties agree, on request of the province, to apply for the necessary legislation. The parties of the second part declare that they have not encumbered the property in any way except as set out in a trust deed to which the province is a part; and it is agreed that the terms are binding upon the successors of the parties of the second part.

Upon the signing of this document, R. T. Elliott, solicitor for the parties of the second part, notified R. S. Thomas, Secretary of the P.G.E. Ry., to assign and deliver to the province the shares of the three companies named, to place the government's representative in possession of these companies' properties, and to advise the directors and employees of the same

companies, that all directions of the government were to be strictly attended to.

The legislature, on Mar. 15, passed a resolution confirming the terms of the agreement given above, and the legislation necessary to give full effect to it is now before the house. In dealing with the matter, Premier Oliver, after detailing the facts surrounding the formation of the company, the course of events during construction, and attending the investigation, and stoppage of the work, said: "In the agreement before you is contained the very best settlement, which after many weary months of effort, I was able to obtain. I do not claim that it is what the province is entitled to. I simply claim that, in my opinion, it is a little the better of the only two courses open to us. This agreement was unanimously concurred in by my colleagues, and was approved by our late Premier by a telegram from Winnipeg when he was on his way home."

As to the working out of the terms of the agreement, Mr. Oliver estimated that the value of the equipment under the agreement was \$722,736; the lands in townsite as worth \$1,608,000; the interest paid on the bonds was \$382,000; the amount paid on the capital stock was \$40,000; the loss in connection with the operation and maintenance of the road was \$441,000; the sum owing to P. Welch for construction was \$1,892,563. These values totalled \$5,087,702, all of which was released to the government. In addition to this, the government was to receive \$750,000 in cash. As the total profit for P. Welch was \$5,705,000, it would be seen that the whole of these profits were wiped out under the agreement and the government was receiving in addition a balance of about \$120,000, which sum P. Welch would lose, without making a cent of profit in any way in connection with the railway.

In conclusion, the Premier outlined the plans which the government had decided upon working out for the future of the railway. The first section of the line from North Vancouver to Whytecliffe, 13 miles, will be placed in good operating condition as speedily as possible, and connected with the North Vancouver lines of the British Columbia Electric Ry. The line will either be electrified or operated by gas-electric engines, and the government will advise the abandonment of the West Vancouver ferry service. He said there is at present no justification whatever for the construction of the section of the line from Whytecliffe to Squamish. The completed line from Squamish to Clinton, 167.7 miles, will have to be put into good condition. A good lift of ballast is necessary, as well as considerable other work. The line from Clinton to Prince George, 185 miles, will be completed as speedily and as economically as possible. An effort will be made to bring the line to the river level at the old town of Quesnel, in order to connect there with the river steamboats; and the pusher grade north of Kelly Lake will be eliminated if possible. If this can be done, it will be advisable to bring the standard of the line up to that of the transcontinental lines. Once Prince George is reached, the line should be carried through to the Peace River as soon as possible. A connection should be made with either the C.P.R. or the Canadian Northern Pacific Ry. near Ashcroft, by a cut off from Clinton. A reconnaissance survey has been made for this cut off. With regard to the future

the government is of opinion that the line will have to pass either to the Dominion Government or to the C.P.R.

In connection with the reopening of traffic on the line, so far as the North Vancouver-Whytecliffe section is concerned, nothing definite had been settled to Mar. 20. It will be necessary to erect a temporary bridge over the Capilano River, to replace one which has been

washed out nearly a score of times since the line was opened. It was, however, expected to have this section of the line opened as a temporary measure early in April. Soon after the agreement was signed, the B.C. Railways Department put a large force of men on the line from Squamish, cleaning things up so as to restart the operation of trains. The first workers' train started out from Squamish

Mar. 15, and reached Mons, 37.4 miles from Squamish, Mar. 16, and subsequently left for D'Arcy, 86 miles, which was reached Mar. 19. It was arranged to operate a regular train schedule from Squamish as close as possible to the working train until Clinton was reached and the line cleared. The government engineers are preparing plans for starting work upon the line in April.

## Transportation Appointments Throughout Canada.

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

**Canadian Government Railways.**—H. B. DRYDEN, heretofore locomotive fireman, has been appointed travelling fireman, vice T. W. McBeath, whose appointment as District Master Mechanic, Moncton, N. B., was announced in our last issue. Headquarters, Moncton, N.B.

H. G. REID, heretofore Assistant Superintendent of Rolling Stock, Transcona, Man., has been appointed Superintendent of Rolling Stock, Western Lines. Office, Transcona, Man.

**Canadian Northern Ry.**—G. CRONN has been appointed news storekeeper, Sleeping, Dining and Parlor Car and News Department, Winnipeg, vice H. E. Hunt, resigned.

**Canadian Pacific Ry.**—W. H. WINTERROWD, heretofore Assistant Chief Mechanical Engineer, has been appointed Chief Mechanical Engineer, vice W. E. Woodhouse, resigned. Office, Montreal.

W. J. MOULE, heretofore Auditor of Disbursements, has been appointed Assistant Comptroller. Office, Montreal.

E. E. LLOYD, heretofore Auditor of Stores and Mechanical Accounts, Montreal, has been appointed Auditor of Disbursements, vice W. J. Moule, promoted. Office, Montreal.

W. H. LANGRIDGE has been appointed Auditor of Stores and Mechanical Accounts, vice E. E. Lloyd, promoted. Office, Montreal.

W. WRIGHT, heretofore Division Master Mechanic, Toronto, has been appointed Division Master Mechanic, Brownville Division, New Brunswick District, vice C. Powers, transferred. Office, Brownville Jct., Me.

J. H. TODD, heretofore dispatcher, North Bend, B.C., has been appointed dispatcher, Brownville Jct., Me.

M. MILLER, heretofore Locomotive Foreman, Glen Yard, Montreal, has been appointed Master Mechanic, Montreal Terminals Division, Quebec District, vice J. F. Gildea, resigned to enter Delaware & Hudson Co.'s service. Office, Montreal.

J. PRENDERGAST, heretofore Locomotive Foreman, Hochelaga, Que., has been appointed Locomotive Foreman, Glen Yard, Montreal, vice M. Miller, promoted.

R. JOHNSTON, heretofore acting Locomotive Foreman, Sortin Yard, Montreal, has been appointed Locomotive Foreman, Hochelaga, Que., vice J. Prendergast, transferred.

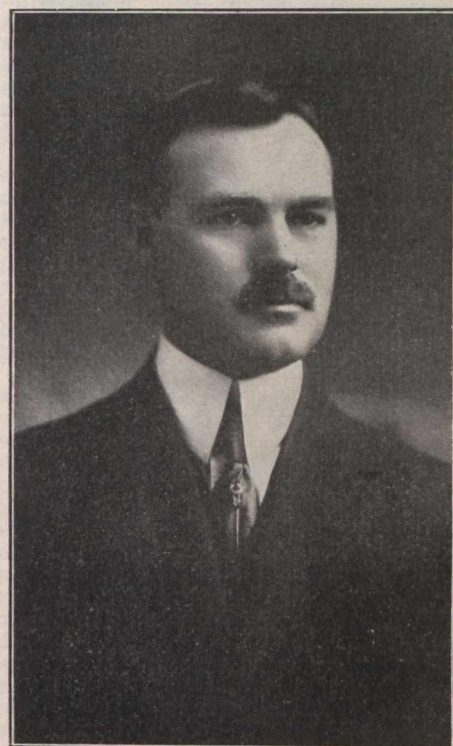
W. H. CAVERS, heretofore Chief Dispatcher, Chapleau Division, Algoma District, Chapleau, Ont., has been appointed Chief Dispatcher, Laurentian Division, Quebec District, Montreal.

C. POWERS, heretofore Division Master Mechanic, Brownville Jct., Me., has been appointed Division Master Mechanic Toronto, vice W. Wright, transferred.

W. UNDERWOOD has been appointed chief ticket clerk, Toronto, vice J. McGeough, promoted.

E. P. BARKER, heretofore Chief Dispatcher, Sudbury Division, Algoma District, Sudbury, Ont., has been appointed Chief Dispatcher, Chapleau Division, Algoma District, Chapleau, Ont., vice W. H. Cavers, transferred.

H. BROUGHTON, heretofore fitter, North Bay, Ont., has been appointed Locomotive Foreman, Chapleau, Ont., vice E. Freeman, promoted.



C. A. Cotterell  
Superintendent, Medicine Hat Division, Alberta District, Canadian Pacific Railway

J. L. ABEL, heretofore dispatcher, Smiths Falls, Ont., has been appointed Chief Dispatcher, Sudbury Division, Algoma District, Sudbury, Ont., vice E. P. Barker, transferred.

S. W. CRABBE, heretofore agent, Chalk River, Ont., has been appointed Superintendent, Schreiber Division, Algoma District, vice G. J. Fox, transferred to Western Lines. Office, Schreiber, Ont.

E. FREEMAN, heretofore Locomotive Foreman, Chapleau, Ont., has been appointed Division Master Mechanic, Schreiber Division, Algoma District, vice W. Wells, transferred. Office, Schreiber, Ont.

E. M. SMITH has been appointed Trainmaster, Wilkie Subdivision, Saskatoon Division, Saskatchewan District, vice S. C. Graham. Office, Wilkie.

W. P. CRAWFORD, heretofore Locomotive Foreman, Neudorf, Sask., has been

appointed Locomotive Foreman, Wilkie, Sask., vice R. B. Milne, who has left the service.

W. E. HAYWARD, heretofore machinist, Brandon, Man., has been appointed Locomotive Foreman, Neudorf, Sask., vice W. P. Crawford, transferred.

G. J. FOX, heretofore Superintendent, Schreiber Division, Algoma District, Schreiber, Ont., has been appointed Superintendent, Calgary Division, Alberta District, vice P. F. Weisbrod, on leave of absence. Office, Calgary.

E. J. LEMIEUX, heretofore Division Master Mechanic, Lethbridge Division, Alberta District, Lethbridge, has been appointed Division Master Mechanic, Calgary Division, Alberta District, vice A. E. Dales. Office, Calgary.

C. A. COTTERELL, heretofore Superintendent, Lethbridge Division, Alberta District, Lethbridge, has been appointed Superintendent, Medicine Hat Division, Alberta District, vice C. D. MacKintosh, transferred. Office, Medicine Hat.

C. D. MACKINTOSH, heretofore Superintendent, Medicine Hat Division, Alberta District, Medicine Hat, has been appointed Superintendent, Lethbridge Division, Alberta District, vice C. A. Cotterell, transferred. Office, Lethbridge.

D. M. SMITH, heretofore Road Foreman of Locomotives, Medicine Hat Division, Alberta District, Medicine Hat, has been appointed Division Master Mechanic, Lethbridge Division, Alberta District, vice E. J. Lemieux, transferred. Office, Lethbridge.

J. McGEOUGH, heretofore chief ticket clerk, Toronto, has been appointed City Passenger Agent, Boston, Mass.

**Delaware & Hudson Co.**—J. F. GILDEA, heretofore Master Mechanic, Montreal Terminals Division, Quebec District, C.P.R., Montreal, has been appointed Master Mechanic, Pennsylvania Division, D. & H. Co., Carbondale, Pa., vice J. J. Reid, resigned.

**Grand Trunk Ry.**—F. A. RUTHERFORD, heretofore Trainmaster, Districts 27 and 28, Detroit Division, Western Lines, has been appointed Inspector of Transportation. Office, Montreal.

W. J. HAMILTON, formerly of Stratford, Ont., is reported to have been appointed Locomotive Foreman, Brockville, Ont.

T. H. HAMILL has been appointed General Yardmaster, Hamilton, Ont., vice T. J. Wrennick, promoted.

D. W. HAYES has been appointed agent, Hamilton, Ont., vice A. M. Adams, transferred to Toronto, as announced in our last issue.

H. MacDOUGALL, agent, Stratford, Ont., is reported to have been appointed agent, London, Ont., vice D. M. Hayes.

T. J. WRENNICK, heretofore General Yardmaster, Hamilton, Ont., has been appointed Superintendent of Terminals, Black Rock, N.Y., vice T. W. Saunders, resigned to enter another company's service.

**Grand Trunk Pacific Coast Steamship Co.**—W. H. FOGG has been appointed chief clerk and stationery agent, with general charge of the Manager's office at Vancouver, B.C.

F. R. HUNT, accountant, has been given general charge of accounts and finance, and all correspondence on these matters are addressed to him at Vancouver, B.C.

**Grand Trunk Pacific Ry.**—W. P. HINTON, Vice President and General Manager, Grand Trunk Pacific Ry., has also been appointed General Manager, Grand Trunk Pacific Development Co., Ltd., which controls the G.T.P.R. hotels, lands, townsites, steamships, etc. Office, Winnipeg.

H. STEPHENSON, heretofore shop foreman, Regina, Sask., is reported to have been appointed shop foreman, Prince George, B.C.

**Timiskaming and Northern Ontario Railway Betterments.**

The Ontario Legislature, on Mar. 22, voted \$686,711.82 for new work, betterments, additional rolling stock and other facilities on the steam railway, and on the electric line operated by the Timiskaming and Northern Ontario Railway Commission. The items for expenditures on the electric line are given in the electric railway department on another page of this issue, under the heading Nipissing Central Ry., and the items for Timiskaming & Northern Ontario Ry. rolling stock are given under Rolling Stock Notes on another page. All the other items are for work on the T. & N.O. Ry., and of the \$585,211.82 voted, \$53,555.71 consists of items for which the provision made in 1917-18 has been revoked; \$445,156.11 is for items in respect of which \$332,825.75 was voted in 1917-18, and was unexpended, and \$868,500 consists of new votes. Following are the several works for which votes were made under these headings:—

<b>Revotes:—</b>		
Swastika siding .....	\$20,000.00	
Monteith station and freight shed...	6,506.25	
Porquois sidings .....	8,729.58	
Iroquois Falls, sidings .....	476.78	
South Porcupine extension .....	2,000.00	
Cochrane, sidings .....	979.20	
New sidings .....	12,473.21	
Improvements, station grounds .....	2,390.69	
<b>Total .....</b>	<b>\$53,555.71</b>	
<b>Partial revotes:—</b>		
Kirkland Lake Branch .....	\$125,000.00	\$150,000.00
North Bay car repair shed .....	3,720.00	10,000.00
Cochrane, ice house and track .....	3,000.00	6,500.00
Cochrane, baggage building .....	6,497.04	15,000.00
Replacing timber bridges with steel bridges .....	100,000.00	104,500.00
Fencing right of way .....	12,135.39	13,000.00
Additional road crossings .....	2,674.24	4,000.00
Additional weight rails, etc. ....	8,642.93	16,000.00
North Bay freight shed .....	5,000.00	7,500.00
North Bay coal plant .....	27,000.00	30,000.00
North Bay, rearranging track .....	8,000.00	10,000.00
North Bay, machine shops, etc. ....	15,000.00	17,500.00
Change on line, curve reduction, mileage 63 to 66.5 and 80.8 to 81.2 .....	16,156.11	56,156.11
<b>Total .....</b>	<b>\$332,825.75</b>	<b>\$445,156.11</b>
<b>New Votes:—</b>		
Connaught, station and agent's dwelling .....	\$ 4,500.00	
Cochrane, section houses and agent's dwelling .....	20,000.00	
Station buildings at unnamed points .....	5,000.00	
Heating, plumbing and electric lighting systems in existing dwellings and stations .....	7,000.00	
Ballast crushing and screening plant .....	15,000.00	
Extension of water supply and improved equipment .....	15,000.00	
Additional yard tracks .....	20,000.00	
<b>Total .....</b>	<b>\$86,500.00</b>	

**Co-operative Railway Building Proposed in Alberta.**

At a meeting of representatives of Alberta rural municipalities recently, a proposition was discussed for the building of short branch lines of railway on the co-operative principle by municipalities. According to the promoters, it would cost \$17,000 to build a mile of good substantial road in normal times. If all the lands within one mile were assessed \$800 a quarter section, within two miles \$700, and so on till eight miles out on either side of the lines was reached, the 16 sections would be assessed at the average rate of \$400 a quarter section, and this would bring in \$25,600 for the 16 sections, and besides certain income would be derived from the disposal of townsites. By making the installments stretch over 20

**Canadian Northern Railway Earnings, Etc.**

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

	Gross		Net	
	Earnings	Expenses	Earnings	Decrease
July	\$3,844,900	\$2,940,000	\$ 904,900	\$ 292,500
Aug.	3,405,200	2,812,000	593,200	478,800
Sept.	3,341,700	2,915,500	1,924,000	306,700
Oct.	3,941,600	3,350,500	591,100	629,200
Nov.	4,050,200	3,295,500	754,700	496,300
Dec.	3,273,200	3,207,900	65,300	758,500
Jan.	2,715,300	3,290,300	x575,000	1,057,100
Feb.	2,691,000	3,171,400	x480,400	688,600
	\$27,263,100	\$24,983,400	\$2,279,700	\$4,606,700
Incr	\$ 440,400	\$5,047,100		
Decr			\$4,606,700	

x Deficit. Approximate earnings or three weeks ended Mar. 21, \$2,187,600, against \$2,126,400 for same period 1917.

**Canadian Pacific Railway Earnings, Etc.**

Gross earnings, working expenses, net earnings, and increases or decreases, compared with those of 1917, from Jan. 1, 1918:

	Gross		Net	
	Earnings	Expenses	Earnings	Decrease
Jan.	\$10,789,818	\$9,621,824	\$1,167,993	\$1,263,486
Feb.	9,574,302	8,983,404	590,898	1,396,161
	\$20,364,120	\$18,605,228	\$1,758,891	\$2,659,647
Incr.	\$1,121,535	\$3,770,171		
Decr.			\$ 2,658,636	

Approximate earnings for three weeks ended Mar. 21, \$7,959,000, against \$7,760,000 for same period 1917.

**Grand Trunk Railway Earnings.**

Aggregate traffic receipts from Jan. 1 to Feb. 28:

	1918.	1917.	Decrease.
G.T.R. ....	\$6,014,854	\$6,825,821	\$810,967
G.T.W.R. ....	1,202,851	1,272,560	69,709
D.G.H. & M.R. ....	412,255	437,852	25,597
<b>Totals .....</b>	<b>\$7,629,960</b>	<b>\$8,536,233</b>	<b>\$906,273</b>

Approximate earnings for three weeks ended Mar. 21, \$3,462,601, against \$3,186,666 for same period 1917.

**Grand Trunk Pacific Ry. Earnings.**

Approximate earnings for Feb., \$464,483, against \$295,512 for Feb., 1917; aggregate earnings for two months ended Feb. 28, \$904,685, against \$625,620 for same period 1917.



W. E. Barnes  
General Master Mechanic, Canadian Government Railways

years, it would cost the owner of the nearest quarter sections \$40 a year; the owner of the quarter section eight miles out \$5 a year, and the rest of the owners at a proportionate rate. The saving of the cost of transporting the produce and supplies from the long haul of from 25 to 30 miles now necessary would, it was urged, make this plan appear to be a good one for the farmers. The project was discussed, but no action was taken.

**A Correction.**

On page 140 there appears an article, accompanied by an illustration, describing the arrangement of a spring-heating furnace in a railway shop. Owing to an error in make-up, which was not detected until the form containing the matter was printed, the caption placed under the illustration referred to the Kettle Rapids Bridge, Hudson Bay Railway, appearing on another page.

G. A. Skipton, Dominion Ex. Co. agent at Preston, Ont., for the past 12 years, died there, Mar. 18, aged 50.



**COTTAGES AT GRAHAM**

Department of Railways and Canals, Canada.  
Canadian Government Railways.

Sealed tenders, addressed to the undersigned and marked on the outside "Tenders for Cottages, Graham," will be received at this office up to and including Twelve o'clock noon, Thursday, April 11, 1918, for the construction of five frame cottages at Graham, Ont.

Plans, specifications and blank form of contract may be seen at the following offices: Chief Engineer, Dept. of Railways and Canals, Ottawa, Ont.; Chief Engineer, Canadian Government Railways, Moncton, N.B.; Resident Engineers at Fort William, Ont., and Cochrane, Ont.; the General Western Agent, Toronto, Ont., and the General Manager Western Lines, Winnipeg, Man.

All the conditions of the specifications and contract forms must be complied with.

Tenders must be put in on the blank form of tender, which may be obtained from any of the offices at which plans are on exhibition.

Each tender must be accompanied by an accepted bank cheque payable to the Honorable the Minister of Railways and Canals for an amount equal to ten per cent. (10%) of the tender.

The lowest or any tender not necessarily accepted.

By order,  
J. W. PUGSLEY,  
Secretary.

Department of Railways and Canals,  
Ottawa, March 26, 1918.



# Electric Railway Department

## The Montreal Tramways Company's New Franchise.

Canadian Railway and Marine World for March devoted over 3 pages to details of the Montreal Tramways Co.'s franchise, which was signed on Jan. 28, after extended negotiations before the commission appointed by the Quebec Legislature and the company's representatives. Below we give the balance of the franchise agreement as ratified by the Quebec Legislature at its last session, our reason for giving so much space to it being that it is a new departure in many ways and will doubtless prove of great interest to electric railways generally. As stated in our last issue, the original bill before the legislature was in French, and the translation we have given was made hurriedly and is subject to revision. The following is the balance of the franchise agreement:—

If at the end of the first year of operation under this contract or at the end of any subsequent year, it shall appear to the commission's satisfaction that the maintenance allowance herein fixed is insufficient, such allowance shall be increased for the ensuing year and from year to year as may be deemed necessary. If at the close of any year the commission shall find that the maintenance allowance is excessive or that the maintenance and renewals fund is greater than prudent management of the tramways system required, then the commission may reduce such allowance to any extent which it may see fit: provided that the maintenance allowance shall never be so reduced as to cause a reduction in the maintenance and renewals fund, except temporarily, below \$500,000, and in case such fund is at the end of any year found to be reduced below such sum, then the commission shall forthwith increase the maintenance allowance in an amount sufficient to restore fund at least to \$500,000. Fund shall be under the commission's control and no monies in it shall be paid out or loaned or invested except with the commission's approval. In case the monies in fund are deposited in bank or invested, the interest or revenues therefrom shall be added to the fund. In case the city shall acquire the property at the termination of this contract, the maintenance and renewals fund as then existing, shall become the city's property, and the amount of the fund shall not be added to the purchase price, and any monies then due by the company to the fund shall be deducted from the purchase price.

**Return Upon Capital Value.**—The capital value of the tramways system is hereby fixed at \$36,286,295, including all physical assets added to the system up to Dec. 31, 1917. As its usual return upon the capital value so fixed, the company shall receive in quarterly payments out of gross revenues a sum equal to 6% on hereafter as money is needed for betterments, additions and extensions of plant required by this contract or approved by the commission, such money except to the extent that monies for such purposes are payable at the time from the maintenance and renewals fund, shall be supplied by the company, and the amounts so supplied and actually expended for such purposes under the commission's supervision shall, plus net interest expenses during construction, be added to capital value,

and the company shall receive out of the gross revenues an annual return of 6% on such amount. For such purposes, however, the company shall be obliged to borrow temporarily from monies in the maintenance and renewals fund, except from monies already in that fund for same purposes and from the contingent reserve fund and the tolls reduction fund to the extent that in the commission's judgment the monies are available for loans, and upon monies so borrowed the company shall pay into such funds interest at 6% per annum. Monies so borrowed shall be reimbursed by the company as ordered by the commission.

Within 60 days after the coming into force of this contract, the commission shall ascertain and determine the amount of money expended by the company for all physical assets added to its system subsequently to Dec. 31, 1917, and the amount so determined shall be added to capital value and the company shall receive an annual return therefrom at the rate of 6% per annum to be taken out of gross revenues.

Upon all monies supplied for capital expenditure by the company, from other sources than the aforesaid funds, during the continuance of the present war, or within two years after its close, the company shall receive out of gross revenues an additional return of 1% per annum, provided such additional return shall not be paid for more than five years beyond the close of the war.

As the capital hereinbefore established at \$36,286,295, does not comprise any working capital, it is agreed that any working capital required shall, when ordered by the commission, be furnished by the company. Upon such working capital so furnished the company shall receive a return at the rate of 6% per annum. Should the commission so order, the company shall be obliged, for the purpose of creating or maintaining such working capital, to borrow from any or all the different funds created by the contract, in the same manner as hereinbefore established for monies borrowed by the company from said funds for betterments, additions and extensions of plant.

For the purpose of covering the expense to be incurred in procuring additional capital, the company shall, out of gross revenues, receive annually \$181,421.47 (being equivalent to ½ of 1% of \$36,286,295), provided said amount is expended solely for the following purposes: when issuing bonds or debenture stock, for discounts, commissions, printing and engraving, exchange, legal and other expenses incidental thereto; when issuing stock, for printing, engraving, transfer and registration fees and listing on stock exchanges. Any surplus over and above the said expenditure, and the interest or income therefrom shall belong to the company but shall be kept in a special account and shall not be distributed until the termination of this contract.

During this contract the company shall not pay dividends of more than 10% annually on its capital stock.

In procuring any amounts of additional capital required after the coming into force of this contract, the company shall limit its mortgages or issues of mortgage bonds or debenture stock in order that the

same do not aggregate more than 75% of the total additional capital then furnished under this contract, but this restriction shall not apply to securities which the company may issue to renew or replace loans contracted under the trust deeds in existence on June 30, 1917, and also the debentures amounting to \$1,500,000, and maturing on May 22, 1922.

**City Rentals.**—The city shall receive out of gross revenues and above all other amounts to which it may be entitled under this contract or otherwise, \$500,000 a year during the continuation of this contract, payable quarterly.

**Contingent Reserve Fund.**—A sum equal to 1% of the gross revenues shall be paid annually into a contingent reserve fund until such fund with its accretions, shall amount to \$500,000, and thereafter no further payments shall be made to this fund and the accretions thereof shall be paid into and become a part of the gross revenues; provided, that if the fund shall be diminished by any of the contingent payments hereinafter described, the accretions of the fund shall thereafter belong to it and the payment of 1% of the gross revenues into the fund shall be resumed as soon as the percentage is available, and shall so continue until the fund is again restored to the full amount of \$500,000. The fund shall be used whenever it may be necessary to make up any deficiency in the payment to be made as provided, and allowances provided.

Upon the termination of the contract, the company shall repay any monies borrowed from the fund and not previously repaid, and the total amount then in the fund shall be distributed as follows: To the city, 30%; to the company, 20%, and to the tolls reduction fund hereinafter established, 50%.

**Division of Surplus.**—All the portion of the gross revenues remaining after the payment of charges hereinbefore described, shall constitute the divisible surplus, and shall, at the end of each year, be distributed as follows: To the city, 30%; to the company, 20%, and to the tolls reduction fund, 50%. The portions distributed to the city and to the company shall belong to them and may be used or disposed of as they respectively see fit. The tolls reduction fund shall be held in trust for the company's patrons for the reduction of tolls, and shall be administered by the commission as herein provided. Whenever at the end of any year the amount in the tolls reduction fund shall exceed \$1,000,000, the commission may, and whenever the amount in said fund shall exceed \$2,500,000, the commission shall, reduce the fares or tolls on the tramways system. For the purpose of effecting said reduction, an amount not exceeding 25% of the total amount in the fund at the close of the year preceding the year when such reduction is to be made, shall be taken out of the tolls reduction fund and added to gross revenues, and the commission shall thereupon reduce the tolls to an extent that in the aggregate for the year is at least equal to the amount so taken out of the tolls reduction fund, but does not exceed such amount plus 75% of the amount which during the last preceding year flowed from gross revenues into the divisible surplus. Thereafter, at the beginning

of each year an amount shall be taken from the tolls reduction fund and turned into gross revenues equal to the amount so taken from the fund at the time of the reduction of tolls; but when the total amount remaining in the tolls reduction fund at the end of any year is less than the amount taken annually from the fund for the increase of gross revenues as above provided, the appropriation from the fund to gross revenues shall for the time being be discontinued, but the tolls shall remain as previously reduced until it shall be necessary as hereinafter provided, to increase them.

If the tolls reduction fund, in spite of its depletion for such reduction in tolls, shall again increase to an amount in excess of \$2,500,000, the tolls shall be further reduced in the same manner as before. If in any year the gross revenues shall be insufficient to provide for the payment of all sums payable under paragraphs 1 to 5, and if the contingent reserve fund is less than \$300,000, the commission shall forthwith from any monies in the tolls reduction fund, appropriate the amount necessary to bring the contingent reserve fund up to \$500,000, all deficits in the payments provided for under paragraphs 1 to 4 being made up, or if sufficient monies therefor are not available in said tolls reduction fund, then the commission shall forthwith increase the tolls to the extent necessary to provide at least sufficient gross revenues to meet all the payments provided for under paragraphs 1 to 5.

At the termination of this contract the tolls reduction fund shall be the city's property, and any amounts borrowed by the company from the fund and not previously repaid, shall forthwith, upon the city's demand, be paid into the fund by the company, and in case of purchase by the city of the tramways system, any amounts then due from the company to the fund shall be deducted from the purchase price.

Any loans made to the company from the maintenance and renewals fund, the contingent reserve fund or the tolls reduction fund, shall constitute, without registration, a lien upon the company's plant and property, superior to any other lien hereafter created by act of the company and not previously authorized by any mortgage or deed of trust in existence on June 30, 1917, affecting such plant and property; but the company may reimburse said loans for the purpose of replacing or renewing any lien created or authorized in virtue of any deed of trust existing on said date.

No monies taken from earnings, except surplus available to the company, shall be used to redeem any mortgage, lien, or other mortgage indebtedness of the company.

**Expropriation.**—On Mar. 24, 1913, and at the expiration of every subsequent five-years period, the city shall have the right, after six months notice given to the company within the 12 months immediately preceding Mar. 24, 1913, and also after a similar notice of six months and on the same conditions at the end of each subsequent five-years period, to appropriate for itself the company's railway, as well as the immovables and dependencies, plant and cars belonging to it and necessary for the operation of the railway, situate within and without the limits of the city, by paying the value thereof to be fixed by arbitrators and 10% over and above the estimate. Should the city exercise the right conferred upon it by this clause, then it is agreed that the valuation of \$36,386,295 fixed by this contract shall

in no way bind the arbitrators in establishing the purchase price payable by the city. The purchase price shall also comprise all the company's privileges, rights and franchises in any municipality wherein the assets so acquired are situated, and the city shall not pay for the value of such privileges, rights and franchises and shall further have the right to operate the system of tramways so purchased in any municipality wherein the same is located. No municipality other than the city shall have the right to purchase the company's railway system in whole or in part.

Within 30 days after the expiration of each year of operation the company shall furnish to the commission detailed statements of its expenditures made within the preceding year.

All the provisions of the contracts, agreements or arrangements concluded between the company and any municipal corporation outside of the city, incompatible with the provisions of this contract shall remain without effect counting from the putting into force of this contract.

In the event of the company, at any time failing to conform to or contravening any of the conditions or obligations which are imposed on it by this contract, or to any of the commission's decisions or orders, it shall be liable to a fine not exceeding \$40, with or without costs at the discretion of the court, for each and every day it neglects to so conform or contravenes any of the conditions, obligations, decisions or orders.

This contract shall form part of the securities furnished by the company under the trust deed in favor of the National Trust Co. and the Harris Trust and Savings Bank, dated July 1, 1911, and other trust deeds existing on June 30, 1917, to guarantee the loans and the issues of debenture stock made by the company under the authority of the said trust deeds.

This contract shall not take effect until ratified by the Quebec Legislature.

### Halifax Electric Tramway Employees Strike.

The Nova Scotia Tramways & Power Co.'s electric railway employes in Halifax, ceased work Feb. 23. On the same day the management issued a statement to the effect that the men did not give any notice of their intention to stop work, nor any reason for so acting. The wages agreement does not expire until May 20, and for two weeks prior to the date of ceasing work there had been negotiations between the company and the men as to a new agreement. On Feb. 18, the company submitted to the men a new scale of wages representing an advance of 12% upon the scale provided for in the unexpired agreement. There had been some differences with the men, owing to certain alleged acts of insubordination which the company's executive officer had dealt with. One employe, Conductor Zinck, being suspended, and the other, Motorman Lowe, being dismissed. It was stated by the Managing Director, H. R. Mallison, that there had been a good deal of insubordination, and defiance of discipline among the men, and that it was determined to make an example. The employes claimed in the case of Conductor Zinck that, having been injured in the explosion, and being nervous, he felt, when rated as motorman for a new run, that in the best interests of himself and the public he should not undertake it;

that before suspension he was not given an opportunity to explaining to the official who suspended him his reasons for not accepting the run, and that he was not physically fit for it. He was taken off the list as a conductor and rated as a motorman. He had served as conductor and in spare time as a motorman. In the case of Motorman Lowe, dismissed, the employes claimed that when an inspector was posting the run guide, including Zinck's name, Lowe suggested that it should not be left up too long, or it might cause trouble. This remark apparently had been described to the company as Lowe ordering the notice down or that he would make trouble. Lowe claimed to have five witnesses to testify to the exact remark he made, which he claims to have been intended as harmless. The men also issued a statement saying that, after ineffectual attempts to secure the reinstatement of Zinck and Lowe, the men decided, by a 90% vote, to cease work until the two men were reinstated.

The city authorities endeavored to bring about an understanding between the parties, with the result that on Feb. 25, H. R. Mallison, Managing Director, wrote the Deputy Mayor as follows:—"It has been decided to moderate the punishment meted out to Motorman Lowe. If our employes are prepared to return to work in the customary manner tomorrow morning, and, on behalf of the citizens, give the company loyal and faithful support, and observe in a satisfactory manner the reasonable rules and regulations laid down for their guidance, the company's ruling in regard to the dismissal of Lowe will be withdrawn, and he will, instead, be subjected to a suspension of one week; which week terminates Wednesday night next. It is part of this proposal that both the company and the men waive further investigation or inquiry in the two cases in dispute and at once resume the harmonious relations which should exist between employer and employes, in order that the public may be efficiently served and the unfortunate condition which has existed for the past three days be ended at once."

This proposal was accepted by the men and the service was resumed Feb. 26.

**Levis County Ry. Fares Advanced.**—The Levis County Ry. applied recently to the four municipalities in which it operates, viz.: Levis, Lauzon, Bienville and St. Romuald, for permission to increase its passenger fares, which were fixed by franchise and ratified by the Quebec Legislature. The fares which have been in force for 15 years are: Cash fare, 5c; unlimited tickets, 6 for 25c; scholars' tickets, 50 for \$1.25. The company applied for the following new rates: Cash fare, 10c; unlimited tickets, 12 for \$1; workmen's tickets, 16 for \$1; children not in arms and scholars under 16 years of age, 50 tickets for \$1.50. We are officially advised that an agreement has been come to, under which the cash fare is advanced from 5c to 10c. Unlimited tickets will be sold, 8 for 50c or 50 for \$3, instead of 6 for 25c as heretofore. Children, not in arms and under 12 years of age, will be charged a cash fare of 5c or 10 tickets for 25c; scholars will be sold 50 tickets for \$1.50.

Sandwich, Windsor & Amherstburg Ry. employes have refused the terms offered by the company, and on Mar. 21 applied to the Minister of Labor for the appointment of a board of conciliation. The two principal points upon which the parties have disagreed are the amount by which wages should be increased, and the recognition of the union.

## The Toronto Civic Railway's Fares and Deficits.

T. Bradshaw, Commissioner of Finance, and R. C. Harris, Commissioner of Works, the latter of whom has charge of Toronto Civic Ry. construction and operation, presented the following report to the city's board of control recently:—

We deem it our duty to again direct attention to the fast accumulating deficit on account of the operation of civic car lines. Prior to the operation of the first line on Gerrard St. East in the latter part of 1912, the Commissioner of Works made strong and insistent representation to the board of control that the rate of fares charged by the Toronto Ry. Co. should apply to the civic lines. Consent was not given to this, but bylaw 6304, passed Dec. 13, 1912, provided for the following scale of fares from 5.30 a.m. to 12 midnight, viz.:—Single cash fare for adults, 2c, or 6 tickets for 10c; children under 9 years, 1c; infants in arms, free; night fares, from 12 midnight to 5.30 a.m., 5c cash.

On Aug. 22, 1913, the Commissioner of Works again recommended that the fare scale of the Toronto Ry. Co. should be applied to the civic lines. The board of control did not agree therewith, but recommended that the existing rates be continued as a temporary measure, to be adjusted, after determination had been reached, upon the negotiations for the purchase of the Toronto Ry. Co., having in view the possible unification of the systems. This was adopted by council Sept. 29, 1913, and on the same day bylaw 6673 was passed, applying the existing rates of fares on the Gerrard St. line, to the St. Clair and Danforth Ave. sections of the system.

In 1914 Aldermen Whetter and Hiltz moved that the board of control consider the advisability of increasing the rates of fares. The board reported favorably, but the motion was referred back by council.

On Feb. 22, 1915, the Commissioner of Works advised the board of control that instructions had been issued to apply the existing rates to the Bloor St. line, and added, "I am still of opinion, however, that a sum sufficient to pay operating, maintenance and overhead charges should be collected."

On Feb. 26, 1915, the Commissioner of Works recommended to the committee on works that the following fares be charged, viz.:—Adults, 3c cash or 9 tickets for 25c; children, 1c; night fares, 5c. The committee adopted this recommendation; the board of control, however, recommended that it be referred back, and in this council concurred on Mar. 8, 1915.

On April 4, 1917, we made joint report to the board of control, recommending that a straight 3c fare, or 10 tickets for 30c, be charged. This recommendation was rejected. Had it been adopted, the revenue for 1917 would have approximated \$428,056, instead of \$278,147 actually received—a practical loss of \$149,909. The foregoing figures do not provide for the collection of fares from soldiers in uniform, of whom we carried 477,149 free during 1917. The total debenture issue on account of civic car lines amounts to \$2,287,171, the annual charges thereon being \$171,063.80. Since the inception of the system, the total charges of the operating sections have been as follows:—

Operating and maintenance.....	\$860,000.00
Capital charges .....	660,947.00
Total .....	\$1,520,947.00
Total revenue .....	930,259.00
Deficit .....	\$590,688.00

In other words, since the institution of the various civic car lines, the ratepayers at large, up to Dec. 31, 1917, were called upon to pay \$590,688 for special service accorded those in the districts contiguous to the civic lines. As before reported, it cannot be urged that this practice is sound, wise or business like. Every public utility should be made self supporting. It is unfair that the citizens at large should be compelled to make good annually, through the tax rate, the deficit created by reason of preferential treatment accorded a section of the community. Furthermore, it provides one of the most potent and damaging arguments against public ownership.

We have shown that the accumulated deficit to Dec. 31, 1917, amounted to \$590,688, and will under present conditions, increase at a rate approximating \$200,000 yearly. This means that in Sept. 1921, when we obtain possession of the Toronto Ry., the ratepayers at large will have disbursed \$1,340,688 to eliminate a deficit created by special preference accorded favored sections. Nor does it end here. We are now proceeding to acquire the section of the Metropolitan Division of the Toronto & York Radial Ry., located on Yonge St. within the city limits, which, if effected, will mean a considerable increase in annual capital charges, and if rated on the fare scale now existing on our civic lines, will considerably augment the annual deficit. This gives us considerable concern. We should persistently hold in mind the necessity of conserving every financial resource, against the acquisition of the Toronto Ry., 43 months hence, when the citizens may be emancipated from the pretence for service offered by the company, whose delinquency in discharging its obligations, is, unfortunately, aggravating rapidly. We are neither conserving or prudent in furnishing service below cost. In our opinion such policy is unwise and dangerous, inasmuch as it may have some serious collateral bearing upon the 1921 situation.

We recommend that the fares on the civic car lines be 3c cash, or 10 tickets for 30c; children's fare to be 1c cash, as at present; the foregoing rates to apply from 5.30 a.m. to 12 midnight; night fares from 12 midnight to 5.30 a.m. to be 5c cash, as at present. We estimate that the recommended scale of fares will be sufficient to cover the operating, maintenance and capital charges, but not physical depreciation, or municipal taxes, which, in our opinion, should be collected from every public utility, operated municipally or otherwise. If this scale be adopted, the following statement, based upon the number of passengers carried in 1917, and the service provided for in the estimates of 1918, would approximate the situation at the end of this year, viz.:—

Operating and maintenance charges.....	\$325,624.00
Capital charges .....	171,064.00
Total .....	\$496,688.00
Revenue passengers—16,478,391 at 3c.	
a passenger .....	494,351.00
Deficit .....	\$ 2,337.00

We cannot too strongly urge upon the administration to give effect to this recommendation. In our opinion it embraces good finance, sound business and efficient administration, while arguments may be admitted to affect its purport. We are convinced that the great outstanding principle which has made public ownership successful, viz., that a high standard of service should be furnished at mini-

mum cost, but that such service should be absolutely self sustaining, will of itself, by its sound logic, confute any such arguments.

The board of control sent the foregoing report on to the city council, advising that the recommendations did not meet with its approval and the city council acquiesced, so the fares remain as they were before and the deficits will continue to pile up.

## Application for Increased Electric Railway Fares in Quebec.

The Quebec Ry., Light & Power Co. is applying to the Quebec City Council for permission to increase its street railway fares and gas rates. Following are particulars of the present street railway fares and of the increases asked:—

Cash fare, 5c., no change asked. Tickets, present rates, unlimited tickets, 6 for 25c. and 25 for \$1; workmen's tickets, 8 for 25c. It is desired to change to 5 unlimited tickets for 25c. and 21 for \$1, and to abolish workmen's tickets.

School children's tickets, present rate, 10 for 25c., no change asked.

Children under 7 years of age, when accompanied by parents or guardians, are now carried free. It is asked that all children, excepting those in arms, shall pay 3c. cash fare, or buy 10 tickets for 25c.

Transfers are now free, and permission is asked to charge 1c. each for them.

After giving particulars of increased fares granted to electric railway companies in the United States, the Quebec Co.'s application gives a statement showing prices of material incidental to the operation of public utility companies in June, 1917, compared with June, 1913, showing an average increase of 109.3%. The application continues: "The larger portion of the material used in the operation of this company's service being manufactured in the United States, we are compelled to pay heavy customs duty, and for this reason alone, railway companies operating in the U.S. have the advantage over Canadian railway companies. Different railways in the United States have, however, found it necessary to ask for, and have been granted increases, in most cases abolishing tickets and charging a straight 5c. cash fare, and in a number of cases charging a 6c. and 7c. cash fare. The operating wages paid the Quebec Co.'s employes for 1917 were \$589,751.90, against \$470,721.43 for 1916.

**Winnipeg Jitneys to be Abolished.**—Winnipeg press dispatch Mar. 26.—Abolition of the jitneys was decided upon by the city council last night by a vote of 12 to 5. The resolution reads that the Winnipeg Electric Ry. Co. shall give adequate service, eliminate the electrolysis that damages the water mains, clear the streets of useless poles, and that if motor busses are put on by the company they shall be under regulation by the city. It was stated Mar. 20 that there were about 200 licenses for running jitneys in existence in Winnipeg, and that they were being issued as usual. The licenses are subject to cancellation at any time, and the bonds given run from month to month.

**Guelph Radial Ry. Officials.**—The officials of this line, which is owned and operated by the City of Guelph, Ont., are as follows: President, J. W. Lyon; Vice President, T. Hall; Treasurer, S. Rundle; Secretary, H. Westoky; Manager, A. H. Foster.

## The London and Lake Erie Ry. and Transportation Co's Position.

The London & Lake Erie Ry. & Transportation Co.'s financial position has been dealt with in previous issues of Canadian Railway and Marine World, including the company's offer, in Oct., 1917, to sell the property to the city of London, for 60c. on the dollar, as represented by the bonded indebtedness. This offer was considered by the city and rejected on the report of Sir Adam Beck, Chairman of the London Railway Commission, operating the London & Port Stanley Ry., and who is also Chairman of the Hydro Electric Power Commission of Ontario. He is reported to have stated that he was prepared to advise the city that the road would be self sustaining if purchased at 35c. on the dollar of the bond issue. The company

would take debentures of the municipalities, bearing interest at 6%, in exchange for the total debentures and stock of the company. I do not know to what extent the Hydro Electric Power Commission would assist in the purchase, but as it injured the L. & L.E.R., which was a very valuable asset to London, it should certainly assist. By this proposition the municipalities would become the owners of the road, and it is certain that all the municipalities desire the road to be kept open."

Some further negotiations took place, and on Mar. 20, the President wrote the London City Clerk, as follows:—"Your letter of the 16th inst. was submitted to a meeting of the directors of the L. & L.E.

present company took over the property, Dec. 15, 1909. The company was authorized to issue bonds for \$30,000 a mile of the line built, and these were issued to the extent of \$840,000, bearing with interest at 5% per annum, payable half yearly. No interest has been paid on them since 1915.

The last operating results available are those for the year ended June 30, 1916, which show gross earnings from operation \$82,410; miscellaneous earnings, \$46; operating expenses, \$85,594; taxes, funded debt, etc., \$47,325; net deficit, \$50,463; fare passengers carried, 403,717.

The St. Thomas, Ont., City Council is reported to have decided to notify the L. & L.E.R. & T. Co. that unless it pays up at once arrears of rental for track through the city, amounting to some \$8,000, its running rights will be cancelled.

### Applications for Increase in Electric Railway Fares.

On account of the greatly increased costs of labor, fuel, rolling stock, materials, and everything else that electric railways have to buy, it is self evident that their passenger fares must be advanced, if the companies are to continue in business, and already, following similar action in the United States, there is a considerable movement for the purpose of securing a change in the rates of fare paid in Canada.

The Levis County Ry., Levis, Que., has applied to the four municipalities in which it operates for a change in its franchise, particulars of which are given elsewhere in this issue, and the application has been granted, at least in part.

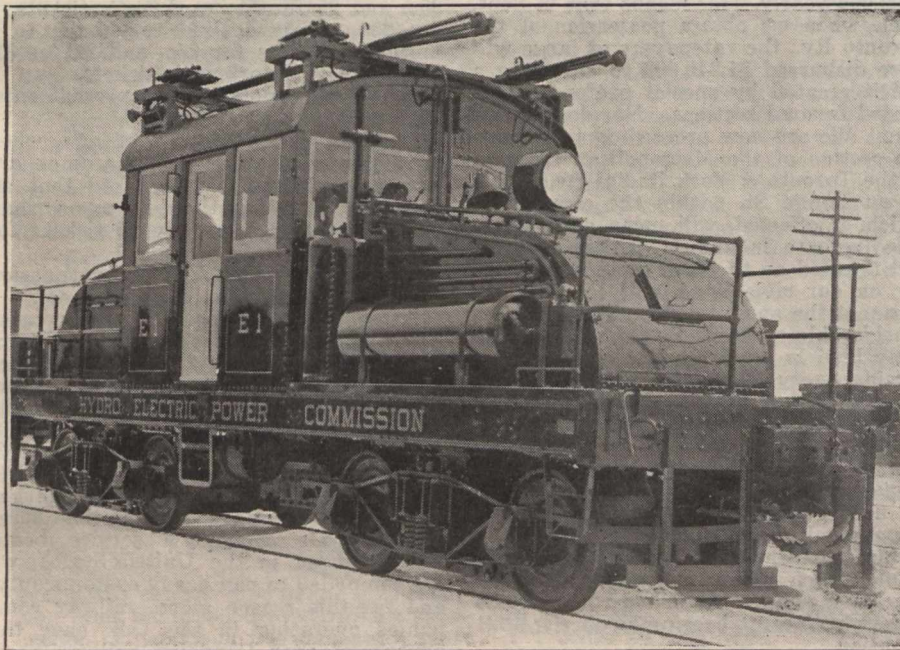
The London Street Ry. has applied to the London, Ont., City Council for a modification of its franchise "either by way of increased rates or otherwise." Its application was published in Canadian Railway and Marine World for March.

The New Brunswick Power Co., operating the St. John Ry., is applying to the New Brunswick Legislature, for authority to increase its passenger fares and electric light rates. It is probable that it will ask for a 6c cash fare, without tickets, and with 1c for transfers.

The Quebec Ry., Light & Power Co. has applied to the Quebec City Council for a change in its franchise, to enable it to advance its fares, particulars of which are given on another page.

**Hamilton & Dundas St. Ry. Freight Traffic.**—The Toronto, Hamilton & Buffalo Ry. is applying to the Dominion Parliament for the confirmation of an agreement dated June 17, 1890, made between it and the Hamilton & Dundas Ry., making certain traffic arrangements or agreements authorized by Sec. 364 of the Railway Act, for 50 years. This is the agreement which was the subject of considerable controversy in the House of Commons in 1917, when it was sought to have it confirmed. The agreement is for the handling of freight from the T. H. & B. Ry. into Dundas by the Hamilton & Dundas St. Ry. As the latter is an Ontario company, and as the Ontario general laws only permit agreements for 21 years, legislative confirmation of the agreement was secured in 1898. The traffic has been handled since that time by the H. & D. St. Ry., and the T. H. & B. Ry. now wishes to secure Dominion confirmation.

The jitney licenses in Vancouver, B.C., will terminate June 30, by which time the city council expects to have secured from the legislature the legislation necessary to prohibit their operation.



Electric Locomotive for Hydro Electric Power Commission of Ontario.

This is the first of 12 electric locomotives for the Hydro Electric Power Commission of Ontario's construction railway, in connection with its Chippewa-Queenston power development, which were fully described in Canadian Railway and Marine World for Dec., 1917, and which were ordered from the C. E. A. Carr Co., Toronto. The cars and trucks are being built by the National Steel Car Co., at Hamilton, Ont., and the Canadian Westinghouse Co. and the Canadian General Electric Co. are each supplying electrical equipment for 6 locomotives.

declined this offer, and it was then suggested that the company should scrap the portion of the line which parallels the London & Port Stanley Ry., the remaining portion to be linked up and operated with the L. & P.S.R. The various municipalities along the route were asked to consider the question of joint action in taking over the line as a municipal enterprise, but nothing definite has been done in this direction.

The President of the L. & L.E.R. & T. Co., G. B. Woods, of Toronto, in a letter which came before the London City Board of Control, Mar. 8, said:—"You are doubtless familiar with the London & Lake Erie Ry. and the effect on it of the electrification of the London & Port Stanley Ry. Negotiations were opened with Sir Adam Beck for the sale of the L. & L.E.R., and his offer of 35c. on the dollar was considered too small. It was intimated that 60c. on the dollar would be accepted. The value of the railway to London, and all the municipalities through which it runs, is known, and if they could agree on the proportion of the purchase price each should assume, I believe the holders of de-

R. & T. Co. held yesterday, and I was authorized to say, the lowest possible price we will accept is \$420,000, for the bonds and capital stock of the railway. This price is 50c. on the dollar for the bonds. If the city does not desire to pay cash, the company would be willing to accept 6% City of London bonds, with interest payable half yearly, the bonds to be payable at the expiration of a time to be agreed upon, not to exceed 20 years. It is very desirable that an early answer should be obtained, as already the road has been kept open many months longer than was at one time contemplated. This was done in order to give the municipalities an opportunity to keep the road running." The letter was considered by the city's Board of Control, Mar. 22, and ordered to be filed, the Mayor being reported as saying that the city would not buy the bonds at any price.

The line, which runs from London, via Lambeth and St. Thomas, to Port Stanley, Ont., on Lake Erie, is 28 miles long, and was opened for traffic by the Southwestern Traction Co., in 1905. That company went into liquidation in 1909, and the

## The Toronto Railway and the City of Toronto.

The Ontario Railway and Municipal Board has adjourned to Apr. 12, further hearing of the failure of the Toronto Ry. to comply with the Board's order respecting the addition of 100 new cars to its equipment by Jan. 1. The company, in the meantime, is advised to use every endeavor to obtain additional cars, and to get its orders on the market and obtain the best delivery possible.

On Nov. 9, 1914, the Ontario Railway and Municipal Board, in announcing its conclusions on a special report obtained as to the service furnished by the company, and the requirements of the city, required, among other things, that the company provide, by June 30, 1915, 50 double truck motor cars of a design to be approved by the board. The chief aim of the parties concerned was the elimination of overcrowding on the cars, and of the outside running board on the summer cars. In the early part of 1915 the company equipped one of its cars with cross seats and a centre aisle, and six of its cars with half of the seats on each side arranged across the car and the other half longitudinally, with a cross-over aisle. Owing to the narrow devil strip, the cars used are of necessity about a foot narrower than those on most of the large electric railways in Canada and the U.S. On Apr. 30, 1915, the board held a sitting to consider plans of cars, when it was stated that the company was proceeding to build cars according to the plans, without having received the board's sanction, and that two cars had been built and 18 were in course of construction, to enable the company to have them in service by June 30, 1915. The board's chairman announced that if the company built the cars without the board having approved the plans it did so at its own risk. The matter again came before the board, May 17, 1915, and the city submitted plans of a composite type of car, and for the reconstruction of existing cars. The company desiring time for the consideration of these plans, the matter was left to the board's engineer, the City Engineer and an official of the company. After some consultation, an existing type of car was arranged with cross seats on one side and a longitudinal seat on the other, with the car body being set a little off centre on the trucks, in order to obtain some extra width without endangering passing cars. The board then decided that the company must have 25 of this type of car in operation by Dec. 1, 1915, subject to some slight alterations to the satisfaction of the board's Engineer. This car, however, did not materialize, owing to the unsatisfactory nature of the design, and on Nov. 22, 1915, the board ordered the company and the city to confer within 30 days, as to the best type of car to be used, and if they failed to agree, the city would be given 15 days in which to submit plans. The city declined to confer with the company, and the board, on Jan. 25, 1916, rescinded its order for the composite cars, and ordered that 25 double trucks cars of a type and character of construction as recommended by its Engineer, Jan. 11, 1915, be built and placed in service by Mar. 1, 1916, and a further order was made Feb. 7, 1916, that the balance of 50 were to be built with the greatest possible interior width, and of a design to be approved by the board's engineer, and placed in service by May 15, 1916. Cars were built on this order and placed in service, several months after the date called for by the original order, the delays being

chiefly due to the city's actions in objecting to any type of car proposed without presenting alternative plans of a reasonable kind, having regard to all the circumstances existing.

The outbreak of war in Aug., 1914, caused considerable dislocation of business generally, men, money and material all being affected, and there were increasing difficulties owing to war requirements. Railway rolling stock suffered, perhaps to a greater extent than most other things, as, while the materials entering into their construction were more urgently required for war purposes, cars were also required to transport manufactures from point to point inland, and from inland points to the seaboard. Again in building such rolling stock as could be handled, preference was naturally given to the type most needed, and passenger equipment had necessarily to be put in the background. However, in Mar., 1917, the Ontario Railway and Municipal Board, on the city's application for a re-opening and reconsideration of the order of Nov. 6, 1914, ordered that the company place in operation 100 additional double truck cars by Jan. 1, 1918, and another 100 by Jan. 1, 1919. At the same time, the city was also applying to the Ontario Legislature for legislation to compel the company to place 100 cars in operation during 1917, and 100 during 1918, and in default to pay to the city \$100 a car a day for every car less than the numbers quoted not operated. The legislature's committee struck this item out of the city's bill on the ground that it was a matter within the competence of the Ontario Railway and Municipal Board. At this time, a condition in the agreement between the city and the company, to the effect that all cars operated on the company's tracks must be built by the company, within the city limits, was in force, but this proviso was waived by the city, to enable the company to purchase cars from outside sources, if possible. Since then, the situation regarding the building of electric railway cars has not improved to any appreciable extent, mainly, it is stated, owing to the difficulty in obtaining the necessary equipment as desired. Several hearings have been held relative to the company's failure to have the cars in operation by Jan. 1, 1918, and the difficulties attending the question of getting orders filled, the board considering, that in any event, the company should have shown its bona fides by actually placing an order, at least, for car bodies, and obtaining deliveries of equipment as speedily as possible. A suggestion was made on behalf of the city, that the company had not used every endeavor to obtain the cars, and that one company at least, was in a position to make deliveries. The city asked for a specification of the cars, and arrangements were made to enable this company to quote and state what deliveries could be made. It appeared later, that the company mentioned was the Canadian Car and Foundry Co., and it was stated that the company would possibly be able to make delivery of 60 car bodies in a year, and perhaps the trucks for them also, leaving the railway company to deal with the matter of equipment. This negotiation is still going on, and the adjournment of the enquiry until Apr. 12, is to enable the company to see exactly what arrangement can be arrived at. No doubt there have been great difficulties in the way of obtaining deliveries of rolling stock, but these are now disap-

pearing, and it may be, that the company might have used greater diligence in attempting to carry out the board's order, but, as stated by the chairman, when the matter was before the board some time ago, the company could not be expected to launch into a heavy expenditure cheerfully, when the franchise had so short a time to run. The stand taken by the city in this, and other matters with which the Toronto Ry. is concerned, cannot readily be understood, as its actions are so erratic, and are apparently taken without due regard to the facts of the case, or the conditions surrounding it.

### Fort William Municipal Railway Deficits.

The application of the Fort William City Council to the Ontario Legislature for the confirmation of a bylaw authorizing the issue of \$225,000 of debentures to take care of the deficits in connection with the city's electric street railway, was considered by the Ontario Railway and Municipal Board, which reported to the legislature that "in important particulars the provisions of the Municipal Act respecting finance have for some years been ignored by the Fort William municipal council, in consequence of which a series of annual deficits in the operation of its street railway system have resulted in a large floating debt." The amount of the deficits are mentioned in the bylaw as:—1914, \$29,162.54; 1915, \$64,270.18; 1916, \$64,827.68; 1917, \$65,746.59. The board recommended that the city should be relieved from the floating debt by the authorization of the issue of debentures, as asked for, but that an additional section should be added to the bill in order to prevent the accumulation of deficits in the future, as follows:—"In case there shall be a deficit in the operation of the city's electric street railway in any calendar year subsequent to 1917, the council of the city of Fort William shall include in the estimates of the following year the amount of such deficit and shall in such following year assess and levy on the whole rateable property within the municipality a sum sufficient to pay such deficit and the interests thereon."

The bill, amended as recommended by the Ontario Railway and Municipal Board, was passed by the Legislature Mar. 15.

**Motor Busses for Winnipeg.**—The Winnipeg Electric Ry. is reported to have decided to place a number of motor busses on streets on which there are no street car tracks, to serve outlying districts and act as feeders to the street railway. It is said that the type of bus chosen will be built on a one ton truck chassis, with interior equipment similar to that of the regular street cars, and that each bus will have capacity for 16 passengers.

**The City of Edinburgh, Scotland,** having taken over the sections of its street railways, hitherto run by a private company and operated by cables, has received expert advice in favor of electrifying the system and operating on the overhead trolley system. The main portion of the city's street railways is operated on the underground trolley system.

The Ontario Legislature has passed an act providing, among other things, that the members of the Guelph City Council shall be directors of the Guelph Radial Ry. under the acts relating to the company. Up to the present time the council has nominated the directors annually, while the new provision is that a directorship of the G.R.R. goes with the office of alderman of the city.

### Winnipeg Electric Railway Annual Report and Meeting.

The report for the calendar year 1917 shows the following results:

Gross earnings from operations.....	\$3,339,009.89
Operating charges, exclusive of depreciation .....	2,143,512.73
Net operating revenue.....	\$1,195,497.16
Miscellaneous income .....	47,374.62
Gross income available to meet fixed charges, etc. ....	\$1,243,374.78
From which the following deductions are made:	
Interest charges on debenture stock, bonds, etc....	\$649,050.97
City's percentage, taxes, etc. ....	209,064.45
Other charges .....	31,629.71
	889,745.13

Net income, excluding depreciation.. \$ 353,629.65

The net income, on the same method of accounting, shows a decrease of \$91,621.80, compared with 1916, notwithstanding the fact that the gross revenue for the year under review shows an increase of \$27,840.20 over the previous year.

The net earnings shown above are slightly more than 1% on the \$9,000,000 capital stock. Twelve per cent. was paid in dividends on this stock a few years ago.

Gross earnings for the year showed a gain of \$27,840. Miscellaneous income was also slightly higher, but all the gain was absorbed in increased costs. The city's share of earnings showed but slight variation. There is deducted from 1917 earnings, however, \$201,050 for depreciation, which has no corresponding item in previous statements.

The 1917 form of statement makes the net income transferred to surplus \$152,579, with the year's sinking fund requirements of \$60,000 made a subsequent charge against total surplus. However, as the sinking fund deduction is properly chargeable to the year's income, it has been included in the following table in the list of general deductions, as in the previous year:

	1917.	1916.	1915.
Gross .....	\$3,339,009	\$3,311,169	\$3,663,835
Expenses .....	2,143,512	1,939,041	2,332,158
Net rev. ....	\$1,195,497	\$1,372,128	\$1,331,737
Misc. inc. ....	47,877	26,010	.....
Gross inc. ....	\$1,243,374	\$1,398,138	\$1,331,737
Less:			
Interest .....	\$ 649,050	\$ 643,991	\$ 637,263
City's p.c. ....	105,777	110,227	99,303
Disc. on sec. ....	11,797	22,929	.....
Taxes .....	103,286	91,569	99,068
Misc. exp. ....	5,985	17,503	.....
Other deduc. ....	13,846	6,665	.....
Sinking fund ....	60,000	60,000	.....
Depreciation ....	201,050	.....	.....
Tot. deduc. ....	\$1,150,795	\$ 952,827	\$ 835,635
Balance .....	\$ 92,579	\$ 445,251	\$ 496,101
Dividends .....	.....	.....	855,000
Balance .....	\$ 92,579	\$ 445,251	\$ 338,898
Prev. bal. ....	*1,125,526	*682,324	1,141,496
Tot. surp. ....	\$1,218,106	\$1,128,075	\$ 782,598

\*—After adjustments. †—Deficit.

The record of the company's earnings, showing net after expenses but before charges, the amount distributed in dividends and the final surplus left over after all charges, for 11 years, follows:

Year.	Net.	Dividends.	Surplus.
1906.....	\$ 714,341	\$ 248,669	\$214,635
1907.....	946,676	373,137	186,872
1908.....	1,117,222	595,789	149,614
1909.....	1,303,066	600,000	263,406
1910.....	1,629,508	600,000	334,769
1911.....	1,928,782	690,000	420,574
1912.....	1,761,236	720,000	474,463
1913.....	1,826,087	1,070,043	185,461
1914.....	1,685,093	1,080,000	*85,389
1915.....	1,331,737	855,000	*368,898
1916.....	1,398,138	.....	445,251
1917.....	1,243,374	.....	92,579

\*—Deficit.

The annual meeting was held at Winnipeg, Mar. 19. The directors and officers for the current year, who were all re-elected, are: Sir Wm. Mackenzie, Presi-

dent; Sir Augustus Nanton, Vice President; F. Morton Morse, Secretary-Treasurer; Sir Donald Mann, D. B. Hanna, G. V. Hastings, J. D. McArthur, R. J. Mackenzie, Hugh Sutherland.

### Electric Railway Projects, Construction, Betterments, Etc.

**Hull Electric Ry.**—We are officially advised that the company is building a Y at its car shed at Deschenes, Que., to facilitate the movement of single end cars, and that the company proposes to lay at an early date 7,000 ft. of new double track, with 85 lb. C.P.R. rails, on concrete paving, on Montcalm St. and Chelsea Road, Hull, Que. (Feb., 1917, pg. 73.)

**Montreal & Southern Counties Ry.**—A press report states that after some years of intermittent negotiations, an arrangement has been reached under which a loop line will be built on Grey Nun, Youville and Common Sts., Montreal, round the company's station. The report also states that it is proposed to build a new station with freight, express and general offices, on Youville St.; that the building will be three stories high, and that it will be built with steel and concrete frame, finished off with pressed brick.

**Nipissing Central Ry.**—The Ontario Legislature has voted \$2,000 for enlargement of car barns, and \$10,000 for increasing facilities at the harbor at Haileybury, Ont.

**Ottawa Electric Ry.**—The city board of control, on Mar. 1, authorized Controller Kent to make preliminary inquiries concerning the position of the city in connection with the O.E.R. franchise, which will expire in a few years. (Oct., 1917, pg. 407.)

**Windsor, Essex & Lake Shore Rapid Ry.**—We are officially advised that the company requires a number of cedar ties and trolley poles. (Oct., 1917, pg. 407.)

### Mainly About Electric Railway People.

**T. Ahearn**, President Ottawa Traction Co., has been elected President Ottawa Motor Club.

**A. H. Foster**, Manager, Guelph, Ont., Radial Ry., who has also been acting as fuel controller for the city during the winter, has resigned the latter position.

**R. Brunt**, one of the oldest employes of the British Columbia Electric Ry., has retired after 26 years service. When he entered the company's service, it had only four cars in operation.

**J. D. Fraser**, director and secretary-treasurer, Ottawa Electric Ry., has been spending a short time in the Gatineau country, north of Ottawa, recuperating after a heavy cold.

**S. S. Anderson**, heretofore Assistant to General Manager, Sandwich, Windsor & Amherstburg Ry., Windsor, Ont., has been appointed General Manager, succeeding his father, Jas. Anderson, resigned.

**H. A. Dorsey**, promoter and President, Dominion Park Co., Montreal, who also promoted, and was at one time President, of the ill fated Toronto Park Co., the property of which at Scarboro Beach was acquired afterwards by the Toronto Ry. Co., died at Montreal, Mar. 6, aged 57. He was buried at his birthplace, Bridgeport, Conn.

**D. A. Starr**, M.I.E.E., formerly of Halifax, N.S., whose birthday is mentioned

on another page of this issue, has since 1902 been General Manager of the Clyde Valley Electrical Power Co., Glasgow, Scotland, of which the Right Hon. A. Bonar Law, M.P., was chairman for nearly six years before being elected leader of the Unionist opposition in the British House of Commons. The company has now nearly 150,000 h.p. connected to its mains, which is being increased.

**James Anderson**, who has resigned his position as General Manager, Sandwich, Windsor & Amherstburg Ry., Windsor, Ont., has been elected Vice President. He was born near Ayr, Ont., June 20, 1851. At the age of 19 he entered the old Great Western Ry. service, and after serving a few years was appointed a conductor, which position he held until Nov., 1883, when he resigned and went into the grocery business as a member of the firm of Robinson & Anderson, which partnership was continued for 10 years. In June, 1893, he sold his interest to his partner and associated with John Davis, W. J. Tucker, Dr. Coventry, W. J. Pulling, of Windsor, Ont., and Wm. Hendrie of Hamilton, Ont., purchased the Sandwich, Windsor & Amherstburg Ry., which was operated under that ownership for 8 years. When it passed into the hands of the present owners, the Detroit United Ry. Co., in 1901, he was appointed General Manager, and the road has since been extended to Amherstburg and Tecumseh, and now operates 35 miles of line.

**Arthur Gaboury**, Superintendent, Montreal Tramways Co., has been appointed by the French Government as an officer of the Academy. The Consul General, in transmitting the diploma, spoke of it as a mark of the French Government's recognition of Mr. Gaboury's "activity and devotion to the cause of France." The insignia, a silver palm suspended from a purple ribbon, was presented to the recipient, in Montreal, Mar. 22, by Brig.-Gen. Arthur Boucher, of the French Army. Mr. Gaboury was born at Montreal, Apr. 6, 1875, and entered Montreal St. Ry. service, June 4, 1894, since when he has been, to Oct., 1900, conductor and motor man; Oct. to Nov., 1900, assistant inspector; Nov. to Dec., 1900, night clerk, Cote St. barn; Dec., 1900, to Sept., 1903, day chief clerk, St. Denis; Sept., 1903, to May, 1906, Claims Agent; May, 1906, to 1907, Assistant Superintendent, and from 1907 he has been Superintendent, Montreal St. Ry. and its successor, Montreal Tramways Co. He has been a member of the Canadian Electric Railway Association's executive committee, since June, 1915.

### Electric Railway Finance, Meetings, Etc.

**Calgary Municipal Ry.**—A press report states that the operating profit for January was about \$1,650, or about double that for Jan., 1917.

#### Cape Breton Electric Co.—

	Jan., 1918.	Jan., 1917.
Gross .....	\$41,428.23	\$38,581.01
Expenses .....	33,256.65	23,208.99
Net .....	8,171.58	15,372.02

#### Edmonton Radial Ry.—

Revenue for Jan., 1918.....	\$47,733.83
Revenue for Jan., 1917.....	45,024.45
Passengers carried Jan., 1918.....	991,846
Passengers carried Jan., 1917.....	935,802

A press report of Mar. 12, states that the total revenue for 1917 was \$488,064.46, with a total expenditure of \$651,796.40, leaving a deficit of \$163,731.94. The deficit for 1916 was \$68,890.19, making the deficit for two years \$232,622.13.

## Electric Railway Notes.

### London Street Railway.—

	2 mths. to		2 mths. to	
	Feb. 1917	Feb. 28 1918	Feb. 28 1917	Feb. 28 1918
Gross	\$33,853.94	\$31,720.65	\$69,920.21	\$65,956.73
Expenses	25,337.81	23,540.17	53,288.37	46,976.14
Net	8,516.13	8,180.48	16,631.84	18,980.59

Quebec Ry., Light & Power Co.—The report of earnings presented to the Quebec City Council by the company, Mar. 15, for the preceding three months, showed a decrease of \$16,639.74, according to a press report.

Regina Municipal Ry.—The report of the city auditors on the finances of Regina, Sask., for the year 1917 shows that there was a net deficit on the Regina Municipal Ry. of \$63,898.99; and a net deficit on the electric light and power plant of \$10,494.54, making a total deficit of \$74,393.53. This was taken care of by light and power taxes, \$34,500; net surplus on waterworks account, \$5,734.85; property sales contribution to street railway sinking fund, \$20,574.76, and \$13,583.92 carried to general revenue and expenditure account to be met out of general taxation.

### Toronto Railway.—

	1918		1917	
	City	percent	City	percent
January	\$ 562,707	\$ 84,406	\$510,053	\$ 76,508
February	473,185	88,754	436,725	70,978
Totals	\$1,035,892	\$173,160	\$946,778	\$147,486

### Operation of Interurban Cars in Winnipeg.

Referring to the relationship between the Winnipeg Electric Ry. company and the interurban companies, the City Solicitor said that money that should have been used for the benefit of Winnipeg citizens that had gone into the Winnipeg, Selkirk & Lake Winnipeg Ry., and the Rapid Transit Co., and that was why the Winnipeg Electric Ry. Co. was in its present position.

Winnipeg's City Solicitor reported to the board of control Mar. 7 that it was not feasible to let the interurban cars run to the centre of the city and that the freight cars and the Headingly cars had no right whatever on the city streets. The Winnipeg Electric Ry. objected to the cars coming into the city, because of the congestion of traffic that would be caused in Main St. He advised that no action be taken by the city to bring the cars in until such time as some arrangements had been made between the Winnipeg Electric Railway and the radial companies, and they asked for that power from the city. The city had also to avoid overlapping franchises in view of the possibility of its taking over the street railway service in the city some day.

Winnipeg Electric Ry. Publicity Department.—The Winnipeg Electric Ry., with a view to promote good relations with the public, and effect a clearer understanding of the utility problems, has established a publicity department, under the direction of H. C. Howard, formerly on the Manitoba Free Press Staff. The company will issue a pamphlet publication, and distribute it on the street cars, to provide a direct means of communication between the company and its patrons, and it is expected it will also be instrumental in improving relations between the company and its employees, helping them in the discharge of their difficult duties to the public, and that a greater degree of confidence and good will between the company, its employees, and the public will be attained.

The Edmonton Radial Ry. is said to be negotiating for the sale of some of its surplus cars.

The Ontario Legislature has voted \$25,000 for the purchase of two new cars for the Nipissing Central Ry.

Guelph Radial Ry. employes at Guelph, Ont., have formed a local division of the Street Railway and Electrical Workers' Union.

Edmonton Radial Ry. employes are discussing a new agreement with the Edmonton, Alta., City Council's utilities committee.

The Hamilton, Ont., St. Ry. is reported to have notified its men that it cannot give the increased wages asked and suggesting that the matter be arbitrated.

The Toronto & York Radial Ry. has not as yet made any arrangements for replacing the cars destroyed by fire at its Metropolitan and Scarboro car barns recently.

The London & Port Stanley Ry.'s rules and regulations for employes have been approved by the Board of Railway Commissioners, and recommended to the Governor in council for sanction.

Sandwich, Windsor & Amherstburg Ry. employes passed a resolution, Mar. 15, asking for higher pay, recognition of their union, and the installation of air brakes and modern sanders on all cars.

The Montreal & Southern Counties Ry. has received another motor car from Ottawa Car Manufacturing Co., the same as those previously delivered, and which were described and illustrated in our last issue.

The London St. Ry. has received trucks for five p.a.y.e. cars and expects the bodies at an early date. It is converting two double truck cars into p.a.y.e. ones, taking out the bulkheads and eliminating the vestibules.

The Winnipeg Electric Ry. has, since Jan. 1, according to a press report, lost the services of 116 conductors and motormen, including men on trial who could not prove their fitness, and men called up for military service.

It has been suggested that the British Columbia Electric Ry. might take over the section of the Great Northern Ry. between Cloverdale, Hazelmere and Melrose, which that company is asking the Board of Railway Commissioners for leave to abandon.

The British Columbia Minister of Finance stated in the Legislature recently that the cost of the commission which investigated the transportation situation in the coast cities last year was \$2,858.65, of which \$2,054.65 was paid to Adam Shortt, the commissioner.

The St. Thomas-Aylmer Motor Bus Co. is reported as proposing to open additional routes to Lucan, Union and Port Bruce, Ont. The service started between St. Thomas and Aylmer in 1917, and is reported to have been profitable. W. N. Warburton, London, Ont., is Manager.

The City of Windsor, Ont., and the surrounding town, village and township municipalities are making arrangements for a joint meeting to discuss a possible plan for taking over all the electric railway lines centring on Windsor, to be operated as a municipally owned concern.

Montreal Tramways Co.'s employes have formed a union, and have become connected with the Amalgamated Association of Street and Electric Railway Employes of America. The union will not

supersede the benefit association which has been in existence for the past 15 years.

The Winnipeg City Council has been authorized by the Manitoba Legislature to license, control, regulate or prohibit jitneys within the city limits. The existing jitney licenses expire April 30, and it is expected that the city council will have taken definite action under its new powers by that date.

The British Columbia Electric Ry. has applied to the Board of Railway Commissioners for authority to increase its freight rates on the Vancouver-Steveston, New Westminster-Eburne, and Fraser River Valley, and other intururban lines, by 10%. Notice of the application has been given the municipalities affected.

In connection with a proposal to the Calgary, Alta., City Council, to protect itself against claims for damages from accidents on the municipal railway by means of an insurance policy, it was stated that 2% of the gross revenue was set aside to provide a fund to meet these claims. Commissioner Graves stated that this had been sufficient to take care of all claims.

In connection with the passing of the act giving Winnipeg City Council power to prohibit jitney traffic, it is reported that the Winnipeg Electric Ry. will put in service a new type of street car, lighter than the present one, that a wrecking car will be provided; that electric switches will be installed, and that improvements will be made in the schedules, which will prevent bunching and other delays.

Calgary Municipal Ry. employes are asking for an increase of wages to 50c. an hour. Commissioner Graves offered an increase to 46½c., but up to Mar. 15, the men had refused to accept less than 50c. Superintendent McCauley is reported to have said, Mar. 14, that the railway could not be operated on anything like a paying basis if the increase was granted, and that if the men were paid higher wages the fares would have to be increased.

Sandwich, Windsor & Amherstburg Ry. employes are asking for an increase of wages. The present wage schedule is said to be from 29c. to 32c. an hour, and the increases asked are from 45c. to 50c. an hour. The men also ask for the recognition of their union and other concessions. An official is reported to have said, Mar. 15, that an increase would be granted, but that the amount would not be fixed until the meeting of the directors at the end of March.

The Winnipeg City Council's special transportation committee's report on the street railway and jitney traffic questions, presented Mar. 18, contained a review of the whole transportation situation in the city, and concluded: "It is deemed inadvisable by the committee to make any specific recommendations, or findings, and consequently the data is transmitted for the consideration of the council as a whole." The council discharged the committee and decided to take up the consideration of the report at an early meeting.

Guelph Radial Ry. Wages.—The conductors and motormen of this line, which is owned and operated by the City of Guelph, Ont., have been given a war bonus of 1½c an hour, which makes their wages as follows: 1st year men, 23½c; second year, 25½c; third year, 27½c; shopmen average 29c.

# Marine Department

## Cargo Steamship Building for Dominion Government.

As stated in Canadian Railway and Marine World for March, the Marine Department had then placed contracts for three cargo steamships, as follows: Canadian Vickers, Ltd., Montreal, one of 4,300 tons dead weight capacity, and one of 8,100 tons d.w.; Collingwood Shipbuilding Co., Collingwood, Ont., one of 3,750 tons d.w. We also stated that on Feb. 18 no order had been given by the department to the Wallace Shipyards, Limited, North Vancouver, B.C., but that negotiations were in progress for 4 steel steamships, and we added later that the Wallace Shipyards had advised us on Feb. 23 that it had an order for 4. The Wallace Shipyards' management apparently construed as an order, a promise that 4 steamships would be ordered from it under certain conditions, and subject to the government's approval, but up to the time of writing only one vessel of 4,300 tons d.w. has been ordered from this company, the particulars being as follows:

Single deck, poop bridge and forecastle; straight stem; elliptical stern; 5 water tight bulkheads; single screw; triple expansion engines; 2 Scotch boilers, 180 lb. working pressure; forced draft.

Canadian Vickers, Ltd., laid the keel of the 4,300 ton steamship Mar. 12, and expect to deliver her before the close of navigation. Its 8,100 ton one is also expected to be delivered this year. The Collingwood Shipbuilding Co. expects to deliver its 3,750 ton vessel in November.

Another order for a 3,000 ton d.w. steamship will probably be given the Collingwood Shipbuilding Co. in April or May, and it is expected to place other orders this year, which will bring the total number up to 30 vessels, the government having decided on an appropriation of \$25,000,000 for this year. The orders are being placed at bulk sums, for vessels fully equipped. The steel plates, angles, etc., which are being procured by the government from the United States, under arrangements with the U.S. Government, will be turned over to the contracting shipbuilders at cost.

Three standard types of steamships have been decided on, one of approximately 3,000 tons d.w., to be built on the Great Lakes, the other two types of 5,100 and 8,100 tons d.w., respectively, to be built on the Atlantic Coast, including the St. Lawrence River up to Montreal, and on the Pacific Coast. The 3,750 ton one ordered from the Collingwood Shipbuilding Co. and the 4,300 ton one ordered from Wallace Shipyards, Ltd., are odd sizes that will not be repeated. The 30 steamships to be ordered this year will probably include 17 of the 3,000 ton type, 5 of the 5,100 ton type and 8 of the 8,100 ton type.

The government does not intend establishing or aiding in establishing any new shipyards, the Minister of Marine believing it to be better policy to confine orders to existing yards. No orders will be placed for wooden steamships.

Sir Robert Borden, in speaking in the House of Commons on Mar. 19, in the debate on the address in reply to the speech from the throne, read the following memorandum, prepared by the Marine Department, which confirms the foregoing information, and also that published in Canadian Railway and Marine World in March.

The intention is to confine at present the awarding of contracts for the construction of steel steamships to yards already established and actually engaged in constructing steel ships. The yards so equipped and at present engaged in constructing, are as follows:—Canadian Vickers, Ltd., Montreal; Davie Shipbuilding Co., Lauzon, Que.; Kingston Shipbuilding Co., Kingston, Ont.; Collingwood Shipbuilding Co., Collingwood, Ont.; Polson Iron Works, Ltd., Toronto; Dominion Shipbuilding Co. Toronto; Midland Shipbuilding Co., Midland, Ont.; Port Arthur Shipbuilding Co., Port Arthur, Ont.; British American Shipbuilding Co., Welland, Ont.; Canadian Allis-Chalmers, Ltd., Bridgeburg, Ont.; Wallace Shipyards, Ltd., Vancouver, B.C.; J. Coughlan & Son, Vancouver, B.C.

The estimated combined capacity of these several yards is approximately 250,000 tons a year. All of these yards, with the exception of the Kingston Shipbuilding Co., are at present fully occupied in constructing steamships for the Imperial Munitions Board or for the Dominion Government. As the ships under contract for the Imperial Munitions Board are completed and the building berths become vacant, they are to be immediately occupied by the government. When the government launched its programme of shipbuilding, two berths only at the yards throughout Canada, were vacant, one of these was at the yard of Canadian Vickers, Ltd., Montreal, and one at the Collingwood Shipbuilding Co.'s yard.

A contract has been placed with Canadian Vickers, Ltd., for the construction of a steel vessel of 4,300 tons deadweight capacity, the keel of which has been laid and considerable construction work begun as well.

A contract has been concluded with the Collingwood Shipbuilding Co. for a ship of 3,750 tons deadweight capacity, the materials for which are in course of delivery. Both of these vessels will be in commission before the close of navigation next autumn.

The next building berth to become vacant will be in May at Canadian Vickers, Ltd. On this berth it is proposed to lay down a ship of 8,100 tons deadweight capacity, which will also be completed and in commission before the end of the year.

Two berths will become vacant at the Collingwood Shipbuilding Co.'s yard at a later date in May. These berths will be at once occupied with ships of 3,000 tons deadweight capacity each, for which the material is under order. While the builders hold out hope that these vessels may be ready before the close of navigation, it is not expected that they will be in commission before the opening of navigation in 1919.

The Wallace Shipyards, Ltd., Vancouver, will also have a berth vacant in May. A contract has been made with this company for laying down a ship of 4,300 tons deadweight capacity. The material has been ordered and the company undertakes to prosecute the work vigorously and complete the vessel ready for commission before the end of the year.

The British American Shipbuilding Co., Welland, Ont., expects to have berths becoming vacant as follows: one in June, one in August, one in October and one in

December. It is proposed to occupy these berths as they become vacant, with the construction of ships of 3,000 tons deadweight capacity for which delivery is promised on the opening of navigation, 1919.

The Midland Shipbuilding Co. of Midland, Ont., will have two berths vacant in November next. These will be occupied with the construction of two ships of 3,000 tons deadweight capacity each, for which delivery is promised early in the summer of 1919.

The Polson Iron Works, Ltd., Toronto, represents that it will have four berths vacant in October next. It is proposed to occupy these with the construction of four steamships of 3,000 tons deadweight capacity each. Delivery of these ships is promised for the summer of 1919.

Canadian Allis-Chalmers, Ltd., Bridgeburg, Ont., will have berths becoming vacant as follows: one in June, two in September and one in November. It is expected to place contracts with this company as berths become vacant, for steamships of 3,000 tons deadweight capacity each. Delivery of the first of these is expected before the close of navigation this year and of the balance during the summer of 1919.

The Davie Shipbuilding Co., Lauzon, Que., will have two berths available in August and two additional before the close of navigation. It is proposed to place contracts for these berths for ships of 5,100 tons deadweight capacity. Delivery of the first of these ships is expected in Aug., 1919, and the others before the close of navigation, 1919.

The Port Arthur Shipbuilding Co., Port Arthur, Ont., will have two berths becoming vacant in July and two before the close of navigation. It is proposed to occupy these berths with ships of 3,000 tons deadweight capacity. Delivery of all of these vessels is expected on the opening of navigation, 1919.

J. Coughlan & Son, Vancouver, B.C., are fully occupied in the construction of ships for the Imperial Munitions Board and are not likely to have any vacant berths during this year. They expect, however, to have some berths become vacant early next year. As berths become vacant, it is proposed to occupy them in the construction of ships of 8,100 tons deadweight capacity.

On this programme of ship construction, the Marine Department is looking forward to have four steamships of the combined tonnage of 23,500 tons in commission before the end of the present year; and, while it is somewhat difficult so far in advance to accurately estimate the work that may be accomplished during the year 1919, it is fully expected that an additional 50 ships with an aggregate tonnage of 235,000 tons will be in commission.

The government programme of construction contemplates the construction of three types of vessels. One type will comprise vessels of 3,000 tons deadweight capacity. Another type 5,100 tons and another type ranging from 8,000 to 10,000 tons. The general features of these various types will be based on the latest types of standard cargo vessels adapted for bulk or general cargo, with loading and discharging facilities in accordance with the best practice. The vessels will



be designed to Lloyds highest class, the steamboat inspection requirements, and will have a sea speed of 11 knots.

All arrangements have been concluded with the United States authorities for purchasing in that country all the steel plates, the boiler plates and sections required for carrying out the government programme up to June, 1919. This steel has been purchased at the price fixed by the U.S. Government for the steel requirements of the U.S. Shipping Board. These prices are substantially lower than the prices Canadian shipbuilders have been obliged to pay from time to time during the past twelve months and represent a very large saving in the construction price of ships. The purchase of the material in the U.S. was made necessary by reason of the fact that plates and shapes required for the construction of ships are not at the present time manufactured in Canada. The manufacture of all materials required for the construction of ships, more particularly plates and shapes is, however, under consideration by the government and it is hoped that the materials for this purpose eventually will be manufactured in Canada.

Sir Robert Borden added:—"I should like to express this government's appreciation of the assistance which was rendered by the U.S. Government, in enabling 80,000 tons of steel to be purchased at the same price as that which is paid by the U.S. Shipping Board. Otherwise there would have been a great increased cost to this country."

**Steel Manufacture in Canada.**—As noted above, the Marine Department has arranged to secure 80,000 tons of steel plates from the United States for use during the next 12 months. The Minister of Marine announced at Ottawa Mar. 26 that he had arranged with the Dominion Iron & Steel Co. to extend its plant at Sydney, N.S., so as to make it capable of producing annually 150,000 tons of steel plates, angles, etc., for shipbuilding. The department has contracted to take 50,000 tons a year, but 75,000 tons may be taken. The company will also be free to take orders from shipbuilders, etc. The expenditure necessary to increase the plant is stated at from \$3,000,000 to \$5,000,000, and it is expected to have the new mill, etc., ready in a little over a year.

**Conference on Shipbuilding Labor Conditions.**—Representatives of steel shipbuilding companies on the Great Lakes etc., together with officers of labor unions, had a conference with the Premier, the Minister of Marine, the Minister of Labor and Senator G. O. Robertson at Ottawa, Mar. 27. There had been some prospect of disagreement on wages, but at the conference all parties expressed a willingness to amicably co-operate in carrying out a plan which is recognized as vital to the allies, while at the same time being a source of great industrial prosperity to the Dominion.

Sir Robert Borden pointed out the great need of shipbuilding to aid in overcoming the allied shortage, and appealed alike to employers and employees to amicably co-operate, so that the product could be turned out with the utmost speed.

The Minister of Marine, after concurring in what the Premier had said as to the need of ships, stated that the government policy was not for the war alone, but contemplated a permanent national industry in shipbuilding. Canada, he said, proposed to be self contained as regards her marine requirements. He referred to the contract made with the Dominion Iron & Steel Co., particulars of which are given above, and said that it was the

government's policy to order ships at a fixed price per ton, and it was therefore very necessary to ship builders to know the rate they would have to pay, particularly as 60% of the cost was labor. He urged strongly that a scale of wages be fixed for at least a year.

P. M. Draper, Secretary, Dominion Trades and Labor Congress, speaking for organized labor, fully realized the national necessity of shipbuilding, and spoke hopefully of employees and employers agreeing. H. B. Smith, President, Collingwood Shipbuilding Co., expressed similar sentiments. There is thought to be little question that any prospective difficulty will be obviated.

### British Vessel Losses During the War.

In a statement by the First Lord of the Admiralty, in the British House of Commons, Mar. 20, it was shown that 6,000,000 tons of shipping were sunk during 1917, while the enemy claimed to have sunk 9,500,000 tons. The merchant tonnage produced in the last quarter of 1914 was 420,000 tons, and this amount had decreased steadily ever since. The total allied and neutral tonnage at present is approximately 42,000,000 tons, including vessels formerly owned by the enemy and now in other hands. The output of tonnage was very low in 1915 and reached its lowest point in 1916. The decline was coincident with the increased output of munitions, and before the intensified submarine campaign, United Kingdom tonnage was 1,300,000 tons to the bad. During the last quarter of 1917, the allied nations were within 100,000 tons monthly of making their losses good, and were then replacing 75% of their lost tonnage.

At present, 47 shipyards, with 209 berths, are engaged on ocean going merchant vessels, and there has been an enormous accomplishment since the early stages of the war. The output for the last quarter of 1917, was 420,000 tons against 213,000 tons for the same period of 1916, and 42,000 tons for the same period of 1915. When the Controller of Construction took over the shipyards there were 50 large merchant vessels in various stages of construction, on which work had been stopped for lack of material, and in many cases these were congesting the yards. He stated that it was well within the capacity of British yards to make good the world's losses, given an adequate supply of men and material. The total foreign output for the last quarter of 1917, was 512,000 tons, making a total output of 932,000 tons, against total losses of 1,200,000, the lowest since the intensive submarine campaign commenced. During the same period, Great Britain lost 260,000 a month, and built 140,000 a month. The output of repair work continued scarce, but increased in February by 80%, as compared with Aug., 1917. The men engaged on repair work might have produced about 500,000 tons of new tonnage had they been engaged on such work.

The three main factors in the shipbuilding problem are:—first, patrol and other craft to destroy submarines and safeguard ships at sea; second, salvage and repair work; third, new merchant tonnage. He contended it would be a great mistake to put all the industries' energies into the building of new vessels. The drop in the merchant shipping losses, he attributed to the efficiency of the patrol and anti submarine craft, and to the valuable convoy of other vessels. He contended that shipbuilding had not been delayed by changes in design of vessel on the stocks,

such changes as were made, were to secure increased speed, greater comfort for crews, to simplify designs and to provide additional heavy gun mountings. Yards had suffered from a shortage of material during the summer of 1917, but now the stocks are more satisfactory than they had been for years. The present need is for skilled labor, and he hoped that within a few weeks it would be only for unskilled labor.

He announced the appointment of Lord Pirrie, Chairman of Harland & Wolff, Ltd., shipbuilders, Belfast, Ireland, as Controller General of Merchant Shipbuilding, and stated that that company had put more than half of its output into standardized ships, and expected to launch one such vessel every two weeks, shortly. Lord Pirrie was born at Quebec, Que., May 31, 1847, and has been connected with Harland & Wolff's since 1862. He is also associated with several large shipowning companies.

### Chartered Vessels and War Region Risks.

Canadian Railway and Marine World for February contained a report of the appeal of the Dominion Coal Co. against the Canadian Court of Appeal's decision, relative to the operation of the s.s. Maskinonge, under charter from the Maskinonge Steamship Co., Liverpool, Eng., in what is alleged to have been a "war region." The owning company sought to recover insurance premiums paid, under a clause in the charter providing for war insurance should the vessel be operated in a war region, and the recovery of the amounts so paid from the charterer. The vessel was being operated between Sydney, N.S., and Boston, Mass., during the latter part of 1915, and in October of that year, a German submarine appeared off Nantucket, N.Y., and sank some vessels. On this, the owning company insured the vessel, and later claimed the amount of the premiums paid, on the ground that the vessel was being operated in a war region within the meaning of the terms of the charter. The charterer claimed that the appearance of the submarine was merely a sporadic attack, which, of itself would not constitute the region a war zone, and in any case, the appearance was at least 100 miles from the nearest point to which the chartered vessel was being operated.

Since that report was published, judgment has been delivered in the House of Lords, and the Dominion Coal Co.'s appeal has been dismissed. In giving judgment, Lord Dunedin said that in his opinion, the war region must indicate the region where from time to time war affected the risks which ships run. Lords Atkinson, Parker and Sumner concurred, but the Lord Chancellor dissented, and in doing so said, that in his opinion, the waters constituting a war region must be within a region in which hostilities were carried on at the time in point of fact. No apprehension, however reasonable, would make it a war region, if in reality it were not so. One isolated outrage of this description did not constitute a war region. The submarine would appear to have been merely passing through on a return voyage; she did not cruise in those waters, and there were no systematic operations. It might have been a perfectly right and prudent thing for the owners to effect the additional insurance, but they could recover only if the charterer had sent the vessel to what was in fact a part of the war region.



CITY OF THREE RIVERS, QUE.		
Le Progres	L. P. Bellefeuille	A. Frenette
TORONTO HAMILTON AND BUFFALO NAVIGATION CO., HAMILTON, ONT.		
Maitland No. 1	B. T. Haagenson	C. E. Sylvester
VALLEY STEAMSHIP CO., ANNAPOLIS ROYAL, N.S.		
Granville	B. C. Collins	J. Logan
VILLE MARIE NAVIGATION CO., VILLE MARIE, QUE.		
Ville Marie	E. Letellier	N. Brouillard
Bobs	J. J. Ladouceur	J. Desrochers
Meteor	H. Kelley	A. J. Kelley
Silverland	WABASH RY. CAR FERRIES, DETROIT, MICH.	
	F. A. Huntoon	H. Lowry
	G. W. Honner	W. Taylor
	W. Norvell	F. Robinson

### Halifax Harbor Regulations.

Following on the enquiry into the causes and consequences of the recent disastrous explosion of a munitions vessel after collision with another, in Halifax harbor, the Marine Department has issued regulations regarding the movements into, within and out of the harbor, the chief points of which are summarized as follows:—Shipowners and agents are advised that as a general rule they should time the arrival of vessels for daylight, to avoid delay in admitting them to the port, and they should communicate the times of all expected arrivals to the Chief Examining Officer. Early notice of the proposed departure of all vessels should also be given to the Collector of Customs. The eastern passage is closed to all traffic, and vessels attempting to enter thereby are liable to be fired on without warning. All vessels other than British ships of war wishing to enter port are required to communicate with the examination steamer, and incoming merchant vessels will be admitted to the examination anchorage at all times of the day, or night, irrespective of whether the port is open or closed, but when the port is closed, no merchant vessel will be permitted to proceed beyond the examination anchorage. Masters must have all way off their vessels on reaching the examination steamer and particularly in foggy weather, or they are liable to be fired on. The port will, as a general rule, be open to merchant vessels arriving at night and such vessels must have ready four efficient allround lights, two red and two white, to be used as directed by the examination officer. Masters must obey the examination officer's directions when approaching port, or their vessels will be liable to be fired on by the battery. Usual signals made by vessels arriving, either by flags, guns, bomb rockets, lights, etc., are not to be made. Masters are specially warned that it may become necessary, in the event of an attack on the port being imminent, to remove buoys or extinguish lights without notice, and vessels should therefore be navigated with extreme caution on approaching port. The use of wireless telegraphy is absolutely prohibited, both in the examination anchorage and in the port.

All vessels must take a pilot both entering and leaving the harbor, with the following exceptions:—Small vessels not exceeding 120 tons engaged in the coastal trade and frequently visiting Halifax; and vessels which are regular traders to the port which may, after sufficient experience, apply to the Chief Examining Officer for permission to leave the harbor without a pilot.

No vessel may change her berth without authority, which must be obtained in writing. Between Bedford basin and no. 2 deepwater pier, vessels are not to proceed in opposite directions at the same time. Masters must comply with the regulations regarding lights, as vessels without lights in the vicinity of the port

at night will immediately be treated as hostile.

If any vessel causes any injury by collision or otherwise to any ship belonging to or engaged in His Majesty's service or to any person on board such ship, or is so managed or navigated or handled as to cause danger of collision, the master or other person in charge shall be guilty of an offence, unless it is shown that such injury or danger was not caused or contributed to by any failure on his part to keep or cause to be kept a proper lookout or to observe any of the orders for preventing collisions at sea or any orders relating to the navigation or mooring of ships in a harbor or approaches thereto.

No vessel is allowed to leave the port at night except under special circumstances. The new regulations cancel all previous regulations, and penalties of \$5,000 fine, or five years imprisonment, or both, are provided for contraventions of the regulations.

### Marine Engineers Wage Scale on the Great Lakes.

The National Association of Marine Engineers of Canada has sent to owners of steamships operating on the Great Lakes the following minimum wage scale and classification for steamships operating on the Great Lakes District, which was adopted by the Great Lakes Executive Committee, representing Port Arthur, Sault Ste. Marie, Collingwood, Owen Sound, Midland, Toronto and Kingston Councils, Jan. 11, 1918, and approved by the National Executive Committee, to be effective during the season of 1918, or until revised or amended by the Great Lakes Executive Committee.

"Conditions of Employment.—This minimum wage scale does not recognize the payment of bonuses in lieu of wages, or restrict additional remuneration in any of the classes. All engineers shall be provided with first-class transportation, board and other legitimate expenses during their employment away from home. All references to tonnage to be construed as gross tons. In all reference to monthly conditions, 30 days to constitute a month. All ratings in all classes to include board and accommodation, excepting passenger ferry steamers. Overtime at the rate of 75c an hour for all time over 12 hours shall be paid engineers on boats carrying only one engineer. Any special conditions of employment not covered by the provisions of this wage scale to be submitted to the Great Lakes Executive Committee through its Business Manager for adjustment.

#### Passenger Steamships.

Class 1.—All passenger steamships of 3,000 tons or over, chief engineer, \$2,000 a season; second engineer, \$150 a month.

Class 2A.—All passenger steamships of 1,250 tons and under 3,000 tons, running six months or over, chief engineer, \$1,800 a season; second engineer, \$125 a month.

Class 2B.—All passenger steamships of 1,250 tons and under 3,000 tons, running less than six months, chief engineer, \$1,600 a season; second engineer, \$125 a month.

Class 3.—All lake passenger steamships under 1,250 tons and all passenger steamships confined to river service, requiring second-class engineer, chief engineer, \$1,400 a season; second engineer, \$105 a month.

Class 4.—All passenger steamships from 45 n.h.p. to 25 n.h.p., chief engineer, \$135 a month; second engineer, \$95 a month.

Class 5.—All passenger steamships under 25 n.h.p., chief engineer, \$110 a month.

#### Freight Steamships.

Class 1.—All freight steamships of 5,000 tons or over, chief engineer, \$2,000 a season; second engineer, \$150 a month.

Class 2.—All freight steamships of 3,000 tons and under 5,000 tons, chief engineer, \$1,800 a season; second engineer, \$125 a month.

Class 3.—All water bottom freight steamships under 3,000 tons requiring second-class engineer, chief engineer, \$1,600 a month, second engineer, \$110 a month.

Class 4.—All freight steamships not included in classes 1, 2 and 3 and requiring second-class engineer, chief engineer, \$1,500 a season; second engineer, \$100 a month.

Class 5.—All other freight steamships not otherwise classified, chief engineer, \$135 a month; second engineer, \$95 a month.

#### Ferry Steamboats.

All passenger ferry steamboats operating from Sault Ste. Marie, Ont., and requiring second-class engineer: chief engineer, \$160 a month; second engineer, \$150 a month, for season of not less than 10 months.

All other passenger ferry steamboats requiring second-class engineer: chief engineer, \$150 a month; minimum season not to be less than \$800.

All passenger ferry steamboats requiring third-class engineer: chief engineer, \$125 a month.

#### Tug Steamboats.

Class 1.—All tug steamboats requiring second-class engineer: chief engineer, \$150 a month; second engineer, \$125 a month.

Class 2.—All tug steamboats from 75 n.h.p. to 50 n.h.p.: chief engineer, \$135 a month; second engineer, \$110 a month.

Class 3.—All tug steamboats from 50 n.h.p. to 25 n.h.p. and all tugs over 15 n.h.p.: chief engineer, \$130 a month; second engineer, \$100 a month.

Class 4.—All tug steamboats under 25 n.h.p. and not embraced in class 3: chief engineer, \$120 a month; second engineer, \$95 a month.

In addition to the foregoing, all engineers of tug steamboats operating from Fort William and Port Arthur harbors shall be paid 10 per cent. over the rates in the above four classes.

**Registration of Masters, Mates and Engineers.**—The order in council requiring the registration of masters, mates and engineers, was given in full in our last issue. At a recent meeting of the National Association of Marine Engineers of Canada, indignation is said to have been expressed as to the order itself, and especially to the clause which requires them to notify any change in the nature of their employment. A protest is stated to have been sent to the Minister of Marine, with a request for an explanation of the objects of the registration.

**The Ulster Steamship Co.'s report** for the year Jan. 31, shows a balance to the credit of profit and loss account of £55,336 7s 2d. after paying income tax and making allowances for depreciation and excess profits tax. A dividend has been declared free of income tax for the year, of 15%, leaving £16,705 13s 6d to be carried forward to this year's accounts. The report states that the company's vessels (Head Line) are under British Government requisition, which naturally interferes with the earnings and the sailings between Ireland and Canada.

## General Shipbuilding Notes Throughout Canada.

**British-American Shipbuilding & Engineering Co., Vancouver, B.C.**—In connection with the site the company is negotiating for on the old Kitsilano Reserve, plans are to be furnished to the Vancouver Harbor Commission, showing what will have to be done in the way of improvements to place the 300 ft. west of the reserve in a position to commence operations. It was originally proposed to take a site on the eastern portion, but the commission claims that it might interfere with future development at that point. Reports state that the company may abandon negotiations, so far as Vancouver is concerned, and some efforts are being made to have a site selected at Nanaimo. S. Mathieson, who is stated to be one of the heads of the company, is reported to have said that contracts for the construction of 20 wooden steamships have been signed, but that he was not at liberty to mention the name of the party ordering, that the company's plans provided for the immediate laying of 8 keels, and to employ from 600 to 800 men, the completion of the present contracts taking about 2½ years; that the type of vessel to be built, would be quite different from those being built for the British Government under orders from the Imperial Munitions Board, and would be of 3,800 tons deadweight capacity, 280 ft. long, 46 ft. wide, 26.6 ft. deep, capable of 10 knots an hour fully loaded; that they would be of the single deck type with triple expansion, reciprocating engines,

visited Crofton recently, to inspect proposed sites for the location of a shipbuilding plant there.

**Davie Shipbuilding & Repairing Co., Lauzon, Que.**, has filed a description and plan for a proposed wharf and foreshore extension on the shore of the River St. Lawrence on the front of its property at Lauzon, Que.

**The Dominion Bridge Co., Ltd.**, has a contract from the American International Shipbuilding Corporation, for the fabrication of keels, skin and floor plates, and floor girders, for the double bottom of 50 ships of 7,500 tons, and for 35 ships of 8,000 tons, which are being assembled at Hog Island, Pa., for the Emergency Fleet Corporation, United States Shipping Board. The keels, plates and the majority of the floor girders are being fabricated at Lachine and some of the floor girders with vertical frames are being fabricated at Toronto.

**The Dominion Government Shipyard at Sorel, Que.**, has for some months been building steam trawlers and wooden drifters, under orders from the Naval Service Department, and has not had any other vessels under construction.

**Collingwood Shipbuilding Co., Collingwood, Ont.**—The fifth of a number of number of trawlers under construction for the Naval Service Department was launched at Collingwood, Mar. 23. The vessel will be complete and ready to leave for the coast on the reopening of naviga-

ably all of the drifters will be completed by the opening of navigation.

**New Brunswick Shipbuilding.**—A St. John, N.B., correspondent writes:—Although the construction of standardized steamships under contract with the Imperial Munitions Board, now in progress in St. John, is New Brunswick's largest contribution so far towards replacing the tonnage sunk by German submarines, this is only a part of the province's effort to meet the shipping shortage. Up and down the coast, in some places in ancient shipyards whose original purpose had almost faded from the memory of the present generation, vessels of smaller size, but of undoubted usefulness, are being built.

Nowhere is this revival of a once flourishing industry better illustrated than in the county of Albert, where wooden ship building again is engaging the activities of the people. A century ago these shipyards were turning out staunch craft, and as ambition grew with the increasing skill of the builders, larger vessels were undertaken and clipper ships which sailed the seven seas were launched from the yards at the head of the Bay of Fundy. So soundly were they built, of such seasoned timbers and of such finished workmanship, that few of them outlived their usefulness in the ordinary course of their careers, and disaster alone seemed capable of ending their days. The frame of one of them, stranded on the Shepody marshes, still holds together, and stands as a monument to the builders of other days.

It is 46 years since the last vessel was

Vessels Built in Canada and Registered During 1917.

	WOOD				METAL				TOTALS					
	Sailing		No.	Tonnage	Steam		Gas		No.	Tonnage				
	No.	Tonnage			Gross	Net	Gross	Net						
Nova Scotia	57	15250	4	986	559	24	588	524	1	1422	810	86	18246	14780
New Brunswick	22	1140				1	25	16				23	1165	1166
Quebec	13	1928	8	698	317	9	251	173	2	7760	5720	32	10637	8058
Ontario		67	13	973	543	2	29	19	3	5403	3302	21	6507	3949
Manitoba			2	1211	864	2	26	17				4	1237	881
British Columbia	12	5372		65	15903		12214					77	21275	17482
Total	105	23757	27	3868	2283	103	16822	12963	6	14585	9832	243	59067	46216

with Scotch boilers and forced draft. It was at first reported that the vessels were ordered direct from England by the British Government, but, as mentioned in our last issue, no confirmation of this was obtainable. It is, however, said that they are not for the British Government.

**Cameron-Genoa Mills Shipbuilders, Ltd., Victoria, B.C.**, is reported to have an order for the construction of two five masted schooners of a similar type to those built by the company for Canada West Coast Navigation Co., but larger. The report states, "These ships will be of the windjammer class and consequently will rely solely on sails for driving power."

**Canadian Car & Foundry Co.**—With reference to the information respecting the company's shipbuilding plant at Fort William, Ont., given in our last issue, we are officially advised that a contract has been placed with the Dominion Bridge Co. for all the steel work in connection with the building to be erected to complete the shipbuilding facilities. This building will be 200 x 240 ft., divided into six aisles, each 200 x 40 ft., and each served by an overhead travelling crane. This is the only building to be erected at present, and it will be of steel frame construction. A contract has been awarded to E. G. Penniman & Co., Fort William, for building the piers for the plant, and also for certain piling work.

**Crofton, B.C.**—Representatives of Norwegian interests are reported to have

launched in Albert, and the fate of this craft was symbolic of the industry of which it was the last product. Old timers still tell the story of the launching. It was after midnight of an October night, the time being so fixed to take fullest advantage of the flood tides. A full moon made the scene almost as bright as day, and hundreds gathered to watch the vessel take to the water. When the finishing touches were completed, she sailed away, laden with high hopes, in addition to her cargo of sweet smelling spruce. She never returned, and of her end there is no record. After a successful run to the West Indies, she returned to New York, and thence set sail for Caledonia, Cape Breton. Outward bound was the last report and then the curtain fell on her career and on that act of the history of shipbuilding in Albert county.

**International Shipbuilding Corporation, Newcastle, N.B.**—The keel of the company's first vessel was laid at its yards on the Miramichi River, towards the end of February. The vessel will be of the following dimensions:—length over all 168 ft., length over keel 155 ft., beam 37 ft., depth of hold 13 ft.; tonnage, gross 575 tons. She will be a four masted sailing ship, with oil engines for auxiliary power, and will be built of native woods with a finishing of Douglas fir. F. H. McNaught, formerly Manager, Maritime Foundry, Chatham, N.B., is Manager of the company, I. Mashion is Superintendent, and A. S. Morash, Lunenburg, N.S., is master shipbuilder. This is said to be the first ship of over 500 tons to be built at Newcastle, for 50 years.

**The Kingston Shipbuilding Co., Kingston, Ont.**, has another steam trawler for the Naval Service Department ready for launching as soon as the ice clears away, and has also several others under construction.

**Naval Service Vessels.**—As previously stated in Canadian Railway and Marine World, the Naval Service placed orders last year for 12 "steel fishery protection vessels," 60 steel trawlers and 100 wooden drifters to be built at various points in Quebec and Ontario. The 12 "fishery protection vessels" are practically all built. About 30 of the trawlers and prob-

ably all of the drifters will be completed by the opening of navigation.

**The Sandwich, Ont.**, town council, it is announced, will petition the Dominion Government to aid in establishing a shipbuilding yard there. It is stated that local financiers would help in building a plant, provided the Government will guarantee orders for merchant ships for service between Canada and Great Britain. It is also stated that water front property between Hill and Brock Sts. has been leased for the purpose.

**The Standard Shipbuilding Co., Vancouver, B.C.**, is reported to have closed contracts with Sir Joseph Maclay, of the British Ministry of Shipping, for the construction of 10 composite steamships.

These vessels, it is said, are to be 281 ft. long, 48 ft. beam and 27 ft. deep, with a speed of 10 knots when fully loaded, and with a deadweight capacity of 3,500 tons. The company is said to have secured a site covering 2,200 ft. of frontage on the Fraser River, near the junction with the Stave River at Ruskin, B.C., and that there is a sawmill, machine shop and smithy already in operation there. Designs for the vessels are said to have been approved by the British authorities, and a representative of the company is said to be on his way to London with final plans. P. J. Donohoe, naval architect, who drew the plans, and who is announced to have been appointed Superintendent of the yards, is reported to have stated in an interview, that the vessels will have reinforced steel keelsons, reinforced steel knees, and other improvements which will make them more seaworthy, and give them six years more life, than those of all wood, and that by the method of construction to be adopted, there will be 80 tons more deadweight capacity on a 250 ft. keel, than in the present type of wooden vessels.

**Sturgeon Cove, N.B.**—It is reported that a company at St. John, N.B., already interested in shipbuilding, is negotiating for the purchase of the Sturgeon Cove Lumber Co.'s plant, with the intention of erecting a shipbuilding plant on l'Etang River there, chiefly for the building of wooden steam trawlers.

**The Taylor Engineering Co., Ltd., Vancouver, B.C.**, is reported to be building a number of small vessels to the value of about \$300,000.

**Three Rivers Shipyards, Ltd., Three Rivers, Que.**, the incorporation of which was announced in a previous issue, is stated to be building a 2 story machine and pattern shop, 75 x 175 ft., and two 250 ft. slips on pile foundations, at the 5 acre site which it has acquired on the western side of Three Rivers harbor. The company has a contract from the Imperial Munitions Board for 2 wooden steamships, these appearing in our list of vessels under construction in Canada for the British Government, under the name of T. M. Kirkwood, Toronto, who is President of the company.

**The Vancouver Shipyards & Engineering Works, Vancouver, B.C.**, is reported to have established a shipbuilding yard on Burrard Inlet, and to be prepared to build ships for sale, instead of taking general contracts to build.

**Victoria Machinery Depot, Victoria, B.C.**—This company is stated to be in a position to commence the construction of steel steamships at once, but is reported to have made complaint that its facilities have been ignored by responsible officials of the Canadian Government.

**The Westport Shipbuilding Co.** has completed the establishment of a shipbuilding plant at White's Cove, Digby County, N.S., and is laying the keel of a three masted schooner. H. Boudreau is master shipbuilder.

**Wooden Shipbuilding.**—The Minister of Marine is reported to have announced recently, that on the completion of construction of the six wooden steamships, in Quebec, Que., the ordering of wooden steamships by the Dominion Government would be discontinued.

**Yarrows, Ltd., Victoria, B.C.**, has completed the fourth shallow draft, stern wheel steamboat hull, and it is being dismantled and packed for shipment to the "Far East," by the first available steamship. The company has made a specialty

of this type of vessel for several years, and numbers of them are in use in shallow waters in various parts of the British Empire. The conditions under which warfare is now being waged, make it necessary that vessels of this type be used in certain waters. The hulls are being built at Victoria and the machinery by the parent concern at Glasgow, Scotland.

### Atlantic and Pacific Ocean Marine.

The British s.s. Turret Crown, formerly well known on the Great Lakes, was reported during March, to be adrift off the Atlantic coast. A wrecking tug was sent to her assistance, but was unable to locate her.

A Russian steamship has been towed into Halifax, N.S., by an oil tanker, she having been found in a disabled condition, having lost her propeller, some distance south of Sable Island. She is now reported to have been taken over by the naval authorities, and the Russian flag replaced by the British.

### Maritime Provinces and Newfoundland.

An order in council has been passed establishing a permanent harbor head line at Lunenburg, N.S., beyond which line, wharves, piers, breakwaters and similar works shall not in future be built.

The Dominion Coal Co.'s s.s. Batiscan, bound from Sydney, N.S., is reported to have been lost with all hands, during a severe storm about Mar. 10. It is reported that she may have struck on the Gannett Ledges. A considerable amount of wreckage of the vessel has been washed ashore near Yarmouth.

### Ontario and the Great Lakes.

The International Transit Co.'s s.s. Algomah resumed the ferry service across the St. Mary River at Sault Ste. Marie, Mar. 22.

Navigation for passenger vessels reopened Mar. 25, between Detroit and Cleveland, by the Detroit and Cleveland Navigation Co., and it was announced that the service between Cleveland and Buffalo would be commenced about Apr. 16.

The Canadian Stewart Co. was given judgment at Toronto, Mar. 18, for \$208,000, against the I. H. Hodge Co., Syracuse, N.Y., in connection with piling work done under a sub contract in the Toronto harbor. For the plaintiffs, it was stated that, through faulty work, the piling was not passed by the government engineers, and had to be done over again.

A deputation representing municipalities along the Lake Erie & Northern Ry., waited on the Dominion Government, Mar. 20, to urge the improvement of the harbor at Port Dover. It was shown that these municipalities import about 270,000 tons of coal a year, and they claim that this can be handled more expeditiously at Port Dover by car ferry, provided facilities are provided.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above mean sea level, for February, as follows: Superior, 601.71; Michigan and Huron, 580.82; St. Clair, 574.54; Erie, 571.67; Ontario, 245.98. Compared with the average February levels for the past ten years, Superior was 0.07 ft. below; Michigan and Huron, 0.98 ft. above; Erie, 0.09 ft. above, and Ontario, 0.47 ft. above.

The Toronto Ferry Co.'s ferry steam-

boats Island Queen and Kathleen were destroyed by fire at their winter berths at Hanlan's Point, Toronto, Mar. 12. The Island Queen was built at Toronto in 1905, and was screw driven by engine of 16 n. h.p. Her dimensions were: length 97.8 ft., breadth 20.3 ft., depth 5.4 ft.; tonnage, 129 gross, 88 register. The s.s. Kathleen was built at Toronto in 1886 and was screw driven by engine of 35 n.h.p. Her dimensions were: length 84 ft., breadth 18 ft., depth 5.5 ft.; tonnage, 119 gross, 72 register.

Canada Steamship Lines' s.s. Aberdeen was burned at her winter quarters, Picton, Ont., recently. She had been withdrawn from the water for repairs, but the work had not been commenced. During last year, she was operated on the lower St. Lawrence. She was built at Picton, Ont., in 1894, and was screw driven by engine of 30 n.h.p. Her dimensions were: length 99.6 ft., breadth 22 ft., depth 8.7 ft.; tonnage, 142 gross, 87 register. She was taken over with other vessels by Canada Steamship Lines, Ltd., on the absorption of the Ontario & Quebec Navigation Co.

H. B. Smith, who in former years operated the s.s. Olcott on the Windsor, Wallaceburg and Detroit service, from Windsor, Ont., is reported to be in negotiation with Canada Steamship Lines, Ltd., for the purchase of the s.s. Thousand Islander for that service. The Thousand Islander is registered in the U.S., and was built at Toledo, Ohio, in 1912. She has a steel hull, steel boiler house, 3 water tight and 2 non water tight bulkheads, electric light, and is equipped with vertical compound engines with cylinders 15 and 30 in. diam. by 20 in. stroke, 700 i.h.p. at 210 r.p.m., and supplied with steam by two Scotch boilers, 12½ x 10½ ft., under forced draft at 150 lb. Her dimensions are: length 164 ft., breadth 32 ft., depth 9½ ft.; tonnage, 355 gross, 241 register.

The Marine Department has issued a notice to mariners that target practice on land and from the air over Lake Ontario by the Royal Flying Corps will begin in the spring at the Beamsville machine gun ranges, about 8 miles west of Port Dalhousie lighthouse. The surface of the lake containing an area of about six square miles in front of part of the first concession of Clinton Tp., forms the danger area for target practice for machine guns and other firearms. Flagstuffs have been erected at the extreme east and west boundaries of the danger zone and red flags will be hoisted and kept flying when firing is taking place. Spar buoys have been placed to mark the boundaries, and these are painted white with a red danger sign surmounting. Penalties are provided for any person destroying or tampering with the marks provided.

The Marine Service Transportation Co. of New York, has, under a writ of attachment, seized a large quantity of war supplies, said to be worth \$20,000,000, and stated to be the property of the former Emperor of Russia, on a claim for \$2,615,762 for breach of contract regarding the shipment of supplies to Russia.

**A Halifax Explosion Aftermath.**—The owners of the steamships Imo and Mont Blanc have each entered an action against the other for \$2,000,000 for damages sustained in the Halifax explosion. The case is before the Supreme Court at Halifax, N.S.

The Australian Government is reported to have completed a scheme which frees all large ocean going ships for the allies' use. A pool, which will control 120 ships engaged in coastal trade, will be formed.

## British Columbia and Pacific Coast.

The Grand Trunk Pacific Coast Steamship Co. has purchased the barges C.C. No. 7 and C.C. No. 9, from U.S. owners, and has changed the names of them to G.T.P. No. 1 and G.T.P. No. 2.

The Minister of Public Works is reported to have stated that an appropriation of \$5,000 is assured for this year, to allow of the commencement of the erection of a shed on pier 3 at Ogden Point, Victoria.

The Victoria Whaling Co. is reported to have purchased the s.s. Elihu Thompson from the Pacific Cold Storage Co., for operation in connection with its plant at Aleutian Islands. The vessel has large cold storage capacity, but will be used chiefly for towing.

The Union Steamship Co. of British Columbia's s.s. Chasina, formerly Selma, it is reported, is to undergo considerable repairs and alterations before being placed on the Powell River run this spring. The freight carrying capacity is to be increased, and the deck houses are to be reconstructed.

Canada West Coast Navigation Co. is now operating 9 of the 12 motor ships which it had built at Vancouver and Victoria recently. Three have been sold to French interests, viz.: Esquimalt, Malahat and Beatrice Castle. The last mentioned has been renamed Stasia. Reports have been current that the entire fleet had been sold to French interests, but this has been denied by the management.

With reference to the opening of the bridge across False Creek at Kitsilano, Vancouver, for the passage of steamships under construction at J. Coughlan & Sons' yards, it is reported that as a result of a conference the C.P.R. has agreed to open the span, and to submit the matter as to the responsibility for the cost, to the Supreme Court of Canada. The bridge is owned by the C.P.R. and leased to the British Columbia Electric Ry.

The B. C. Government is reported to have purchased the C.P.R. s.s. Beaver for the ferry service between Ladner and Woodward's Landing. It is stated that the vessel, which has been out of service for some time, will be thoroughly overhauled and repaired at a cost of about \$5,000. The s.s. Beaver was built at Victoria in 1898, and is equipped with engine of 13 n.h.p., driving a paddle wheel. Her dimensions are: Length 140 ft., breadth 28 ft., depth 5.1 ft.; tonnage, 545 gross, 344 register. The C.P.R. operated the vessel for several years between New Westminster and Chilliwack.

**C. T. White & Son, Ltd.,** Sussex, N.B.—Two schooners with auxiliary power are under construction, and it is expected that the first will be launched in April, and the second in June. They are 143 ft. long, 34 ft. wide and 13 ft. dep., having a draft of about 16½ ft. They will each be about 480 tons register, carrying about 900 tons, and will be fitted with three masts, fully rigged. The auxiliary power will consist of 12 h.p. bull dog engines, with connections for hoisting sails, anchors and cargo, and they will be equipped with patent stockless anchors and full size chains as required by Bureau Veritas.

**British Columbia Export Co., Ltd.,** has been incorporated under the British Columbia Companies Act, with \$24,000 capital and office at Vancouver, to carry on a general merchant and shipping business, and in connection therewith to own and operate steam and other vessels, and carry on a general shipowning business.

## Ships Under Construction in Canada for British Government.

The particulars of steamships ordered by the Imperial Munitions Board for the British Government, with the names and addresses of builders, number of vessels, individual and total tonnage, which were published exclusively in Canadian Railway and Marine World for March, have attracted considerable attention, and we have been congratulated from many quarters on securing the information and presenting it in such convenient form.

Speaking in the House of Commons, Mar. 19, in the debate on the address in reply to the speech from the throne, Sir Robert Borden gave considerable information in regard to shipbuilding, and confirmed the figures published by Canadian Railway and Marine World in March, as to orders placed by the Imperial Munitions Board as follows: 43 steel steamships, 211,300 tons dead weight, approximate cost \$40,000,000; 46 wooden steamships, 128,800 tons d.w., approximate cost \$24,500,000; total, 89 steamships, 340,100 tons dead weight, approximate cost \$64,500,000.

The figures given above show that the 43 steel steamships will cost approximately \$189.31 a ton d.w., and that 46 wooden steamships will cost approximately \$191.42 a ton, though the latter figures may be increased, as at present they are only estimated.

All the orders for steel steamships placed by the Imperial Munitions Board have been at a price per ton d.w. for fully completed vessels. In the case of the wooden steamships, the hulls in Eastern Canada are being built for lump sums agreed on with the builders. For those ordered in British Columbia, the hulls are being built on a cost basis, plus \$16,000 a hull, the board supplying boilers and machinery.

At present, at least, it is not the intention for the Imperial Munitions Board to order any more steel or wooden steamships in Canada, for the British Government, and as the berths in which the vessels now under order are being built, become vacant, they will be taken for cargo vessels to be built for the Dominion Government.

**Launchings of Steamships.**—Following are particulars of steamships ordered by the Imperial Munitions Board for the British Government and which have been launched up to date, with dates of launchings:—

Steel Steamships.			
Date.	Name	Builder.	Tonnage.
May 18, 1917	War Dog	Wallace Shipyards, Ltd.	4,500
July 9, 1917	War Wasp	Nova Scotia Steel & Coal Co.	1,800
Aug. 4, 1917	War Fish	Port Arthur Shipbuilding Co.	4,300
Nov. 3, 1917	War Dance	Port Arthur Shipbuilding Co.	3,400
			14,000

The first three of the vessels above mentioned have sailed; the fourth is being held during the winter at Sorel, Que.

Wooden Steamships.			
Date.	Name	Builder.	Tonnage.
Dec. 28, 1917	War Songhee	Foundation Co., Ltd.	2,800
Jan. 4, 1918	War Nootka	Western Canada Shipyards, Ltd.	2,800
Jan. 24, 1918	War Yukon	Cameron-Genoa Mills Shipbuilders, Ltd.	2,800
Feb. 16, 1918	War Puget	Wm. Lyall Shipbuilding Co.	2,800
March 6, 1918	War Selkirk	Western Canada Shipyards, Ltd.	2,800
			14,000

Since the launching of the first wooden steamship approximate calculations have been made, from the launching weights, showing that the deadweight tonnage of each wooden ship will be approximately 3,080 tons.

## A Silly Attack on the Shipbuilding Programme.

The Toronto Evening Telegram, in one of its rabid attacks on the Union Government, says among other things:—

"Union Government shipbuilding policy will be worked out as a pro-Montreal, anti-Ontario policy that will give as much as possible to Montreal and eastern interests and do as little as possible for Ontario and western interests. . . . Shipbuilding policies that will place contracts east of the Ottawa River, or with the allies of interests east of the Ottawa River, will be worked out without let or hindrance from Sir Robert Borden."

There is no foundation whatever for the charges quoted. Up to date the Marine Department has let contracts for 4 steamships, 2 at Montreal, 1 at Collingwood, Ont., and 1 at Vancouver, B.C. It has under consideration the placing of contracts for all berths that will be available at steel shipbuilding plants throughout Canada this year and which have been reported by the various companies as follows:—Province of Quebec, 7; Ontario, 20; British Columbia, 4.

**Ice Conditions on the Great Lakes.**—Reports as to ice conditions on the Great Lakes during March, indicated that there was about the same amount of ice in Lakes Superior and Michigan, less in Lakes Huron and Erie, and more in Lake Ontario, than at the same period in 1917. The warmer weather in the middle of the month had some effect and ice was reported to be moving out. The average thickness in Whitefish Bay was 30 in. and in St. Mary's River, 26 in. Ice was also moving out in Lake Huron, and the St. Clair River was open to St. Clair. Little ice was reported on Lake Erie at the western end, but was heavy and extensive in the east. The western portion of Lake Ontario was reported clear, but heavy and extensive fields existed from Sodus Point, N.Y., to the outlet of the lake. The ice jam at the mouth of the St. Clair River, broke Mar. 19.

**The s.s. Empress of Ireland Case.**—The Supreme Court's judgment on the appeal of the C.P.R. as to the disposition of the proceeds of the sale of the s.s. Storstad, which was responsible for the loss of the C.P.R. s.s. Empress of Ireland in the Gulf of St. Lawrence, May 29, 1914, provides that the proceeds be divided into two parts of seven and eight fifteenths respectively, the first to be divided amongst the claims for loss of life, and the second pro rata among all claimants. This is a variation of the Admiralty Court's decision that the distribution be made under the law of the United Kingdom.

**Halifax Harbor Regulations.**—An order in council was passed, Mar. 7, rescinding rule 6 of the Rules and Regulations for the Port of Halifax, dated Oct. 23, 1906, and the following has been substituted:—"No steamer entering or leaving Halifax harbor, those of His Majesty and the Government of Canada excepted, shall, while inside of George Island, or in the North West Arm, proceed at a greater speed than 6 knots an hour, under a penalty of \$100, to be paid by the owner, master or agent of the vessel violating the law."

**The U.S. Emergency Fleet Corporation** is reported to have placed a large order with Yarrows, Ltd., Victoria, B.C., for high pressure cylinders for installing in steel steamships now under construction in U.S. yards.

**Manitoba Transport Co., Ltd.,** has been incorporated under the Manitoba Companies Act, with \$100,000 capital and office at Winnipeg, to carry on the business of shipowners, carriers by land and water, shipbuilders, forwarding agents, etc.

## Pilotage at the Port of Halifax, N.S.

As stated in Canadian Railway and Marine World for March, the enquiry into the operations of the Halifax Pilotage Commission concluded Feb. 14. The commission consisted of Thos. Robb, Manager, Shipping Federation of Canada. Chairman; Capt. J. N. Bales, Deputy Port Warden of Montreal; and Capt. J. W. Harrison, Marine Superintendent, Furness, Withy & Co., Halifax, N.S. Considerable evidence was given by port officials, and by representatives of shipping companies concerned, and a report has been made to the Minister of Marine, the main points of which are summarized as follows:—

There was very special reason for investigation in respect of the Halifax Pilotage District, arising from the terrible calamity which had so recently befallen Halifax, and the need there, of a certain reformation, reorganization and improvement was obviously apparent, in view of a succession of serious accidents to vessels in the port, a number of the vessels being in charge of pilots. The records of the pilotage office have been poorly kept, books were audited so far as the total receipts and expenditures were concerned, but details of the actual pilotage earned were only shown summarized. Pilotage collected from vessels where no pilot was supplied, and for movements in the harbor, could not be given in detail, and it was only when the Royal Commission put in an auditor to check the accounts that the Secretary produced monthly statements, which he said did not belong to the pilotage commission, but were records of the division of money and dividends to pilots, expenses of the pilot boats and dividends to the owners of them. These statements contained entries of sums paid to masters of vessels as gratuities, and said to have been paid for the signing of pilotage bills on vessels not paying full pilotage, or not having a pilot, in order to obtain clearance at customs. The Canada Shipping Act forbids customs clearance to any ship liable to pilotage dues, and the evidence showed that it was presumed that the vessels were so liable, all vessels being required to have a certificate from the pilotage authority. The Secretary-Treasurer of the Pilotage Commission has merely clerical duties, and is assisted by a boy who answers the telephone and runs messages. This boy appears to have been acting as an intermediary between the pilotage office and the naval authorities, by the telephone, and has been trusted with reporting the inward and outward movements of vessels to the dockyard, of which no office record has been kept. It has not been possible to get any detailed statement from the Secretary as to the gross earnings of the pilots, certain figures given in evidence being misleading, but the Secretary stated that he considered the gross earnings of each pilot, for 1917, were about \$8,000. The earnings, as they appear in the return, do not include movements, and this appears to be a serious dereliction of duty on the Secretary's part, and it is strongly recommended that immediate steps be taken to have proper and intelligent returns made, giving the entire earnings. Attention is drawn to \$1,976.13 earned by Pilot Gorman, for irregular charges on vessels bound directly to Bedford Basin from sea, or vice versa, and this, it is understood, has been discontinued, as a result of legal advice to the pilotage commission.

Special attention is drawn to the pilotage commission's laxity regarding apprentices. No record of the attendances of apprentices is kept, and their duties seem to have been those of members of the pilot schooners, and while these are in dock they have nothing to do. They never go on board steamships with the pilots, and therefore cannot gain the experience required to handle ocean steamers, and when questioned, some of them were found very deficient in general chart exercises, marks on lead line, etc., but they had a fairly good local knowledge of the soundings at the entrance to the harbor. The only examination for eyesight is when apprentices are entering the service, and is made by two of the commissioners. The total earnings are pooled, after deductions for management and superannuation fund. This system appears to be pernicious and to remove all incentive to individual ambition.

Intoxicating liquors were permitted on pilot schooners, and several instances were recorded of inebriety among pilots. While the pilotage commissioners have dismissed some of these recently, they do not appear to have been strict enough in this respect.

After the pilots have drawn their money, the Secretary prepares a statement dividing the earnings among the pilots, after deducting for schooner store supply, crews' and apprentices' wages, etc., the balance being divided into shares, 1½ shares being allotted to the owners of the pilot schooners. Included in this statement are certain gratuities paid to masters of vessels, stated to be for compensating the master for signing the voucher, to enable the Secretary to justify the collection of pilotage dues from the steamship agent. This is a very bad feature of the matter. No evidence having been submitted as to the unreasonableness or otherwise of the tariff, it is taken for granted that there are no complaints. The question of movements appears to cause a good deal of irritation, and it is recommended that sec. 462 of the Canada Shipping Act, be strictly applied, as this appears to be fair and reasonable, and defines when a pilot may leave a vessel which he has undertaken to pilot. From the evidence, and from other information obtained, it was gathered that there was a shortage of pilots, and as this required urgent attention, the Royal Commission, not having the power, asked the Pilotage Commissioners to appoint seven pilots from the list of applications from masters and mates.

Recommendations were made, as follows:—That the administration of the service by the present pilotage commission has been found unsatisfactory, and that legislation be enacted appointing the Minister of Marine as the Halifax pilotage authority; that a superintendent, with sea going experience and a clean record, be placed in full charge of the district to reorganize and administer its affairs, and be directly responsible to the Minister, such superintendent not to have been, at any time, a pilot of the district; that a qualified assistant be appointed, so that the office may be kept open day and night; that apprentices be indentured to the Minister, and that public notices be given when there are vacancies; that an eyesight test be made annually, the system adopted being the same as in vogue in the Quebec and Montreal districts, that is, an annual examination for sight and hearing by a medical officer and officer of the

Marine Department; that an oculist be appointed, for an immediate examination of eyes and hearing of all pilots and apprentices of the Halifax District; that a register of pilots be kept at the pilotage office, so that each pilot may be engaged in turn for outward pilots and on the pilot tender for inward pilots; that no pilot or apprentice be allowed to use intoxicating liquors, any infraction being punished by fine or suspension for a first offence and by dismissal for a second offence; that no such liquors be kept in the pilotage office or on board the pilot tender, an offender being punished by instant dismissal; that gratuities by pilots be prohibited and considered as an offence and dealt with accordingly; that no pilot be allowed to perform duties outside his own district; that all information in regard to changes in the aids to navigation, especially during the war, be through the Naval Service, and in ordinary times, through the Marine Department; that the present number of pilots be increased by seven, making 20 altogether, and that it be further increased not to exceed 25, nor to be less at any time, than 20; that a steam pilot tender be provided, and that in order to relieve the situation, masters of Canadian registered vessels trading regularly to the port be licensed by the pilotage authority, by amending sec. 487 of the Canada Shipping Act, and placing Canadian vessels in Canadian ports, on a par with U.S. vessels in U.S. ports. One or two minor matters, relating to the pooling of pilotage earnings, etc., are to be dealt with more fully in the final report, which will also cover the administration of pilotage affairs at St. John, N.B., and Sydney, N.S.

With regard to the recommendation that a steam pilot tender be provided, we are advised that negotiations for a suitable boat are proceeding. An order in council constituting the Minister of Marine as the pilotage authority for the pilotage district of Halifax, has been passed, as follows:—

Whereas the commission appointed to enquire into and report upon all matters connected with the pilotage system and administration at the port of Halifax has recommended that the Minister of Marine and Fisheries be appointed the pilotage authority for the pilotage district of Halifax in place of the Halifax Pilot Commissioners, and that many changes should be made in the pilotage regulations for the said district: Therefore the Governor-General in council, in view of these recommendations and the importance of making immediate provision for improved pilotage facilities for the large number of vessels that are arriving at and leaving the port of Halifax owing to the war, on the recommendation of the Minister of Marine and Fisheries, and under the provisions of the War Measures Act, 1914, makes the following regulations:

The Minister of Marine and Fisheries for the time being shall be the pilotage authority for the pilotage district of Halifax, and all powers and authority, heretofore vested in the Halifax Pilot Commissioners, are hereby vested in and transferred to him. All property, both real and personal, now vested in or under the control of the said commissioners, is hereby transferred to and vested in the Crown to be administered by the Minister of Marine and Fisheries.

The said minister, as such pilotage authority, in addition to the powers heretofore exercised by the pilotage authority

of the pilotage district of Halifax, shall have power to reorganize the pilotage system in the said district, to retire or dismiss any pilots or employes, at present employed, and to appoint such pilots, superintendents, officers and clerks as he may deem necessary for the proper administration of the said district, and to change and amend the pilotage regulations for the said district as he may deem necessary or desirable.

The Minister may defray all expenses in connected with the reorganization and administration of the said pilotage district out of pilotage funds in the said district.

These regulations shall continue in force during the continuance of the present war and for one year thereafter.

Capt. H. St. George Lindsay, a former Dominion Wreck Commissioner, and latterly General Superintendent, River St. Lawrence Pilotage, has been appointed Superintendent of Pilotage at Halifax, for the time being.

### Specifications of Deck Machinery for Standard Wooden Steamships for British Government.

Following are the specifications issued by the Imperial Munitions Board at Ottawa for deck machinery for standard wooden steamships being built in Canada for the British Government:—

The winches to be double cylinder reversing engines having cylinders 7 x 12 in. diameter by 12 in. stroke, fitted with double geared whipping and warping drums. Cylinders to be of hard, close grained cast iron, bolted to a foundation plate of substantial scantling; valves being flat valves and preferably the valve chest to be arranged with a cover in sloping direction in order to facilitate facing the valve seat. Pistons to be fitted with steel rams-bottom rings, piston rods and valve spindles to be of rolled brass or Muntz metal. Valve gears to be of the link motion reversing type, and eccentric to be of cast iron, eccentric straps of gun metal. The gear wheels to be of cast iron, of double helical form, or may be of steel with straight teeth, provided the teeth are machine cut. The main bearings are to be fitted with brass bushes and all other working parts fitted with adjustable brass bushes. The clutches are to be of cast steel, mounted on a squared shaft not on feathers. The winches are to be fitted with valves on both steam and exhaust, with the usual control valve. Reversing gear to have back balancing weights, the cylinders to be lagged and cleaded with sheet iron. All exposed working parts to be carefully guarded to the requirements of the British Factory Acts. This specification is intended to cover a winch of high class design and extra heavy construction, similar to that made by the best known British winch builders, of standard make. One pair of whipping and one pair of warping drums are to be fitted, of shape approved by board. Foot break is to be fitted.

Windlass to be of double cylinder, horizontal or vertical type, windlass fitted with double gypsies with comb lifters and breaks, to be of a size suitable for handling stud link cable 1 3/4 in. diameter and to the full requirements of Lloyd's Register of Shipping. All bearings are to be good extra surface and to be fitted with adjustable brass bushes. All working parts to be protected to the requirements of the factory acts. Devils, claws and stoppers to be fitted, as usual, of cast or wrought iron. Steam stop valve and ex-

haust valve to be fitted. Steering gear to be of steel of the straight machine cut type. This special case is intended to cover a high class steam windlass of a type supplied by certain English makers, and all parts are to be of extra strong construction to the approval of the board's technical adviser.

Steering gear to be fitted amidships and to consist of a double cylinder engine of approved design, fitted with slide valve motion and control valve of approved design, actuating through spare and worm gearing; a single drum will receive the chains from the steering gear aft; control valve to be operated either by rods and gear from the steering wheel on bridge or alternately if this be found impossible, by the tellemotor control gear. The hand steering gear to be arranged on the poop and arranged to operate steering should engine be out of action. Steering wheels to be of teakwood, brass fitted, or in the case of the tellemotor gear, may be a small brass wheel. All to be to the full requirements of Lloyd's Register of Shipping for the highest classification.

Ash winch to be fitted on casing secured to bulk head, of a double cylinder variety, with ropes led to both ventilators; ash buckets to be controlled from the stoke held fore.

The first steamship to carry bulk grain from Vancouver, B.C., for Europe, without breaking bulk, was reported to have arrived at London, Eng., safely, Feb. 16. No particulars as to the condition of the cargo have been received, and considerable interest is felt as to this, as it has always been contended by some, that bulk grain could not be satisfactorily shipped by that route owing to the different temperatures encountered. The vessel carrying the cargo was the s.s. War Viceroy, built at Portland, Ore., for the British Government. She sailed from Vancouver, Dec. 2, 1917.



#### VESSEL FOR SALE.

Tenders addressed to the undersigned at Ottawa, and endorsed on the envelope "Tender for Dredge Galveston", will be received up to noon of the

**Eighth Day of April, 1918,**

for the purchase of the steel twin screw suction and hopper dredge Galveston, now lying at Sorel, P.Q. Persons desiring to inspect the dredge should apply to the Superintendent of the Shipyard at Sorel.

Length, 223-0 x 39-0 x 15-6 depth of hold.  
Gross tonnage, 1,332.  
Net tonnage, 838.  
Draft loaded, 14-9 aft and 13-1 forward.  
Dead weight, 1,800 tons.  
Two suction pumps, Dutch type.  
Working capacity, 1,350 cu. yds. in 45 minutes.  
Hopper capacity, 1,500 cu. yds.  
Engines, 15 x 24 x 39 x 34" stroke.  
Propellers solid, 4 bladed 8' 4" dia. x 10' 0" pitch.  
2 Scotch boilers 13' 9" dia. x 11' 0" long x 180 lbs. w. pressure.  
Built in Germany in 1904.

The dredge will be sold as it now stands and no additional equipment or apparel will be supplied by the Department.

All offers must be for cash payment as soon as the tender is accepted, and the vessel must be removed immediately by the successful tenderer.

Each tender must be accompanied by an accepted cheque on a chartered Canadian bank, equal to five per cent. (5%) of the whole amount of the offer, which cheque will be forfeited if the successful tenderer declines to purchase the vessel at his tender price. Cheques accompanying unsuccessful tenders will be returned.

The highest or any tender not necessarily accepted.

Newspapers copying this advertisement without authority from the Department will not be paid for same.

ALEXANDER JOHNSTON,  
Deputy Minister of Marine.

Department of Marine,  
Ottawa, March 21, 1918.

### Mainly About Marine People.

C. Stanton, Assistant Deputy Minister of Marine, Ottawa, is spending a holiday in California.

Capt. John Andrew, an old time master of sailing craft on Lake Ontario, died at Oakville, Ont., recently, aged 73.

H. W. Cowan, director and Operating Manager, Canada Steamship Lines, Ltd., Montreal, has been spending a short time in California.

Miss Alice Ross, daughter of W. G. Ross, President, Montreal Harbor Commission, was married at Montreal, Mar. 19, to H. W. Soper, son of W. Y. Soper, Vice President, Ottawa Electric Ry.

W. I. Gear, Director, Steel Shipbuilding, and also of Wooden Shipbuilding in Eastern Canada, for the Imperial Munitions Board, Ottawa, visited a number of the Ontario shipbuilding yards during March.

J. W. Norcross, Vice President and Managing Director, and F. S. Isard, Director and Comptroller, Canada Steamship Lines, Ltd., have been spending a short time at White Sulphur Springs, Va.

Capt. Robert Fraser, for several years Marine Superintendent, Montreal Transportation Co., Kingston, Ont., died at Long Beach, California, Mar. 10, after a long illness. He retired from active service at the end of 1916 on account of his health. The funeral took place at Kingston.

Capt. J. W. Harrison, master of the s.s. Picton, has been presented by the British and Foreign Sailors Society, with a salver made of copper from Nelson's flag ship, suitably engraved, for his conduct in clearing his vessel from Halifax harbor at the time of the great explosion there in Dec., 1917.

Capt. C. D. A. Barber, at one time, Manager, Northern Transportation Co., Athabasca Landing, Alta., died at Duluth, Minn., Mar. 5. In the early stages of the war he enlisted with the 202nd Battalion, C.E.F., and went overseas. On his return, he was for some time in Edmonton, Alta., and about two months ago, went into business in Duluth.

William Andrews, who died at Collingwood, Ont., Mar. 12, aged 77, was one of the early wooden ship builders on the Canadian lakes. He first worked at the Andrews shipbuilding yards, established by his father at Port Dalhousie, Ont., and on the acquisition of the property for the construction of the Welland Canal, he moved to Port Robinson and subsequently to Collingwood, continuing shipbuilding with his brother, S. D. Andrews, who was one of the founders of the yards now owned by the Collingwood Shipbuilding Co., and who is now Inspector of Hulls, under the Marine Department, at Collingwood.

Farrar Transportation Co., Ltd.—The report for 1917, presented at the annual meeting at Toronto recently, was considered very satisfactory, a substantial dividend being paid. The officers for this year are:—President, T. I. Thomson, Owen Sound, Ont.; Vice President, W. E. Allen, Toronto; Managing Director, G. E. Fair, Toronto.

Bay of Fundy Tides.—The Naval Service Department has issued, in pamphlet form, "Tides at the Head of the Bay of Fundy," from observations during Admiralty chart surveys, Noel Bay, 1859; tide levels for the Baie Verte Canal, Cumberland Basin, 1870; and measurements by the tidal survey in 1916, in Cobequid Bay, where the highest tides occur.



# Canada Steamship Lines, Ltd., Annual Report and Meeting.

A brief summary of the report for the calendar year 1917 appeared in Canadian Railway and Marine World for March. Following are fuller particulars, as presented at the annual meeting in Montreal Mar. 5. The company had a satisfactory year. While the gross earnings are higher than in 1916, the net earnings are slightly lower. This is accounted for by the enormous increase in the cost of everything that enters into the operation of such an undertaking. The vessel tonnage owned by the company is greater than it was in 1916, despite the losses that have occurred. Directors and management are convinced that the company has a promising field for development and expansion on the high seas. During the year a vacancy occurred in the directorate, through the resignation of R. M. Wolvin, which was filled by the appointment of H. W. Cowan, Operating Manager, to the board. The deferred dividends on the preference shares have been paid, and it has been decided that the quarterly payments of these dividends will be resumed. All the properties have been thoroughly maintained, and the fleet is in a better state of efficiency than it was at any other time.

## Balance Sheet.

Assets.			
Fixed assets—			
Vessels as at Dec. 31, 1916	\$18,797,920.80		
Net additions for year, being excess of additions to fleet over vessels lost and sold	1,932,944.04		
	20,730,864.34		
Real estate, buildings, docks and wharves, as at Dec. 31, 1916	\$5,331,114.53		
Net additions for year	180,568.40		
	5,511,682.93		
Other fixed assets at Dec. 31, 1916	\$ 610,434.42		
Net additions for year	115,325.29	725,759.71	
	\$26,968,306.98		
Less depreciation reserve	2,562,951.56		
	\$24,405,355.42		
Current and workings assets—			
Cash in banks and on hand	\$ 231,730.98		
Accounts receivable, less reserve for doubtful accounts	1,606,820.59		
Adjusted losses due by underwriters	712,682.53		
Insurance and other claims, estimated amount recoverable	924,325.94		
Interest receivable accrued	5,639.91		
Inventories of stores and supplies	583,808.06		
	4,065,008.01		
Charges deferred to future operations—			
Insurance unexpired	\$ 732,056.09		
Repairs, etc., applicable to subsequent seasons	305,471.67		
Miscellaneous	27,328.20	1,064,855.96	
Investments at cost	220,792.70		
Funds deposited with trustees for mortgage bonds and debenture stock	244,107.55		
Organization expenses, less proportion written off	86,818.00		
Leases, contracts and goodwill	\$30,086,937.64		
	8,589,646.79		
	\$38,676,584.43		
Liabilities.			
Capital stock—			
1% cumulative preference stock	\$12,500,000.00		
Common stock	12,000,000.00		
	\$24,500,000.00		
Funded debt—			
4% debenture stock as deposited as security for loan	\$598,400.00		
Amount retired by operation of sinking fund	440,766.46		
	1,039,166.46		
	\$6,081,340.20		

First mortgage bonds	1,315,026.69		
Loan secured by debentures stock and investments	500,000.00		
		7,896,366.89	
Current and accrued liabilities—			
Accounts payable	\$2,538,985.28		
Bond and other interest accrued	123,160.03		
Business profits war tax	704,545.58		
Dividend declared (payable Jan. 2, 1918)	437,500.00		
		3,804,190.89	
Reserves—			
For freight and other claims	\$ 10,000.00		
For premium on redemption of Richelieu & Ontario Navigation Co. bonds	6,959.75		
Surplus arising from sinking fund purchases of debenture stock	84,312.78		
		101,272.53	
Surplus		2,374,754.12	
Contingent liabilities—			
On notes receivable under discount	\$ 22,610.89		
On notes endorsed for allied company	120,000.00		
	\$142,610.89		
		\$38,676,584.43	

Operating Account.			
Operating revenue—			
Vessels	\$12,887,256.23		
Docks and wharves	183,772.27		
Miscellaneous	290,393.74		
	\$13,361,422.24		
Other revenue	173,393.70		
	\$13,533,815.94		
Expenses	9,509,951.47		
	\$ 4,023,864.47		

Net earnings	\$ 4,023,864.47		
From which deduct—			
Interest on mortgage bonds	\$ 90,729.86		
Interest on debenture stock	301,575.03		
Other interest	5,721.23		
Special bonus to employes	35,294.53		
Reserve for depreciation	1,061,563.37		
Reserve for doubtful debts and claims	25,579.29		
Directors' fees	25,000.00		
Reserve for business profits war tax	300,000.00	1,845,46.31	
		\$ 2,178,401.16	

Surplus Account.			
Balance at Dec. 31, 1916	\$ 1,848,225.27		
Profit for year 1917	\$2,178,401.16		
Net profit on sales, etc., of fixed assets	941,879.95	3,120,281.11	
		\$4,968,506.38	
Proportion of organization expenses charged off	\$ 86,820.41		
Balance of discount on debenture stock charged off	27,765.19		
	\$ 114,585.60		

Dividends on preferred stock—			
12.83 1/3%, being arrears to Dec. 31, 1916	\$1,604,166.66		
7% for year ended Dec. 31, 1917	875,000.00	2,479,166.66	2,593,752.26
		\$ 2,374,754.12	

Jas. Carruthers, President, in moving the adoption of the report, referred to the company's improved financial position as disclosed by the annual statement, and said: "The company during the last three or four years had gone more extensively into the ocean traffic, and the directors believe there is a good field for development and expansion in this direction, more particularly owing to the fact that the Canadian Government has decided on a policy of building up a Canadian merchant marine. This undoubtedly will prove a great boon to the country and will indirectly help the company. Under the expert guidance and advice of the Vice President and Managing Director,

the directors have done some selling and buying of vessels during the year. They have a certain well defined policy in this connection. Their object is (and they have been successful so far) to establish the fleet on a more modern basis, to meet the changing conditions. Older and smaller vessels, gradually becoming obsolete and costly to operate, are being replaced by larger and newer ships, so that even during the war, but more particularly after the war is over, your fleet will be in a position to meet every requirement and every condition that may arise.

"Now, as to future prospects. There is no doubt that after peace is declared there will be new problems to face. It is generally conceded that the prosperity which flourishes in both the United States and Canada at present may wane. Work will not be so plentiful, the high wages that are now being paid will have to be cut down and a readjustment is bound to take place, so that such conditions as exist today must not be accepted as permanent and the uncertainty as to the future make it incumbent upon us to be both careful and conservative. Your directors believe, however, that the enormous losses in ocean tonnage suffered by all nations will take a long time to replace, even to an extent to partly meet the world wide demand. I feel warranted, therefore, in saying that in all probability present rates will continue until the available tonnage becomes sufficient to meet at least normal conditions. In saying this, I have times in the shipping trade will not return for years.

"We have every reason to expect a large increase in the acreage of grain in our Canadian Northwest this coming season. There is an enormous shortage of foodstuffs the world over and the knowledge that even if peace were proclaimed within six months, the urgent requirements would continue until the supply equalled the demand means that these high prices for all kinds of grain are going to continue for some time to come, so there is every incentive to the farmer to put every acre possible under cultivation, and I believe with favorable weather conditions we will have a largely increased production all over Canada, especially in the Northwest. With the large grain carrying fleet this company has on the upper lakes, the shareholders can understand what a big difference it makes to us if the crop be large or small in our Canadian Northwest. So we hope the crops will turn out as looked for, and I assure you that our company will be in a position to handle a large part of this traffic to the seaboard. The number of our shareholders is increasing every year and I am pleased to report that the last figures show there are 2,250."

J. W. Norcross, Vice President and Managing Director, in seconding the motion for the adoption of the report, said: "As you have been told by the President, we have sold some of our older and more obsolete ships and replaced them by modern tonnage; and while it is true that a number of our smaller vessels have been taken from the Great Lakes for the ocean service, we have augmented our lake fleet by larger ships, which can be more easily and cheaply operated. Our ocean fleet has been increased, and is operating successfully in different parts of the world, and on the whole the property is in good condition. We have had several disasters, including the s.s. Bermudian, which was

sunk, but which is being salvaged, and in the course of a few months, will be in better condition than she was before the disaster. All our losses were fully covered by insurance to the extent of replacement values.

"It is impossible at present to forecast the company's future, but it seems to me that, while industries which are now working to capacity, will receive somewhat of a setback for a period after the declaration of peace, it will be because a large number of factories came into being during the war, and are largely engaged in manufacturing for war purposes. There is, no doubt, a very large percentage of increase in equipment for the manufacture of all sorts of materials, while, on the other hand, there is a very great decrease in water transportation facilities since the war began, and it will take several years to replace the tonnage lost. It will require the best efforts of all trans-

portation companies after the war to meet the demands of European countries, in the matter of food stuffs alone. It is, therefore, with considerable confidence that we look forward to the company's future."

The directors and officers were all re-elected, and are as follows:—Commander Sir A. Trevor Dawson, R.N., Hon. President; Jas. Carruthers, President; J. W. Norcross, Vice President and Managing Director. Other directors:—C. A. Barnard, J. C. Newman, H. B. Smith, E. Bristol, M. J. Haney, Hon. J. P. B. Casgrain, G. H. Smithers, D. B. Hanna, J. P. Steedman, F. S. Isard, H. W. Cowan, W. E. Burke, J. E. Dalrymple. Secretary: F. Percy Smith. London Advisory Committee: Commander Sir A. Trevor Dawson, R.N., Chairman; Sir Vincent Caillard, Albert Vickers, W. Grant Morden, C. G. Bryan, Sir Mitchell Mitchell-Thomson, Bart., Sir H. Montagu Allan, C.V.O.; Secretary, T. J. Fellowes Brown.

## New Regulations Respecting Life Jackets for Vessels.

The following instructions have been issued by the Board of Steamship Inspection, Marine Department, Ottawa, to steamship inspectors:—

1. **Inspection of Life Jackets.**—No life jacket may be accepted after April 1, 1918, as part of the statutory equipment of a vessel unless—(a) it is of a type approved by a certificate of approval issued on or after May 1, 1917; (b) it complies with the specification annexed to the certificate; and (c) it is in good condition and generally fit for the service intended. Makers of life jackets who wish to obtain approval for their life jackets should make application as indicated in paragraph 8.

2. **General.**—Life jackets intended to form part of the statutory equipment of a vessel must be approved material and construction and those intended for use by adults must be capable of supporting 12 lb. of iron in fresh water for 24 hours. Life jackets intended for use only by children must, in general, be capable of supporting 12 lb. of iron in fresh water for 24 hours. The required buoyancy may be supplied by cork, kapok or other approved substance, but no life jackets which depend on air compartments for their buoyancy will be accepted. The cork used in the manufacture of life jackets should not weigh more than 12 lb. a cubic ft, and must be of good quality and cleaned. Pieces of cork for all parts of jackets except for shoulder or other special pockets should, in general, be not less than 20 cu. in., however, smaller pieces may be worked in in pockets with these sized pieces, provided they are securely attached to the larger pieces with proper wooden pins. In no case will cork shavings or cuttings be accepted. Kapok must be pure Java kapok of good quality, free from seeds or other foreign matter and well cleaned. At least 24 oz. of kapok must be in each life jacket whose buoyancy is derived from this material.

3. **Distribution of buoyancy.**—The buoyancy must be so distributed in the life jacket that when worn by a person in the water it will comply with the following conditions:—(a) When the wearer is in the position of the body should be as near the vertical as possible, and if there is any tendency to depart from the vertical it should be to throw the head backwards. (b) The buoyancy of the jacket should be so arranged that it will keep the wearer's

head clear of the water when floating in the inert position. (c) In the event of the wearer through any cause being rendered unconscious, the head should be so supported that it would not fall forward and the face become submerged. (d) Life jackets for adults must be such that they will fulfil the conditions set out in paragraphs a, b and c of this section when worn by persons whose chest measurement varies from 32 to 50 in., life jackets for children will be required to fulfil these conditions when the chest measurement varies from 24 to 38 in. Jackets intended for both adults and children must be such as will be satisfactory for the whole range of chest measure from 24 to 50 in.

4. **The covers** may be of cotton, linen or other approved material, subject to the following conditions:—Covers of all linen with no admixture of other material must weigh not less than 6 oz. to the yard with a width of 27 in., must have at least 28 threads to the inch in the warp and in the weft, and must be unglazed and unmangled, and free from all dressing. It may be bleached or unbleached, but no artificially colored material is to be used except in covers for children's life jackets. The minimum standard for covers of all cotton with no admixture of other material will be cotton duck 38 double warp and 54 in weft, weighing not less than 6 oz. to the yard, with a width of 29 in. Any other material must be submitted for approval.

5. **The tapes** must be of linen or cotton thread web 1¼ in. wide, and capable of bearing a strain of 200 lb., and must be securely attached to the cover; the ends of the tapes where they are attached to the cover must be doubled, and the ends displayed. The method of affixing and tying the tapes must be simple and easily understood, and capable of being rapidly carried out.

6. **Sewing.**—The tops of the cover must be sewn with doubled material, and must be at least as strong as no. 25a 5-cord Whittemore cord. All other sewing is to be made with linen thread not less than no. 25.

7. **Marking.**—All jackets must be marked "Adult's life jacket," "Child's life jacket," or "Adult or Child's life jacket," as the case may be, and must also be marked in such a manner as will indicate clearly the front and back in bold letters not less than 2 in. deep. The maker's

name or trade mark should be on all life jackets. Life jackets suitable for children only shall be colored red.

8. **Approval of life jackets.**—Application for test and approval of life jackets should be made to the Chairman, Board of Steamship Inspection, Marine Department, Ottawa, by shipowners desirous of adopting any special type of life jacket, or by makers; a sample jacket should be forwarded for a test, arrangements for which may then be made, the makers or their representatives usually being notified so that they may be present. When the test is completed a specification form will be supplied by the department, which must be correctly filled in and duly signed by the maker, who must also submit sample photographs in various positions of adjustment, with instructions for adjustment. The specification and photographs, and report on the test will then be submitted for the board's consideration, the result of which will be communicated to the makers, and if the jacket is approved, they will be requested to supply a number of copies of the specification and photographs for distribution amongst the inspectors, and to undertake to provide with all jackets supplied a minimum number of photographs showing adjustments. All life jackets must strictly comply with the specification and original sample approved by the board, and be inspected at the maker's works or warehouse, or elsewhere, by a representative of the board, when a percentage of each batch will be tested by floating them in fresh water with the required amount of iron suspended from them. If found satisfactory, they should be stamped to show they are approved, with date of examination and initials of the person making the examination. All life jackets found on board ship may be tested by a steamship inspector, whether previously approved or not, and may be tested as to condition, or to ascertain what weight of iron they will support, and if found deficient, will be condemned, and a report will be made to the board, who reserve the power at any time to withdraw their approval of an approved life jacket.

The Ogdensburg Coal & Towing Co., Ltd., the incorporation of which was mentioned in our last issue, has an authorized capital of \$1,500,000 and office at Montreal. It has taken over the business formerly conducted in Canada by the Ogdensburg Coal & Towing Co., Ogdensburg, N.Y., and has formed another company under the name of the Ogdensburg Coal Corporation, with \$200,000 authorized capital, to take over the U. S. business, and which will be controlled by the Canadian company. The officers and directors of the O. C. & T. Co. are:—President, W. L. McDougald, Vice President, Century Coal & Coke Co., Montreal; Secretary-Treasurer, G. P. Morgan, Montreal; other directors, J. W. Norcross, Vice President and Managing Director, Canada Steamship Lines; R. M. Wolvin, President, Montreal Transportation Co.; C. A. Barnard, K.C., director, Canada Steamship Lines, Ltd., and F. S. Isard, Comptroller, Canada Steamship Lines, Ltd.

The Marine Engineers Association of Newfoundland, at a recent annual meeting, passed resolutions of sympathy with the relatives of those who lost their lives in the wreck of the s.s. Florizel. Officers for this year were elected as follows:—C. Puddester, President; John Pollock, Vice President; James Coffey, Secretary; Treasurer; W. Crossman, A. McKinley, E. J. Birch, executive committee.

## Notes on Vancouver Shipbuilding Plants.

Some twenty years ago the parts of two or three small steel cargo boats were taken from Great Britain and assembled in Coal Harbor, B.C., but no serious effort was made in shipbuilding until the spring of 1916, by which time the shortage of tonnage was becoming acutely felt, particularly in the export lumber trade. The B.C. Government offered encouragement to the construction of wooden auxiliary

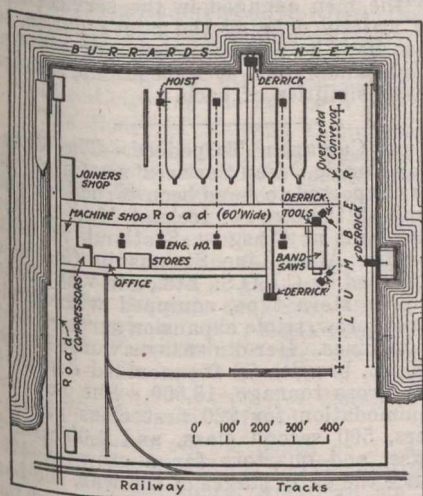


Fig. 1. Wm. Lyall Shipbuilding Co.'s yards at West Vancouver.

steam sailing schooners and a score of them were quickly under construction. They are built to one type, of 2,550 tons dead weight and 1,500,000 ft. of lumber in capacity. Each has twin Bolinder engines of 360 h.p. to give a speed of 8 knots. Many of this first group of ships have been launched and several have made voyages.

Steel steam shipbuilding quickly followed on the first wooden shipbuilding programme, and on May 17, 1917, the first oceangoing steamer built in Western Canada was launched by the Wallace Shipyards, Ltd., at North Vancouver. This was War Dog, a boat of 4,800 tons dead weight, 315 ft. long, 45 ft. moulded beam, 27 ft. deep and 6,750 tons displacement. Engines designed and built in the yards gave her a speed of 10 knots.

The wooden ship yards are, broadly

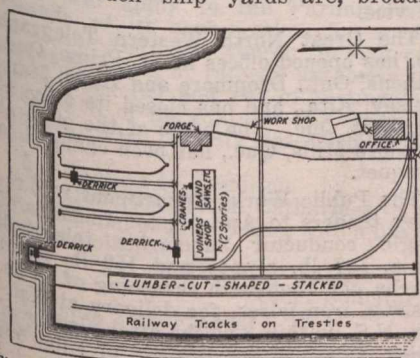


Fig. 2. A typical wooden shipbuilding yard at Vancouver.

speaking, laid out on the same general plan, a typical example of which is the Wm. Lyall Shipbuilding Co.'s yards near Vancouver, shown in fig. 1. There is a wide frontage to the sea or river, with space sufficient for laying down the number of vessels required side by side, with a pier or wharfage for unloading waterborne material and a narrow gauge line or lines to carry it to the workshops,

aerial conveyors or travelling derricks to distribute it where required when worked up, and hoists to handle it at the respective ships. In every case the base of the yard is contiguous to railway trackage, with a spur or spurs into the yard. Facing the line of vessels, is a row of machine shops and adjoining these are the compressors, usually three, for furnishing power to the compressed air tools. These consist of boring, drilling and turning machines, a plant for cutting, threading and heading bolts, and another for galvanizing. A model loft, pattern shops, a floor for templates and the drafting office are grouped together. As compared with the plant for building steel ships, that for the construction of wooden vessels is simple. The massive timbers are unloaded from scow, by the travelling derrick on the wharf, and stacked in the space between the lines of the derrick and the overhead conveyors, which carry the material to the band saw shops, where it is cut to the templates and swung over to the second travelling derrick and by it transferred to a third. It is then delivered to the ship cranes and hoisted into position.

Fig. 2 shows the layout by another wooden ship yard, of slightly different

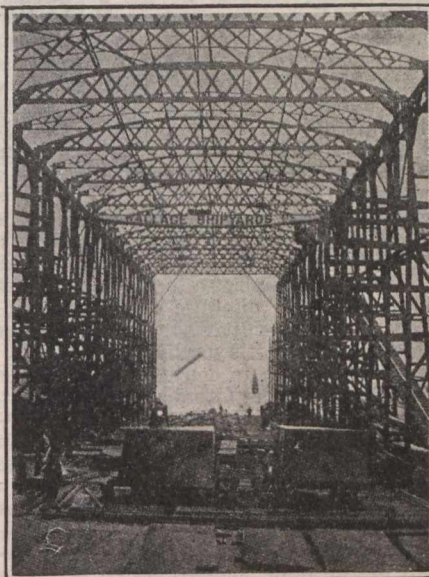


Fig. 3. Steel shipbuilding at Wallace Shipyards, Ltd., North Vancouver.

layout from the Lyall yard, though the plant contained is practically similar. Where the lumber is taken to the yard on the cars, it is stacked along the rails of the travelling derrick by which it is taken to the shops, the overhead conveyor in this case being dispensed with. This derrick also travels on tracks between the shipways which it controls. Ample space is required for stacking the lumber upon delivery and again when shaped and prepared. A great deal of work is done in the open air by hand, such as the shaping of the massive rudder and bow pieces, and stern posts, scarfing, trimming knees, etc., the preparation of the masts, yards and booms.

A much greater space is demanded for wooden shipbuilding, in proportion to tonnage, than for building in steel. In the latter yards, materials require much less space. Plates are placed on edge in racks and passed with the minimum of handling to the punching and boring machines. A

few months ago steel ships in this territory were assembled rather than built, but a complete change is being brought about. Though no steel is rolled in the province as yet, all shaping, cutting, bending, welding, casting, turning, boring, drilling and punching are now done in the shops of the yards. Engines are designed and built complete, instead of being simply imported and set up.

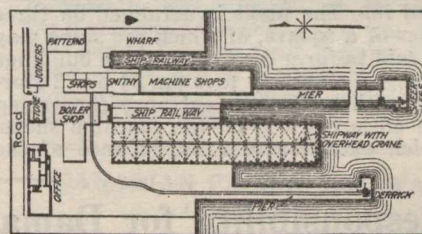


Fig. 4. Wallace Shipyards, Ltd., plant, North Vancouver.

The Wallace shipyard at North Vancouver (fig. 4) is a good example of this type. Here a large runway with overhead crane is placed between two piers. The one to the west is for loading and unloading scows, and the eastern pier has a travelling derrick, but has sheer legs as well, at the pierhead, and the pier is upon a greater scale and is carried out to deep water. Immediately east of the shipway, with its crane, which is shown in fig. 3, is a ship railway of 2,500 tons capacity and parallel with that are the machine shops, smithy, shaping floor, furnace room and galvanizing plant in the order named. The offices and drafting rooms occupy a second story over a portion of the machine shops. Then comes ship railway 2, of 1,500 tons capacity, and more wharfage where an extension of the machine shops

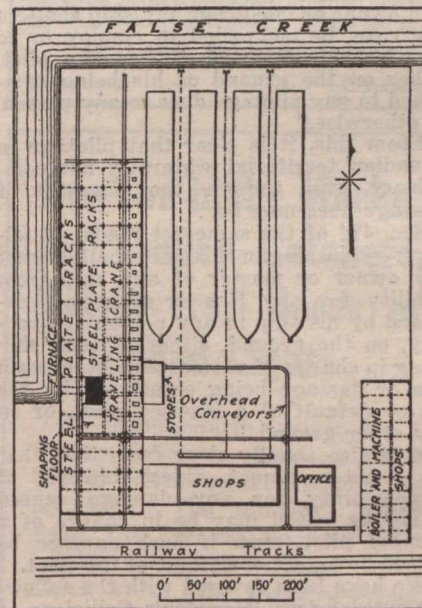


Fig. 5. J. Coughlan & Sons Steel Shipbuilding Yard.

is being made. The crane, it will be noticed from fig. 3, travels on light steel runways braced by overhead trusses. North of the gantry extend the boiler shop sheds, punching and riveting shops, all beneath the same roof. The L-shaped building in the northeast corner contains joiner and carpenter shops and pattern rooms. The forge connected with these yards is on the Vancouver side of the

harbor. The entire capacity of the yard is limited to the construction of one ship of 8,800 tons and the simultaneous docking and repairing of two others, not exceeding 2,500 and 1,500 tons deadweight.

In J. Coughlan & Sons yards on False Creek six steel steamers aggregating 52,800 tons deadweight are in course of construction. The position is ideal, having a wide frontage on sufficiently deep and wide water with a bay and wharfage on the west side. The Great Northern Ry. tracks form the southern base. The building is carried on in the open, but one of the last ships laid down is to be covered in. The plant is arranged on three sides of a square, of which the ships may be said to form the fourth. The buildings facing the railway (see fig. 5) are 2 storied, with a through entrance separating the office block from the machine shops, which extend across the balance of the

front. Above the machine shops are the mold loft and template rooms. The whole of the west wing is devoted to the preparation of the plates, which are unloaded at the wharf on that side and placed in the racks by means of a narrow gauge railway, and distributed thence to the different boring, cutting and punching machines, by means of the same narrow gauge, which is continued around the building. A powerful travelling crane takes the prepared materials to the yard and then they are delivered by the overhead conveyors to the different ships. An extensive shaping floor and furnaces are included in this wing, where the ribs, bearers, beams and stanchions are bent to the templates. A 3-story boiler shop forms the eastern wing, for the engines and boilers are designed and built in the yards.—R. Mackay Fripp in Engineering News-Record.

not take a pilot, seems open to question. The fact of his having to pay the charges whether he takes a pilot or not, does not necessarily make him take one, on the ground that he has to pay for it anyway. He takes a pilot for safety. If the clause compelling payment of the charges in the event of a pilot not being taken were deleted, there is no ground for supposing that a master would take chances and navigate the vessel to port without a pilot. It is thought that the situation might be cleared by making the taking of a pilot compulsory; by improving the type of the men engaged in the service; and by strictly defining the pilot's duties, so that both he and the master of a vessel might understand their positions, and the responsibilities of each.

## Responsibility for Damages in Marine Casualties.

In the course of the recent enquiry into pilotage at maritime ports, the chairman of the commission, Thos. Robb, is reported to have stated, in commenting on certain evidence, that "if the law compelled a master to take a pilot, the master was relieved of responsibility."

This is a question which seems to have exercised the minds of various persons who are, or have been, associated, either officially, or through misfortune, with marine casualties, for some time, and not alone on this side of the Atlantic Ocean. So far as one can judge after hunting for the needle of common sense in a haystack of legal verbiage, there are different rules applying in different territorial waters, but so far as Canada is concerned, there appears to be no ambiguity in the law governing the point.

The Canada Shipping Act, R.S.C. 1906, chap. 113, sec. 473, provides as follows:—"No owner or master of any ship shall, in any case, be compelled to employ or to give his ship into the charge of a pilot, either on the ground of his being compelled to pay pilotage dues to any person, or otherwise."

From this, it is clear that pilotage in Canadian territorial waters is not compulsory, even though the payment of pilotage dues may be.

Sec. 474 of the same act reads, as follows:—"Nothing in this part shall exempt any owner or master of any ship from liability for any loss or damage occasioned by his ship to any person or property, on the ground, either of such ship being in charge of a licensed pilot, or such loss or damage being occasioned by the act or default of a licensed pilot, or on any other ground."

It is also equally clear from this, that the master cannot divest himself of responsibility for any damage caused while the vessel may be in charge of a licensed pilot, even if such damage be caused by an act or default of the pilot.

We have been favored with the following extract from Marsden's Collisions at Sea, on the matter of compulsory pilotage:—"A pilot, whom the owner or master of a ship voluntarily employs to navigate the ship, is the servant of the owner for that purpose, and the owner is answerable for a collision caused by his fault or negligence. In some waters, and under certain circumstances, the law requires a ship to be placed in charge of, and navigated by, a qualified or licensed pilot, and in such cases, it is a statutory offence on the part of the owner or person

in charge of the ship, not to take a pilot on board. A pilot taken under these circumstances, called 'a compulsory pilot,' is held to be placed in charge of the ship by the law, and to supersede the master in the conduct of the ship so long as she is in pilotage waters. He is not the servant or the agent of the owners, and for a collision caused entirely by his negligence, neither is the owner answerable at law, nor the ship at Admiralty. In such cases the remedy of the injured person is against the pilot alone. Pilotage is held to be compulsory, so as to exempt owners from liability for the acts of the pilot in all British waters, and for all ships in, and for which the employment of a pilot is enforced by penalty, or where the pilotage charge can be recovered against the ship or her owners, whether the pilot is employed or not. In some foreign waters pilotage is compulsory in the sense that payment of the pilotage charge is compulsory, but the shipowner is nevertheless liable for the pilot's negligence."

This argument, in conjunction with the two sections of the Canada Shipping Act, quoted above, leaves the situation thus:—A master is not compelled to take a pilot on board his vessel; he is compelled to pay the pilotage dues, whether he takes a pilot or not; and neither the master, nor the owners, are relieved from responsibility for damages through any act or default of the pilot, should one be taken on board to navigate the vessel.

A well known shipping authority, in giving Canadian Railway and Marine World his opinion, says: "If the law compels the master to take a pilot, the master is relieved of the responsibility, but I would mention that this would only apply in cases where pilotage is compulsory. Here in Canada, a vessel is not obliged to take a pilot, though the master or owner, whether he does or not, is obliged to pay the pilotage dues. This system, I contend, tends to do away with what is the principal consideration, i.e., safety."

Whatever may be the case in other waters, vessels entering Canadian waters are under Canadian laws, and when a pilot is taken on board, he is there merely in an advisory capacity, owing to his presumed knowledge of local conditions, the sole control of the vessel remaining with the master. Though the master is not compelled to take a pilot, it is always advisable for him to do so, and, as a matter of fact it is always done by ocean going vessels; but whether he should be compelled to pay pilotage charges should he

s.s. Calgarian Torpedoed.—The Canadian Pacific Ocean Services' s.s. Calgarian was reported to have been torpedoed and sunk off the coast of Ireland, Mar. 1. She was built at Glasgow, Scotland, in 1913, for the Allan Line Steamship Co., now absorbed by C.P.O.S., Ltd., and was of the cruiser stern type, equipped with quadruple screw, triple expansion arrangement of turbines. Her dimensions were: length 600 ft., breadth 72 ft., moulded depth 54 ft.; gross tonnage, 18,500. She had accommodation for 220 first class passengers, 500 second class, and 1,000 third class, and quarters for a crew of 470. Since the early stages of the war, she has been used as an auxiliary cruiser and for transport work, but latterly for cruiser work only. It has been suggested that vessels of this type should not be used for auxiliary cruiser operations, as they are stated not to be fitted for the work, and could be used otherwise to better advantage.

The Unsinkable Ship.—The Ship Protection Committee of the U. S. Shipping Board, received a number of suggestions recently for making ships practically unsinkable, and has selected several of the devices for tests and experiments.

## Telegraph, Telephone and Cable Matters.

The Public Works Department received tenders during March for the supply of 30,000 lb. of galvanized iron telegraph wire, for early delivery at Nelson, B.C., for the Dominion Government Telegraph Service.

The Great North Western Telegraph Co. has opened offices at St. Prime, Que., Athens, Ont., Dropmore and Hvas, Man., Kelsey, Alta., and has closed its office at Perthuis, Que. The name of the office at Methors Mills, Que., has been changed to Dosquet.

The Public Works Department will receive tenders to Apr. 15, for 12 knots of single conductor submarine telegraph cable, 107 lb. copper and 150 lb. gutta percha per knot, with sheathing of 12 no. 8 s.w.g. iron wires, for delivery at Halifax, N.S., within 8 weeks after placing of order, and also for 5 reels of same on several reels for distribution, to be delivered at Vancouver, B.C.

The Maritime Telegraph & Telephone Co.'s report for 1917 shows receipts of \$813,483.52, and expenses of \$683,978.53. The dividends paid, including one paid Jan. 1, 1918, were \$111,000, leaving a surplus of \$18,504.99. The directors for this year are: S. M. Brookfield, O. E. Smith, G. E. Faulkner, L. B. MacFarlane, C. F. Sise, Jr., G. F. Pearson, A. Mackinlay, J. H. Winfield, and E. L. Macdonald.

**Among the Express Companies.**

The Board of Railway Commissioners has extended the express delivery and collection limits for Calgary, Alta., as defined in order 15149, Sept. 8, 1911, by including Rideau Road, from Mission Bridge to the Emery Floral Co.'s green-houses.

The Canadian Ex. Co. announced Mar. 18, that, under instructions by the Ontario Government, no more intoxicating liquors would be carried by it to points on the Timiskaming & Northern Ontario Ry. As the carriage and delivery of intoxicating liquors to and in Ontario, is prohibited by law, after Mar. 31, this was only anticipating the law by a few days.

The Board of Railway Commissioners issued order 27036, Feb. 26, directing that the Dominion Ex. Co.'s special mileage tariff for the carriage of cream of in British Columbia, be extended beyond 75 miles, as follows:—75 to 100 miles, 5 gal. can, 40c.; 8 gal. can, 45c.; 10 gal. can, 60c.; 100 to 150 miles, 5 gal. can, 50c.; 8 gal. can, 55c.; 10 gal. can, 68c.; 150 to 200 miles, 5 gal. can, 60c.; 8 gal. can, 65c.; 10 gal. can, 75c. The new rates are effective Apr. 1. The application for a reduction in the rates for cream for distances not over 75 miles, was refused.

Consequent on the death of J. A. D. Vickers, Vice President and General Manager, Western Lines, American Ex. Co., Chicago, Ill., the following changes have been announced:—C. D. Summy has been appointed acting General Manager, Western Lines, Chicago; W. E. Beckner has been appointed Assistant General Manager, Western Lines, Chicago. We have also been advised of the following changes:—W. G. Smith has resumed his duties as Manager, Central Department, Western Lines, Cleveland, Ohio; J. H. Gates has been appointed Manager, Northwestern Department, Western Lines, Chicago., and C. L. Chase, heretofore acting Manager, Northwestern Department, Chicago, has been appointed Manager, Southern Department, Western Lines, Chicago. In connection with the death of J. A. D.

Vickers, which was referred to in Canadian Railway and Marine World for March, the American Express Co.'s President, G. C. Taylor, issued the following circular: "With deep regret I record the death of J. A. D. Vickers, Vice President and General Manager of the company at Chicago, which occurred at his home on Feb. 17. He had been continuously in the express service since 1875, a period of 43 years, occupying the position of Vice President and General Manager for the last four years. Mr. Vickers won his high place in the express world by merit. Zealous for the interests of the company he represented, he never allowed his zeal to obscure his keen sense of justice in dealing with both his associates and the public. As an executive he exercised his authority with such kindness and modesty as to win the love and confidence of all those associated with him."

**Printing Express Receipts in English and French.**

Mention was made in Canadian Railway and Marine World for March, of a claim against the Dominion Express-Co. for \$150 for loss of baggage, on which the company had confessed judgment for its full liability of \$50, the plaintiff refusing same, on the ground that the shipping papers were in English, which he was unable to read, and claiming that they should have been in French. In delivering judgment for the plaintiff for \$50, as admitted by the company, Mr. Justice Archer dealt with the matter of the use of the dual languages on transportation papers, which is of sufficient importance to summarize as follows:—

The plaintiff, in answer to the defendants' plea, alleged that the receipt stating the conditions was in English, notwithstanding the law which obliges the company to publish its contracts and receipts in both languages, that he did not know English and did not understand the matter mentioned on the receipt, that the company's agent did not call his atten-

tion to the conditions and did not ask him to declare the value of the trunk and contents, and that he would have paid extra charges in respect of the value over \$50 had it been brought to his notice. The court considered that plaintiff knew that, besides the name and address which were inserted in lead pencil in the body of the receipt, there was other printed matter, and that therefore he was sufficiently put on his guard, and that if he could not read the document, he should have asked the agent to give him a receipt in French, to which he was entitled. He did not ask for a receipt in French, and it was therefore due to his own fault that he did not know of the special conditions on the receipt, which was a contract between himself and the company.

**CANADIAN PACIFIC RAILWAY COMPANY.**

**Notice to Shareholders.**

The Thirty-seventh Annual General Meeting of the Shareholders of this Company, for the election of Directors to take the places of the retiring Directors and for the transaction of business generally, will be held on Wednesday, the first day of May next, at the principal office of the Company, at Montreal, at Twelve o'clock noon.

The Common Stock Transfer Books will be closed in Montreal, New York and London at 3 p.m. on Tuesday, the ninth day of April. The Preference Stock Books will be closed in London at the same time.

All books will be re-opened on Thursday, the second day of May.

By order of the Board,  
ERNEST ALEXANDER,  
Montreal, March 11th, 1918. Secretary.

Freight and Passenger Steamers, Barges, Tugs, Vessels, Yachts, Lighters, Sand Suckers, Scows, etc. and Marine Machinery For Sale and Wanted. Write for Lists.

**JOHN A. MOODY**  
London - - - Ontario

**THE TORONTO, NIAGARA & WESTERN RAILWAY COMPANY.**

Notice is hereby given that The Toronto, Niagara and Western Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time wherein it may construct the lines of railway authorized by paragraphs (a) and (b) of section 2 of chapter 51 of the Statutes of Canada for the year 1916, shortly described as follows:—

- (a) Toronto to Hamilton.
- (b) Hamilton via St. Catharines to the International boundary line, with a branch to Port Colborne.

GERARD RUEL,  
Chief Solicitor.

Toronto, 25th February, 1918.

**THE CANADIAN NORTHERN ONTARIO RAILWAY COMPANY.**

Notice is hereby given that the Canadian Northern Ontario Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time wherein it may construct the line of railway authorized by paragraph (b) of section 2 of chapter of the Statutes of Canada for the year 1916, shortly described as follows:—

From a point on its authorized line between Port Arthur and Sudbury, near the head of Long Lake, thence northerly and westerly to a junction with the National Transcontinental Railway east of Lake Nipigon.

GERARD RUEL,  
Chief Solicitor.

Toronto, 5th March, 1918.

**JOHNS-MANVILLE PRODUCTS**

- |                            |  |  |
|----------------------------|--|--|
| Roofing and Sill Coverings | Magnesia & Fire Felt Locomotive Laggings | Asbestos Cements                           |
| Packings                   | Flexible Armored Squirt                  | Brake Linings and Asbestos Metallic Blocks |
| Pipe Coverings             | Suction, Tank, Hose                      | Electrical Supplies                        |
| Transite Smoke Jacks       | Air Brake Expander Ring                  | Mastic Flooring                            |
| Transite Asbestos Wood     | J-M Manual Slack Take-up for Air Brakes  | Fire Extinguishers                         |
| Waterproofing              | Steel Car Insulation                     | Vitribestos Stack Lining                   |
| Cork                       | Underground Conduit                      | Refrigerator Car Insulation                |
| Fibre Conduit              |  | Asbestos Fire Felt                         |
| Steam Traps                |  |  |

THE CANADIAN H. W. JOHNS-MANVILLE CO., LIMITED  
TORONTO MONTREAL WINNIPEG VANCOUVER

**Are You in the Market for Trolley Catchers, Retrievers, Bases or Head Lights**

We manufacture Knutson No. 5 Trolley Retriever, Knutson No. 2 Trolley Retriever, The Ideal Trolley Catcher, The Simplex Trolley Base, The Peerless No. 10 Roller-bearing Trolley Base, The Peerless Check Valve, The Peerless Junior Head Light, The Perfect Head Light, The Hollis Safety Fender, No. 3 Detachable Fender.

**Trolley Supply Co.**  
CANTON, OHIO



### 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.

**Lyman Tube & Supply Co., Ltd.**—Second-Lieutenant E. O. Champagne, of the Royal Flying Corps, heretofore salesman, Lyman Tube & Supply Co., Montreal, has sailed for England.

**Marsh Engineering Works, Ltd.**—The name of Marsh & Henthorn, Limited, makers of hoisting machinery, etc., Belleville, Ont., has been changed, by order in council, to Marsh Engineering Works, Ltd.

**Refrigerator, Heater & Ventilator Car Co.**—The Duluth, Minn., Commercial Club passed a resolution recently, urging Director General McAdoo to adopt, for all U.S. railways, the Moore refrigerator car system, which is in operation on the Duluth & Iron Range and the Duluth, Missanabie & Southern Rds., and is being introduced on the Great Northern Ry. and other lines, to conserve perishable food products.

**Franklin Railway Supply Co. of Canada, Ltd.**, the incorporation of which, under the Dominion Companies Act, was mentioned in Canadian Railway and Marine World for March, has taken over the business handled heretofore by the Montreal branch of the Franklin Railway Supply Co., Inc. The new company has exclusive rights in Canada to all the parent com-

pany's products. The officers of the new company are:—J. S. Coffin, Sr., Chairman of Board; J. S. Coffin, Jr., President, and Leland Brooks, Vice President. The Chairman, J. S. Coffin, Sr., spent 14 years in railway work and has been in the railway supply field for 26 years. He began as a machinist's apprentice and became locomotive fireman, locomotive man and road foreman of locomotives, most of his experience being on the Wisconsin Central. He then went to the Galena Signal Oil Co. as mechanical expert, was promoted to manager of that department and several years later was elected Vice President. After two years he resigned the latter position to become Vice President of the American Brake Shoe & Foundry Co., which position he held until 1911. In 1902 he organized the Franklin Railway Supply Co., Inc., of which he was president up to 1916, when he was elected Chairman of the Board. He is also a director of a number of other corporations. The President, J. S. Coffin, Jr., after leaving at the Stevens Institute, went with the Venango Manufacturing Co., Franklin, Pa., and later with the American Locomotive Co. in its erecting shop and as a locomotive inspector. In 1912 he went to the Franklin Railway Supply Co. as a service representative, then into the sales department, and in 1915 was appointed Canadian Sales Manager, which position he held up to the time of his recent election. The Vice President, Leland Brooks, after leaving Stevens Institute, was employed by the New York Central Rd. for seven years in the engineering department, and then by the Franklin Railway Supply Co., Inc. For the past year he has been connected with its Canadian branch as Assistant Mana-

### Transportation Associations, Clubs, Etc.

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

Canadian Car Service Bureau—W. J. Collins, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July and August.

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

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

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

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—C. N. Ham, Montreal.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Quebec Transportation Club—A. F. Dion, Quebec.

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

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

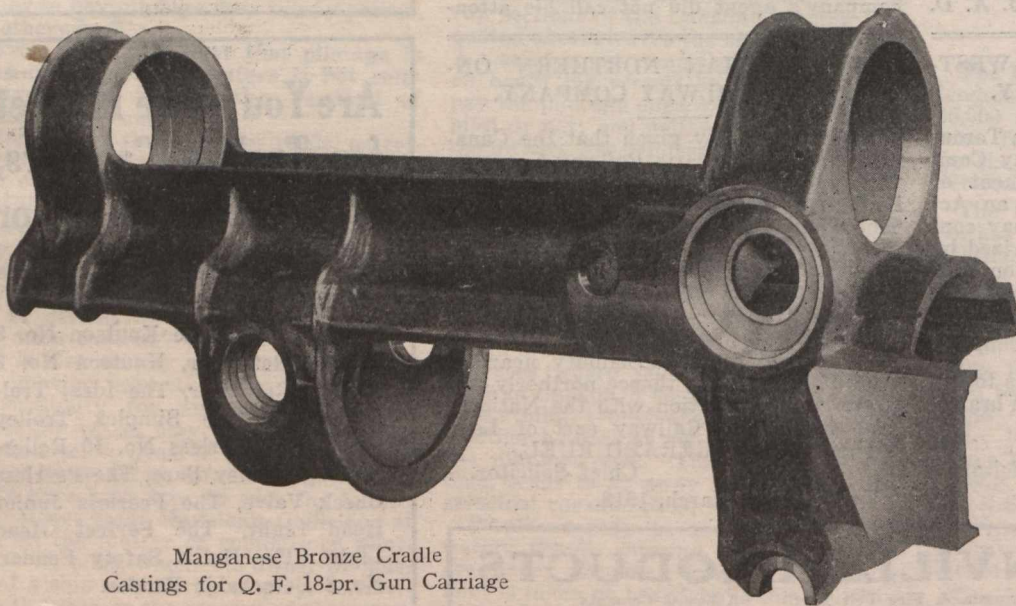
Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

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

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

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

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