

Canadian Railway and Marine World

June, 1916.

The Outside Frictionless Rail for Curves.

By W. P. Chapman, M.Can.Soc.C.E., Bridge Engineer, Eastern Lines, Canadian Northern Railway.

The wheels of a locomotive or car mounted on rigid axles, when rounding a curve tend to travel on a tangent to that curve, but are prevented from doing so by the flange of the foremost wheel coming in contact with the gauge side of the outer rail. This obstruction retards the progress of the outer wheel and momentarily allows the inside wheel to gain in distance until the back flange of the inner wheel is forced against the gauge line of the inner rail; then develops the maximum resistance in friction on curves. The inner flange in traversing the inside rail meets with no resistance to its progress from that rail except of a secondary character, the friction being first developed and transmitted from the forward edge of the front wheel traversing the outer rail. This at first permits the inner wheel to get slightly ahead of the outer wheel, until the inner flange is forced against the inner rail. It should be noted here, that the flange of the outer wheel first meets obstruction several feet in advance of the back flange of the inner wheel of truck, but the inner flange meets with no obstruction to its progress until after the former has been transmitted to it in a secondary way. The inner wheel having the lesser distance to travel, it is obvious it should be slightly retarded rather than relieved of friction. If we keep the two wheels directly opposite each other continually, and the axle at right angles to tangent of curve, the friction due to curvature is practically eliminated, provided the proper superelevation is given to overcome centrifugal force. To illustrate, we will take a 4 degree curve about 1,400 ft. long. The exact distance the outer wheel will travel is 1,409 ft., that of the inner wheel 1,404 ft. Now it is clear that if these wheels are on a rigid axle the inner wheel must either slip and lose, or the outer must jump and gain, 5 ft. in distance. It is this compensating movement on rails of same area which causes most of the friction on curves over that of the tangent.

The width of head of a standard 80 lb. rail is 2 9/16 in. With two such rails laid to standard gauge on a tangent the adhesive resistance of each should be practically the same. For our present purpose we will assume that with equal surfaces the adhesive resistance will be the same for curves. It follows that some compensating action must take place to enable the outer wheel to keep pace with the inner wheel. This is accomplished either by a slipping movement of the inner wheel, or a jumping forward of the

outer wheel. Investigations have been made, the results of which make it quite feasible to practically eliminate this most difficult feature of friction due to curvature. The solution is known as the frictionless rail. This frictionless rail is a section of same weight as the standard sections, designed to meet the exigencies of the case, covering all sections, and being quite equal to the physical requirements of the companion rail, the main features being a narrower head, giving less surface to tread of wheel; a flat, rounded gauge line, and angular side to reduce the contact surface against the flange of outer wheel. It is slightly higher than the standard section, to permit of the use of the standard or usual fishing plate or bar. At points where it joins the standard rail a slight modification of the fishing bar may be necessary.

The advantages of the frictionless rail

on the rail, meets with just a little more resistance to its revolution, tending to retard its progress. This retarding, or slip, of the inner wheel, is sufficiently uniform and effective to keep the wheels opposite each other, with the axle on a line at right angles to tangent of curve, provided of course the superelevation is not neglected. These two influences working in conjunction effect a balance or compensating action upon each pair of wheels, the result of which is that each axle will under ordinary conditions tend to traverse a curve on radii lines.

From the foregoing it is clear that the outer frictionless rail, to develop the desired results, must have, as a companion or inner rail, one with a greater area for wheel contact; in other words two rails of similar section will not permit that compensating action which gives the desired results. Further, rails on tangent or the

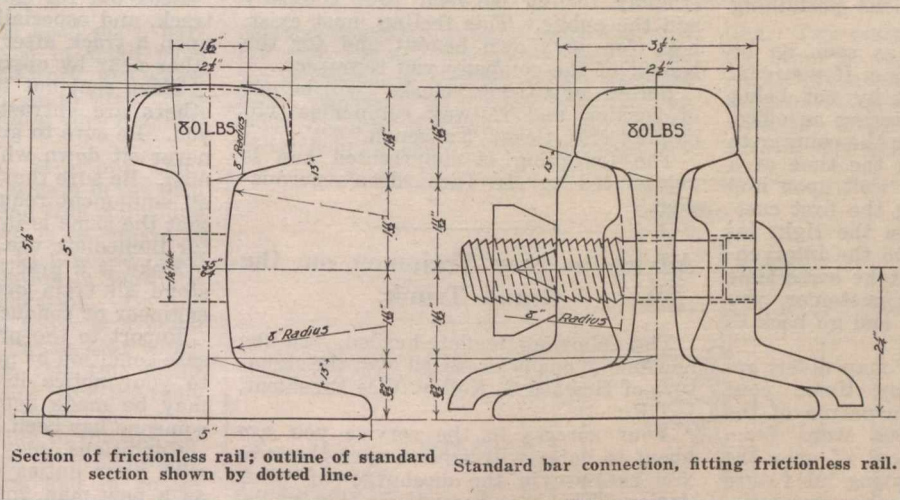
inside of curves, with track conditions good, wear horizontally, and do not show a great percentage of wear on the upper corner of head, nor at the gauge side, but they do invariably show that much of the upper corner of rail-head is worn off the outer rail on curves. This is done by the forward edge of flange and not by the collar of wheel. The design of the outside frictionless rail for curves, in addition to reducing the horizontal contact surface, also reduces the projecting angle of head,

which in the standard rail offers the greatest obstruction to the revolution of the outer wheel. Briefly, this frictionless rail is a new design—applied to a new purpose, to accomplish new and much desired economic results.

It is not necessary to go with minute details into calculations to show the exact theoretical friction or adhesion to overcome, as no two trucks are exactly the same, neither are the speeds uniform; and with other varying conditions of weather etc., it would be impossible to work out theoretical formulae to meet all conditions. Suffice it to say that the fundamental principles, if followed as outlined, will, it is confidently expected, overcome in a great measure and in an economical way one of the greatest difficulties railway companies have so long had to contend with, in that most obstinate feature, friction on curves.

The accompanying sketch shows a section of 80 lb. frictionless rail, the other sections being designed in accordance.

The writer has not considered it necessary to recognize the effect of coning on wheels, as investigations show this to be an uncertain factor and only temporary.



Section of frictionless rail; outline of standard section shown by dotted line.

Standard bar connection, fitting frictionless rail.

will be to eliminate friction due to curvature on train loads, also on locomotives, thereby greatly increasing the hauling capacity of the latter on sharp curves, and further reducing the number of rail breakages, as returns show conclusively that the number of rail failures is nearly 100% higher on curves than tangents. It will also reduce to some material extent, compensation for grades on curves—thereby reducing the cost of construction of railway.

This frictionless rail is laid outside the curve to the customary gauge with its companion rail of the standard section. As previously described, the outer wheel in traversing a 4 degree curve revolves or jumps over 5 ft. greater distance than the inner wheel. It is clear then that the object should be to remove every obstacle in the way of friction that would in any way retard the movement of this wheel. This is accomplished by decreasing the contact area of the top of outer rail, allowing the outside wheel to perform its ordinary revolutions with less friction, and gain slightly over its companion wheel on the same axle. The inner wheel, having a greater grip or contact surface

Ticket Salesmanship.

By A. G. Richardson, District Passenger Agent, C. P. R., Winnipeg.

Successful salesmanship is based upon an intimate knowledge of human nature. The main thing for a salesman to know is how to get along with people. As a general rule, a great deal depends upon the amount of interest you show in each transaction; especially in planning long-distance trips.

Selling railway tickets is as important as selling boots and shoes, or any other commodity. You never heard of a salesman selling one boot or one shoe—that's what you do when you fail to sell a round trip ticket, if the purchaser intends to return. Selling round trip tickets not only protects your company's revenue, but saves soliciting at the other end. In the ticket business, efficiency means securing the greatest amount of revenue possible from each transaction.

The best way to organize your office staff is to hold schools or council meetings regularly. Hold them evenings. Exchange ideas. Make the meetings informal and discuss different subjects, for instance: "Salesmanship," having one member of your staff act as salesman and another as purchaser. Other subjects, "Organization," "Filing System," "Tariffs," "Routes" and "Fares." In the larger cities, invite your rate clerk to attend and discuss questions pertaining to his department.

Greet every customer as soon as he comes in; call him by name, if you can. Many customers are lost by not being politely accosted when entering an office. Often a customer comes to the counter to secure a folder or to ask the time of a certain train and you can wait upon him at once without offending the first customer. If you have shown the right interest he will not object to the interruption. If you find it will take some time to wait upon the second customer, you can say, "In a moment," and go back to the first customer.

A dissatisfied customer may divert revenue amounting to many times your salary. In dealing with a patron of the company, one discourteous word from any employe will throw out of gear the entire machinery for securing his future business.

Honesty in all your dealings goes without saying—but that's not enough. Add energy, courtesy and common sense. Common sense is the keynote of good salesmanship.

Customers like to be waited on by well-appearing, clean clerks. Clean faces, clean hands and finger nails, well-kept hair, clean linen and boots, have as much to do with good appearance as good clothes.

Take care of your health. Energy is the salesman's greatest asset. You can't be energetic without having good health. Outdoor walking is one of the best means of preserving your health.

Every railway company has its own advantages. Get from the engineering, operating, or publicity department some interesting facts and talk them up. Railways spend millions of dollars on improvements, equipment, taxes, etc., and the public hear little about it. Over \$108,000,000 has been invested in block signal systems in Canada and the United States. The railways of Canada and the United States spent over \$10,000,000 in newspaper advertising last year. The railways pay over \$140,000,000 in taxes every year. There are approx-

imately 1,900,000 railway employes in Canada and the United States.

All employes of the same company must pull together. Wherever there is friction there is loss. Every employe of the company has some good ideas and cooperation will bring them out. Even the office boy has his point of view. Cooperate with employes of other departments. Ask them to advise you when they hear of anyone making a trip, and solicit the business.

Without loyalty all the other qualifications are worthless.

Keep a record of your clients' names and addresses and their favorite summer and winter trips. When you have suitable literature or circulars use this record as a mailing list. In the larger cities these names can be separated under different headings, such as: "Society," "School Teachers," "Atlantic Coast," "Pacific Coast," "Southern Destinations," etc.

Conditions of travel are continually changing—new rail and steamship lines are opened up; new train services are inaugurated—and the public expect you to be up to date.

You should be an important factor in your community and help to ensure a friendly feeling between your company and the public. This feeling must exist, both for your own benefit and for the benefit of the company you represent.

Before long ticket "clerks" will be out of fashion and railway companies will employ only ticket "salesmen."

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Advice to New Trainmen on the Grand Trunk.

The following leaflet, headed, "To the new man," has been issued over the signature of Howard G. Kelley, Vice President, G.T.R.:

Your success in the service you are about to enter will depend upon the care you exercise in the discharge of your duties. The best record you can make, both for yourself and for the company, is the record of a considerate and careful man. There are engineers, conductors and others who have worked for the Grand Trunk from 20 to 30 years without receiving injury themselves or causing injury to a single one of their fellow employes. Everybody respects the man who can make that kind of record. If you are the right kind of man—and we believe you are—you desire to become one of these honor men. One fact we want to impress thoroughly upon your mind at the beginning is this: The Grand Trunk Railway does not want anyone in its service to take an unnecessary chance in the performance of his duties for the sake of saving time, or for any other reason. We say this because experience has shown that taking chances is the worst kind of bad business both for the employe and for the company. Mutual protection, therefore, makes necessary compliance at all times with the following safety precautions: Never go between moving cars for any purpose. If the coupling apparatus should fail to work, thus making it necessary to go between, stop the cars before doing so. Never attempt to adjust drawbar with

foot, or, in other words, don't kick a drawbar to make coupling. If they don't make the first time, pull ahead and try again.

Never get upon an approaching engine or car from a position between the rails.

Don't ride on pilot of an engine except when absolutely necessary in the performance of your duties, and then be sure to keep a firm hold to prevent falling.

Where permissible in the performance of your work, ride on footboard at the following, instead of the advancing, end of engine.

When necessary to open knuckle in order to make coupling, open knuckle on the standing car, instead of the moving car where permissible, and do so when the moving car is a safe distance away—at least one car length.

When necessary to open knuckle on moving car, do not step between rails to do so, and do not attempt it except when the car is moving at slow speed.

Never go under engine or train, or get in a position whereby injury would be caused by movement of equipment, without first being sure that the other members of the crew, especially the engineer, know where you are and what you are doing.

In riding on the side of a car, place the foot in stirrup, or on grab iron, and keep the body erect and close to side of car. Do not ride with foot on brake beam or oil box.

Look out for cars before crossing any track, and especially when about to step upon a track after going behind cars or other near by obstructions.

When sent out to flag, remember that others are entrusting their lives with you. Be sure to go back far enough, and never sit down while on duty as a flagman. Be sure that you are provided with all equipment required for flagging, and that the same is in position and condition for immediate use.

Make it a practice to read and understand all train orders received by your engineer or conductor.

Report to the proper person every unsafe condition or method which may come to your notice in order that correction may be made before, instead of after, someone has been injured.

Conditions may arise in connection with your duties concerning which you, as a new man, may require information and explanation. When you find such to be the case, do not hesitate to ask. Many a beginner has got into trouble by trying to conceal his lack of knowledge. You will find the older men in the service quite willing to help you.

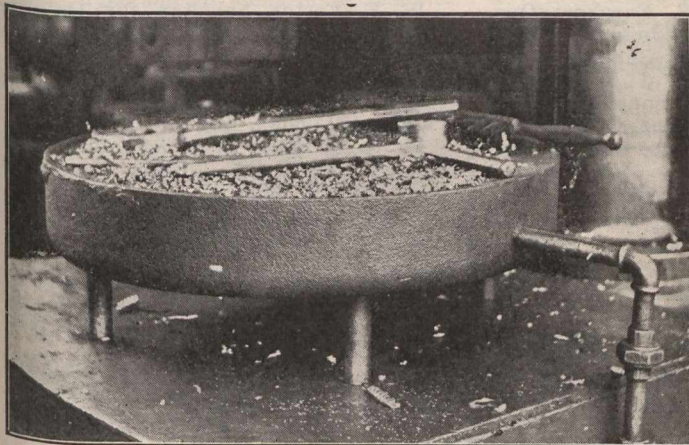
Make yourself thoroughly familiar with the Book of Rules. It represents the best methods of railway operation which we have yet been able to devise as a result of years of study and experience by the most competent men in the various branches of the service. Remember that every rule in the book exists because experience first showed such rule to be necessary, and that you will be expected to comply with the rules—all of them—and not just those you may think you ought to comply with. You should find a study of the history, reason for and construction of the rules a most interesting, as well as profitable, study.

Australian Made Rails.—Steel rails, which it is stated compare favorably in workmanship, composition and tests, with those of other countries, are being made in Australia, the first supply having been made for the Victorian Railway Commission.

Railway Mechanical Methods and Devices.

Drip Pans for Drill Presses in Grand Trunk Shops.

Where cutting compound is used on drill presses, the surrounding floor area is usually very soggy from the escaping liquid flowing over the floor. This is not only disagreeable from the aesthetic standpoint, but is also most wasteful of the cutting compound, which under these cir-



Drip Pans for Catching Drilling Compound Under Drill Presses.

stances can only be used once, barring what is often saved in small pans placed directly under the work, and which must be emptied from time to time. This latter process is not usually very economical.

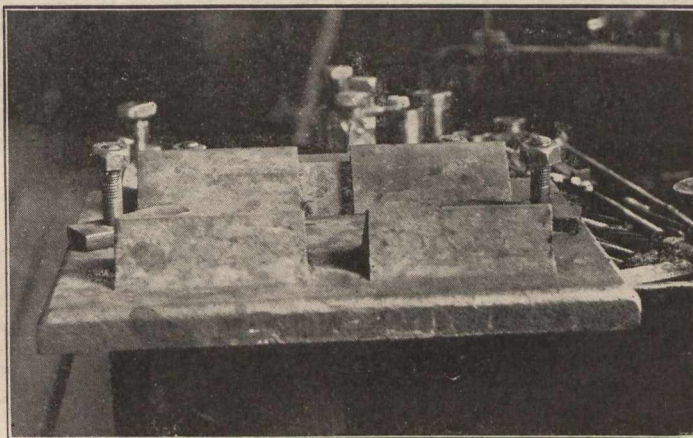
The G.T.R. shops at Stratford, Ont., have in use a complete system in the drill press section for catching this compound and reclaiming it, which is so simple in character as to appeal to practical shop men. A typical installation is shown in the accompanying illustration. On the bed of each drill press there is a small cast iron pan, let into the face of which is a sheet iron grating. On this latter all the cuttings, and liquid from the table drop, the cuttings draining the compound through the grating to the pan below. This drainage also carries through small cuttings and dirt, and in consequence, in order to make the latter a settling basin as well as a catch, an outlet pipe is let into the side as shown, about 1½ ins. above the bottom. Through this pipe, the clarified liquid, after the settling, drains off to a catch basin under the floor, several such pans draining to the one basin. From this central basin, the liquid is pumped up again to the main system for further use, only a very small amount being wasted, such as that which is carried off on the work and by evaporation.

The Railway Signal Association held its regular meetings at New York, May 24 and 25, when the general committee reports were dealt with, and also the report of a special committee on the harmonization of specifications for electrical requirements. A preliminary report on standard marking or numbering of relay posts was also considered, on presentation by a special committee on electrical testing.

Japanese laborers and minor mechanics from the Pacific Division have been moved east by the C.P.R., to work in shops and locomotive houses, owing to the scarcity of men.

Straddle Milling Tender Axle Boxes in Grand Trunk Shops.

The sides and faces of tender axle boxes are straddle milled at one pass in the G.T.R. shops at Stratford, Ont., the jig in which this is performed being shown in the accompanying illustration. The jig consists of a cast iron base, with projecting tapered blocks on the upper



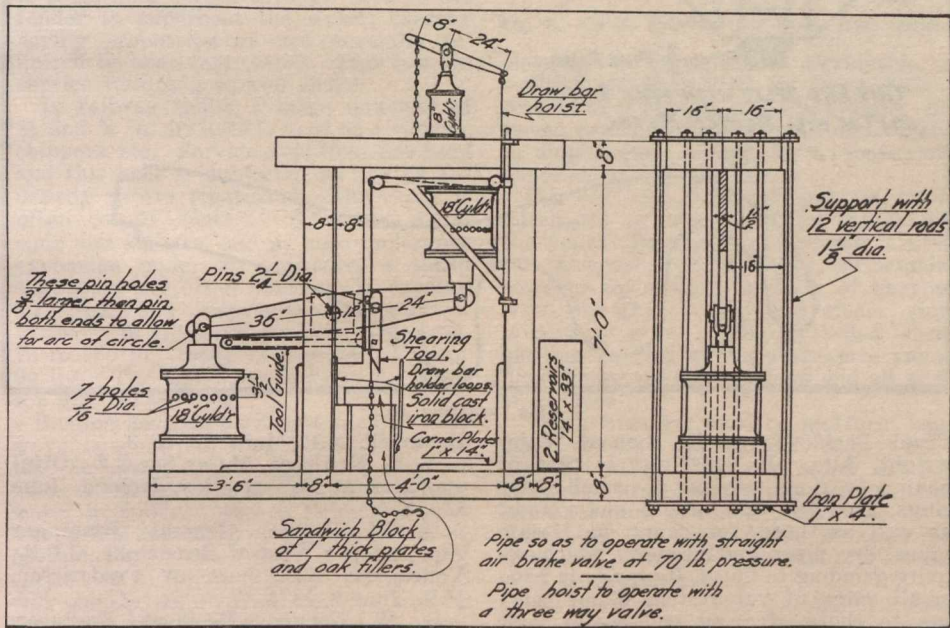
Jig for Straddle Milling Tender Axle Boxes.

surface, machined to the outside shape of the axle boxes. The under face of the jig is ribbed to fit the milling machine table, to which it is attached by two bolts. Each jig will take two boxes, these being held in place by clamp strips. A

Drawbar Rivet Shearing Machine on Canadian Northern.

A very useful device for separating drawbars and thimbles from tailstraps is used by the Canadian Northern Ry. and consists primarily of a stirrup frame with anvil block and air cylinders connected through multiplying levers to the shears as shown by the accompanying illustra-

tion. Two main cylinders one 16 in. and the other 18 in. in diameter operate the shear levers and develop an approximate force of 36,000 lbs. at the point of contact with the levers, and 110,000 lbs. at the shears, this with an extreme travel of 4



Drawbar Rivet Shearing Machine.

combination milling cutter is used on the horizontal milling machine.

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

	Acres.
Calgary & Edmonton Ry.	2,080.00
Canadian Northern Ry.	9,692.26
Grand Trunk Pacific Ry.	505.30
Grand Trunk Pacific Branch Lines Co.	59.97
Qu'Appelle, Long Lake & Saskatchewan Rd. & Steamboat Co.	3,204.00
Total	15,541.53

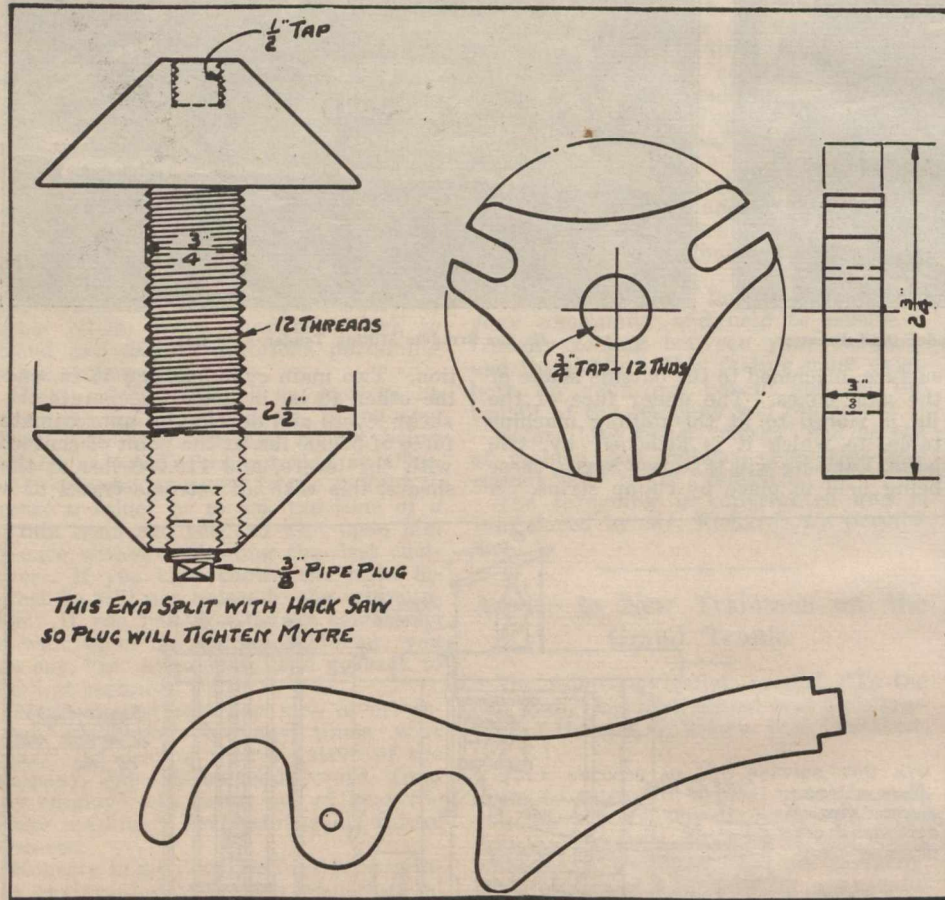
ins. The air pressure is regulated by a locomotive feed valve at 80 lbs. pressure per square in. On top of the frame is placed an 8 in. cylinder forming a lifting medium for use in placing drawbars. A solid cast iron base block is used and all drawbars are securely fastened in place for the shearing operation. The operating cylinders are cushioned when passing on the up stroke, so that there may be no possibility of pistons striking the heads violently. This is accomplished by drilling a row of 7/16 in. diameter holes 3½ ins. from the non pressure head, so as to rapidly release the air when the piston

passes this point, diminishing the operating pressure in the cylinder.

The operation of the machine is controlled from an engineman's brake valve, which is so placed as to force the shears down slowly on the drawbar rivet when the handle is in running position. In full release position the shearing effect is a maximum and to release the handle is placed in emergency position. It has been found possible to handle 60 drawbars a day by two men. We are indebted to T. Clegg, Air Brake Foreman C.N.R., for the above information.

Ring Centering Jig on Grand Trunk Pacific.

The device shown in the accompanying illustration is employed by the Grand



Ring Centering Jig.

Trunk Pacific Ry. in its shop at Wainwright, Alta. Its chief use is that of holding various styles of small joint rings, used for valve stems and glands, as well as those for front end steam pipes, dry pipes and headers, which require grinding to finish. Its range is from small rings of valve stem gland packing to those of front end steam joint rings. It will hold rings either from the inside or outside. It is centered and true as soon as the feet grip the ring. By turning the leg carrier up and down on the spindle the feet are spread or contracted.

It was developed by W. W. Yeager, now Locomotive Foreman at Biggar, Sask., when he held a similar position at Wainwright, Alta.

Scotch Railway Rates Increased.—The Caledonian and North British Railways have raised their rates from all their stations to other stations in Scotland, to the maximum, less 10%, where the maximum rates are not already in force.

Birthdays of Transportation Men in June.

Many happy returns of the day to:—
 Jas. Anderson, Manager, Sandwich, Windsor & Amherstburg Ry., Windsor, Ont., born at Ayr, Ont., June 20, 1851.
 F. F. Backus, Assistant to President, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., born at Rochester, N.Y., June 4, 1860.
 W. C. Bowles, General Freight Agent, Western Lines, C.P.R., Winnipeg, born at Montreal, June 3, 1875.
 J. H. Boyle, Superintendent, District 1, Eastern Division, C.P.R., Farnham, Que., born at Waterloo, Que., June 26, 1869.
 F. P. Brady, General Superintendent, National Transcontinental Ry., Quebec to Winnipeg, and Lake Superior Branch, G. T. Pacific Ry., Cochrane, Ont., born at

tinental Ry., Quebec, born at Montreal, June 9, 1860.

E. W. DuVal, Superintendent, District 3, Saskatchewan Division, C.P.R., Saskatoon, born at Toledo, Ohio, June 5, 1885.

Knowlson Elliott, City Freight Agent, C.P.R., Calgary, Alta., born at Gorrie, Ont., June 26, 1884.

J. M. R. Fairbairn, M.Can.Soc.C.E., Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal, born at Peterborough, Ont., June 30, 1873.

W. E. Foster, Solicitor for Ontario, G.T.R., Montreal, born at Belleville, Ont., June 27, 1866.

A. A. Goodchild, General Storekeeper, Eastern Lines, C.P.R., Montreal, born at Peckham, London, Eng., June 3, 1866.

H. W. Harding, Local Secretary, Canadian Northern Ry., London, Eng., born there, June 6, 1869.

Hon. J. D. Hazen, M.P., Minister of Marine, Ottawa, born at Oromocto, N.B., June 6, 1860.

L. K. Jones, I.S.O., Assistant Deputy Minister, Department of Railways and Canals, Ottawa, born at Port Hope, Ont., June 9, 1849.

A. C. Lytle, Assistant Superintendent of Construction, Montreal Tramways Co., Montreal, born at Hemmingford, Que., June 6, 1854.

R. S. McCormick, M.Am.Soc.C.E., Chief Engineer, Algoma Central & Hudson Bay Ry. and Algoma Eastern Ry., Sault Ste. Marie, Ont., born at Quaker City, Ohio, June 22, 1873.

Duncan McDonald, ex-General Manager, Montreal Tramways Co., born at St. Thomas de Montmagny, Que., June 17, 1859.

S. J. McLean, Dominion Railway Commissioner, Ottawa, born at Quebec, June 14, 1871.

C. E. McPherson, Assistant Passenger Traffic Manager, Western Lines, C.P.R., Winnipeg, born at Chatham, Ont., June 7, 1861.

W. R. MacInnes, Freight Traffic Manager, C.P.R., Montreal, born at Hamilton, Ont., June 7, 1867.

G. Manson, Assistant to the Vice President, C.P.R., Montreal, born at Thurso, Scotland, June 8, 1863.

H. N. Merriam, ex-Division Engineer, Pacific Great Eastern Ry., Golden, B.C., born at Waupun, Wis., June 19, 1874.

J. D. Morton, Assistant Comptroller, Canadian Northern Ry., Toronto, born at London, Ont., June 15, 1857.

L. Mulkern, Division Freight Agent, C.P.R., Atlantic Division, St. John, N.B., born at London, Ont., June 18, 1871.

J. E. Pinault, General Superintendent, Canada & Gulf Terminal Ry., Mont Joli, Que., born at Rimouski, Que., June 24, 1884.

F. R. Porter, Assistant General Freight Agent, Grand Trunk Pacific Ry., Winnipeg, born at Stratford, Ont., June 13, 1875.

F. Price, Superintendent of Car Service, G.T.R., Montreal, born there, June 11, 1864.

Allan Purvis, General Superintendent, Eastern Division, C.P.R., Montreal, born at Batavia, Java, June 29, 1878.

J. L. Reycraft, Solicitor, Manitoba and Saskatchewan Divisions, C.P.R., Winnipeg, born in Orford Tp., Kent County, Ont., June 20, 1868.

L. G. Rogers, Assistant Superintendent, District 1, Ontario Division, C.P.R., Trenton, Ont., born at Richford, Vt., June 18, 1874.

N. Van Wyck, Freight Claims Agent,

Haverhill, N.H., June 22, 1853.

A. H. N. Bruce, M.Can.Soc.C.E., Ottawa, born at Ballyscullion, Ireland, June 18, 1854.

H. W. Brodie, General Passenger Agent, Lines West of Revelstoke, C.P.R., Vancouver, B.C., born at Fredericton, N.B., June 8, 1874.

G. W. Coburn, Resident Engineer, C.P.R., Brandon, Man., born at Upper Melbourne, Que., June 24, 1877.

E. P. Coleman, General Manager, Dominion Power & Transmission Co., Ltd., Hamilton, Ont., and Vice President, Canadian Electric Railway Association, born at Taunton, Mass., June 14, 1867.

W. S. Cookson, General Passenger Agent, G.T.R., Montreal, born at Port Jervis, N.Y., June 12, 1871.

E. L. Cousins, Chief Engineer, Toronto Harbor Commission, Toronto, born there, June 11, 1883.

A. Craig, City Passenger Agent, C.P.R., Hamilton, Ont., born there, June 5, 1884.

A. E. Doucet, M.Can.Soc.C.E., Quebec, ex-District Engineer, National Transcon-

Canada Steamship Lines, Ltd., Montreal, born at Hamilton, Ont., June 29, 1883.
V. G. R. Vickers, Manager, Foreign De-

partment, and Superintendent; Atlantic Division, Dominion Express Co., Montreal, born at Toronto, June 1, 1866.

Walter White, Trainmaster, G.T.R., Palmerston, Ont., born at Toronto, June 4, 1866.

The Use of Rubber Goods in Railway Service.

By J. M. S. Carroll, Manager, Quebec Division, Canadian Consolidated Rubber Co., Ltd.

Railways are amongst the largest users of rubber goods of various kinds, and a general summary of some of the most important lines regularly purchased may be of interest:

Air brake and air signal hose, made to standard M.C.B. specifications. All railways have in recent years improved the general treatment accorded train hose, and complaints on bad quality are now practically unheard of. A large proportion of train hose formerly was destroyed by careless treatment in service, but watchfulness and care on part of railway officials have effected a wonderful improvement in this connection. Brakemen would occasionally give the locomotive man a signal to go ahead, after cutting off certain cars, and omit to disconnect couplings of hose, resulting in undue strain on end of hose; and often a fractured end.

Normal air pressure in 1 3/8 in. train hose is 90 lbs. Wear in Canadian service is not due so much to working pressure

	Length.	I.D.	Enlarged ends
Canadian Pacific...	25 in.	1 1/2 in.	1 3-4 in.
Grand Trunk.....	24 in.	1 1/2 in.	1 13-16 in.
Intercolonial	24 in.	1 1/2 in.	1 5-8 in.
Michigan Central..	24 in.	1 1/2 in.	1 11-16 in.

Up to the present, various roads appear to lack cohesion in seeking to establish standard length and other measurements, applying to steam heater hose. Their nipple equipment varies, and each road no doubt has a disinclination to change its practice and adopt the other's standard. This variation in railway shop practice creates difficulty for the rubber manufacturers, by compelling use of differently equipped mandrils for each railway's requirements.

Steam pressure carried in car heating line varies somewhat, but will average around 60 lbs. Next to the locomotive pressure often reaches 90 lbs. The hard service this line has to undergo makes it important to use only best quality materials and workmanship. An accident to a steam heat line will very quickly be followed by a cold car in zero weather. Gaskets used in steam heater hose are made from a special compound to resist continuous action of steam.

Corrugated steam tender hose is connected from locomotive to tender. The line regularly in use by C.P.R. is 54 x 2 3/4 ins. x 5 ply. Hose acts as a conductor of water from reserve supply in tender to locomotive boiler. Surplus steam is sometimes forced through hose to the tender to superheat the water, thereby saving proportion of cost normally required to heat cold water. This hose in service retains a curved shape.

In railway shops, a large quantity of 1/2 and 3/4 in. air hose is used on rivetters, chippers, etc. Service conditions are hard and this hose is subjected to lots of unusually severe treatment. The cover is often cut by contact with sharp metal ends and corners, and as hose undergoes expansion under air pressure, a sharp substance will often puncture it, causing air leak and subsequent destruction. Pressure in this class of hose runs from 75 to 100 lbs., with an average of about 90 lbs. The best hose is none too good for air tool service.

Suction hose, as used by Canadian railways, is usually of roughbore type, 3 ins. i.d. On steam shovel work this class of hose is largely used for replenishing water in boiler. Hose is thrown around a good deal and cheap quality should never be sold. Construction work is often being carried on in remote places. Cheap hose will quickly disintegrate and the cost of delivering inferior hose to site of work is just as great as charges on A-1 material that can be depended upon to deliver lengthy service.

Vacuum hose is used at terminals to clean passenger cars and should be of special quality, the writer has known cases where vacuum cleaners have been put out of business by pieces of inferior tube blocking the parts. Badly cleaned cars bring a strong reprimand from the superintendent, and a general soreness develops against use of cheap hose. Vacuum hose, when in use, is dragged through windows and ends of car, and must be well cushioned by good rubber stock, in order to allow needed resiliency to twist around seats, etc.

Fire hose, both linen and cotton rubber lined is extensively used. Linen hose is also found to be an economical agent to use for wetting down coal piles.

Steam and water hose.—Large quantities of various sizes and plies, in 50 ft. lengths, are regularly used by all railways. This material is usually supplied without couplings.

Hydraulic hose must be of strong construction and preferably protected on cover by wire or heavy duck. This line is used by machine shops in connection with hammers and rams and must withstand considerable pressure.

White corrugated tubing 3-32 in. i.d. x 1-16 in. wall is extensively used in car shops to make deck sashes weatherproof.

Red rubber tubing is used as outside covering on wire berth cables in sleeper and tourist cars. The rubber cover prevents the wire from scratching varnish of cars.

Rubber boots with leather soles, are largely used by mechanical departments of railways. In the operation of washing out locomotive or stationary boilers, this

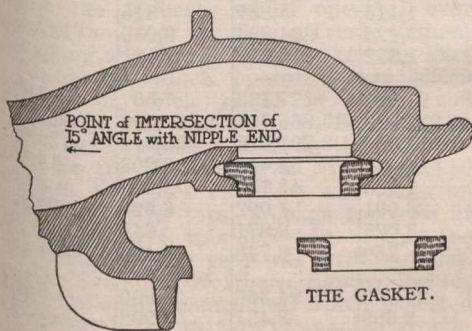


Fig. 1. M.C.B. Standard Air Brake Hose Gasket.

as to climatic extremes met with. Zero weather is troublesome and excessive cold sometimes tends to put the air hose temporarily out of service. Cases have been known on Canadian roads where the hose, in excessively cold weather, became so stiff as to uncouple the ends and thus destroy the brake connection with engine.

Train air signal hose connects between cars the standard signal equipment from the locomotive engineer's cab to end of train. In emergency cases conductor can signal locomotive man or vice versa.

Air brake gaskets play an important part in brake operation. Though small, they are perhaps the most important detail in the air brake hose connection. Experience has demonstrated that gaskets, to be fully effective, must be a specially close fit when seated in position and stock must be of a tough, resilient character. The standard M.C.B. gasket is shaped as shown in Fig. 1, which also shows detail of hose coupling where gasket is seated.

For some years past, the C.P.R. has used air brake gaskets conforming to general measurements of M.C.B. standard, but made with an extra flange, as shown in Fig. 2. This particular shape of gasket is standard with the Westinghouse Co. The Grand Trunk, Grand Trunk Pacific and Canadian Northern are also using the Westinghouse type of air brake gasket. Steam heater hose used on Canadian roads is not of uniform inside diameter, or length. Some of the measurements are as follows:

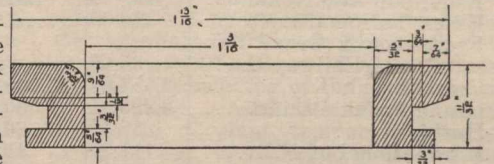


Fig. 2. C.P.R. Standard Air Brake Hose Gasket.

class of boot is especially serviceable.

C.B.S. packing 1-32 in. is used as a protective covering on diaphragms between coaches, to prevent cotton material in diaphragms rotting from continuous exposure to the weather.

C.I. packing 1-16, 1-8 and 1-4 in. is purchased in large quantities throughout the year. This class of packing is used for a variety of purposes, principally however for making gaskets of varying sizes, for both water and steam (low pressure) pipe joints, etc. Red sheet packing is used on high pressure steam lines, being cut into washers and all sizes of gaskets.

Truck tires are used on platform baggage trucks. As cement floors have almost entirely displaced wood the use of rubber tires ensures practically noiseless operation of small trucks, etc.

Pebbled (or dot) rubber is used on steps and platforms of tourist and second class passenger cars.

Inlaid rubber tiling is largely used. The Canadian Pacific, Canadian Northern, Grand Trunk, Grand Trunk Pacific and Intercolonial have hundreds of sleeping, dining and observation cars equipped with it. The rubber floor is noiseless, attractive in appearance, very enduring, and easy to clean.

Head light gaskets are used on large locomotive head lights to prevent undue vibration. Rubber stock used in this line is tough and has lots of resiliency.

The foregoing comprise the leading lines of rubber goods used in the operation of railways on this continent. A multitude of moulded rubber articles are also used in shop practice. Without rubber, railways would have great difficulty in operating.

Steam Railway Statistics for Year Ended June 30, 1915.

In the following table the column headed gross earnings includes passenger and freight earnings, as well as miscellaneous earnings; the latter not being shown separately; the next four columns give the operating expenses classified under their various headings, while the last gives the net earnings, which are arrived at by deducting the totals of the four columns referred to from the figures in the gross earnings column. The minus (—) mark before figures in the net columns shows that there was a deficit in the operations of the line to the extent of the figures given. The cents have been omitted in all cases, and the figures in the totals show the aggregate earnings, etc., including the cents, omitted from the detailed items.

Name of Railway	Mileage	Passenger Earnings	Freight Earnings	Gross Earnings	Maintenance of Way and Structures	Maintenance of Equipment	Traffic and Transportation Expenses	General Expenses	Net earnings
Algoma Central & Hudson Bay	347.81	\$ 65,492	\$ 458,748	\$ 615,153	\$ 122,682	\$ 85,242	\$ 237,625	\$ 43,129	\$ 126,273
Algoma Eastern	88.94	44,614	200,643	285,367	43,215	28,116	88,196	15,955	109,882
Atlantic, Quebec & Western	102.42	34,872	42,649	77,522	26,767	18,586	53,953	14,358	-36,143
Bedlington and Nelson	12.04	26	3	29	2,807	151	661	801	-4,393
Brandon, Sask. & Hudson Bay	69.45	26,281	23,042	49,388	41,168	9,872	50,652	5,105	-57,409
British Yukon	121.12	54,838	236,143	291,744	21,880	9,940	45,963	15,817	198,142
Canada & Gulf Terminal	35.80	20,197	21,396	41,852	8,819	2,323	19,085	7,022	4,602
Canada Southern	380.04	3,186,695	6,474,461	9,720,956	898,500	1,196,809	3,661,910	248,400	3,715,335
Canadian Government									
Intercolonial	1,450.60	3,947,891	7,187,449	11,259,709	2,116,981	2,235,592	6,676,956	319,225	-89,405
Prince Edward Island	275.20	212,621	186,560	412,520	170,116	92,756	314,536	19,634	-184,523
Canadian Northern	7,980.27	6,128,670	18,211,408	25,912,106	3,974,820	3,004,746	10,644,702	1,199,675	7,088,160
Canadian Pacific	12,823.50	28,720,643	60,285,597	90,830,245	11,400,538	11,307,965	35,073,333	2,430,731	30,617,675
Cape Breton	31.00	5,436	4,743	10,435	6,245	920	10,532	3,215	-10,487
Caraquet	84.78	24,054	45,255	71,582	17,163	8,180	33,392	8,219	4,626
Crows Nest Southern	74.18	11,059	63,013	74,085	91,706	18,569	55,148	7,345	-98,682
Cumberland Ry. & Coal Co.	32.00	18,005	83,290	101,883	20,948	6,907	44,220	3,105	26,702
Detroit River Tunnel	1.45								
Dominion Atlantic	274.16	405,921	508,716	931,052	206,863	105,029	387,023	34,779	197,356
Eastern British Columbia	14.00	2,084	30,510	33,246	10,590	4,435	13,950	1,630	2,639
Elgin and Havelock	27.00	3,999	7,761	11,760	4,612	1,113	5,887	315	-166
Esquimalt and Nanaimo	199.00	232,566	289,606	542,202	87,821	53,224	204,884	9,030	187,240
Essex Terminal	10.00		43,505	48,340	12,708	1,372	13,388	4,111	16,746
Fredrickton & Grand Lake									
Coal & Railway Co.	35.00	7,457	53,667	62,137	11,304	21,701	27,433	7,507	-5,810
Grand Trunk	3,551.64	12,199,082	23,745,812	36,456,217	4,409,695	6,076,123	15,865,763	1,282,498	8,822,136
Grand Trunk Pacific	2,228.91	1,580,332	4,950,028	6,660,580	1,887,451	1,611,323	3,291,315	593,575	-723,081
Hereford	52.18	20,686	69,751	90,836	30,118	14,964	50,410	3,803	-14,461
International of N.B.	111.30	41,367	60,249	102,403	47,330	7,289	41,755	2,200	3,826
Inverness Ry. & Coal Co.	60.91	23,231	188,352	212,911	37,998	26,901	51,092	6,694	90,324
Kent Northern	27.00	8,704	11,543	20,247	7,090	3,725	8,871	645	-83
Kettle Valley	255.75	3,608	14,506	18,383	7,963	760	6,746	1,426	1,485
Klondike Mines	31.81								
London & Port Stanley	23.66	28,986	108,371	138,196	18,388	25,703	94,366	5,900	-5,962
Lotbiniere & Megantic	30.00	7,167	16,287	23,435	9,610	2,669	8,431	4,992	-2,269
Magnetawan River	1.91								
Maine Central, (Princ. Br.)	5.10	11,829	6,731	18,561	2,102	2,403	8,828	815	4,411
Manitoba Great Northern	91.77	6,304	18,169	24,760	61,444	6,140	35,616	4,349	-82,790
Maritime Coal, Ry. & Power	15.00	6,623	62,823	69,471	11,752	5,808	20,418	2,231	29,261
Massawippi Valley	35.46	67,142	132,465	201,226	70,005	37,951	110,184	10,260	-27,176
Midland of Manitoba	6.40	134,618	97,888	251,137	56,104	41,935	248,933	15,871	-111,797
Montreal & Atlantic	163.40	219,003	693,743	930,425	212,120	75,666	455,267	34,768	152,503
Montreal & Province	58.60	39,837	63,818	105,810	37,153	2,977	48,606	2,073	15,000
Montreal & Vermont Jct.	23.60	72,729	53,366	126,298	21,403	10,746	38,072	4,035	50,040
Morrissey, Fernie & Michel	10.85	10,168	83,465	93,633	13,519	13,408	35,377	21,217	10,110
Moncton & Buctouche	32.00	12,054	17,906	31,213	7,115	3,956	14,971	5,541	-371
Napierville Jct.	27.06	14,335	82,302	96,821	12,761	7,272	33,149	1,511	42,126
National Transcontinental	1,993.50	39,006	240,842	280,887	153,019	35,924	157,163	11,002	-76,222
Nelson & Fort Sheppard	55.42	21,845	24,336	47,145	39,525	5,416	44,431	5,276	-47,505
New Brunswick Coal & Ry. Co.	58.00	13,213	26,990	42,659	20,831	9,219	14,387	3,615	-5,395
New Brunswick & P.E.I.	35.79	14,969	34,364	49,451	23,175	7,801	25,792	1,141	-8,459
New Westminster South	23.73	7,956	19,550	29,710	7,314	2,444	12,267	2,110	5,573
North Shore	8.63	205	619	825	70		899	18	-163
Northern New Brunswick & Seaboard	19.80	608	1,028	1,636	741	20	2,391	1,425	-2,942
Nosbonsing & Nipissing	5.50								
Ottawa and New York	56.90	93,018	117,341	212,314	99,635	45,791	127,848	10,747	-71,708
Pere Marquette in Canada	198.81	169,588	2,220,171	2,400,874	279,616	174,406	939,122	83,888	923,840
Phillipsburg Ry. & Quarry	6.00								
Quebec Central	253.00	416,372	903,397	1,340,265	181,026	130,899	542,706	48,970	436,661
Quebec Oriental	100.00	55,384	67,503	122,968	35,590	14,145	52,202	14,375	6,650
Quebec Ry. Light & Power	30.82	8,936	69,336	78,528	8,061	23,108	32,928	7,783	6,716
Quebec, Montreal & South	192.18	153,407	205,497	360,992	101,572	173,407	163,762	16,167	-93,917
Red Mountain	9.59	3,118	7,776	11,154	9,322	747	12,699	960	-12,576
Rutland & Noyan	3.39	8,470	5,617	14,087	3,395	2,012	5,511	676	-2,491
Roberval-Saguenay	36.80	9,642	98,326	158,255	20,672	10,086	45,990	8,365	73,050
Salisbury & Albert	45.00	11,858	21,608	36,161	10,268	9,015	13,070	2,587	1,220
Schomberg & Aurora	14.40	5,940	6,109	12,050	6,516	1,411	6,952	391	-3,221
Stanstead, Shefford and Chambly	43.00	38,845	39,289	78,642	29,098	6,816	49,702	2,687	-9,662
St. Clair Tunnel	1.10		328,708	333,919	24,239	32,071	65,584	4,765	207,258
St. Lawrence & Adirondack	46.12	244,343	309,024	556,068	78,108	32,207	293,442	13,334	138,979

(Continued on page 219)

Steam Railway Statistics for Year Ended June 30, 1915 (Continued from page 218)

Name of Railway	Mileage	Passenger Earnings	Freight Earnings	Gross Earnings	Maintenance of Way and Structures	Maintenance of Equipment	Traffic and Transportation Expenses	General Expenses	Net Earnings
St. Martins	30.00	5,965	12,291	18,389	7,866	647	7,214	895	1,765
Sydney & Louisburg	70.00	53,178	647,947	720,298	89,609	157,343	264,210	25,854	183,281
St. John & Quebec	118.82	11,380	29,955	38,883	21,473	2,324	22,021	2,131	-9,067
Temiscouata	113.00	59,633	158,914	220,482	48,712	28,800	80,324	19,194	43,450
Timiskaming & Nor. Ont.	328.49	550,398	893,067	1,477,724	396,355	273,982	639,571	98,749	69,066
Thousand Islands	6.33	12,414	19,152	34,983	5,570	630	15,181	4,375	9,224
Toronto, Hamilton & Buffalo	95.03	399,645	851,512	1,256,168	201,047	167,281	521,698	52,336	313,803
Vancouver, Victoria and Eastern	261.67	181,323	303,459	507,560	252,627	57,008	296,463	35,021	-133,559
Victoria and Sidney	15.97	20,321	11,071	31,679	16,587	4,947	19,674	3,772	-13,031
Victoria Terminal Ry. & Ferry Co.	0.99	1,700	803	2,809	379	312	1,245	344	617
Wabash in Canada .....	.....	425,133	1,867,139	2,303,612	324,228	554,369	1,228,379	86,505	110,129
York & Carleton	10.50	1,893	3,786	5,679	1,218	269	2,347	20	1,824
	35,582.44	\$60,699,934	\$134,488,303	\$199,843,072	\$28,762,906	\$28,156,261	\$83,840,915	\$6,973,025	\$52,111,972

Notes to Steam Railway Statistics.

The total mileage of 35,582.44 given in the foregoing table is the actual length of the railways being operated at June 30, 1915, but the total mileage reported by the different companies as being operated was 36,520.54, a difference of 938.10 miles. This is accounted for by the fact that 22 companies have trackage rights over other companies' lines to the extent named, the most noticeable of these being the Wabash, which operates over 245.40 miles of the Grand Trunk, without owning any line in Canada; and the Pere Marquette, which operates over 335.59 miles, of which 198.81 is owned, and 136.78 is operated under trackage rights. The total mileage given in the table includes the Noshonong & Nipissing, 5.50 miles, the track of which was taken up in 1913. The total mileage reported at June 30, 1914, was 30,794.54, so that the increase for the year was 4,787.90 miles. The Canadian Northern figures include the following companies, which reported separately in 1913-14: Canadian Northern, Canadian Northern Ontario, Canadian Northern Quebec, Brockville, Westport & Northwestern, Halifax & South Western, Irondale, Bancroft & Ottawa, Central Ontario, and Quebec & Lake St. John. The Grand Trunk figures include those of the Canada Atlantic.

The traffic statistics for the New Brunswick and Prince Edward Island cover 11 months from Aug. 1, 1914; and those for the St. John & Quebec six months from Jan. 1, 1915.

Russian Railway Extensions.—It has been officially announced that the railway between Petrograd and Kola will be completed by the end of this year, and communication established with the port of Alexandrovsk, which is free of ice all the year round. A number of other lines have been connected near Moscow, and a project to connect the Yaroslav and Nijni lines is under way.

Women as Car and Locomotive Cleaners.—Owing to enlistment of men for war purposes, most of the railway companies in Great Britain have engaged women for cleaning passenger cars, and some of them have introduced females into the locomotive sheds to assist in cleaning locomotives. When engaged in their work, the women wear overalls similar to those worn by the men similarly employed.

The export of pig iron, and of steel of various kinds used by railways and shipbuilders, has been absolutely forbidden by the British Government.

Dominion Government Railway to Hudson Bay.

Referring to the building of this railway from Pas, Man., to Port Nelson, the acting Minister of Railways said in the House of Commons recently, that there were possibly many who doubted the advisability of the construction of this railway. While he had had grave doubts as to the feasibility of the undertaking, he had come to the conclusion, after seeing the reports in the Department, and discussing the matter with those who are at work in connection with the railway, that the road will be of value to the country in time to come. It will serve a useful purpose in opening up a large area of agricultural land for settlement; there is also a large area believed to contain mineral resources, and there will be the fisheries in Hudson Bay, which it is expected will rank with those that have made the Newfoundland waters famous. Further, there was no doubt in his mind as to the navigability of Hudson Bay and Straits for several months of the year. This had been demonstrated to his satisfaction since the Railways Department, for its own purpose purchased three vessels for use in its Hudson Bay service, as well as chartering several others, and so far as these vessels are concerned, they have navigated this route without meeting with any accident of importance. It is true that during the first season two vessels were cast away right at Nelson under circumstances which have never been satisfactorily explained and which have absolutely no bearing upon the practicability of the Nelson route. The vessels that were purchased were not built purposely for this route, and other vessels would perhaps be found safer.

As to the railway, it was not expected that there would be any great rush of traffic during the first few years after it was opened, but the time would come when it would be of immense value to Western Canada. He believed also that in years to come the line would have a military value. Its total length to Port Nelson is 424 miles. Grading has been completed to mile 378; steel has been laid, including sidings, to mile 242, at which point the erection of the Mountain Rapids bridge over the Nelson River is being proceeded with. The work was expected to be completed in April and track laying will be resumed. The track is surfaced to mile 242, and a final lift of ballast has been given to mile 150. The telegraph line keeps pace with the steel, and has been laid to mile 242. The work is divided into three sections, and all three contracts were given to J. D. McArthur

& Co. On section 1, \$3,229,994 has been expended; on section 2, \$1,602,300, and on section 3, \$1,865,795, a total of \$6,698,089. The total value of the work under contract is estimated at \$9,629,605. During the coming summer the track will be carried forward to the second crossing of the Nelson River at Kettle Rapids, at mile 332. Here a large bridge is to be constructed and it is not expected that track work can proceed beyond this point until the spring of 1917, but, when resumed, it will be carried through to Port Nelson without further delay.

At Port Nelson good progress has been made on the permanent work of harbor development. Previously the work done at that point has been of a preliminary character, consisting of the establishment of the camp, construction of plant, shops for repair of plant, temporary wharves, drydock, etc., necessary for the prosecution of the work. The substructure for the bridge approach to the main dock has been carried out half a mile from shore, and the whole of the bridge superstructure will be completed this coming season. The suction dredge was employed excavating the approach channel with satisfactory results, the remaining dredges, tugs and scows being chiefly occupied in procuring stone filling for cribs and riprap.

The total expenditure upon the H.B.R. and terminals to Dec. 31, 1915, was as follows:

General expenses, engineering, etc.....	\$ 721,974
Pas bridge and terminals.....	388,172
Pas to Thicket Portage:	
On contract account.....	\$3,229,994
Rails, bridges, etc.....	2,680,896
	5,910,890
Thicket Portage to Split Lake Jct.	1,661,291
Split Lake Jct. to Port Nelson.....	1,815,869
Port Nelson terminal.....	4,977,208
	\$15,465,304

Delaware, Lackawanna & Western Rd. Connection.—In the discussion on the extension of the charters for railways in the Niagara Peninsula of Ontario, controlled by Canadian Northern interests, the rumor has been revived that when the C.N.R. builds to the Niagara frontier it will connect with the D.L. & W. and thus secure direct connection with New York. The D.L. & W. mileage from Buffalo to New York is 411 miles.

Trackmen's Wages on Government Railways.—The management has voluntarily increased trackmen's wages to \$1.75 a day on country sections and \$1.85 in cities, and coal shovellers and ash pit men's wages to \$1.70 a day.

The Pacific Great Eastern Ry. has resumed traffic on its Squamish-Clinton section, which had been closed since severe snowstorms of January.

Grand Trunk Railway Report and Meeting.

The report for the year ended Dec. 31, 1915, presented at the annual meeting in London, Eng., recently, shows the revenue account as follows:—

Gross receipts	£8,292,688-1-1
Working expenses, 78.52 p.c.....	6,511,257-4-7
	£1,781,430-16-6
Income from rentals and hire of equipment	373,222-6-2
Total net revenue.....	£2,154,653-2-8
Amount received from International Bridge Co.	31,968-2-6
Interest on Central Vermont Ry. bonds	13,013-8-6
Interest on securities controlled companies and St. Clair Tunnel bonds acquired by issue of G.T.R. 4 per cent. debenture stock.....	245,195-14-9
Balance of general interest account	95,870-15-5
Net revenue receipts.....	£2,540,701-3-10
The gross earnings for 1914 were £8,-	

596,767; working expenses, \$6,841,919; net traffic receipts, \$1,754,848; income from rentals and hire of equipment, \$327,044; total net revenue, \$2,081,892; income from securities, \$274,362; balance of general interest account \$81,438; making net revenue receipts for the year ended 1914, \$2,437,592.

The net revenue charges for 1915 were \$2,030,017-5-10, against \$2,012,477, leaving a surplus for 1915, of \$510,683-18-0, against a surplus of \$425,115 for the previous year.

Adding the balance of \$4,323-7-9 at the credit of net revenue account on Dec. 31, 1914, the amount available for dividend at Dec. 31, 1915, was \$515,007-5-9, from which an interim dividend of 1½% on the 4% guaranteed stock, amounting to \$187,500, was paid Nov. 9, 1915, leaving a balance of \$327,507-5-9, from which it was decided to pay a further dividend of 2½% on the same stock, making the total divi-

dend for the year. This absorbed \$312,500, the balance of \$15,007-5-9 being carried to the current year's accounts.

Vacancies on the board caused by the death of Lord Welby, and the resignation of G. von Chauvin, were filled during the year by the election of Sir H. A. Yorke and S. Baldwin, M.P. The remaining directors were re-elected.

The Association of Railway Claim Agents held its annual convention at Atlantic City, N.J., May 17 to 19. Addresses were given, or papers read, on the following subjects: The Federal Employers' Liability Act; prevention of accidents; handling of claims of railway postal clerks; the Ardmore explosion; claim economics; close co-operation of claim and operating departments in the investigation and settlement of claims; and how to cope with the ambulance chasing lawyer and the damage suit doctor.

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.

The dates of orders, immediately following the numbers, are those on which they were drawn.

General order 164, Apr. 25.—Suspending, pending further hearing by Board, tariffs of railway companies showing charges for sale and ice in refrigerator cars.

24893. Apr. 12.—Approving G.T.R. form of release and power of attorney 151 to be signed by persons who desire, for special reasons, to travel in cars which are not intended to carry passengers.

24894. Apr. 18.—Amending order no. 14956, Oct. 9, 1911, re operation of Canadian Northern Ry. between Delisle and Macrorie, Sask.

24895. Apr. 15.—Authorizing London & Port Stanley Ry. and Michigan Central Rd. to connect their tracks, in St. Thomas, Ont., and to cross streets shown on plan filed with the Board, except second crossing of Talbot St., and crossover track on Moore St., new plan to be filed by L. & P. S. R. in accordance with these requirements.

24896. Apr. 13.—Authorizing Canadian Northern Ry. to build spur to gravel pit and to cross Government road allowance between Secs. 19 and 30, T. 25, R. 17, w.3.m., Sask.

24897. Apr. 14.—Ordering Canadian Northern Ry. within 60 days to install bell at crossing of Desormeaux St., Tetreaultville, Que., 20 per cent. of cost to be paid out of railway grade crossing fund, balance by City of Montreal.

24898. Apr. 13.—Authorizing Canadian Northern Ry. to build across Russell Road with its proposed connection with G.T.R., in Lot 11, Gloucester Tp., Ont., reserving question of diversion or protection of the highway.

24899. Apr. 18.—Amending order 20657, Oct. 24, 1913, re operation of Canadian Northern Ry. between Macrorie and Elrose, Sask.

24900. Apr. 17.—Authorizing Canadian Northern Ry. to remove station agent at Ruel, Ont.

24901. Apr. 17.—Authorizing C.P.R. to build at grade, its Swift Current Northwesterly Branch, across certain untravelled highways, between mileage 15.41 and 25.10, Sask.

24902. Apr. 17.—Authorizing C.P.R. to divert Government trail in n.w.¼ Sec. 23-38-12, w.4.m., Alta., and to build, at grade, its Swift Current Northwesterly Branch, at mileage 14.90 across same and to close diverted portion within limits of its right of way.

24903. Apr. 17.—Authorizing C.P.R. to divert Government road allowance between Secs. 11 and 14-38-12, w.4.m., Alta., and to build, at grade, its Swift Current Northwesterly Branch across same.

24904. Apr. 17.—Dismissing application of M. Griffin, Whitby, Ont., for order directing Toronto Eastern Ry. to pay damages for alleged injury to Lots 243 to 246, Mary St., Whitby.

24905. Apr. 17.—Ordering London St. Ry. to lay double track across G.T.R. at Richmond St., London, Ont., and to rearrange interlocking plant to take care of additional track, and before proceeding, to file plan showing proposed changes, for approval of Board's Engineer; City of London to insert necessary diamond in track at the crossing; L.S.R. to pay cost of laying the double track to G.T.R. and connecting with the diamond, and to pay to the City, equivalent to 7 per cent. on expense that city is put to, for such time as L.S.R. operates over G.T.R.

24906. Apr. 18.—Authorizing Canadian Northern Quebec Ry. to build bridge across Rouge River, Lots 25 and 32, R. 1, Arundel Tp.

24907. Apr. 3.—Authorizing C.P.R. to build spur for Canadian Oil Companies, Ltd., at Weyburn, Sask.

24908. Apr. 18.—Ordering G.T.R. to build farm crossing at or near line between Lots 37 and 38, Con. 2, Sidney Tp., Ont.

24909. Apr. 18.—Authorizing London & Lake Erie Ry. & Transportation Co. to sell through passenger tickets from points on its line to points on or via Michigan Central Rd., the latter to honor same subject to prompt accounting therefore by L. & L. E. R. & T. Co.

24910. Apr. 19.—Rescinding order 23418, March 16, 1915, re protection at cross of G.T.R. spur at Rockland, Ont.

24911. Apr. 17.—Authorizing St. Placide and St. Benoit parishes, Que., to build shelter and platform on Canadian Northern Ontario Ry. at Cote Double, and rescinding order 24613, Dec. 29, 1915.

24912. Apr. 18.—Ordering C.P.R. to operate trains 529 and 530 to Monitor, Alta., and to continue present mixed service with trains 611 and 612; effective May 1.

24913. Apr. 19.—Authorizing Michigan Central Rd. to build extension of siding and additional tracks for Electro Metals Co., Welland, Ont.

24914. Apr. 20.—Authorizing Montreal & Southern Counties Ry. to use bridge over creek on Lot 747, Con. 8, Granby Parish, Que.

24915. Apr. 22.—Suspending, pending hearing on date to be fixed by Board, following tariffs:—C.P.R., C.R.C. no. E-3129; G.T.R. C.R.C. no. E-3345; and C.N.R. Supplement 9 to C.R.C. 584, re rates on wood pulp and sulphite pulp from stations in Canada to points in the United States.

24916. Apr. 22.—Extending to July 1, time within which C.P.R. shall rebuild crossing on its Reston-Wolsley Branch between Secs. 4 and 9-11-33, W.I.M., Sask., to conform with Board's Standard Regulations.

24917. Apr. 22.—Approving G.T.R. Form of Release and Power of Attorney 151, to be signed by persons who desire, for special reasons, to travel in cars which are not intended to carry passengers.

24918. Apr. 25.—Approving C.P.R. location of station at Admiral, Sask.

24919. Apr. 22.—Authorizing Montreal & Southern Counties Ry. to open for traffic its line from Abbotstford to Granby, Que., 8.60 miles.

24920. Apr. 25.—Ordering C.P.R. to build farm crossing for and at expense of W. & J. Gracey, Shelburne, Ont., to be completed by June 1.

24921. Apr. 20.—Ordering New York Central & Hudson River Rd. and C.P.R. to stop certain trains at Highlands, Que., until a change is authorized by Board.

24922. Apr. 26.—Approving agreement between Bell Telephone Co. and Dawn Tp., Ont., Apr. 13.

24923. Apr. 25.—Approving plan A-101, of City of Toronto, No. 8, 1913, as revised.

24924. Apr. 26.—Authorizing Canadian Northern Ontario Ry. to build spur for Marshay Lumber Co., in Marshay Tp., Ont.

24925. Apr. 26.—Authorizing Saskatchewan Highway Commissioners to build highway over C.P.R. Pheasant Hills Branch in s.e. ¼ sec. 32-36-9, w.3.m.

24926. Apr. 18.—Authorizing C.P.R. to divert road allowance between Cons. 3 and 4, South Sherbrooke Tp., Ont.; to close diverted portion within limits of right of way, and to take certain lands for diversion.

24927. Apr. 28.—Amending order 24907, Apr. 3, re C.P.R. spur at Weyburn, Sask.

24928. Apr. 27.—Approving plans 4301B-1-A, B, C and D, of Quinlan & Robertson, Ltd., show-

ing false work to support Bloor St. viaduct, Toronto, during construction. If G.T.R. and C.N.R. find it necessary to appoint inspector or watchman to ensure safety of trains, wages of such shall be paid by applicants.

24929. Apr. 27.—Extending for three months from Mar. 31, subject to order 24270, Oct. 5, 1915, time within which C.P.R. may carry traffic over its Stirling East Branch, mileage 49.2 to 74.5, Alta.

24930. Apr. 28.—Authorizing Canadian Northern Ry. to build spur to serve Block B, plan B, Prince Albert, Sask., to cross River St. and Second Ave. West, for 10 years as consented to by city, unless otherwise ordered by Board.

24931. Apr. 27.—Authorizing Peck Rolling Mills, Ltd., to build railway across Mill St. and Montreal & Southern Counties Ry. at grade, in Montreal.

24932. Apr. 28.—Authorizing G.T.R. to build siding for W. S. Cook & Son, Belleville, Ont.

24933. May 1.—Authorizing G.T.R. to carry McGill University mining students destined to Sydney, N.S., at half one way first class fare from Montreal to Sherbrooke, Que., and return; any other parties desiring to travel for same purpose between Montreal and Sherbrooke, Que., to be granted equally favorable terms, until otherwise ordered.

24934. April 29.—Ordering Canadian Northern Ry. to appoint station agent at Lavoy, Alta.

24935. April 29.—Approving interlocking plant controlling crossings at Essex Terminal Ry. with Windsor, Essex & Lake Shore Rapid Ry. and C.P.R. in Sandwich West Tp., Ont.

24936. May 2.—Authorizing C.P.R. to build reinforced concrete trestle at mileage 29.81, Bredenburg Subdivision, near Strathclair, Man.

24937. May 1.—Dismissing application of Town of St. Lambert, Que., for order directing Montreal & Southern Counties Ry. to place track upon permanent foundations, reserving to applicant right to make further application later; ordering M. & S. C. Ry. to change grade on Elm, Desaulniers and Bird Sts., St. Lambert, to conform to highway level, cost to be paid by applicants, and authorizing applicant to build permanent roadway between rails and for 2 ft. on each side on said streets; company to be relieved of maintaining gravel there, but to contribute such portion of cost as will fairly represent its present liability in this regard.

24938. April 25.—Amending order 19570, June 13, 1913, re furnishing slats for floors of refrigerator cars by adding: "2. That where shippers furnish slats for the said cars, an allowance of 500 lbs. in weight per car be made."

24939. May 1.—Ordering G.T.R., within 90 days, to install improved automatic bell at crossing of public road near Lyn, Ont.; dip in grade on north approach to be levelled to give clear view over low ridge to west; 20 per cent. of cost of bell, and 20 per cent. of cost levelling approach to be paid out of railway grade crossing fund.

24940. May 3.—Ordering C.P.R. to appoint station agent at Beresford, Man., by Sept. 1.

24941. May 4.—Amending order 24911, Apr. 17, by changing figures of previous order referred to from 26413 to 24613. (This was noticed in our summary and corrected there.)

24942. May 3.—Authorizing G.T.R. to build siding across Brant St., Burlington, Ont.

24943. May 4.—Ordering C.P.R. to extend commercial track at Domain, Man., for 400 ft., and to appoint station agent there; and to move station platform back to clear road allowance; to be done by Sept. 1.

24944. May 3.—Authorizing G.T.R. to build spur for Colonial Hide Co., Wellington St., Montreal.

24945. May 5.—Suspending, until further order, items on page 3, Supplement 10 to C.P.R. tariff C.R.C. no. W-2061, Esquimalt & Nanaimo Ry. tariff C.R.C. 302, and Kettle Valley Ry. tariff C.R.C. 52, covering minimum carload weights on forest products.

24946. May 4.—Amending order 24799, Mar. 14, re C.P.R. road diversion at mileage 45.54 of its Weyburn-Lethbridge Branch, Sask.

24947. May 8.—Authorizing C.P.R. to build spur for J. M. Stones at mileage 36.6, Trenton Subdivision, crossing unopened road allowance between Bedford and Oso Tps., Ont.

24948. May 6.—Approving agreement between Bell Telephone Co. and Kemble-Sarawak Telephone Co., Apr. 26.

24949. May 5.—Relieving G.T.R. from providing further protection at Canifon Road, Belleville, Ont.

24950. May 9.—Authorizing London & Port Stanley Ry. to build spur from Bathurst St., north-westerly across G.T.R. property and Clarence St., immediately to south of G.T.R. yard, London, Ont.

24951. May 9.—Authorizing C.P.R. to build spur for J. A. Barrett, at mileage 0.70, Prescott Subdivision, Ont.

24952. May 6.—Authorizing C.P.R. to bridge a Y at grade across Canadian Northern Ontario Ry. and Russell Road, Gloucester Tp., track connecting St. Lawrence & Ottawa Ry. and Montreal & Ottawa Ry.

24953. May 8.—Authorizing Canadian Northern Ry. to open for traffic its Oakland Branch from mileage 42 to 54; speed of trains limited to 15 miles an hour.

24954. May 8.—Authorizing Canadian Northern Quebec Ry. to build transfer track with Pointe aux Trembles Ry. at mileage 170.28 from Quebec.

24955. May 8.—Authorizing Michigan Central Rd. to build siding for Canadian Aloxite Co. near Montrose Jct., Ont.

24956. May 8.—Authorizing C.P.R. to rebuild bridge 35.8, Brandon Subdivision, Man.

24957. May 8.—Authorizing G.T.R. to build additional tracks, and to alter existing tracks, for Canadian Explosives, Ltd., in Beloeil Parish, Que.

24958. May 9.—Authorizing C.P.R. to build spur for Rock Springs Coal & Brick Co. in legal subdivision 14, n.w. ¼ sec. 3-10-17, w.4.m., Alta.

24959. May 8.—Approving G.T.R. clearances at crating shed and unloading platform of Ford Motor Co. of Canada, Ford City, Ont.

24960. May 9.—Ordering C.P.R. to install improved type of automatic bell at Rankin St., Campbelltown, Ont., by Sept. 1; 20 per cent. of cost to be paid out of railway grade crossing fund, and until Sept. 1, relieving it from providing further protection at said crossing.

24961. May 10.—Authorizing G.T.R. to build temporary siding, and to change existing sidings, for Dominion Flour Mills, Ltd., adjacent to Lachine Canal Reserve, Montreal Parish, Que.

24962. May 10.—Authorizing C.P.R. to build spur for Godson Contracting Co., mileage 0.60 on McTier Subdivision, Ont.

24963. May 11.—Authorizing C.P.R. to build siding for Canada Nitro Products, Ltd., Yorkton Tp.

24964. May 10.—Authorizing Canadian Northern Ry. to construct four spurs to serve Block 10, Parkview, Calgary, Alta., and to cross Spruce Ave.

24965. May 10.—Dismissing C.P.R. application for order directing Montreal Light, Heat & Power Co. to assume cost of changes in power line crossing incidental to building of Decary Ave. subway, Montreal.

24966, 24967. May 12.—Amending orders 19245, May 12, 1913, and 21873, May 26, 1914, re Lake Erie & Northern Ry. crossings of G.T.R. at station 1074+72.9 near Paris, and station 1281+58, Simcoe, Ont., respectively.

24968. May 6.—Suspending, pending hearing by Board, item 20A on page 2 of supplement 13 to C.P.R. C.R.C. no. w-2110, showing rates on pig lead, spelter and antimony.

24969. May 10.—Authorizing C.P.R. to rebuild bridge 1.9, Prescott Subdivision, near Ottawa, Ont.

24970. May 10.—Authorizing Michigan Central Rd. to rebuild bridge over Bear Creek, mileage 1.25, Petrolia Branch, Ont.

24971. May 11.—Authorizing Canadian Northern Ry. to close road allowance, within right of way fences, between Secs. 2 and 3-31-20, and to divert through s.w.¼ Sec. 2-31-20, w.4.m., Alta.

24972. May 10.—Approving Vancouver, Victoria and Eastern Ry. & Navigation Co.'s by-laws 8 and 9, Apr. 20.

24973. May 20.—Certifying and allowing corrections in C.P.R. plan of location through n.e.¼ Sec. 18-15-13 and s.e. Sec. 19-15-13, w.3.m., as shown on plan marked A on file with Board.

24974. May 11.—Amending order 24781, Mar. 3, re Grand Trunk Pacific Ry. spurs for Imperial Oil Co. in w.½ Sec. 32-17-19, w.2.m.

24975. May 15.—Authorizing C.P.R. to make diversion in lieu of road allowance on east boundary of Sec. 27-34-23, w.3.m., Sask., and close road allowance within limits of right of way and to build its Macklin Subdivision at mileage 2.4 across same.

24976. May 15.—Ordering Canadian Express Co. and G.T.R. to arrange for through shipments of fruit from Jordan, Vineland and other Niagara points, from July 1 to Aug. 31 inclusive; when conditions allow shippers to do with reduced service, shippers to notify express company accord-

ingly.

24977. May 15.—Approving agreement between Bell Telephone Co. and Palace Road Mutual Telephone Association, Apr. 26, 1915.

24978. May 16.—Amending order 24895, Apr. 15, re London & Port Stanley Ry. and Michigan Central Rd. connection at St. Thomas, Ont.

24979. May 15.—Authorizing Canadian Northern Ry. to build spur in s.e.¼ Sec. 10 and s.w.¼ Sec. 11-24-1, w.5.m., Alta.

24980-24981. May 6.—Recommending to Governor in Council for approval, Brantford & Hamilton Electric Ry. and Hamilton Radial Electric Ry. bylaw, Apr. 26, regulating travel on cars.

24982. May 17.—Suspending, pending hearing by Board, tariffs C.P.R. C.R.C. no. W-2075; C.N.R. C.R.C. no. W-861, and G.T.P.R. C.R.C. no. 100, re increased charges for live stock shipments.

24983. May 15.—Authorizing Boston & Maine Rd. to operate locomotives used in international traffic and merely passing through Canadian territory, equipped with clear vision window in cabs; permission not to extend to locomotives operated from or entirely within Canadian territory.

24984. Apr. 13.—Amending order 17562, Sept. 25, 1912, authorizing Toronto, Hamilton & Buffalo Ry. to build spur, in Hamilton, for National Steel Car Co.

24985. May 12.—Amending orders 20643 and 24923, Oct. 23, 1913, and Apr. 25, 1916, respectively, re rebuilding of C.P.R. bridge at Strachan Ave., Toronto.

24986. May 17.—Ordering C.P.R., within 60 days from date to install bell at second line west, Chinguacousy Tp., Ont.; 20 per cent. to be paid out of railway grade crossing fund.

24987. May 17.—Extending for three months from date time within which G.T.R. shall complete highway over its line in Tay Tp., Ont.

24988. May 18.—Ordering C.P.R. by Sept. 1, 1917, to erect class A-2 station at Piapot, Sask.

24989 to 24991. May 18.—Ordering Canadian Northern Ry. to erect standard fourth class stations at Beadle, D'Arcy, and Carmel, Sask., by Sept. 1.

24992. May 18.—Amending order 4391, Feb. 25, 1908, re G.T.R. spur crossing of C.P.R. at Lindsay, Ont.

24993. May 22.—Approving agreement between Bell Telephone Co. and Wotton Local Telephone Co., May 3.

24994. May 22.—Suspending, pending hearing by Board, railway tariffs showing charges for heated refrigerator cars.

General order 165, May 16.—Suspending, pending further hearing by Board, following tariffs, showing charges for ice and salt in refrigerator cars.—C.P.R. C.R.C. no. W-2149 and W-2150; C.N.R. C.R.C. no. W-927 and W-930; G.T.P.R. C.R.C. no. 155 and 156; Esquimalt & Nanaimo Ry. C.R.C. no. 324; and Kettle Valley Ry. C.R.C. no. 80.

Canadian Northern Railway's Interests in the Niagara Peninsula.

The two railway bills in which the Canadian Northern Ry. interests were concerned, which formed the subject of considerable controversy in the House of Commons, viz., the Niagara, St. Catharines & Toronto Ry., and the Toronto, Niagara & Western Ry., have been passed by the Dominion Parliament, having been given their third readings in the Senate, May 16 and 17 respectively. The opposition directed against the measures came from the Hydro Electric Power Commission of Ontario, the municipalities associated with it in the proposal to build an extensive system of radial railways, and the City of Toronto.

The Niagara, St. Catharines & Toronto Ry. Act extends for two years the time for starting construction, and for five years for completing the following lines, from Port Colborne to Fort Erie and from Fort Erie to the city of Niagara Falls, from Niagara Falls to the town of Niagara, and from Niagara to St. Catharines, from Welland to Brantford, and an extension of the St. Catharines & Niagara Central Ry. to the Niagara River at or near Fort Erie, and an extension to Toronto passing at or near Hamilton.

The Toronto, Niagara & Western Act grants similar extensions of time for building the following lines: From in or near Toronto into or near Hamilton, but not along any portion of Burlington Beach, in Wentworth County, without the Burlington Beach Commission's consent,

or along any portion of the Beach in Halton County without the Nelson Township's consent; from in or near Hamilton, to or near Grand Island in the Town of Niagara Falls, and with the consent of the proper authorities, beyond the limits of Ontario to a point in New York State, a branch of the railway authorized to St. Catharines through or near Thorold, and also to Port Colborne, and from a point in or near Hamilton, or in Halton County, through or near Brantford, Woodstock, London and Chatham to or near Windsor. A clause was added that the line entering Toronto shall be built upon or within the location for the Canadian Northern Ontario Ry., extending westerly and north-westerly from the joint section to be used by the C.N.O.R. and the C.P.R. at North Toronto, or such variation therefrom as the Board may direct on the application of the C.N.O.R. or the City of Toronto. One of the company's previous Acts authorized it to sell electric power with the consent of the municipalities. The company agreed to this provision being repealed.

The discussion in the Commons brought about an understanding that route plans for new railways should be subject to the sanction of the Board of Railway Commissioners, instead of to that of the Minister of Railways, as formerly. A Government bill was passed in the House to amend the Railway Act in this regard, but the Senate, after considerable discussion in committee, directed the redrafting of the bill May 12. The bill was left on the minutes of the Senate Railway Committee to be taken up at the call of the chair. The Committee did not meet before Parliament prorogued and the bill therefore died.

Scientific Research Work for Canada.

—The C.P.R. management has arranged with Arthur D. Little, Inc., chemists and chemical engineers, Boston, Mass., who are establishing a Canadian Research Bureau in Montreal, to mobilize scientific and chemical men throughout Canada, to make a complete investigation of the mineral, metal, hydro electric and chemical resources, in order to secure the practical application to industry of many minerals heretofore neglected or exported to other countries for manufacture, of by products in existing industries, and of other natural resources which are neglected or insufficiently exploited. Among other things investigated will be the waste of straw, in the wheat fields, of flax fibre, of lumber, a large proportion of which is wasted in the forest or at the mill. The opportunities for investment of capital in tungsten, molybdenite, graphite, oil shale, manganese, magnetite, talc, feldspar and other minerals will be investigated. The results obtained for the C.P.R.'s special information will be disseminated from time to time in bulletin form.

The Port Arthur Ont., Public Utilities Commission has taken over the management of the city waterworks, which makes the total value of public utilities under one management about \$4,000,000. Since its establishment about a year ago the commission has made reductions of about \$30,000 a year in salaries and other operating expenses. The commissioners are: W. P. Cooke, Chairman; G. H. Rapsey, who is at present also acting as Secretary Treasurer; I. L. Matthews, and A. E. Wideman, with the mayor as ex officio. As the commissioners are devoting a large amount of time to the work, a suggestion to allow them some compensation is under consideration.

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

Canadian Pacific Ry.—We are officially advised that fair progress has been made with the erection of the new passenger station at Quebec. It is expected that it will be completed about the middle of July.

We are officially advised that the company has decided to do a considerable amount of broken stone ballasting. The programme for this year includes from Place Viger, Montreal, to Ste. Therese, Que., double track, 19.9 miles; as much as possible between Windsor Street, Montreal, and Smiths Falls, Ont., double track, 128.5 miles, and from North Bay to Verner, Ont., 33.9 miles. The stone will be obtained from Terrebonne on the Quebec Subdivision, the Canadian Northern Ry.'s Mount Royal Tunnel at Montreal, Staynerville and Cap St. Martin on the Ottawa Subdivision, Smiths Falls, Ont., and from Worthington on the Lake Superior Division.

Tenders are under consideration for the purchase and removal of the old C.P.R. North Toronto station building. The new station on Yonge St. is rapidly approaching completion.

We are officially advised that the company has no present intention of erecting an addition to the roundhouse at Weyburn, Sask., as stated in recent press reports.

We are advised that ballasting on the section of the Weyburn-Lethbridge line from Foremost to Pakowki, Alta., 25 miles, is being gone on with, and it is expected to be ready for traffic early in June. Nothing has been done as yet in the way of construction to connect up the line running east, now ending at Pakowki, with the line running west, ending at Attaman, and we are officially advised that the company has not decided to extend the line farther east.

At the company's Lake Louis Hotel, Alberta, a kitchen addition is being built at the back of the concrete wing and the former ballroom is being converted into a dining room.

About 140 ft. of Shed No. 4, at the C.P.R. docks at Vancouver, have been taken down to make room for the new 50 ton crane to be erected. A contract for the concrete foundation for the crane, is reported let to the Cotton Co. (Ltd.), Vancouver. It is expected that the new crane will be erected by the end of June. It will be electrically operated and will be an addition to the dock equipment, the present 15 ton crane being retained.

D. C. Coleman, Assistant General Manager, Western Lines, stated when in Vancouver recently, that the management had appointed a committee, consisting of himself as chairman; F. W. Peters, General Superintendent, British Columbia Division; F. C. Clendinning, Division Freight Agent; J. W. Troup, Manager, B.C. Coast Service; and F. K. Lee, to draft a comprehensive scheme for handling the increased business at the port; that it would be prepared for a series of units, and that as business developed the units would be taken up one by one.

Canmore Ry.—The Alberta Legislature has incorporated a company with this title to build a railway from the C.P.R. to No. 2 mine, Canmore, with branches to the Georgetown Colliery and No. 1 mine, Canmore, in tps. 24 and 25, ranges 10 and 11 west of the 5th meridian. (Mar., pg. 106.)

Central Vermont Ry.—Southern New England Ry.—Application has been made

to the Massachusetts Legislature by the Central Vermont Ry. for power to acquire the Southern New England Ry. The latter company was organized under C.V.R. auspices to build a railway from a point on the C.V.R. to Boston, and to Providence, R.I. A considerable amount of construction was done on the latter line, in face of the New York, New Haven & Hartford Ry.'s opposition, but construction was suspended about three years ago. Some matters in connection with the line were made the subject of a judicial investigation by a United States court, and the present application is said to be in connection with the settlement of the situation.

Dominion Government Ry. to Hudson Bay.—The Dominion Parliament has voted a further sum of \$3,000,000 on capital account towards the construction of terminal facilities and elevators for this railway, running from Pas to Port Nelson, Man. In connection with this vote, the acting Minister of Railways informed the House of Commons, May 3, that the total expenditure on the railway up to Feb. 29, was \$10,404,182.26, and on the terminal facilities at Port Nelson, \$4,861,071.69, a total of \$15,265,960.95. The estimated cost of the line complete is \$16,000,000, and the estimated cost of the terminals \$10,000,000, a total of \$26,000,000. The line will have a total length of 425 miles. There will be some dredging necessary at the entrance to the harbor. The channel is from half a mile to 15 miles wide, 19 or 2 ft. deep at low water, with a 16 ft. rise at spring tides. This will give a depth of water sufficient for all navigation purposes. The last report on construction sent into the department gave the following details: Miles of steel laid, 241; miles of steel laid in sidings, 24; miles of steel laid on temporary track, 33; grading completed (with exception of a few depressed grades), 378 miles; track surfaced, 225 miles. (April, pg. 106.)

Essex Terminal Ry.—The Ontario Legislature has ratified a bylaw of the city of Windsor granting a right-of-way and other rights to the company. (Feb., pg. 138.)

Gananoque and Arnprior Ry.—The Ontario Legislature has extended the time which the company may build its projected railway from Gananoque to Arnprior, with branches from Moreton to Lyndhurst, and from an unnamed point to Ottawa. The company has power to use electricity or other motive power, as well as steam for operation. (Mar., pg. 106.)

Grand Trunk Ry.—The installation of automatic signals from Bonaventure station, Montreal, to Coteau Junction, Que. and also between Toronto and Hamilton, Ont., is said to be under consideration. (Mar., pg. 182.)

The company is building a spur from its Georgetown-Allandale line into the site of Camp Borden, the military training camp which is being established on the Angus pine plains near Barrie, Ont.

Great Northern Ry.—The Vancouver City Council issued a permit, May 28, for the foundation work, at the new G. N.R. station at False Creek, at an estimated cost of \$30,000. The contractors are Grant Smith and Co. and McDonnell Ltd., and the work is being done under the supervision of the company's architect, F. L. Townley. A. H. Hogeland, Chief Engineer, is reported to have said

in a recent interview that every effort will be made to complete the station by June, 1917, the date specified in the Board of Railway Commissioners' order.

In a recent interview A. H. Hogeland, Chief Engineer, is reported to have said construction work is under way on the extension of the Abbotsford line which will afford connections at Sumas Landing with the Canadian Northern Pacific Ry. and the other link at Hope. It is expected this piece of line will be ready for operation in July.

The G.N.R. is at present operating northward from Spokane into British Columbia as far as Princeton. The extension of service to the coast will be effected by the joint section between Coquihalla Summit and Hope, built by the Kettle Valley Ry., a C.P.R. division over which it will have running rights. The branch from Spokane runs north to Marcus and thence to Grand Forks, Midway, Oroville, Keremeos, Princeton and Coalmont. The extension of the line to the coast over the Hope Mountains will bring the Boundary, Similkameen and other districts of the interior into much closer communications with Vancouver.

High River and Hudson Bay Ry.—The Alberta Legislature has extended the time within which the company may build its projected railway east and west from High River. (April, pg. 138.)

The Kettle Valley Ry. extension from Otter Summit to Hope, B.C., near which place connection is made with the C.P.R. main line, is expected to be opened for traffic at an early date. The stations on the line, with their distances from Penticton, are:—Brodie, mileage 113.9; Joliet, mileage 119.8; Coquihalt, mileage 127.6; Romer, mileage 134.1; Iago, mileage 139.6; Portia, mileage 144.4; Jessica, mileage 149.9; Lear, mileage 155.0; Othello, mileage 158.9; Hope, mileage 164.3. The mileage from Penticton to the actual connection with the C.P.R. is 166.7 miles. The opening of this line will give the C.P.R., which leases the K.V. lines, a new through line from Winnipeg to Vancouver, via Dunmore, Nelson, Midway, Penticton and Hope. The distance will be 1,625 miles, the distance between the same points, via the main Transcontinental line being 1,484 miles.

Lockport Ry.—The Nova Scotia Legislature has incorporated a company with this title to build a railway from Lockport, N.S., to a junction with the Halifax & South Western Ry. main line, four miles. It is provided that the town of Lockport may acquire the railway at the actual cost of the undertaking. The project is promoted by residents of the town.

The Legislature refused to incorporate a company with the title of the Lockport Transportation Co., which, among other things, asked power to build a railway from Lockport to a junction with the Halifax & South Western Ry. The proposed capital of the company was \$800,000, and the estimated cost of the railway was \$100,000. The Premier, in criticizing the bill, said permission was being asked "to do about everything under the sun," and it was not advisable to tie up the interests of the whole town with a railway that would be dependent for its success or non-success on the other business interests of the company.

Michigan Central Rd.—We are officially advised that the plans for the erection of buildings at Montrose, Ont., include a 20 stall locomotive house, with machine

shop, and elevator, oil house, fuel oil house, sand house and office building. The engine house will be of brick and mill construction on a concrete foundation; the oil house of concrete, fireproof construction; while the office building and machine shop will be of brick. The locomotive house will have a depth of 97 ft at one end, and where it connects with the machine shop a depth of 114 ft. 8 in. The machine shop will be 123 ft. 10 in. x 37 ft. 3 in., the coal house adjoining being 15 x 30 ft.; the oil house 42 x 22 ft.; the fuel oil house 37 x 13 ft.; and the office building 51 x 23 ft.; and 85 ft. turntable with the necessary tracks will be provided. We are advised that the contract for these buildings has been let to the Wallbridge Aldinger Company, Detroit, Mich., and that work has been started and will probably be completed this year.

Sarnia, Ont. people want to induce the company to locate terminal buildings there. To do this the existing line from St. Thomas to Courtright would have to be extended to Sarnia, or a line built from Petrolia. (May, pg. 182.)

Minneapolis, St. Paul and Sault Ste Marie Ry.—A press report states that a contract has been let to the Foley Bros. Construction Co., Minneapolis, Minn., for building an ore dock at Ashland, Wis., of steel and concrete. It is estimated to cost \$1,000,000.

Montreal Central Terminal Co.—According to local reports, the company, which is represented by C. N. Armstrong, proposes to lay its plans for a central terminal station before the Montreal Board of Control at an early date. The proposal is to build a large station in a central location, into which all the railway lines entering the city would run their trains, with a tunnel under the St. Lawrence River to connect the north and south shores. It is claimed that if the proposal were carried out all level crossings would be eliminated, and the city would be saved a very large sum, while some of the present terminal stations could be given over exclusively for freight traffic purposes. It is proposed to use electric traction exclusively in the terminal and connecting lines. The cost of the terminal proposal alone is put at between \$30,000,000 and \$40,000,000. (Sept., 1914, pg. 403.)

Prince Edward Island Ry.—Tenders were received by the Railway Department, Ottawa, up to May 31 for constructing a station, water tank, locomotive house, transfer platform, standpipe pit, asphalt and turntable foundation for the Carleton Point car ferry terminal.

Quebec Bridge.—The Dominion Parliament has voted \$3,450,000 on account of the construction of the bridge across the St. Lawrence River near Quebec. The total expenditure to Oct. 31, 1915, was \$18,257,621.85, of which \$10,473,346.38 was on account of the bridge now under construction. The Chief Engineer has advised the Department that it is expected to have the final spike driven in the superstructure during next autumn. The acting Minister promised to arrange, if possible, for members of Parliament to be present on the occasion of the floating into position of the span which will connect up the central cantilevers. This span is the largest ever attempted to be floated into position, in the history of bridge construction, and it will require the utmost delicacy and skill, much more so than if the work was being done in non-tidal waters. (Mar., pg. 106.)

Big River to Lac La Rouge, Sask.—In connection with the development of

the fishing industry in Northern Saskatchewan, C. R. Rouse, was in Regina, May 15, discussing the prospects for building a narrow gauge railway from Big River, at the present terminus of the Canadian Northern Ry. Prince Albert-Shellbrook Branch, to Isle a la Cross, Lac La Rouge and Lac la Plouge, 200 miles. The fisheries are being developed and the catch is carried by teams to Big River and dispatched to the markets by train. The country is being settled by men of the fishermen-farmer type, and Mr. Rouse says he has secured the right of way for the railway, and has control of sufficient rolling stock to operate the section from Big River to Isle a la Cross, if he could get money to provide and lay the rails. The grading would be done largely by the settlers.

Taber Transit Co.—The Alberta Legislature has extended the time within which the company may build the various lines authorized, reaching from Taber, and connecting with others in the vicinity, the C.P.R. Suffield Branch, and with Bow City. (April, pg. 139.)

Toronto, Hamilton & Buffalo Ry.—We are officially advised that construction has been started on the extension of the recently opened line from Smithville to Dunnville, from the latter point to Port Mackland, about five miles. The contractors for grading are Fitch & Douglas, Dunnville, Ont., and the tracklaying and other work will be done by the company's own staff. There are no engineering features of any importance on the line, which is expected to be completed and ready for operation about July 15. (April, pg. 139.)

Freight and Passenger Traffic Notes.

Representatives of the Canadian Freight Association will hold a conference with shippers at Regina, Sask., June 5, to discuss the checking of freight on private sidings.

The Canadian Government Railways will put in operation on June 16, for the summer, the St. Lawrence special, running from Montreal to points along the St. Lawrence River on the Intercolonial Ry.

The Burlington, Ont., municipal council is asking the Hamilton Radial Ry., and the G.T.R., to reduce fares between that place and Hamilton. A large number of Burlington residents go to Hamilton daily for business purposes, and desire to have commutation tickets issued.

The Victoria and Island Development Association is undertaking an extensive plan of advertising Vancouver Island as a tourist resort, and is in communication with 200 tourist agencies in the United States with a view of securing tourists' travel.

A Nova Scotia press report states that the C.P.R. is arranging to operate a train ferry service from St. John, N.B., to Digby, N.S., which will enable it to operate its trains directly over the Dominion Atlantic to Windsor Jct., and thence over the Intercolonial into Halifax.

The Grand Trunk Ry. is arranging to establish a suburban train service from Collingwood to Pine Station, Ont., in connection with the opening of the Camp Borden there. Local press reports state that it is proposed to put on five additional trains a day.

An arrangement has been made with the Grand Trunk Pacific Ry. by which shippers to points on the Edmonton, Dunvegan & British Columbia Ry., Alberta & Great Waterways Ry., and the Central Ry. of Canada, will be able to use the

G.T.P.R. sheds at Edmonton, Alta., without extra charge.

The C.P.R. put in operation, May 20, a regulation increasing from 10 to 30 days, the stop over privilege on through tickets to Vancouver, on the following points:—Banff and Lake Louise, Alta.; Field, Glacier, Revelstoke, Secamons and Balfour, B.C.

The Pacific Great Eastern Ry. resumed on April 25 its train service from Squamish to Clinton, B.C., which had been abandoned since the severe snowstorms at the end of January and early in February. A train service is being given on alternate days. On the completed section of the line from North Vancouver towards Squamish, an hourly service in either direction was inaugurated May 4, as far as Whytecliffe, the present end of track.

The C.P.R. new North Toronto station will probably be opened for traffic between the middle and end of June. Train 24 for Montreal, and train 23 from Montreal, both with Ottawa sleeping cars, will continue to use the station, as will also the following trains: the Rideau from Toronto to Ottawa, and the York from Ottawa to Toronto, which now use Toronto Union Station; train 707 from Toronto to Owen Sound, train 708 from Owen Sound to Toronto; train 713 from Toronto to Teeswater, and train 714 from Teeswater to Toronto. A new train leaving Lindsay in the morning, and returning in the afternoon, will also use the new station.

Toronto, Hamilton and Buffalo Ry. Employees Wages.

The award of the board of conciliation in the arbitration proceedings affecting Toronto Hamilton and Buffalo Ry. employees was issued May 6. The arbitrators were Judge Snider, Chairman; G. S. Kerr, K.C., representing the company, and J. Simpson, Toronto, representing the men. The matters coming before the board affected the machinists, blacksmiths, boilermakers and railway carmen. Following is a summary of the findings:

The men of the four trades mentioned get a nine hour working day, and a Saturday half holiday in these departments, except the locomotive house, where a 10 hour day is recognized all over the Dominion. Time and a half will be paid for all overtime. Recognition of a committee appointed by the men to settle all disputes was agreed upon. The rates per hour established are as follows: Machinists, 36c.; machinists' helpers, 20 to 22c.; boilermakers, 36c.; boilermakers' helpers, 20 to 22c.; blacksmiths, 31 to 36c.; blacksmiths' helpers, 22c.; tinnerns, 28 to 30c.; tinnerns' helpers, 25c.; pipe fitters, 25 to 34½c.; pipe fitters' helpers, 22c.; car carpenters, 26 to 30c.; car repairers, 20 to 22c.; a month; car inspectors' helpers, 20c.; car cleaners, 20c.; car inspectors, 70 to 75c. a month. The new schedule is dated back to March 1, including overtime, which will have to be paid to the employees for all hours worked over the regular day's work as specified in the board's decision.

The award was not favorably received either by the company or the employees. The company announced May 1, that certain increases would be made in the wage scale, ignoring the award and refusing to recognize the men collectively. Although efforts were made to bring the parties together, the carmen, blacksmiths, boilermakers and machinists at the company's shops in Hamilton, numbering about 120, struck work May 20.

Further Dominion Government Aid to Canadian Northern and Grand Trunk Pacific Railways.

The items in the supplementary estimates submitted to the House of Commons May 7, providing for loans of \$15,000,000 to the Canadian Northern Ry. and \$8,000,000 to the Grand Trunk Pacific Ry., were passed by both Houses of Parliament.

The loan to the Canadian Northern is repayable on demand, with interest, payable half yearly, at 6%. The loan is to be used for expenditure made, or to meet indebtedness incurred in paying interest upon the securities of the companies included in the C.N.R. system, having priority over the guaranteed securities guaranteed by the statutes of 1914, chap. 20, and instalments of principal of equipment securities and upon construction; the loan to be secured by mortgage upon the C.N.R. undertakings, and so much of the loan as may be applied for the benefit of any company included in the C.N.R. system, to be secured in addition by mortgage upon the undertaking of such company; the mortgages to contain such terms and conditions as the Governor in Council may approve. The disposition of the loan is subject to the direction of the Governor in Council.

The loan to the Grand Trunk Pacific is also repayable on demand with interest, payable half yearly, at 6%. The loan is to be used in paying securities of the company, to meet the deficit in operation, and for the purchase of rolling stock; the loan to be secured by mortgage upon the company's undertakings, containing such conditions and terms as the Governor in Council may approve; the disposition of the loan is subject to the direction of the Governor in Council.

The Finance Minister's Statement.

The Minister of Finance made a statement to the House of Commons, May 8, in connection with the matter on the motion to go into committee of supply. He stated that the loans were, in the Government's view, necessitated from consideration of public interest by reason of the critical position of the financial affairs of the two companies. In 1914, it was the view that the proceeds of the securities for \$45,000,000 guaranteed for the Canadian Northern, and of the \$16,000,000 guaranteed for the Grand Trunk Pacific would have been sufficient for the purposes then in view. Closely following upon the execution of the trust deeds, war broke out, which resulted in the practical closing of the markets of the world to securities other than those of the various governments for the prosecution of the war. In order to carry out the intention of Parliament, the Dominion Government made loans in Dominion notes to the Canadian Northern for \$10,000,000, and to the Grand Trunk Pacific for \$6,000,000, security being taken in guaranteed stocks, the transaction subsequently being ratified by Parliament. Owing to the continuance of the war, the two companies have had to place the guaranteed securities upon the market at lower prices than would otherwise have been the case. In addition to this \$45,000,000 of guaranteed securities, the Canadian Northern had \$55,000,000 of marketable securities, and has not been able to realize upon them within \$10,500,000 of the amount it was calculated would have been the case; the G.T.P.R. being in proportionately the same position. This resulted in the delay of a year in the completion of the C.N.R., the transcontinental line which was only

linked up in Dec., 1915. The country's interests were so intimately bound up with those of the two companies that it was necessary for the country to give them some relief, the policy of the Government since the outbreak of the war having been to maintain stability and to promote confidence in the financial and economic situation of Canada.

There were three courses open to the Government, one to withhold and to permit the two companies to go into the hands of receivers, the second to permit default and take physical possession of the two systems, that is, to foreclose the mortgages to the Dominion; and the third to grant aid by way of loan. After giving these alternatives the most careful and lengthy consideration, the Government decided upon the last mentioned, as a temporary expedient to meet the situation until such time as the whole problem, involved in the suggestion of taking over the lines, or of granting permanent aid in other directions have been considered and solved. In conclusion, he said: "The House will observe that the loans which we propose, of \$15,000,000 and \$8,000,000 respectively, are repayable upon demand, so that, in a sense, we have a control of the situation through those demand loans. We are charging 6% interest, the Dominion Government being able to borrow at slightly less than that figure. We realize that the security upon which we are making these loans to both of the railway systems in question is rather slender, and therefore we have a vital interest in the administration of the affairs of these two railways. It is our intention, in order that we may be kept fully informed, pending our investigation by experts, which I have announced, as to the condition and administration of these companies, to appoint three directors of the C.N.R. and three directors of the G.T.P.R."

The Canadian Northern's Position.

The Minister stated that the C.N.R. net earnings for the year ended June 30, 1915, were \$6,000,000, and it is estimated that the net earnings for the year to end June 30, 1916, will be \$9,000,000. The fixed charges upon the system, including the constituent and subsidiary companies, aggregate \$15,000,000. Since the passing of the act of 1914, the net earnings of the company have been applied to the payment of fixed charges, and payments upon construction account. The terms of the legislation of 1911 and 1914, under which the Dominion Government might be called upon to pay interest for three years (the amount so paid to be added to the mortgage indebtedness), upon \$35,000,000 of the C. N. Ontario Ry. securities, issued in respect of the Montreal-Ottawa-Port Arthur line, and of the \$45,000,000 of securities issued under the Act of 1914, would be called into effect this year, so that from July 1 next the C.N.R. will call upon the Dominion Government to provide \$4,500,000 a year in respect to these securities. A similar provision has been inserted in the Act respecting the bonds guaranteed by British Columbia, and that Government will have to provide, from July 1, for the interest of the bonds so guaranteed. Therefore, for the next financial year the fixed charges, so far as they have a bearing upon the financing of the company, will be reduced to about \$11,000,000 a year. The public credit of the Dominion and the provinces is pledged

to the extent of \$211,000,000 of the \$383,000,000 of the company's securities issued. In addition to these securities, there are \$17,000,000 of equipment bonds, and \$92,000,000 of temporary loans and current obligations. The reason why there are so many temporary loans and current obligation is that in the earlier stages of the war short term obligations only could be sold, and the method of financing adopted has been the pledging of securities against short date notes. The company assumes it will be able to extend existing notes, or to place new notes to retire them. In regard to current obligations, unless aid was given by the Government, the company would not be able to carry through the year. The estimate was that the minimum assistance upon which the company would be able to make arrangements to finance during the coming year was \$15,000,000. This amount is to be used as follows:—For expenditures made or indebtedness incurred to meet interest payments maturing due upon securities in priority to the securities of \$45,000,000 guaranteed by the Dominion Government under the legislation of 1914; to meet instalments of equipment bonds and on construction account.

The Grand Trunk Pacific's Position.

The G.T.P.R., the Minister said, was completed from Winnipeg to Prince Rupert. The company had issued securities guaranteed by the Dominion for \$78,000,000, and in addition the Dominion had loaned the company \$25,000,000. The provinces of Saskatchewan and Alberta had guaranteed the bonds of a subsidiary company for building branch lines for \$13,000,000, so that, in addition to the loans, the public credit of the Dominion and of the two provinces named was pledged to the extent of \$115,000,000, while the G.T.R. Co. has guaranteed additional securities of the G.T.P.Ry. and of its subsidiaries for \$97,000,000. The G.T.R. also held notes of the G.T.P.R. and its subsidiaries for \$25,000,000 for advances. The G.T.R. now finds itself unable to extend any further aid to the G.T.P.R. and is further confronted with the necessity of providing for betterments, improvements and terminal facilities upon its own system, involving the expenditure of large sums. This condition of affairs led to the writing of a letter to the Government by A. W. Smithers, Chairman of the G.T.R. Board, in Dec., 1915, which is referred to further on. The G.T.P.R. is now out of the construction stage. The fixed charges for this year are \$7,200,000, while there has been a deficit upon operating and maintenance account and for exceptional repairs, of \$2,000,000, and the company is in arrears in the payment of interest to the Dominion Government on the \$25,000,000 of loans, the amount of such arrears on April 1, being \$1,350,000. The Dominion Government will be called upon to pay this year, without recourse, the interest on the Mountain Division bonds. For the interest charges the Government is responsible for \$2,400,000 a year, and the G.T.R. is responsible for \$4,000,000 a year. The amount to be provided for to meet the fixed charges, deficit in operation, and repairs will aggregate \$9,000,000 a year. In considering the future of the line, it must be borne in mind that in addition there must be taken into consideration improvements, betterments

and rolling stock, which will be required, estimated by the Railways Department at anything from \$3,000,000 to \$5,000,000 after a year or two. The minimum amount upon which it was estimated the company would be able to continue as a solvent concern was \$8,000,000.

Returns to Parliament.

A number of returns and financial statements respecting the affairs of the two companies were laid before Parliament. They set forth in considerable detail the information given about the companies by the Finance Minister in the speech quoted above.

Canadian Northern.—The statement of the financial position of the company to April 15, showed a total amount of stock outstanding of \$358,770,798.68, distributed as follows: Guaranteed by Dominion Government, \$104,613,247.77 out of \$104,746,586.72 authorized; guaranteed by Province of Ontario, \$7,859,997.50, out of \$7,860,000 authorized; guaranteed by Province of Manitoba, \$25,501,865.81, out of \$25,665,339.99 authorized; guaranteed by Province of Saskatchewan, \$14,762,546.64, out of \$18,600,000 authorized; guaranteed by Province of Alberta, \$18,950,361.99, out of \$21,744,250 authorized; guaranteed by Province of British Columbia, \$39,953,123.85, out of \$47,975,000 authorized; unguaranteed securities, \$103,944,920.39, out of \$109,000,525.48 authorized; land grant securities, \$21,416,539.99 authorized and issued. The equipment securities outstanding amount to \$17,302,500; and there is also outstanding \$25,000,000 of 5% convertible debenture stock, which brings the total outstanding liabilities up to \$401,073,298.

Total securities issued.....	\$383,770,798	
Imperial Rolling Stock Co. bonds	17,302,500	\$401,073,298
Less issued outside of mileage and equipment:		
Issued on terminals, elevators, express, telegraph and subsidiary companies..	\$40,338,224 99	
Issued on land grant, etc.	21,416,539 99	
5 per cent. income convertible D.S....	25,000,000 00	\$ 86,754,764

Total issued on mileage and equipment	\$314,318,534
Mileage (including 394 miles leased miles	9,993
Total issue per mile exclusive leased lines	\$ 32,744
Total issue per mile including 5 per cent. income stock.....	35,348
Total fixed charges exclusive of subsidiary companies and land securities	12,989,059
Fixed charges per mile.....	1,299

The Dominion and British Columbia Governments have undertaken to pay interest on securities for 2 and 3 years after lines are in operation to extent of \$4,514,507, which temporarily reduces total fixed charges on mileage to \$8,474,552 and to \$848 per mile.

The issue of \$45,000,000 of bonds authorized by the Dominion Act of 1914, realized \$36,759,265.10 when pledged or sold, with \$133,333.33 unissued. It was estimated that the issue would produce \$41,052,999, so that owing to the war conditions the company realized \$4,293,734 less than was anticipated. The proceeds of the issue were applied in accordance with the terms of the Act.

The company's liabilities at April 15, were \$92,450,883, made up as follows: London loans on securities, \$29,411,964; Dominion Government and sundry loans, \$16,214,066; one and two year notes, \$14,000,000; bills payable, \$7,300,000; net amount of temporary loans, \$16,395,418; due contractors, \$5,912,497; audited vouchers and pay rolls, etc., less cash on hand, \$3,206,940.

Grand Trunk Pacific.—The first and most important document on the return

relating to the G.T.P.R. is the letter from A. W. Smithers, Chairman of the Board of Directors, G.T.R., dated Dec. 10, 1915, in which he referred to an offer he had made to the Government, which offer he repeated with the G.T.R. directors' approval. This was "that the Government should take over the G.T.P.R. as from Jan., 1916, with all its branch lines, together with its development company, and other subsidiary companies, with all the assets, the G.T.R. to surrender to the Government the whole of the common stock of the G.T.P.R. on condition of the Government relieving the G.T.R. of all liabilities in respect of the G.T.P.R., its branch lines, its development company, and other subsidiary companies, and repaying to the G.T.R. any money advanced by the G.T.R. to the G.T.P.R., or its branch lines, and development company, and other subsidiary companies." After summarizing the financial position, Mr. Smithers went on to say: "We have done our utmost to meet the heavy financing which has been necessary, and the difficulty of which has been immensely increased by the disastrous war conditions. We are now 'at the end of our tether' with regard to G.T.P. financing. . . . I beg you to remember that the G.T.P.R. has been built through a most difficult country, at a cost which is moderate considering the high character of the work, and the satisfactory low grade maintained in crossing the mountains, and it must be also remembered that all the work has been done under the supervision of the Government engineer, and all expenditure has been audited by the Government auditors."

An accompanying statement shows that the par value of bonds issued and outstanding is \$193,251,104.86, out of a total authorized issue of \$221,015,496, the amount realized being \$184,698,507.69. The amount of the interest payable on the bond issue for 1916 is \$7,206,844.20, the guarantees for the same having been given by the Dominion Government in respect of \$2,678,833.82; by the G.T.R., \$3,989,250.22; by the Province of Saskatchewan, \$395,176.32. and by the Province of Alberta, \$143,583.84. The interest payment includes interest on \$55,170,720 Mountain Division bonds assumed by the Dominion Government. To the interest payment there is added the estimated loss in operation on the Mountain Division for one year, \$1,200,000; exceptional expenditure on Mountain Division for maintenance and providing necessary facilities for the operation of the line for one year, \$720,000; loss in operation of branch lines for one year, \$300,000; miscellaneous current expenditure, \$950,000; to provide 50 refrigerator cars at \$4,000 each, \$200,000; making a total with the interest of \$10,576,844.20.

The total expenditure upon the construction and interest payments to Feb. 20, was \$197,129,391.82 in respect of the main line and branches, and there was realized from bond issues \$184,698,507.69; the difference being \$12,430,884.13.

The total amount due to the G.T.R., including the difference between bond issue and cost, amounts to \$14,385,821.37, of which \$801,783.54 is due by the G.T.P.R.; \$13,369,537.83 is due by the G.T.P. Branch Lines Ry., and \$214,500 by the G.T.P. Saskatchewan Ry. The advances to the G.T.P. Development Co. amount to \$11,793,907.46, making the total sum due to the G.T.R. \$26,179,728.83, against which the G.T.R. holds notes of the G.T.P. Branch Lines, the G.T.P. Saskatchewan Co., and the G.T.P. Development Co., for the amounts due by them,

and is also entitled to \$3,868,100 of bonds guaranteed by the Provinces of Saskatchewan and Alberta, representing expenditures made on branch lines and terminals when the amount has been finally agreed upon.

Under the G.T.P.R. Guarantee Act of 1914, the company was authorized to issue \$15,962,666.66 of bonds (in sterling, £3,280,000). It was estimated that these would have realized 91½%, but owing to war conditions they only realized, when pledged or sold, 79.6%, making a difference between the estimated and actual proceeds of \$1,874,734. The other papers on the returns had reference to the expending of the proceeds of these bonds.

Discussion in House of Commons.

When the estimates came up in committee of supply in the House of Commons, May 9, the Minister of Finance, in reply to questions said the G.T.P.R., according to the report of Sir Collingwood Schreiber, the General Consulting Engineer to the Government, was not up to the standard set, viz., the G.T.R. between Montreal and Toronto. It was not likely to be brought up to that standard for some years to come. It was estimated that it would take from \$4,000,000 to \$5,000,000 to bring the line measurably to the standard set. The item was finally passed by the House of Commons, May 12.

In regard to the C.N.R. prospects, the Minister submitted an estimate of the company's earnings up to 1920, supplied by D. B. Hanna, Third Vice President. The total net earnings for the year ended June 30, 1915, were \$6,623,000; for 1916, the estimate was \$9,770,000; for 1917, \$11,500,000; for 1918, \$15,120,000, and for 1919 and 1920, \$17,700,000. The Duluth, Winnipeg & Pacific Ry., the bonds of which are guaranteed by the C.N.R., is one of the most profitable, if not the most profitable of the company's lines. There is at credit, \$1,300,000 of the proceeds of the Montreal-Port Arthur loan, and about \$4,300,000 of the \$45,000,000 loan, so that with the funds to be provided by this present loan, the contractors will be provided for.

When the vote came up for further consideration, May 13, Hon. W. Pugsley moved to add the following: "Before making such loan, the Governor in Council shall require the company to give to His Majesty the King an option to acquire at any time within five years from the date thereof the railways and other property of the company and of all other railways and property included in the Canadian Northern Ry. system at such price as to the Governor in Council may seem reasonable under existing circumstances." On the resuming of the discussion, May 15, the chairman of committee ruled the amendment out of order, and the discussion proceeded on the main question, the item being passed.

The Dominion Parliament also, in the further supplementary estimates, voted \$10,000 to provide for a continuous audit on behalf of the Dominion, commencing May 1, of the revenues and expenditures of the two companies to which the loans have been granted.

Daylight Saving in Winnipeg.—In connection with the working of the daylight saving bylaw put in force in Winnipeg recently, the C.P.R. put the clock forward an hour, as required, at its shops, and then asked the men to vote on whether the changed time be retained, or a return made to standard time. Of the 1,800 or so employes, over 1,200 voted in favor of standard time.

Railway Rolling Stock Notes.

The C.P.R. has built a portable rail saw at its Angus shops, Montreal.

Canadian Government Railways have ordered 500 steel frame box cars, 50 tons capacity, from Canadian Car & Foundry Co., and 500 similar cars from Eastern Car Co.

Canadian Government Railways are reported to have ordered 20 second hand sleeping cars, 10 second hand tourist cars and 1 second hand dining car from Pullman Co.

The C.P.R. has ordered 21 steel ore cars from Hart-Otis Car Co., two scale testing cars from Canadian Fairbanks-Morse Co., and two ditching machines from American Hoist & Derrick Co.

The Asbestos and Asbestic Co. has received one 6 wheel saddle tank locomotive, with cylinders 13 by 16 ins., and drivers 33 ins. diam., and weighing 59,800 lbs., in working order, from Canadian Locomotive Co.

The Canadian Northern Ry., between Apr. 11 and May 15, received 1 first class passenger car from National Steel Car Co., and 4 compartment observation cars and 3 dining cars from Canadian Car & Foundry Co.

The acting Minister of Railways stated in the House of Commons May 8 that within the next three or four weeks thereafter he would award contracts for from \$3,000,000 to \$4,000,000 worth of cars for Canadian Government Railways.

The Canadian Locomotive Co. has delivered 9 decaped locomotives to the Russian Government, completing the contract for 50 for the Russian Imperial Railways. They were fully described and illustrated in Canadian Railway and Marine World for January.

Canadian Government Railways, since Apr. 14, have received 1 steel sleeping car for Intercolonial Division, from National Steel Car Co., and 22 stock cars, for Transcontinental Division, from Canadian Car & Foundry Co. A description of the latter cars, with an illustration, is given on another page in this issue.

Canadian Government Railways have purchased from Hotchkiss, Blue & Co., Chicago, 2 first class passenger cars, 65 ft. long inside, with wide vestibules; 1 first class passenger car, 60 ft. long inside with wide vestibule, and 2 dummy end baggage cars, 65 ft. long, all with steel underframes and steel sheathed. The passenger cars are mahogany finish, olive green plush upholstery, mantle gas lights, and have smoking rooms.

The Algoma Eastern Ry. has ordered 125 Otis general service cars from Hart-Otis Car Co. They are being built at the Canadian Car & Foundry Co.'s Dominion works. Following are the chief dimensions:—

Length over end sills	24 ft. 4½ ins.
Length inside	22 ft. 5 ins.
Width over all	9 ft. 11¼ ins.
Width inside	9 ft. 6 ins.
Height	5 ft.
Height from rail	9 ft. 4 13/16 ins.
Doors on each side	4
Capacity	100,000 lbs.

Canadian Government Railways have ordered 30 Mikado (2-8-2) locomotives, with superheaters, from Canadian Locomotive Co., for delivery in November. Following are the chief details:—

Weight in working order on drivers ..	213,500 lbs.
Weight in working order, total	283,000 lbs.
Wheel base, rigid	16 ft. 3 ins.
Wheel base, total	35 ft. 1 in.
Wheel base, 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.
Grate area	56.6 sq. ft.

Driving wheels, diam.	63 ins.
Driving wheel centres.....	Cast steel
Driving journals.....	Main, 11 x 20 ins.; others 10 x 12 ins.
Cylinders, diam. and stroke.....	27 by 30 ins.
Boiler, type.....	Extended wagon top, radial stay
Boiler pressure.....	180 lbs.
Tubes, no. and diam.....	240 2 ins.; 32 5/8 ins.
Tubes, length	20 ft.
Brakes.....	Westinghouse American
Superheater.....	Locomotive Superheater Co., Type A
Rear frame.....	Cradle type
Trailing truck.....	Radial type with side bearings
Cab.....	Steel with vestibule
Weight of tender loaded.....	166,000 lbs.
Tank capacity.....	9,000 U.S. gals.
Tank, type.....	Water bottom with vestibule connection
Coal capacity.....	12 tons
Truck, type.....	Pedestal, equalized
Truck wheels, diam.....	34 ins.
Wheel, type.....	Steel tired, retaining ring, cast steel centres
Journals.....	M.C.B. 6 by 11 ins.
Brake beam.....	High speed with M.C.B. heads

Death of Lieutenant-Colonel Greenwood.

A cable from London, Eng., May 15, announced the death of Lieut.-Col. Henry Smith Greenwood, M.Can.Soc.C.E., who had been suffering from an internal growth for some time, and was for a while in a sanitarium in the south of France. He was born near Kingston, Ont., Apr. 27, 1861, and graduated from the Royal Military College of Canada, with special mention in civil engineering, in June, 1882. He entered railway service in Aug., 1882, and was, to December in the same year, rodman on construction, Canada Atlantic Ry.; from 1883 to 1888 he was in the service of the Department of Railways and Canals, his work being as follows: Jan. to May, 1883, running transit and in charge of survey party traversing inland lakes and small rivers and taking soundings of same; May to Nov., 1883, with survey party making changes in location and establishing permanent bench marks, Nov., 1883, to Jan., 1884, on staff of the construction of locks at Fenelon Falls, Ont., May to Aug., 1884, with survey party running instruments on trial lines; Aug., 1884, to May, 1885, superintending construction of dam across the Otonabee River, Lakefield, Ont.; May, 1885, to Sept., 1886, superintending construction of lock and three small dams near Burleigh Falls, Ont.; Sept., 1886, to Jan., 1887, in office making up estimates; Sept., 1887, to Jan., 1888, on leave in England visiting engineering works; Jan. to Apr., 1888, office work; May, 1889 to Apr., 1892, Assistant Engineer, Cornwall Canal enlargement, with supervision of two sections; Apr., 1892, to June, 1894, Resident Assistant Engineer, Cornwall Canal enlargement, with supervision of three sections, the work consisting of three locks, three weirs, culverts, bridge, deepening and widening of canal and new banks where necessary; in June, 1894, he was transferred from the Cornwall Canal to the Peterborough and Lakefield Division of the Trent Canal, to take charge of surveys and prepare plans for the letting of contracts for the work, consisting of 6 locks, 5 bridges, 5 dams and several smaller works connected with canal construction.

He held a Royal School of Infantry first class certificate and the long service decoration. In 1886 he was captain and adjutant in the 4th Hussars; in 1889, Lieutenant-Colonel of the 3rd Dragoons, and went on the reserve of officers in 1907. He served in the South African war with the 1st Regiment Canadian Mounted Rifles in 1900, and in the native rebellion in Natal in 1906. In the South African war he served through Lord Roberts' campaign in the Orange Free

State, and after the entry of the British into Johannesburg he was appointed to reorganize the railways in the Transvaal. Later, on the removal of Major Waghorn, R.E., who was in charge of the military railways under Sir Percy Girouard, to another point, in control of the engineering of all the Transvaal lines, he was placed in charge, under Major Waghorn, of the lines in western Transvaal, that is, all lines west of Pretoria, and remained in that position until the conclusion of the war, when he was appointed Resident Engineer in charge of the lines in western Transvaal and northern Orange River Colony, and remained in that capacity until his return to Canada in 1909. On the conclusion of the war he organized and commanded a railway regiment from amongst the officials and employes of the Central South African Railways, which included all arms, was well equipped and disciplined and held a high reputation. During the Zulu rebellion drafts from this regiment took part, but he was unable to obtain the necessary leave to join them, as there was a great deal of reconstruction and new work going on on the railways at that time. In June, 1910, he was appointed Assistant Chief Engineer of Construction, Eastern Lines, Canadian Northern Ry., resigning in April, 1914, on going to live in England. He was elected a member of the Canadian Society of Civil Engineers in Dec., 1906, and a member of the Institute of Civil Engineers in Mar., 1904. Since the commencement of the present war, and until a short time before his last illness, he was engaged at the War Office in London.

A. F. Stewart, M.Can.Soc.C.E., Chief Engineer, Eastern Lines, Canadian Northern Ry., Toronto, who was associated with him in railway work in South Africa, as well as later in Canada, wrote us recently in reference to him, as follows:—"He was an able engineer, very thorough and practical in all his work. His modesty and reticence prevented him from being very well known except to his intimate friends, but these knew him to be a man of marked ability and the highest character, entirely to be relied upon both in work and in friendship."

Canadian Overseas Railway Construction Corps.—The C.P.R. has sold two 65-ton steam shovels and two self propelling extension track pile drivers to be used by the Canadian Overseas Railway Construction Corps, which is commanded by Lt.-Col. C. W. P. Ramsey, formerly Engineer of Construction, C.P.R. The Corps has built a considerable mileage of track at strategic points and is all the time making surveys for further construction. The work has often to be done under fire, but fortunately there have been no serious casualties, though there have been many narrow escapes. Lt.-Col. Ramsey and Major C. L. Hervey have been mentioned in dispatches, and 18 of the non commissioned officers and sappers who enlisted when the corps was established have received commissions in the Royal Engineers.

The International Railway Fuel Association held its annual convention at Chicago, Ill., May 15 to 18, when papers dealing with the following subjects were read and discussed,—care of locomotives and boilers with regard to fuel economy, psychology of the firemen, interpretation of coal analysis with special reference to non-combustibles, the transportation department and fuel economy, the functions of a railway fuel inspector, method of illustrating the components of coal, and fuel distributing record system.

Three Quebec Railways to be Acquired by Dominion Government.

The Dominion Parliament has passed an Act authorizing the Governor in Council to acquire, under the provisions of the statutes of 1915, chap. 16, upon such terms as may be approved, the following lines of railway, together such equipment and properties as may be deemed necessary for the operation thereof:—(1) The line commonly known as the Quebec, Montmorency & Charlevoix Ry., extending from St. Paul St., Quebec, to St. Joachim, 43.2 miles; (2) the Quebec & Saguenay Ry., extending from a junction with the last named line at St. Joachim, to Nairn Falls, Charlevoix County, Que., 62.8 miles; (3) the Lotbiniere & Megantic Ry., extending from Lyster to St. Jean des Chaillons, Lotbiniere County, Que., 30 miles. The consideration to be paid for these lines, and for the "equipment and appurtenances" is to be the value thereof as determined by the Exchequer Court of Canada.

The Act of 1915, under which the purchase of these lines is to be effected, provides that the Minister of Railways, subject to the authority of the Governor in Council, may "construct, purchase or lease, either with or without an agreement to purchase, in whole or in part, any line or lines of railway . . . in Quebec, New Brunswick, Nova Scotia or Prince Edward Island . . . which in his opinion can more conveniently and usefully be operated as part of the Government Railways System, or which may be deemed necessary or desirable for the more efficient operation of the said system. A copy of the lease or contract shall be laid before Parliament; that no line shall be leased or otherwise acquired exceeding 200 miles in length, and that no contract for the construction of a line exceeding 25 miles long shall be entered into or the purchase price of any railway paid without a vote of Parliament. No line can be purchased unless it directly connects with some part of the then existing Government Railway system.

The acting Minister of Railways, in introducing the measure. May 15, explained that the capital expenditure on the Quebec, Montreal & Charlevoix Ry. was reported to be, to Mar. 31, \$2,992,209.89; the capital cost of the Lotbiniere & Megantic Ry. was \$349,208.85; and the cash expenditure on the Quebec & Saguenay Ry. was claimed to be \$4,872,315.42, while there was due for right of way, etc., \$461,000, a total of \$5,333,315.42. The latter company had received \$248,000 in subsidies, of which \$116,000 was still in the hands of a branch company, and the Quebec provincial subsidies had not been paid over. The estimated cost of completing the line is \$700,000. The Lotbiniere & Megantic Ry. was to be taken over at \$330,000, and the Quebec, Montmorency & Charlevoix Ry. was to be taken over for the bond issue of \$2,500,000. An amendment was adopted, on the motion of the acting Minister of Railways, to the section providing for the fixing of the value of the line as follows: "Said value to be the actual cost of said railway, but not to exceed \$4,465,000, exclusive of bonded indebtedness which is to be assumed by the Government, but not to exceed in all \$2,500,000." In other words, the Government assumes \$2,500,000 of bonds of the Q.M. & C.R., pays \$330,000 for the Lotbiniere & Megantic Ry., and will pay the actual cost of the Quebec & Saguenay Ry., not to exceed,

however, \$4,135,000. A motion to read the bill a third time six months hence was defeated, May 10, and the measure went to the Senate, where it was passed the following day.

The Quebec, Montmorency & Charlevoix Ry. was originally built as a steam railway, extending, according to the Dominion Railway statistics for the year ended June 30, 1915, from Quebec to Cap Tourmente, 27.50 miles, and having 3.32 miles of branch lines. The line subsequently passed into the hands of the Quebec Ry., Light and Power Co., and is known in the electric railway field as the Q.R.L. & P. Co., Montmorency Division. The statistics of electric railway mileage issued by the Dominion show the following mileage:—Length of first main track, 28.60 miles; length of second main track, 9.80 miles; sidings and turn-outs, 3.00 miles; total mileage of track, 41.40 miles. We are officially advised by the Quebec Ry., Light and Power Co., that the Montmorency Division main line extends to Cap Tourmente, 30 miles. From Quebec to Montmorency, approximately 7 miles, the line is double tracked, and in addition there are some six odd miles of sidings, crossing points, etc., making a total of 43.20 miles. These figures do not include either the Beaufort line, or the upper level line to Montmorency Falls. The difference existing between the returns given to the Department of Railways is largely owing to the fact that the line is not electrified beyond St. Joachim station, and certain of the crossing sidings are also not electrified. The company operates both a steam and an electric railway service over the line, the financial results of the operation of which for the year ended June 30, 1915, will be found in the tables in other parts of this issue. The company had at June 30, 1915, in its steam service, eight freight locomotives; 4 first and 2 second class passenger cars; 2 baggage express and postal cars, and 12 other cars in passenger service; 38 box, 78 flat, one stock, 13 coal, and 44 other cars in freight service, and three cars in the company's service. For the electric service there were on the Montmorency division, 15 closed passenger cars and two sweepers. The line does a very large pilgrimage business in summer between Quebec and the shrine of Ste. Anne de Beaupre.

The Quebec & Saguenay Ry. Co. was incorporated to build a railway from Quebec, or near thereto, to Tadousac, via Murray Bay. For a number of years the project hung fire, but after the charter had been acquired by Sir Rodolphe Forget, things began to move, and the project became linked up with the Q. Ry., L. & P. Co. In March, 1911, a contract was let to O'Brien & Doheny to build a line from Cap Tourmente to Murray Bay wharf, 56 miles. About the same time a contract was let to the Bishop Construction Co. to build 7.50 miles of railway from Murray Bay wharf to a pulp mill at Pointe a Pic. The site of this mill is approximately at Nairn Falls. Track on this line was laid in 1911 and this represents all the track laid in connection with the company's project. O'Brien & Doheny started construction in June, at St. Joachim, mileage 25, on the Q.M. & C. Ry., and continued grading until Aug., 1912, when work ceased. At that time work had been completed to subgrade on about 95% of the 54.54 miles under the

firm's contract. No track had been laid except for construction purposes, but steel for 10 miles of track was reported to be on hand.

The Lotbiniere & Megantic Ry. was built under a Quebec charter, and extends from Lyster on the G.T.R. to St. Jean des Chaillons, 30 miles. The results of its operations for the year ended June 30, 1915, will be found in the railway statistics table in another part of this issue. The company was reported to have owned at that date 4 freight locomotives, 2 first and 2 second class passenger cars, 1 box, 24 flat and 1 other car in freight service, and one caboose. The company received subsidies from the Dominion amounting to \$96,000; and from Quebec, \$126,994. In 1907, the Quebec Legislature incorporated the Quebec Eastern Ry. to build a railway from Sherbrooke to the site of the Quebec Bridge, with power to arrange for the operation of the line into Quebec; a branch line to Lyster, with power to acquire the Lotbiniere & Megantic Ry.; a branch to Lime Ridge, and unnamed branch lines. Extensions of time for the building of the lines were granted from time to time, but nothing was ever done. It was subsequently said that the Q.E. Ry. charter was acquired by the Forget interests, and that the control of the L. & M. Ry. was held by friendly interests, in that it was operated as part of the Quebec Ry., Light, Heat & Power Co.'s system, under that company's General Manager, H. G. Matthews.

The Dominion Parliament has voted in further supplementary estimates, \$4,000,000 to provide the amount required to be paid for the Quebec, Montreal & Charlevoix Ry., the Quebec & Saguenay Ry. and the Lotbiniere & Megantic Ry., and for the equipment, appurtenances and properties used in connection with such railways, as acquired under the statute, and to provide for the cost of completing, equipping and operating the railways—the operating expenses to be chargeable to revenue account. The Minister of Finance, in explaining the vote, stated that the amount involved in the acquiring of the Lotbiniere & Megantic Ry., was \$330,000. There had been expended about \$5,000,000 on the Quebec & Saguenay Ry., which started at St. Joachim on the Quebec, Montmorency & Charlevoix Ry., and both these railways were being acquired in the public interest. If it was necessary that the Q. & S. Ry. should be acquired in order that a large amount of capital should not go to waste, it was necessary that the Q.M. & C. Ry. should be acquired in connection with it, in order that there might be a continuous railway from Quebec to Nairn Falls. So far as the Q., M. & C. Ry. is concerned, the Government assumes the obligation of \$2,500,000 of 5% bonds, and so far as the Q. & S. Ry. is concerned, the Government acquires it on a basis of actual cost, not to exceed some \$4,000,000, which is said to be less than the actual cost.

C.N.R. Honor Roll.—The Canadian Northern Ry. has had prepared an honor roll containing the names of all the officials and employes who have enlisted for overseas service, the roll containing about 1,000 names. It is very handsomely designed, the border containing the arms of all the provinces.

Charges Against G.T.R. Conductor Dismissed.—The cases against William Neil of Niagara Falls, Ont., for alleged theft of money received for fares, were dismissed by the Hamilton magistrate, May 10. The conductor had been in G.T.R. service for 44 years, and is 63 years old.

Mainly About Railway People Throughout Canada.

G. A. Walton, General Passenger Agent, Western Lines, C.P.R., has removed his family from Chicago to Winnipeg.

W. McWood, ex-Superintendent Car Department, Grand Trunk Ry., Montreal, who is 86 years of age, is reported to be very ill.

J. E. M. Firby, who died at Winnipeg, May 1, aged 65, was formerly Foreman of Bridges and Buildings, Canadian Northern Ry. there.

Hon. Frank Cochrane, M.P., Minister of Railways and Canals, returned to Canada early in May, after being absent for several weeks through ill health.

F. H. Phippen, K.C., General Counsel, Canadian Northern Ry., and Mrs. Phippen, left Toronto, May 15, for New York, whence they sailed for England.

W. H. Miller, General Paymaster, Wabash Ry., died suddenly from appendicitis at St. Louis, Mo., Apr. 30, the day prior to that fixed for his wedding.

J. A. Whyte, of Toronto, formerly of Ottawa, who founded the Whyte Railway Signal Co., has enlisted as a sergeant major in the Beavers Battalion, which is being organized in Toronto.

James Adie, local agent, C.P.R. Telegraphs, St. Catharines, Ont., received notice May 3, that his eldest son, Flight Lieutenant H. M. E. Adie, had died from injuries received in action.

G. A. Suckling, son of H. E. Suckling, Treasurer, C.P.R., Montreal, was married at Toronto, May 9, to Miss A. M. Angstrom, daughter of A. Angstrom, Naval Architect, Canadian Northern Ry., Toronto.

V. J. Melsted, A.M.Can.Soc.C.E., heretofore Engineer of Water Service, C.P.R., Winnipeg, has been appointed by the Manitoba Board of Health, to conduct analyses of all public water supplies in the province.

Stephen L. Henderson, who was on the C.P.R. engineering staff in Vancouver, and who enlisted in the Canadian Expeditionary Forces, and was at the front as a lance corporal, is reported missing. He is a son of Elmes Henderson, Toronto.

W. G. Connolly, City Passenger and Ticket Agent, Grand Trunk Pacific Ry., Vancouver, B.C., was referred to in our last issue, under the heading of Birthdays of Transportation Men in May, as representing the C.P.R. instead of the Grand Trunk Pacific Ry.

Geo. W. Stevens, President, Chesapeake and Ohio Ry., Richmond, Va., who was the guest in Montreal of Sir Frederick Williams-Taylor, General Manager, Bank of Montreal, was entertained at luncheon at the Mount Royal Club, May 5.

Capt. George McNair, killed in action in France, recently, was at one time chief clerk in the Freight Department, G.T.R., Hamilton, Ont., and at the outbreak of war was in Grand Trunk Pacific Ry. service in the west.

William A. Gardner, President, Chicago and North Western Ry., Chicago, Ill., died at Barnstable, Mass., May 11. He had been in ill health for some time, and went to his summer home, where he died, towards the end of April.

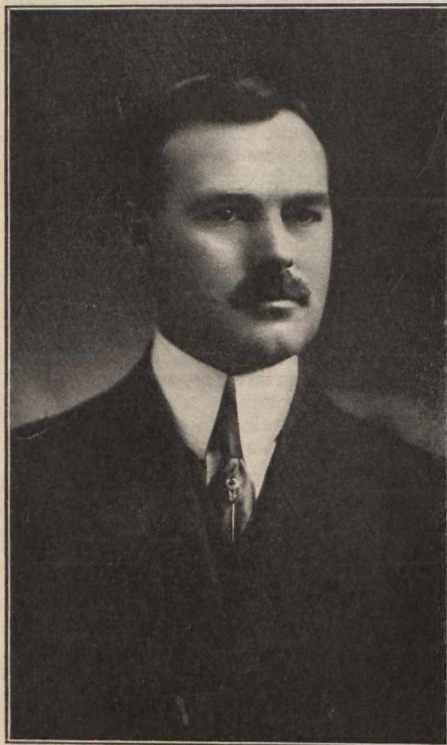
F. C. Salter, European Traffic Manager, G.T.R., London, England, who underwent two rather serious operations for abdominal trouble recently, was re-

ported early in May to have recovered sufficiently to enable him to take up his work again.

Douglas Charles O'Keefe, whose appointment as City Passenger Agent, C.P.R., Tacoma, Wash., was announced in our last issue, was born at Grand Forks, N.D., Sept. 29, 1887, and was from June, 1907, to Apr., 1916, in the Passenger Department, C.P.R., there.

Lieutenant O. P. Hertzberg, son of A. L. Hertzberg, M.Can.Soc.C.E., Division Engineer, Ontario Division, C.P.R., Toronto, was married there, recently, to Miss J. C. Morris. Lieutenant Hertzberg, who was wounded while on active service, is home on leave to recuperate.

George Moberly, who died at the General and Marine Hospital, Collingwood, Ont., Apr. 27, aged 86, was a member of



C. A. Cotterell,
Superintendent, District 2, British Columbia
Division, Canadian Pacific Railway.

the Royal Commission appointed in 1886 to enquire into and report as to the advisability of instituting a board of railway commissioners.

James McGown, Jr., whose appointment as Locomotive Foreman, C.P.R., Rogers Pass, B.C., was announced in our last issue, was born at Vancouver, B.C., Feb. 19, 1893, and entered C.P.R. service in August, 1909, since when he served an apprenticeship and served as machinist.

Jno. M. Egan, who was the first General Superintendent of the Western Division, C.P.R., at Winnipeg, from Jan. 1882 to Sept. 1, 1886, has resigned the presidency of the Kansas City Railway & Lighting Co., Kansas City, Missouri, and is living at Amboy, Ill., near which he has a large farm.

H. W. Wheatley, elder son of A. W. Wheatley, President, Lima Locomotive Corporation, Lima, Ohio, and until recently Vice President, Canadian Locomotive Co., Kingston, Ont., is taking an aviation course at Hammondsport, N.Y., and when qualified will report at Ottawa for overseas service.

Major T. C. Irving, Jr., of Toronto, Vice President of Robert W. Hunt & Co., Ltd., consulting and inspecting engineers, etc., who has been at the front almost since the beginning of war, and is now officer commanding no. 2 Field Co., Canadian Engineers, First Canadian Division, is to be married in England in June to Miss Jessie Murray of Toronto.

Capt. Ian M. W. Sinclair, of the 13th Battalion, son of Angus Sinclair, railway contractor, Toronto, was slightly wounded in the shoulder while in action recently, but has returned to duty. He was previously wounded in the knee at the Orchard battle. His younger brother, Lt. Angus Sinclair, is in a hospital in France suffering from shrapnel wounds.

G. J. Weidman, whose appointment as City Passenger Agent, C.P.R., Cleveland, Ohio, was announced in our last issue, was born at New York, N.Y., Apr. 20, 1889, and entered C.P.R. service June 11, 1911, since when he has been, to Oct. 1912, stenographer, New York; Oct. 1912 to Nov. 1913, assistant ticket agent, New York; Nov. 1913 to Jan. 1916, City Passenger Agent, Washington, D.C.

William Cotter, until recently President and General Manager, Pere Marquette Rd., Detroit, Mich., who has been appointed President and General Manager, Manufacturers' Ry. and St. Louis and O'Fallon Ry., St. Louis, Mo., was from 1896 to 1899, Superintendent, Eastern Division, G.T.R., Montreal; 1899 to July 1, 1901, Superintendent, Western Division, same road, Detroit, Mich.

F. W. Peters, General Superintendent, British Columbia Division, C.P.R., Vancouver, is suing the Dominion Shipbuilding, Engineering & Dry Dock Co., Ltd., North Vancouver, regarding the purchase by him of 100 shares in the company. He asks for a declaration that the subscription was obtained by fraud and that he is not a shareholder or in the alternative for a declaration that the shares are fully paid up.

Miss Katherine Hughes, who came out from England shortly after Sir William Van Horne's death to write his biography, after spending some time in Montreal left early in April and occupied some weeks in visiting various places in the United States, particularly his birthplace at Joliet, Ill., and also Toronto and other Canadian points. She has returned to Montreal with a large amount of valuable information to be used in her book.

C. R. Moore, who has been appointed Assistant to Vice President, Construction, Maintenance and Operation, G.T.R. (H. G. Kelley), entered G.T.R. service at Hamilton, Ont., in 1883, and has served in the Mechanical Accountant's office, and the Motive Power, Car, and Transportation departments. In 1911, when chief clerk to the Superintendent, at Toronto, he was appointed chief clerk to Vice President Kelley, and has remained in that position until his present appointment.

William P. Hutchinson, who has been appointed Resident Manager, The Macdonald, Grand Trunk Pacific Ry., Edmonton, Alta., was born at Penzance, England, Aug. 31, 1884, and after spending about two years with the American Audit Co., New York, was on July 2, 1913, appointed auditor, Chateau Laurier, G.T.R., Ottawa, remaining in that position until Aug. 1913, when he was appointed auditor, The Fort Garry, G.T.P.R., Winnipeg,

continuing as such until May 1, the date of his present appointment.

W. B. Bamford, who has been appointed District Freight Agent, C.P.R., Toronto, was born at Belleville, Ont., Sept. 10, 1863. Prior to his present appointment he was Division Freight Agent, Atlantic Division, St. John, N.B., which position he held from Apr., 1911, when his former title of General Freight Agent, Atlantic Division, held from June, 1910, was abolished. Before the last mentioned date he was District Freight Agent, London, Ont. He was entertained to luncheon at the Union Club, St. John, N.B., May 8, before leaving for Toronto.

Charles R. Moore, who has been appointed Assistant to Vice President, Construction, Operation and Maintenance, G.T.R., Montreal, was born at Hamilton, Ont., Oct. 12, 1867, and entered G.T.R. service in 1883, since when he has served successively, as junior clerk, Mechanical Accountant's office, Hamilton, Ont.; and in the Motive Power, Car, Maintenance of Way, and Transportation Departments at Montreal, and at various terminals on the system. In 1911, being then chief clerk to Superintendent, Toronto, he was appointed chief clerk to Vice President Kelley, and remained as such until his present appointment.

Thomas E. Sands, who has been appointed Freight Traffic Manager, Minneapolis, St. Paul & Sault Ste. Marie Ry., Minneapolis, Minn., was born at Albany, N.Y., Jan. 4, 1869, and entered railway service in June, 1886, since when he has been, to 1888, clerk, Chicago, St. Paul, Minneapolis & Omaha Ry.; 1888 to 1909, successively, contracting freight agent, travelling freight agent, chief clerk, Freight Traffic Department, and Assistant General Freight Agent, Minneapolis, St. Paul & Sault Ste. Marie Ry.; Apr., 1909, to the date of his present appointment, General Freight Agent, same road, Minneapolis, Minn.

John D. McAuley, whose appointment as Travelling Freight and Passenger Agent, Grand Trunk Pacific Ry., Juneau, Alaska, was announced in our last issue, was born in Plantagenet, Ont., June 11, 1884, and entered railway service Oct. 1904, since when he has been, to Dec. 1908, in Local Freight Department, G.T.R., Montreal; Dec. 1908 to June 1911, in Freight Claims Department, G.T.R., Montreal; June 1911 to Sept. 1913, in Foreign Freight Department, G.T.R., Montreal; Sept. 1913 to Sept. 1914, City Freight Agent, Grand Trunk Pacific Ry., Vancouver, B.C.; Sept. 1914 to Mar. 1, 1916, City Freight Agent, G.T.P.R., Regina, Sask.

William Gordon Powell, whose appointment as Freight and Passenger Agent, Grand Trunk Pacific Ry., Skagway, Alaska, was announced in our last issue, was born at Galt, Ont., June 27, 1891, and entered railway service Oct. 1908, since when he has been, to Nov. 1909, clerk, C.P.R., Brandon, Man.; Nov. 1909 to Nov. 1910, excursion clerk, C.P.R., Brandon, Man.; Nov. 1910 to Nov. 1911, chief clerk, District Passenger Agent's office, Grand Trunk Pacific Ry., Winnipeg; Nov. 1911 to Feb. 1912, Assistant City Passenger Agent, G.T.P.R., Winnipeg; Feb. to Dec. 1912, City Passenger Agent, G.T.P.R., Winnipeg; Dec. 1912 to June 1913, Travelling Passenger Agent, G.T.R. and G.T.P.R., Winnipeg; June 1913 to Feb. 1916, City Passenger and Ticket Agent, G.T.P.R., Regina, Sask.

Flight Lieutenant Trafford Jones, who was killed somewhere in France or Flanders recently, while on patrol duty, by

being shot through the head, was born at Toronto, Oct. 19, 1887, and was educated at Upper Canada College and the Faculty of Applied Science, Toronto University, graduating from the latter in 1908. He was engaged for some time in the Canadian Northern Ry. Mechanical Department offices, Toronto, leaving in 1911 to promote Canadian Brakeshoes, Ltd. He joined the Army Service Corps in Feb., 1915, going to England in May, 1915. Early this year he was transferred to the Royal Flying Corps and was on active service at the front for four months. He leaves a widow, a daughter of Alfred W. Smith, Toronto, and one child.

L. Mulkern, who has been appointed Division Freight Agent, Atlantic Division Division Freight Agent, Atlantic Division, C.P.R., St. John, N.B., was born at London, Ont., June 18, 1871, and entered C.P.R. service in Mar., 1890, since when he has been, to 1897, operator, Freight Department, Toronto; 1897 to 1901, inward freight clerk, London, Ont.; June 1, 1901, to June, 1903, clerk in General Freight Agent's office, Toronto; June, 1903, to Apr., 1908, canvassing freight agent, chief clerk to General Freight Agent, and Travelling Freight Agent, Toronto, consecutively; Apr., 1908, to June, 1910, chief clerk to General Freight Agent, Through Traffic, Toronto; June, 1910, to Jan., 1914, District Freight Agent, London, Ont.; Jan., 1914, to May 15, 1916, District Freight Agent, Toronto.

Thomas Francis Rahilly, whose appointment as acting Trainmaster, Algoma Central & Hudson Bay Ry., Sault Ste. Marie, Ont., was announced in our last issue, was born at Diorite, Mich., Oct. 6, 1892, and entered railway service June 22, 1908, since when he has been, to July 20, 1908, section hand, Chicago & North Western Ry., Michigamme, Mich.; July 23, 1908, to May 11, 1913, freight clerk, Duluth, South Shore & Atlantic Ry., St. Ignace, Mich.; May 12 to Aug. 27, 1913, clerk in Audit Office, same road, Marquette, Mich.; Aug. 28 to Nov. 2, 1913, chief clerk to Yardmaster, Sault Terminals, same road, Sault Ste. Marie, Ont.; Nov. 3, 1913, to Nov. 30, 1914, clerk in Comptroller's Office, Algoma Central & Hudson Bay Ry. and Algoma Eastern Ry., Sault Ste. Marie, Ont.; Dec. 1, 1914, to Apr. 15, 1916, Travelling Auditor, same companies.

H. D. Cameron, whose appointment as Mechanical Engineer, Canadian Northern Ry., Toronto, was announced in our last issue, was born there Sept. 23, 1879, and was educated at the Montreal public and high schools, and graduated from McGill University with the degree of B.Sc. (Mechanical Engineer) in 1901. He entered railway service in the summer of 1899 as mechanical apprentice, G.T.R. shops, Montreal, and continued there during vacations and after graduation until 1902, since when he has been, to 1903, in drawing office, Mechanical Department, Canada Atlantic Ry., Ottawa; 1903 to 1905, Assistant Engineer, Montreal Water and Power Co., Montreal; 1905 to 1906, on engineering staff of Gulf, Colorado and Santa Fe Ry., Cleburne, Tex.; 1906 to Apr. 1, 1916, in drawing office, latterly as chief draughtsman, Mechanical Department, Canadian Northern Ry., Winnipeg.

T. Collins, who has been appointed Superintendent, District 2, Ontario Division, C.P.R., London, entered C.P.R. service, Sept. 2, 1885, since when he has been, to Mar. 7, 1887, brakeman, West Toronto, Ont.; Mar. 7, 1887, to Aug. 1, 1896, conductor, West Toronto, Ont.; Aug. 1, 1896, to Sept. 1, 1869, construction

trainmaster, Guelph and Goderich Branch; Sept. 1 to Oct. 15, 1897, Trainmaster, London, Ont.; Oct. 15, 1897, to Jan. 1, 1908, construction trainmaster, double tracking, Montreal to Smiths Falls, Ont.; Jan. 1 to Apr. 15, 1908, Trainmaster, Smiths Falls, Ont.; Apr. 15, 1908, to June 1, 1909, construction trainmaster, double tracking, Montreal to Smiths Falls, Ont.; June 1, 1909, to June 1, 1912, Assistant Superintendent, Smiths Falls, Ont.; June 1 to Dec. 1912, Superintendent, District 2, Lake Superior Division, Chapleau, Ont.; Dec., 1912, to May 1, 1916, Superintendent, District 4, Ontario Division, Toronto.

Jules E. Morazain, who has been appointed Superintendent, District 1, National Transcontinental Ry., Quebec, Que., was born at Wheatland, Que., July 31, 1875, and entered C.P.R. service May 3, 1890, since when he has been, to May 24, 1890, clerk, Drummondville, Que.; Aug. 1, 1890, to Jan. 8, 1891, operator, Foster, Que.; Jan. 9 to Aug. 12, 1891, operator, Richfort, Vt.; Aug. 12, 1891, to Aug. 15, 1892, undertook a commercial course; Aug. 15 to Sept. 26, 1892, operator, C.P.R., Sutton, Que.; Sept. 26, 1892, to Feb. 8, 1894, operator, Highlands, Que.; Feb. 9, to July, 1894, operator, Richfort, Vt.; July to Oct., 1894, relieving operator at various points; Oct., 1894, to May 27, 1895, operator, Highlands, Que.; May 27, 1895, to Sept. 24, 1901, agent, Highlands, Que.; Sept. 24, 1901, to Nov. 3, 1908, agent, Mile End, Que.; Nov. 3, 1908, to Jan. 31, 1913, General Agent, Operating Department, Quebec, Que.; Feb. 1 to Dec. 6, 1913, Assistant Superintendent, District 3, Eastern Division, Quebec, Que.; Dec. 6, 1913, to May, 1916, Assistant Superintendent, Montreal Terminals, C.P.R.

James M. MacArthur, whose appointment as Superintendent, District 1, Manitoba Division, C.P.R., Kenora, Ont., was announced in our last issue, was born at Toronto, Dec. 8, 1885, and entered C.P.R. service July 16, 1902, since when he has been, to Oct. 1, 1902, clerk to Division Engineer, Toronto; Oct. 1, 1902, to Mar. 1, 1903, clerk to Chief Dispatcher, Toronto; Mar. 1 to July 1, 1903, clerk to Superintendent, Moose Jaw, Sask.; July 1, 1903, to Aug. 10, 1907, chief clerk to Terminal Superintendent, Toronto; Aug. 10, 1907, to Aug. 5, 1909, assistant chief clerk to General Superintendent, Ontario Division, Toronto; Aug. 5, 1909, to Aug. 9, 1910, assistant chief clerk to Second Vice President, Winnipeg; Aug. 9, 1910, to Feb. 21, 1912, chief clerk to Second Vice President, Winnipeg; Feb. 21, 1912, to Oct. 3, 1913, chief clerk to General Superintendent, Manitoba Division, Winnipeg; Oct. 3, 1913, to Aug. 1, 1914, Trainmaster, Medicine Hat, Alta.; Aug. 1, 1914, to Feb. 24, 1915, Terminal Trainmaster, Calgary, Alta.; Feb. 24, to Mar. 23, 1915, acting Superintendent, Cranbrook, B.C.; Mar. 23 to Oct. 31, 1915, Terminal Trainmaster, Calgary, Alta.; Oct. 31 to Dec. 1, 1915, acting Superintendent, Nelson, B.C.; Dec. 1, 1915, to Mar. 31, 1916, acting Superintendent, Lethbridge, Alta.

Geo. O. Somers, who has been Secretary of the Canada Bond Corporation, Ltd., Toronto, for the last three or four years, and who was appointed member of the Traffic Rates Bureau for western railways, Chicago, Ill., recently, was born at Barrie, Ont., July 10, 1860. He entered railway service in 1875, since when he was consecutively to 1879, telegraph operator, Northern Ry. of Canada, assistant agent, relief agent, station agent and superintendent's clerk, same road; 1880 to 1882, engaged in other business at Chicago; 1883 to 1885, successively clerk,

general freight office, acting general baggage agent and chief clerk, general passenger and ticket department, Canadian Pacific Ry., at Winnipeg, Man.; 1886, chief clerk, general passenger and ticket department, Michigan Central Rd., at Chicago; 1887, travelling passenger agent, Duluth, South Shore & Atlantic Ry., at Marquette, Mich.; to Sept., 1894, successively chief clerk, general passenger and ticket department, chief clerk, general traffic department, and Assistant General Freight Agent, Great Northern Ry.; Sept., 1894, he was appointed General Freight Agent, same road, and later transferred to a similar position on the Chicago Great Western Rd., which he resigned in June, 1912, to take up the position in Toronto which he has just relinquished.

Allan Purvis, who has been appointed General Superintendent, Eastern Division, C.P.R., Montreal, was born at Batavia, Java, June 29, 1878, and was educated at the Merchant Taylor's School, Liverpool, Eng. He entered C.P.R. service in Vancouver, B.C., at an early age, and was

from Aug. 1890 to Feb. 1891, messenger, Stores Department; Feb. to Nov. 1891, storesman; Nov. 1891 to Sept. 1892, junior clerk, Vancouver, B.C.; Sept. 1892 to Aug. 1893, timekeeper, Donald, B.C.; Aug. 1893 to Oct. 1894, clerk, Vancouver, B.C.; Oct. 1894 to Mar. 1895, assistant storekeeper, North Bend and Kamloops, B.C.; Mar. 1895 to Sept. 1896, clerk and operator, Car Service and Fuel Department, Vancouver, B.C.; Sept., 1896 to Jan. 1899, Chief Clerk, Fuel Department, Vancouver, B.C.; Jan. 1899 to Feb. 1908, chief clerk to General Superintendent, Pacific Division, Vancouver, B.C.; Feb. to Nov. 1908, Superintendent, District 4, Central Division, Souris, Man.; Nov. 1908 to Oct. 1909, Superintendent, District 3, Pacific Division, Nelson, B.C.; Oct. 1909 to Oct. 1911, Local Manager, Fraser Valley Branch, British Columbia Electric Ry., Vancouver, B.C.; May 1912 to Feb. 1915, Manager of Interurban Lines, same company, New Westminster, B.C.; May 1915 to May 1, 1916, Superintendent, District 2, Ontario Division, C. P.R., London, Ont.

a debt, at the end of this war, of \$1,000,000,000. In time of peace it would not be a light undertaking to bring about the nationalization of all the railways of Canada; it would certainly not be a light undertaking to do so in time of war. But this situation must be faced; there must be an end of this annual coming to the Government by these two railway companies for relief. The policy which we have adopted has been stated to be no policy. I say it is the true policy in the situation in which we find ourselves. We are not in a position to say what should be the permanent solution of Canada's railway problem. We are in this position, that we do not want these railway companies to collapse. The policy which has been before this committee, and I know it has met with approval in this House, is the true policy at this time, and it is not the less the true policy because it provides temporarily for the situation. It bridges time, it enables these roads to continue—these roads which are so vital, so essential for the welfare of this country—until such time as, upon the best advice that we can get, we shall be able to suggest some permanent solution, which I believe will probably involve the taking over by this Government of one or more of the existing railway systems, and which, as I stated, may involve later on the nationalization of all the railway systems of Canada."

Royal Commission to Enquire into the Railway Situation.

The Dominion Parliament has voted \$150,000 to provide for an inquiry and a report upon the railway situation in Canada. In explaining the vote in the House of Commons, May 15, the Minister of Finance said the terms of the commission had not been settled. In general terms, the purpose the Government has in view, is that a full report shall be made upon the physical and financial conditions of the railways in Canada and upon the general railway situation, in order that it might be in a position to adopt a policy which would prevent recurring visits for temporary aid, and settle the railway situation in permanent fashion. The powers which will be given to the commission will have to receive careful consideration by the Government in order that the end in view may be accomplished. The commission will furnish the Government with information respecting the physical and financial conditions relating to the railway companies of Canada, and also, it is hoped, will give suggestions and advice as to what distribution or rearrangement, or linking up of lines and systems would give the best economic results for the enormous amount of capital which has been expended. The Government has in mind a commission clothed with wide powers which will bring in a comprehensive report, as a result of which it will be known what policy, at least upon the Government's view, should be adopted to settle the railway situation with which the country is confronted. The problem cannot be sidestepped. The loans given at the present session are a measure of temporary assistance, and there is every reason to believe that if steps are not taken to provide a permanent solution, the same situation will recur. The personnel of the commission has not been settled by the Government. It is not an easy task to settle upon men of ability. Such men might be found in Canada,—others suggest they are to be found only in the United States,—but the problem of finding them the Government must address itself to. The commissioners will be asked to advise generally as to the railway situation, and to report as to what arrangement, distribution, or linking up of the lines or systems will

give the best economic results. The Government cannot make any commission a dictator; they cannot abdicate the functions of the Government or of Parliament in favor of any commission. But it is hoped the commission will give the Government the benefit of expert knowledge to enable them to find a permanent solution of the railway situation.

In the course of the discussion on the Canadian Northern and Grand Trunk Pacific loans, May 15, the Minister of Finance said: "We are confronted with a railway situation which it is our duty to solve, and which we propose to solve by taking the best expert advice that we can get, looking to a permanent settlement of these difficulties which annually confront the Government. My own view is that the solution of that railway problem may involve, and probably will involve, the Government of Canada taking over one or more of the railway systems of Canada. As I stated in my speech when introducing these loans to the House, it is possible that it may lead to the nationalization of the railways of Canada. But I stated at the same time, and I state now, that whether a war is on or not, it is not a light undertaking to take over all the railways of the Dominion. We should have to consider many things; as, for example, the effect upon our credit of taking them all over at once. The member for South York seemed to suggest that it was a very easy thing to take them all over. Well, it is not an easy thing to take over all the railways of Canada and assume all the activities now being carried on by them, activities connected with immigration; activities connected with transportation upon the Atlantic and upon the Pacific; the operation of all those roads; the financing of their needs. That would not be a light undertaking at any time, even if we had no war. But I desire, in conclusion, to say that we are in this war; we are confronted with heavier responsibilities by far than have ever fallen to the lot of the people of Canada before; that the end of this war is not in sight; that we are increasing our national debt at the rate of \$20,000,000 or \$25,000,000 a month; that we shall probably be confronted with

Small Claims Against Government Railways.

In an Act passed in 1911, setting out the procedure to be followed in respect to small claims against the Canadian Government Railways, under which the General Manager may be sued directly, provision was only made for claims against the Intercolonial Ry. A recent case brought out the fact that although the Prince Edward Island Ry. is a Canadian Government railway, a small claim against it could not be tried in the local courts owing to the fact that it was not specifically mentioned in the Act. An Act has now been passed making the Act of 1911 apply to the P.E.I.R., as well as to the I.C.R. In the House of Commons, amendments were introduced to make this provision retroactive, and to make the provisions of the Act apply in future to all railways operated by the Canadian Government. Both were defeated. The Senate added a clause making the measure retroactive so far as the P.E.I.R. is concerned, but the Commons refused to accept it, and the Senate decided May 16, not to press it. The measure therefore became law in the form it left the Commons.

The American Railway Tool Foremen's Association will hold its annual convention at Chicago, Ill., Aug. 24 to 26. Among the committee reports to be dealt with will be the heat treatment of steel, special tools for steel car repairs, devices for reclaiming material, special tools and devices for the forge shop, emery wheels as applied to locomotive repairs, and jigs and devices for locomotive houses.

The American Railroad Master Tanners, Copper-smiths and Pipefitters Association held its annual convention at Chicago, Ill., May 22 to 24, when a number of papers were read and discussed.

The old Western Hotel premises, Second Ave., Saskatoon, Sask., are being thoroughly rearranged for an office building for the Canadian Northern Ry.

Intercolonial Railway Betterments, Etc.

About three years ago a new locomotive house and power station were built at Port Tupper, N.S., on a foundation of creosote piling, the enclosed space being filled in with miscellaneous debris. During the past winter this mass of material was discovered to be on fire, originating either from hot ashes from the locomotives or from spontaneous combustion. When the enclosed area was partially uncovered it was found that some of the creosote piling had been burned off, and the whole building was in danger of collapse. The situation is now reported to be thoroughly under control, and the building in a safe condition, although some cracks have developed.

The Dominion Parliament has voted \$978,000 on capital account towards the building of a branch line from Sunny Brae to Mulgrave, N.S. It was explained that this line will be 93.18 miles long, with a 0.6 gradient east and west. It is intended to open up the central portion of Guysboro County, and to provide a more economical route for the iron, steel and coal traffic from Sydney and Newfoundland than the present one. The vote in 1915 was \$1,000,000, out of which \$22,000 were expended upon surveys, which are now completed, and the present \$978,000 is a revote. It is the Government's intention to proceed with the construction of the line just as soon as financial conditions warrant.

At a conference between the Halifax city authorities and the Dominion Government officials in charge of the construction of the new railway terminal facilities recently, it was agreed that the bridge across Young Ave. be made 80 ft. wide, instead of 65 ft., as originally planned, at an additional cost of \$10,000.

The acting Minister of Railways stated in the House of Commons, May 3, that it was not the Government's present intention to change the location of the line, or to build a new line between Truro, N.S., and Moncton, N.B., for the purpose of avoiding existing heavy gradients over the Cobequid Mountains. Some surveys had been made, at a cost of over \$37,000, for a new route between the two points named.

The Dominion Parliament has voted \$129,600 to bring the New Brunswick & Prince Edward Island Ry., running from Sackville to Cape Tormentine, up to Intercolonial Ry. standard. It is proposed to replace five of the existing bridge structures with pile trestles, three with wood stringers, and the bridge at Baie Verte with steel spans on concrete piers and abutments at a cost of \$56,500. The 56 lb. steel rails will be replaced with 80 lb. at a cost of \$69,000; additional ballasting will cost \$3,100, and a telegraph line \$1,000.

The acting Minister of Railways stated in the House of Commons recently that the total cost of the Main St. subway at Moncton, N.B., was \$132,673.21. Nothing was paid for right of way; but there were certain claims outstanding for abutment damages. When financial conditions improve, the Department will complete the elimination of level crossings in Moncton in accordance with the arrangements made between the management and the City Council. Plans are being made for the building of a subway under the railway tracks at Central St., Campbellton, N.B.

The Dominion Parliament has voted \$111,000 towards the construction of a spur line to Courtenay Bay, St. John, N.

B., this being a revote. The construction of this spur will permit the abandonment of 0.68 of a mile of the present line, which contains a number of objectionable street crossings in the city. The proposed line will be free of all street crossings, and will give the railway control of the water front at that point. The \$111,000 will cover the cost of the purchase of the right of way, all expenses in connection therewith, and the preparation of plans, but will not provide any money for construction. (May, pg. 183.)

Railway Finance, Meetings, Etc.

Martime Coal Ry. and Power Co.—The annual meeting was held in Montreal, May 1. The report for the year ended Feb. 29, showed net profits of \$136,192, an increase of \$24,981 over the preceding year. After paying \$97,407 interest on bonds, providing for sinking, depreciation and other funds \$11,701, was added to profit and loss account which now stands at \$65,355. The total assets are valued at \$3,940,154. The accounts of the railway portion of the company's undertaking are not reported separately. The directors for the current year are:—W. Hanson, President; A. E. Dymont, Vice President; Hon. N. Curry, G. R. Holme, A. MacLaurin, W. L. Magden, Hon. W. Mitchell, W. H. Tottle.

New Brunswick and Prince Edward Island Ry.—The acting Minister of Railways stated in the House of Commons recently, that the amount paid on the purchase price of the New Brunswick and Prince Edward Island Ry. was \$180,000. The amount unpaid was \$90,000, on which there had been paid in interest to Aug. 1, 1915, \$10,186.50.

St. John and Quebec Ry.—The acting Minister of Railways stated in the House of Commons recently, that since the Government made a tentative agreement for leasing the St. John Valley Ry. (the New Brunswick section of this projected railway), it had expended \$6,925.52 in operation and maintenance. The receipts from the operation were \$5,245.98.

Temiscouata Ry.—Net earnings for February were \$58. Aggregate earnings for eight months ended Feb. 29, \$24,141.

White Pass and Yukon Route.—Gross earnings for Feb. \$17,664, against \$12,543 for Feb. 1915. Aggregate earnings for two months ended Feb. 29, \$26,884, against \$18,818 for same period 1915.

The Master Boiler Makers' Association held its annual convention at Cleveland, Ohio, May 23 to 26. The subjects dealt with in committee reports, covered cleaning and maintaining superheater tubes, removing and replacing wide fireboxes, basic or acid steel for fireboxes, cleaning boilers with tubes removed, cracking of barrel sheets, bulging of front tube sheets, advantage of cutting off stay ends with oxy-acetylene, rules for arriving at maximum heating surface, fusible plugs in crown sheets, standard thickness of copper ferrules for good and bad water districts, do long tubes vibrate in service, oxy-acetylene and its advantages in boiler repairs, electric welding, prevention of cracking in side sheets.

Canadian Society of Civil Engineers, Edmonton Branch. At the annual meeting recently, the following officers were elected for the current year: L. B. Elliott, Chairman; J. Chalmers, Vice Chairman; C. A. Robb, Secretary-Treasurer; A. T. Fraser, J. L. Cote, D. J. Carter and D. Donaldson forming the executive committee.

Timiskaming and Northern Ontario Railway Report.

The Province of Ontario owns the Timiskaming and Northern Ontario Ry., a steam road, and the Nipissing Central Ry., an electric line, which are operated by the Timiskaming and Northern Ontario Ry. Commission. The commissioners' report for the year ended Oct. 31, 1915, issued recently gives the following information:

Revenue from transportation.....	\$1,485,080.02
Revenue other than transportation....	66,471.75

Total operating revenue	\$1,551,551.77
Maintenance of way and structures	\$325,865.86
Maintenance of equipment 262,654.51	
Traffic expenses	18,135.13
Transportation expenses ..	625,911.92
General expenses	95,929.49

Total operating expenses	\$1,328,496.91
Net operating revenue	223,054.86
Ore royalties	26,268.74
Rent from joint facilities	12,815.26
Rent from lease of road	16,601.37
Miscellaneous income	2,857.98

Total income	\$ 282,598.21
Deductions from income	72,059.58

Total earnings	\$ 210,538.63
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Compared with the year ended Oct. 31, 1914, the total operating revenue shows a decrease of \$119,347.10; the total operating expenses a decrease of \$140,077.32; and the net operating revenue an increase of \$20,230.22. The income from ore royalties in 1913-14 decreased, \$29,605.77, while three new items amounting to \$33,274.61, bring the total income up to \$282,598.21, an increase of \$24,399.12. The deductions from income show an increase of \$29,221.86, and the total earnings a decrease of \$18,439.60. From the profit and loss account \$225,000 was paid to the Treasurer of Ontario, leaving a credit balance of \$415,664.24.

ASSETS.

Cost of road	\$17,913,700.48
Cost of equipment	2,243,124.88
Nipissing Central Ry.	464,677.97
Empire Lumber Co., Latchford ..	7,176.50
Working assets	879,750.04
Deferred debit items	9,770.55
	\$21,518,200.42

LIABILITIES.

Provincial loan account	\$20,483,415.77
Working liabilities	619,120.41
Balance profit and loss.....	415,664.24
	\$21,518,200.42

TRAFFIC STATISTICS.

Revenue passengers	480,995
Passengers carried one mile	21,446,747
Passengers carried one mile per one mile of road	65,287
Average distance carried (miles)	44.59
Average amount received	\$1.00
Average receipts per passenger per mile..	2.25 cts.
Passenger service train revenue per train mile	\$1.15
Revenue freight carried (tons)	676,938
Tons carried one mile	94,939,616
Carried one mile per mile of road.....	289,018
Average distance of haul of one ton (miles)	140.25
Average revenue per ton	\$1.37
Average amount received per ton per mile of road	\$0.98
Freight revenue per train mile	\$2.23
Freight originating on the line (tons)	487,173
Received from Canadian lines (tons)...	151,762
Received from U. S. lines (tons)	38,003
Total (tons)	676,938
Mileage of revenue passenger trains..	417,290
Mileage of revenue mixed trains.....	66,019
Mileage of revenue freight trains	350,489
Total revenue train mileage	833,798

British Rail Exports.—The export of steel rails from Great Britain for February was 3,905 tons against 14,877 tons in Feb. 1915, and 35,484 tons for Feb. 1914. The total export for January and February was 4,617 tons, of which 4,169 tons went to India, 317 to Australia and 131 to South Africa.

Increase in Prices of Railway Materials and Supplies.

E. J. Chamberlin, President Grand Trunk and Grand Trunk Pacific Railways, has had the following statement prepared showing the increase in market prices of a large number of materials and supplies used by railway, as compared with the prices in 1914 before the outbreak of war:—

	INCREASES RANGING FROM 5 TO 80 PER CENT.	
	Canada.	U.S.
Acids.....	56	—
Bolts, machine and carriage.....	50	57
Bolts, track.....	—	49
Batteries and renewals.....	17½	10
Brake beams.....	34	34
Brushes.....	17½	10
Castings, malleable.....	7	21
Castings, steel.....	26	28
Cement.....	—	12
Chain.....	20	19
Couplers, car and loco.....	13	23
Drift gear.....	55½	48
Drills, carbon.....	52	52
Duck cotton.....	15	15
Fence wire.....	67	67
Files.....	6½	14
Fuses.....	74	43
Frogs and switches.....	23½	16
Gasoline.....	38	—
Glass.....	48	12
Hose.....	5	5
Iron, common bar.....	38	74
Joints, rail.....	21½	14
Knuckles, car and loco.....	16	17
Leather, belting.....	10	15
Lumber, oak, car, loco.....	10	10
Lumber, yellow pine.....	15	15
Metal babbitt.....	34	22
Nails, wire.....	67	57
Netting, loco. stack.....	36	—
Nuts, square.....	38	52
Nuts, hex.....	38	70
Pipe, black.....	50	—
Pipe, galvd.....	78	—
Pipe, cast iron.....	38	42
Rings, packing and piston.....	32	21
Rivets, boiler.....	54	—
Roofs, car metal.....	57½	50
Roofs, plastic.....	40½	33
Rope, Manila.....	44	64
Stationery.....	15	10
Screws, iron.....	—	38
Scoops, shovels.....	10	—
Spikes, track.....	—	55

	PER CENT.	Canada.	U.S.
Steel bars.....	44	—	—
Steel firebox plates.....	61½	54	54
Springs, car and loco.....	31	50	50
Tie plates.....	67½	60	60
Tires.....	71	25	25
Tin.....	47½	40	40
Tubes, superheater.....	43½	36	36
Valves.....	61	51	51
Washers, wrought.....	5	6	6
Waste, cotton and wool.....	25½	18	18
Wheels.....	38	31	31

Material.	PER CENT.	Canada.	U.S.
Antimony.....	607½	600	600
Brass, rod.....	187½	180	180
Brass, sheet.....	221½	214	214
Castings, brass.....	87	87	87
Copper rod.....	127½	120	120
Copper sheet.....	107½	100	100
Copper ingot.....	87½	80	80
Drills, high speed.....	277½	270	270
Ferrules, copper.....	131½	124	124
Iron, galvd. sheet.....	121½	114	114
Iron, black sheet.....	87½	80	80
Lead, pig.....	112½	105	105
Paint, white lead in oil.....	32	26	26
Potash, prussiate.....	938	928	928
Rivets, boiler.....	—	91	91
Screws, brass wood.....	179	123	123
Screws, iron.....	87	—	—
Steel bars, plates, angles, etc.....	—	117	117
Steel plates, angles, etc.....	124½	—	—
Steel, tool, high speed.....	450	450	450
Steel billets.....	—	192	192
Tubes, boiler.....	96¼	89	89
Tubing, copper.....	127½	120	120
Vitriol, bluestone.....	220	—	—
Zincs, battery.....	203	—	—
Stationery.			
Blotting papers.....	100	80	80
Copying pencils.....	150	140	140
Inks.....	80	100	100
Paper fasteners.....	100	100	100

Canadian Lines Leased by New York Central Railroad.

The New York Central Rd. Co.'s report for the year 1915 contains the following paragraph: "By lease dated Sept. 27, 1915, which became effective Jan. 1, 1916, this company leased the railway and property of the St. Lawrence & Adirondack Ry. Co. and assumed its lease of a portion of the Grand Trunk Ry. extending from Valleyfield to Beauharnois and its track-

age rights over the Canadian Pacific Ry. from Adirondack Jct. into the city of Montreal. The lease is for 21 years at an annual rental of a sum equal to the interest payable on bonds of the lessor, which may at any time be outstanding, payable direct to the holders of such bonds. On the same date a lease of the railway and property of the Ottawa & New York Ry. Co. was executed to become effective Jan. 1, 1916, and to continue for 21 years at an annual rental of a sum equal to the interest payable on bonds of the lessor, which may be outstanding, payable direct to the holders of such bonds. The Ottawa & New York Ry. extends from the International Boundary in the St. Lawrence River, near Nyando, to the city of Ottawa, in Ontario, and connects directly with the Ottawa Branch of the New York Central Rd. These two leases were made under the authorization and approval of the Public Service Commission of the State of New York, Second District, and of the Canadian Parliament."

The Central Railway of Canada Fiasco.

There was deposited with the Exchequer Court of Canada, May 3, copy of a scheme of arrangement with the Central Ry. of Canada's creditors as provided for by the Railway Act, Revised Statutes of Canada, Sec. 365. The Central Ry. of Canada, proposed to build a railway from Montreal to Georgian Bay. The original incorporation of a company to build such a line dates back to pre Confederation days, and a big land grant was set apart to aid construction. Lines built under the charter were sold to the C.P.R., but certain interests held that the old charter was still good, and the Dominion Parliament within recent years granted the company extensions of powers. Bonds were placed on the market in England; a general contract was entered into for construction, and a considerable amount of grading was done. Wills & Co., the contractors, according to the company, failed to prosecute the work with sufficient dispatch, and they claimed that the company had failed to provide the funds according to contract. Legal proceedings were instituted on both sides, which did not clear the situation, and with the declaration of the governments interested that the land grant voted half a century or more ago, was no longer available, the company ceased to be a construction factor in the railway situation. The settlement of its affairs was the only course open. J. D. Wells, Montreal, is secretary.

New C.P.R. Station Names.—The junction of the Kettle Valley Ry. with the C.P.R., near Hope, B.C., on the north side of the Fraser River, has been named Petain, after the French general in command at Verdun. The junction point of the Kettle Valley Ry. and the C.P.R. near Otter Summit, where the C.P.R. Spence's Bridge branch ends, has been named Brodie, after H. W. Brodie, General Passenger Agent, C.P.R., Vancouver.

A warrant has been issued for the arrest of S. Busby, cashier, Freight Department, Canadian Northern Ry., Saskatoon, Sask. It is reported that defalcations to the extent of over \$6,000 have been discovered. A letter was received from him confessing that he had been engaging in wheat speculation with disastrous results, and that he was enlisting for overseas service.

The Canadian Pacific Railway's Roll of Honor.

C. H. Buell, Staff Registrar and Secretary, Pension Department, C.P.R., has issued list 9, which is prefixed as follows:—"Several thousand officers and employes of this company enlisted for active military duty with the Canadian Expeditionary Forces, and the majority of them are now in Europe, bravely battling for Canada and the Empire. As particulars of army reservists are not available, these lists of those who have given up their lives for their country or been wounded in action are necessarily incomplete, and do not therefore indicate fully the extent to which the Company's officers and employes have participated in the great struggle."

Alcock, R. W.	Loco. fireman	Red Deer	Wounded
Bearman, F. C.	Wiper	Assiniboia	Wounded
Belisle, Joseph.	Clerk	Outremont	Wounded
Bull, James A.	Rodman	Windy Lake	Killed in action
Coulthard, L. W.	Operator	Montreal	Killed in action
Denholm, John.	Clerk	Winnipeg	Wounded
Doig, David.	Clerk	Winnipeg	Killed
Duff, Louis R.	Brakeman	Moose Jaw	Wounded
Emerson, Sidney.	Craneman	Ogden	Wounded
Field, C. V. G.	Apprentice	Angus	Killed in action
Grignon, Lorenzo.	Car Repairer	Glen Yard	Wounded
Harvey, P. E.	Stower	Toronto	Wounded
Hertzberg, O. P.	Levelman	Toronto	Wounded
Huddle, Charles.	Car Cleaner	Calgary	Wounded
Kirkwood, W. H.	Wiper	Winnipeg	Suffering from shock
Latimer, Walter.	Car Repairer	Toronto	Killed in action
Loucks, Kirk S.	Concrete Inspector	Brooks	Shell contusion
McCauley, N. H.	Clerk	Shaunavon	Killed in action
McLay, Guy R.	Sectionman	Moore's Mills	Wounded
McMillan, John.	Tinsmith	Winnipeg	Wounded and prisoner
Othen, Harry.	Porter	Pt. McNicoll	Killed in action
Prescott, Leonard.	Laborer	West Calgary	Wounded
Roland, A. J. H.	Assistant Agent	Carstairs	Wounded
Ryder, F. H.	Yardman	McAdam Jct.	Wounded
Sales, P. C. H.	Wiper	Brandon	Wounded
Smith, Sears D.	Trainman	Brownville Jct.	Wounded
Southgate, C. O.	Clerk	Havelock	Wounded
Whyte, Herbert.	Hostler	Moose Jaw	Wounded

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NOTICE TO ADVERTISERS.

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Canadian Government Railways Officials' Salaries, Etc.

In the House of Commons recently, the acting Minister of Railways gave the names and salaries of 23 officials who have been engaged from other railways between Jan. 1, 1912, and Dec. 31, 1915, as follows:—

Engineering Department—C. B. Brown, \$500 a month; A. T. McDonald, \$110; F. S. Wilkins, \$100; G. C. Lightner, \$165; L. H. Robinson, \$150; A. D. W. Cuthbert, \$90; Jas. Pullar, \$90; H. T. Ruhl, \$200; L. Brousseau, \$140; T. L. Landers, \$125; G. C. Perkins, \$85; A. H. Jones, \$125; J. E. Long, \$225; T. F. King, \$100.

Operating Department—J. K. McNeillie, \$500; A. C. Barker, \$215; W. C. Roberts, \$125; W. S. Byrne, \$50.

Traffic Department—C. A. Hayes, \$833.33; E. Legasse, \$105; T. Cree, \$95; H. Russiere, \$90.

Mechanical Department—G. E. Smart, \$300.

Canadian Railway Club Annual Meeting.

The report for the past year was dealt with at the annual meeting at Montreal, May 16. It was announced that 23 members of the club were in active service, two of whom had been killed. During the year, the President, L. C. Ord, joined the Canadian Expeditionary Force, his place, as President, being taken by R. M. Hannaford, Vice President. The officers elected for the current year are: President, R. M. Hannaford, Assistant Chief Engineer, Montreal Tramways Co.; First Vice President, G. E. Smart, Master Car Builder, Canadian Government Railways, Moncton, N.B.; Second Vice President, Prof. Keay, Professor of Railway Transportation, McGill University; Executive Committee, J. Hendry, Master Car Builder, G.T.R., Montreal; T. C. Hudson, Master Mechanic, Quebec Division, Canadian Northern Ry., Joliette; E. E. Lloyd, Auditor of Stores and Mechanical Accounts, C.P.R., Montreal; C. Manning, secretary to Superintendent of Motive Power, G.T.R., Montreal; C. W. Van Buren, General Master Car Builder, C.P.R., Montreal; W. H. Winterrowd, Assistant to Chief Mechanical Engineer, C.P.R., Montreal; Secretary, Jas. Powell, Chief Draughtsman, Motive Power Department, G.T.R., Montreal; Treasurer, W. H. Stewart, Assistant Superintendent, C.P.R., Montreal, at present serving temporarily with the Imperial Munitions Board at Ottawa.

Grain Inspection at Western Points.

The following figures compiled by the Department of Trade and Commerce, show the number of cars of grain inspected on railways at Winnipeg and other points on the Western Division for April, and for eight months ended Apr. 30, with a comparison of the number of cars inspected for eight months ended Apr. 30, 1915.

	April	Eight months to Apr. 30, 1916	Eight months to Apr. 30, 1915
C.P.R. Calgary	9,754	135,068	52,115
C.N.R.	719	5,604	5,870
G.N.R. Duluth	488	4,685	1,338
G.T.P.R.	1,299	32,990	13,838
Totals	17,774	250,208	109,032

The C.P.R. Chateau Frontenac Hotel, Quebec, was damaged by fire May 16, the fire being confined to the kitchen portion of the building.

C.P.R. Scholarships at McGill University.

George Bury, Vice President, C.P.R., issued the following circular recently:—
“Two free scholarships, covering 4 years tuition in the Faculty of Applied Science of McGill University, are offered, subject to competitive examination, to apprentices and other employes enrolled on the company's permanent staff, and under 21 years of age, and to minor sons of employes. The examination, which will be the regular entrance matriculation examination provided for in the University's Annual Calendar, will be held at the University, Montreal, and at other centres throughout Canada, in June. The candidates making the highest average and complying with the requirements of admission will be awarded the scholarships and have the option of taking a course in any department of the Faculty of Applied Science. Scholarship will be renewed from year to year, to cover a period not exceeding four years, if, at the close of each session, the holder thereof is entitled, under the rules, to full standing in the next higher year. In case a scholarship holder finds it necessary to interrupt his course for a year or more, notice must be given at the close of the session to the C.P.R. Co. and to the head of the University's Railway Department, in order that the scholarship may be open to other applicants. In order to establish prior claim to the next available scholarship, notice of the student's intended return must be given to the C.P.R. and to the head of the Railway Department not later than Jan. 1, preceding the opening of the session in which such scholarship will be available. Applications for certificates entitling eligible persons to enter the competition should be addressed to C. H. Buell, Staff Registrar and Secretary, Pension Department, Montreal. Copies of the annual calendar containing the conditions of admission and announcement of courses may be obtained upon application to J. A. Nicholson, Registrar, McGill University, Montreal.

Canadian Society of Civil Engineers' Reorganization Committee.

The Canadian Society of Civil Engineers, at its last annual meeting, decided to appoint a committee to study and report upon a policy for increasing the society's prestige and influence, and to consider the organization and bylaws. A letter vote of the members taken in April resulted in the election of the following as the committee:—

District 1—W. J. Francis, Phelps Johnson, R. S. Lea, H. H. Vaughan, W. F. Tye, A. Boyer.

District 2—D. H. McDougall, W. A. Duff, L. H. Wheaton.

District 3—A. E. Doucet, A. Amos, A. R. Decary.

District 4—John Murphy, R. deB. Corriveau, G. B. Dodge.

District 5—H. E. T. Haultain, R. W. Leonard, E. W. Oliver.

District 6—H. B. Hucklestone, W. L. Mackenzie, A. J. McPherson.

District 7—R. F. Hayward, D. C. Lewis, E. A. Cleveland.

Steel Rails Ordered.—The C.P.R. has ordered from the Algoma Steel Corporation 30,000 tons of steel rails, special C.P.R. section, 85 lbs. to the yard, for delivery at Sault Ste. Marie, Ont., from May to Sept., 1917.

Transportation Appointments Throughout Canada.

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

Canada Steamship Lines, Ltd.—R. DUGUID, Mechanical Superintendent, having been given leave of absence owing to ill health, Gilbert Johnston, Consulting Engineer, is discharging his duties during his absence.

A. C. SHERIDAN, heretofore Passenger Agent, Buffalo, N.Y., has been appointed District Passenger Agent, there, vice J. V. Foy, General Agent, Passenger Department, whose appointment as Assistant General Passenger Agent, Toronto, was announced in our last issue.

J. M. SHEA, heretofore Travelling Passenger Agent, G.T.R., Boston, Mass., has been appointed New England Passenger Agent, Canada Steamship Lines, Ltd., vice J. F. Dolan, General Agent, Passenger Department, resigned to enter private business. Office, Boston, Mass.

Canadian Northern Ry.—G. ABBOTT, heretofore Car Foreman, Edmonton, Alta., has been appointed Car Foreman, Port Arthur, Ont., vice C. Wheaton, transferred.

C. L. ALLEN has been appointed chief draughtsman, Mechanical Department, Winnipeg, vice H. D. Cameron, whose appointment as Mechanical Engineer, Toronto, was announced in our last issue.

R. CURLEY has been appointed City Passenger Agent, Winnipeg.

A. L. JOHNSON, has been appointed Travelling Passenger Agent, Winnipeg.

C. WHEATON, heretofore Car Foreman, Port Arthur, Ont., has been appointed Assistant Car Foreman, Winnipeg, vice J. Rudd, promoted.

A. I. DANIEL, heretofore City Ticket Agent, Regina, Sask., has been appointed Ticket Agent, Brandon, Man.

E. R. CUNNINGHAM, heretofore Passenger Agent, Prince Albert, Sask., has been appointed City Ticket Agent, Regina, Sask., vice A. I. Daniel transferred.

J. RUDD, heretofore Assistant Car Foreman, Winnipeg, has been appointed Car Foreman, Kamsack, Sask., vice W. Millman, transferred.

N. McLEAN, heretofore Locomotive Foreman, Hanna, Alta., has been appointed Locomotive Foreman, Humboldt, Sask., vice A. T. Hannah, transferred.

E. BOWER has been appointed Travelling Passenger Agent, Saskatoon, Sask.

W. MILLMAN, heretofore Car Foreman, Kamsack, Sask., has been appointed Car Foreman, Saskatoon, Sask., vice J. Grant, transferred.

E. G. WICKERSON, heretofore Passenger Agent, Brandon, Man., has been appointed Passenger Agent, Prince Albert, Sask., vice E. R. Cunningham, transferred.

J. GRANT, heretofore Car Foreman, Saskatoon, Sask., has been appointed Car Foreman, Edmonton, Alta., vice C. Abbott, transferred.

A. T. HANNAH, heretofore Locomotive Foreman, Humboldt, Sask., has been appointed Locomotive Foreman, Hanna, Alta., vice N. McLean, transferred.

S. VINCENT, heretofore Locomotive Foreman, Kamloops Jct., B.C., has been appointed Locomotive Foreman, Toller-ton, Alta., vice M. A. Cardell, transferred.

GREEN & BURDICK have been appointed ticket agents at Victoria, B.C.

Canadian Pacific Ry.—F. G. J. COMEAU, General Freight Agent, Dominion Atlantic Ry., Halifax, N.S., has also been appointed District Freight Agent, C.P.R., in charge of traffic to and from the Dominion Atlantic Ry. and the Halifax & South Western Ry., as well as for Halifax, reporting to the Division Freight Agent, Atlantic Division, St. John, N.B., Office, Halifax, N.S.

L. MULKERN, heretofore District Freight Agent, Toronto, has been appointed Division Freight Agent, Atlantic Division, vice W. B. Bamford, transferred. Office, St. John, N.B.

H. JARVIS has been appointed Agent, Sleeping, Dining and Parlor Cars and News Service, St. John, N.B., vice F. Jeffs.



Allan Purvis,
General Superintendent, Eastern Division, Canadian Pacific Railway.

ALLAN PURVIS, heretofore Superintendent, District 2, Ontario Division, London, has been appointed General Superintendent, Eastern Division, vice A. E. Stevens, transferred. Office, Montreal.

C. E. SARNEY, heretofore Locomotive Foreman, Megantic, Que., has been appointed Locomotive Foreman, Farnham, Que., vice H. Frawley, not now in the company's service.

C. SENAY, heretofore General Agent, Quebec, Que., has been appointed Assistant Superintendent, District 3, Eastern Division, vice J. E. Morazain, resigned to enter National Transcontinental Ry. service. Office, Montreal.

T. COLLINS, heretofore Superintendent, District 4, Ontario Division, Toronto, has been appointed Superintendent, District 2, Ontario Division, vice Allan Purvis, promoted. Office, Toronto.

C. J. KAVANAGH, formerly in railway service in the United States, has been appointed Superintendent, District 4, Ontario Division, vice T. Collins, transferred. Office, Toronto.

W. B. BAMFORD, heretofore Division Freight Agent, Atlantic Division, St.

John, N.B., has been appointed District Freight Agent, Toronto, vice L. Mulkern, transferred.

C. GRIBBIN, heretofore Locomotive Foreman, Toronto, has been appointed District Master Mechanic, District 4, Ontario Division, Toronto. This is a new position.

W. WRIGHT, heretofore Assistant Locomotive Foreman, London, Ont., has been appointed Locomotive Foreman, Toronto, vice C. Gribbin, promoted.

A. EDWARDS, heretofore fitter, has been appointed Assistant Locomotive Foreman, London, Ont., vice W. Wright, promoted.

H. HICKS, heretofore Night General Yardmaster, Winnipeg, has been appointed General Yardmaster, Fort William, Ont., vice G. J. Fox, promoted.

D. CONDELL, heretofore Car Foreman, Nelson, B.C., has been appointed Car Foreman, Ignace, Ont., vice D. McKay, transferred.

G. J. FOX, heretofore General Yardmaster, Fort William, Ont., has been appointed Trainmaster, District 2, Manitoba Division, vice D. England. Office, Winnipeg.

A. E. STEVENS, heretofore General Superintendent, Eastern Division, Montreal, has been appointed General Superintendent, Saskatchewan Division, vice J. G. Taylor, who has retired on account of ill health. Office, Moose Jaw.

W. J. RENIX, heretofore District Master Mechanic, District 1, British Columbia Division, Revelstoke, has been appointed Master Mechanic, Saskatchewan Division, Moose Jaw, and not District Master Mechanic, Moose Jaw, as stated in our last issue.

E. W. DUVAL, who has been acting General Superintendent, Saskatchewan Division, Moose Jaw, for some weeks during the absence through ill health of J. G. Taylor, General Superintendent, has resumed his position as Superintendent, District 3, Saskatchewan Division, Saskatoon.

J. H. SCOTT, who has been acting Superintendent, District 3, Saskatchewan Division, Saskatoon, during the absence of E. W. DuVal at Moose Jaw, has resumed his position at Chief Dispatcher, Saskatoon.

D. MCKAY, heretofore Car Foreman, Ignace, Ont., has been appointed Car Foreman, Field, B.C., vice C. J. Crozier, transferred.

F. W. SADLIER, heretofore Shop Foreman, Revelstoke, B.C., has been appointed Locomotive Foreman, Fort William, Ont., vice G. Twist, and not District Master Mechanic, as stated in our last issue.

H. J. REED, heretofore Locomotive Foreman, Souris, Man., has been appointed Locomotive Foreman, Cranbrook, B.C. The name was wrongly given in our last issue, as J. A. Reid.

C. J. CROZIER, heretofore Car Foreman, Field, B.C., has been appointed Car Foreman, Nelson, B.C., vice D. CondeLL, transferred.

M. A. CARDELL, heretofore Locomotive Foreman, Tollerton, Alta., has been appointed Locomotive Foreman, Kamloops Jct., B.C., vice S. Vincent, transferred.

W. H. DEACON, heretofore City Passenger Agent, Spokane, Wash., has been appointed Travelling Passenger Agent, Vancouver, B.C.

H. M. BEYERS, heretofore City Passenger Agent, Tacoma, Wash., has been

Construction Battalion for Overseas Service.

appointed City Passenger Agent, Spokane, Wash., vice W. H. Deacon, promoted.

D. C. O'KEEFE, heretofore clerk in Passenger Department, Tacoma, Wash., has been appointed City Passenger Agent there, vice H. M. Beyers, transferred.

Canadian Pacific Ocean Services, Ltd.—E. T. STEBBING has been appointed General Agent, Passenger Department, Trans-Pacific and Trans-Atlantic Lines, New York, dealing with all matters pertaining to passenger traffic for the ocean services, but until further advised, agents continue to report and remit for ticket sales, as at present. Office, 1231, Broadway.

Dominion Atlantic Ry.—D. J. MURPHY, Jr., Superintendent of Transportation, having been granted extended leave of absence on enlistment for active service, R. B. BROWN, heretofore Chief Dispatcher, has been appointed Trainmaster and Chief Dispatcher. Office, Kentville, N.S.

Grand Trunk Ry.—C. R. MOORE, heretofore chief clerk, has been appointed Assistant to Vice President, Construction, Maintenance and Operation (H. G. Kelley). Office, Montreal.

H. A. CLARK, heretofore with Mussels Limited, Montreal, has been appointed storekeeper, G.T.R., Richmond, Que., vice M. E. Martin, enlisted for active service with the 9th Field Ambulance Corps.

W. J. MOFFATT, heretofore City Passenger and Ticket Agent, has been appointed City Passenger Agent, Toronto.

C. E. TENNEY, heretofore Passenger and Ticket Agent, Portland, Me., has been appointed City Ticket Agent, Toronto.

G. A. HARRISON, heretofore City Passenger and Ticket Agent, Sherbrooke, Que., has been appointed Passenger and Ticket Agent, Portland, Me., vice C. E. Tenney, transferred.

G. L. BRYSON has been appointed Travelling Passenger Agent, Kansas City, Mo., vice C. N. Wilson, resigned.

H. G. SMITH, heretofore Assistant City Passenger and Ticket Agent, Grand Rapids, Mich., has been appointed City Passenger and Ticket Agent, Mount Clemens, Mich., vice Casper Czizek, resigned.

Grand Trunk Pacific Ry.—W. T. HUTCHISON has been appointed Manager, Macdonald Hotel, Edmonton, Alta., vice Louis Low.

Great Northern Ry.—G. H. HESS, Jr., has been appointed Assistant Comptroller, vice F. H. Parker, whose appointment as Assistant General Freight Agent, was mentioned in our last issue. Office, St. Paul, Minn.

Michigan Central Rd.—A press report stating that T. Hickey, Roadmaster, St. Thomas, Ont., had been appointed Superintendent of Tracks at Detroit, Mich., is incorrect. We are officially advised that the company has not had a Superintendent of Tracks for a number of years and that there is no intention of creating such an office at present.

Minneapolis, St. Paul & Sault Ste. Marie Ry.—T. E. SANDS, heretofore General Freight Agent, has been appointed Freight Traffic Manager. Office, Minneapolis, Minn.

National Transcontinental Ry.—J. E. MORAZAIN, heretofore Assistant Superintendent, District 3, Eastern Division, C.P.R., Montreal, has been appointed Superintendent, District 1, N.T.R., vice A. J. Gorrie, resigned. Office, Quebec, Que.

Prince Edward Island Ry.—ALEXANDER SCOTT has been appointed Resident Engineer, Charlottetown, P.E.I.

The Minister of Militia has authorized the formation of No. 1 Construction Battalion, to be raised by Blair Ripley, M.Can.Soc.C.E., heretofore Engineer of Grade Separation, C.P.R., Toronto, and who has been appointed Lieutenant-Colonel and officer commanding. The class of men being recruited is of a somewhat varied nature, and Lt.-Col. Ripley is aiming to get bridge and building men, railway sectionmen, railway construction men, general construction men and laborers, as well as artisans of various trades, and it is hoped that the battalion will be composed of officers and men who will be able to undertake construction work of almost any nature. The object of the battalion, which will consist of 1,038 officers and men, is somewhat indefinite. It will, of course, operate on lines of communication, and generally speaking its work will be to make good or replace works destroyed by the enemy, and to build works necessary in connection with the effective combating of the enemy. It is likely that the unit will be attached to the Royal Engineers, and it is very probable that a large amount of its work will be roadmaking, etc. The battalion, of course, will do what it is called upon to do, and the men will be chosen with this in view. No one will be taken on who cannot do skilled or unskilled labor of some sort. It is expected that the battalion will be dispatched overseas almost as soon as it is recruited up to strength. The officers chosen up to date are as follows:—

Lieut.-Col. and officer commanding—Blair Ripley, M.Can.Soc.C.E., was born at Oxford, N.S., Aug. 29, 1880, and was from 1901 to 1903, Assistant Engineer, Canadian Northwest Irrigation Co., Great Falls & Canada Co., Alberta Ry. & Coal Co., and St. Marys River Ry. in Alberta and Montana respectively; 1903 to 1905, Chief Engineer of Construction, St. Marys River Ry. in Alberta, and from 1904 to 1905, also Chief Engineer of Construction, Alberta Ry. & Irrigation Co.; 1905 to 1907, Resident Engineer on Construction, Grand Trunk Pacific Ry. in Manitoba and Saskatchewan, and Assistant Engineer on harbor work, G.T.P.R., Prince Rupert, B.C.; 1907 to May 1, 1916, Resident Engineer on grade revision, C.P.R., Maple Creek to Medicine Hat, Alta.; Resident Engineer on field work, Lethbridge viaduct, C.P.R.; Assistant Engineer in charge, Old Man River viaduct, C.P.R., Macleod, Alta.; Assistant Engineer in Charge, Outlook viaduct, C.P.R., Outlook, Sask. On the completion of these works he was sent by the C.P.R. to Nova Scotia to report on betterments and improvements in connection with the Dominion Atlantic Ry., and to organize and prepare for the replacement of some large and difficult bridges on the waters of the Bay of Fundy. In 1912 he was appointed Engineer in Charge of the grade separation, C.P.R., North Toronto, which work is now almost completed.

Capt. and Adjutant—T. R. Loudon, B.A.Sc., A.M.Can.Soc.C.E., was for some time assistant professor of ferro-metallurgy at Toronto University and of late a member of the engineering firm of James, Loudon & Hertzberg. He has been instructing at militia headquarters at Toronto recently.

Capt. J. H. Byrne, S.Can.Soc.C.E., graduate of Royal Military College and McGill University. He was on the National Transcontinental Ry. as District and Government Inspecting Engineer and

has had considerable experience on construction, chiefly of railways.

Capt. R. R. Holland has been actively connected with construction of railways and other engineering works for 15 years, having filled positions as Resident Engineer, Assistant Engineer and Division Engineer on both the Canadian Northern and National Transcontinental Railways.

Capt. A. R. Ketterson, A.M.Can.Soc.C.E., Associate of Glasgow Technical College, until this appointment Assistant Bridge Engineer, C.P.R., Montreal. Has previously represented the Bridge Engineer on Western Lines, C.P.R., and has had varied experience in engineering and construction both in Canada and Scotland.

Paymaster H. G. Henson, graduate of McGill University in architecture. Served in Paymaster General's office, Militia Department, Ottawa, for a year.

Capt. Quartermaster Victor G. Davis, formerly of Canadian Pacific and Canadian Northern Railways purchasing department. He has qualified as a lieutenant.

Lieut. J. B. Heron, of Toronto; experience chiefly in construction. He was in the Boer War, and has for some time been in the Canadian Engineers, both at Niagara and Toronto camps.

Lieut. Fred G. Cross, A.M.Can.Soc.C.E., for nine years with the C.P.R. in Western Canada and in the Natural Resources Department, C.P.R.

Lieut. H. R. McQueen, A.M.Can.Soc.C.E., graduate Royal Military College. Experience in mining, railway and general construction works. Latterly Mining Engineer, O.I.M. Co., Chisholm, Minn.

Lieut. O. P. Hertzberg, connected for several years with Engineering Department, C.P.R., two of which were with Lt.-Col. Ripley on grade separation in Toronto. He was in several engagements in the present war and is now recuperating at home, having been wounded some three months ago. He has two brothers at the front in the Canadian Engineers.

Lieut. H. L. Gilmour, of Ottawa, graduate of McGill University. Is connected with the lumber industry in the Ottawa Valley.

Lieut. Geo. S. Grant, of Ottawa, contractor and construction man, son of late Hugh Grant, contractor, who was connected with the building of the Intercolonial Ry. in Cape Breton.

Lieut. G. O. Fleming, S.Can.Soc.C.E., graduate S.P.S., Toronto. Experience chiefly on construction, Toronto Ry. Co., and with the engineers at the militia headquarters, Toronto.

Lieut. V. A. E. Steele has had experience in general construction in both Canada and the United States, and has been for some time connected with the Dominion Railways and Canals Department.

All Rail Wheat Transportation.—Senator Loughheed informed the Senate, May 8, that since the 6c a bushel rate had been in operation, 675,000 bush. of wheat had been hauled from Armstrong to Quebec on the National Transcontinental Ry. On shipments of wheat originating at Winnipeg, the through rate to Quebec is 12c a bushel.

Iron Substituted for Copper and Brass on German Locomotives.—Owing to the heavy demands of ordnance manufacturers, and the general scarcity of copper in Germany, firebox sheets and staybolts are being made of iron, and seamless or welded iron tubing is being used instead of brass branch and oil pipes.

Fire Protection on Railways.

The Board of Railway Commissioners' Fire Inspection Department issued orders recently, under general order 107, directing the C.P.R., the Canadian Northern Ry. and the Grand Trunk Pacific Ry. to maintain a sufficient force of fire rangers for efficient patrol and fire fighting duty on their lines, between April 1, and Nov. 1, except in so far as they may be relieved from so doing by an order in writing from an authorized officer of the Board. The directions of the order are specific in each case, and the areas within which the patrols are to be maintained are fully set out. The directions to the C.P.R. cover mileages on the Manitoba, Alberta and British Columbia Divisions; to the Canadian Northern Ry., mileages on the Central Division, and to the G. T. Pacific Ry., mileages on the Mountain Division. For the supervision of the work, the Board has appointed inspectors, located as follows: E. J. Zavitz, Toronto; Thos. McNaughton, Prince Albert, Sask.; P. C. B. Hervey, Edmonton, Alta.; E. H. Finlayson, Calgary, Alta.; D. R. Cameron, Kamloops, B.C.; M. A. Grainger, Victoria, B.C.; H. S. Irwin, Prince Rupert, B.C.; R. E. Allen, Hazelton, B.C.; H. G. Marvin, South Fort George, B.C., and P. S. Bonney, Tete Jaune, B.C. The object sought to be obtained is the prevention of fires along railways, and to avoid as far as possible the imposition of unnecessary expenditure upon the companies for that purpose. An efficient system of fire patrol can be established at a minimum expenditure, and as the conditions vary from time to time and from place to place, the fire inspectors appointed by the Board have authority to waive the requirements wholly or in part from time to time as practicable. The order in each case calls for the minimum of adequate protection.

Provision of Cars Under Canada Grain Act.—An act has been passed by the Dominion Parliament adding a new subsection 2, to section 207 of the Canada Grain Act, 1912, chap. 27, as follows: "Whenever after due examination the Board considers it necessary and advisable in order to facilitate the dispatch of grain which is insufficiently housed and liable to become damp or injured." The section provides that the Board constituted under the provisions of the Canada Grain Act, "may in its discretion order cars to be supplied contrary to the provisions of this part," under certain circumstances, and the new subsection gives the Board power to direct cars to certain districts under conditions which appear to prevail at present and which are not otherwise provided for.

Dynamiter Horn.—The U. S. Federal Council Court of Appeals sitting at Boston, Mass., recently, finally denied Werner Horn's application for a writ of habeas corpus, holding that his commission as an officer of the German army was no evidence of authority to commit any act as a belligerent within the United States, and that his action in attempting to blow up the C.P.R. bridge near Vanceboro, Me., was a personal act. Horn's trial for the illegal transportation of dynamite was postponed at Boston, May 9, to enable him to appeal in the habeas corpus proceedings to the U. S. Supreme Court.

Old Steel Rails for trench work, roofs of dugouts, etc., are being supplied in considerable quantities by the C.P.R. to the British Government.

Union Station Proposed for Montreal.

During the discussion of the Railways and Canals Department's estimates in the House of Commons, May 3, the matter of union station for Montreal was raised, Hon. G. P. Graham and C. Marcel, M.P., suggesting that the time was opportune for considering it, seeing that he G.T.R. Bonaventure Station had been burned, and the question of its rebuilding was being taken up. He said that if the G. T.R. built an expensive new station at Bonaventure St., there would be no possibility of a union station being built for many years to come.

The acting Minister of Railways stated that there is no possibility of anything being done in the way of rebuilding the Bonaventure station for months to come. Meanwhile the commission that is about to be appointed to enquire into the whole railway situation of the country will report on just such matters as the provision of union stations at important centers in the Dominion.

The suggestion was made that all passenger traffic should be arranged to run into the C.P.R. Windsor St. station, which could be developed into a union station.

Toronto Civic Ry. Cars Ordered.—The City Council has ordered materials for 13 double truck, double end cars, the parts being assembled in the council's car barns. The contracts have been awarded as follows: Bodies, \$4,907 each, the city supplying the step and door mechanism, Preston Car & Coach Co.; trucks, \$828.50 a set, Dawson & Co.; electrical equipment, \$1,866 a set, Canadian Westinghouse Co.; the city supplying gears and pinions; wire and cable, \$123.17 a car, Eugene F. Phillips Co.; fare boxes, \$51.10 each, Coleman Fare Box Co. A contract has also been awarded to R. Chalkley & Son, Ltd., for an extension to the St. Clair Ave. car barn, for \$24,435.

Damage Suit Against C.P.R.—An important action was begun May 10 before Mr. Justice Clute at Goderich, Ont., in which O. E. Fleming, Windsor, Ont., is the plaintiff and the C.P.R. is the defendant. The action arose out of the building of the Guelph & Goderich Ry., in the construction of which a bridge had to be built over a river running through the Attrill estate, Goderich, which the plaintiff had purchased to develop the gravel beds on it. He claims that as a result of the building of the bridge the current of the river has been so diverted as to wash away thousands of loads of gravel, for which he claims \$30,000 damages. The further hearing of the case was adjourned to Toronto.

The Railway Signal Association held its regular meetings at New York, May 24 and 25, when the general committee reports were dealt with, and also the report of a special committee on the harmonization of specifications for electrical requirements. A preliminary report on standard marking or numbering of relay posts was also considered, on presentation by a special committee on electrical testing.

The employes of the various express companies operating in Winnipeg, have formed a "good cheer club" in the interests of employes who have enlisted for active service. Presentations are made to those enlisting, field comforts are provided for those at the front, pamphlets are issued quoting letters from men on service, and communication is kept up with those now in Europe.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, for Western Lines, compared with those of 1914-15, from July 1, 1915:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,206,100	\$921,000	\$285,100	x\$145,400
Aug.	1,192,800	954,000	238,800	x5,900
Sept.	2,014,500	1,358,000	661,600	1,900
	\$4,413,600	\$3,227,000	\$1,186,600	x\$79,900
Decr.	\$658,300	\$579,000	\$79,300	.....

Mileage in operation at Sept. 30, 1915, 4,965 against 4,670 at Sept. 30, 1914.

Commencing with October, the figures show the earnings of the entire system, both eastern and western lines.

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
Oct.	\$3,678,500	\$2,421,500	\$1,257,000	\$537,800
Nov.	3,535,200	2,323,800	1,211,400	618,400
Dec.	3,435,600	2,233,500	1,202,100	768,800
Jan.	2,086,800	1,831,400	255,400	88,100
Feb.	2,089,200	1,959,800	129,400	x133,500
Mar.	2,607,000	2,240,600	366,400	x134,800
	\$17,432,300	\$13,010,600	\$4,421,700	\$1,706,900
Inc.	\$5,897,800	\$4,191,000	\$1,706,800	.....

Decrease in net earnings in March compared with last year, was due to snow blockades and other interruptions to traffic which increased operating expenses abnormally.

Approximate earnings for April, \$2,819,300, against \$1,938,900 for April, 1915, and for two weeks ended May 14, \$1,425,700, against \$784,400 for same period 1915.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1914-15, from July 1, 1915:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$7,895,375.47	\$5,094,972.35	\$2,800,403.12	\$978,042.71
Aug.	8,801,451.52	5,359,136.80	3,442,314.72	79,157.02
Sept.	10,273,165.45	5,527,864.81	4,475,300.64	\$78,252.25
Oct.	13,483,206.88	6,863,780.29	6,579,424.15	\$3,258,105.79
Nov.	13,351,283.51	6,996,870.48	6,354,413.03	\$3,710,340.86
Dec.	12,705,673.45	7,003,351.97	5,702,321.48	\$3,502,797.67
Jan.	8,588,826.04	6,498,417.81	2,090,408.23	954,174.38
Feb.	8,795,880.30	6,501,487.56	2,294,342.74	315,328.12
Mar.	10,380,981.98	6,959,651.62	3,421,330.36	448,315.63
	\$94,235,802.16	\$56,805,533.69	\$37,430,268.47	\$11,664,429.57
Inc.	\$17,599,981.48	\$5,935,551.92	\$11,664,429.56	.....

Approximate earnings for April, \$10,568,000, against \$7,164,000 for April, 1915, and for three weeks ended May 21, \$7,965,000, against \$4,773,000 for same period in 1915.

Grand Trunk Railway Earnings.

Following are the earnings and expenses for the G.T.R., including the Canada Atlantic Ry., the G.T.W.R. and D.G.H. & M.R., for March, compared with those for Mar., 1915:—

GRAND TRUNK RAILWAY.		1915.
Earnings	\$3,550,850	\$3,242,450
Expenses	2,664,600	2,419,800
Net earnings	\$ 886,250	\$ 822,650
GRAND TRUNK WESTERN RAILWAY.		1915.
Earnings	\$ 710,400	\$ 582,750
Expenses	561,100	573,800
Net earnings	\$ 159,300	\$ 8,950
DETROIT, GRAND HAVEN & MILWAUKEE RY.		1915.
Earnings	\$ 248,000	\$ 189,000
Expenses	243,900	213,000
Net earnings	\$ 5,100	\$ x 24,000

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from Jan. 1 to Apr. 30, —		Increase
1916		1915
G.T.R.	\$13,577,901	\$11,734,513
G.T.W.R.	2,914,947	2,274,071
D.G.H.&M.R.	1,003,012	757,343
	\$17,495,860	\$14,765,927

Approximate earnings for April, \$4,685,505, against \$3,205,778 for Apr., 1915, and for two weeks ended May 14, \$2,107,204, against \$1,785,301 for same period 1915.

Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section 916 miles, for April were \$466,132, against \$210,272 for Apr., 1915. Aggregate earnings for four months ended Apr. 30, \$1,519,201, against \$923,673 for same period 1915.

Traffic Orders by Board of Railway Commissioners.

Charges for Ice and Salt in Refrigerator Cars.

General order 164. April 26.—Re tariffs of railway companies showing charges for ice and salt in refrigerator cars. Upon hearing the application at Ottawa, Mar. 21, the Canadian Pacific and Canadian Northern Railways, the Canadian Manufacturers Association, and the Montreal and Toronto Boards of Trade being represented; tariffs showing the said charges having been filed with the Board as required at the hearing: It is ordered that the following tariffs be suspended, pending further hearing by the Board, viz.: Canadian Pacific, C.R.C. no. E-3138, C.R.C. no. E-3139; Grand Trunk, C.R.C. no. E-3356, C.R.C. no. E-3357; Canadian Northern, C.R.C. no. E-768, C.R.C. no. E-769; Michigan Central, C.R.C. no. 2524; Wabash, C.R.C. no. 936; Pere Marquette, C.R.C. no. 2015; Dominion Atlantic, C.R.C. no. 476; Quebec, Montreal & Southern, C.P.R., no. 568; Essex Terminal, C.R.C. no. 310; London & Port Stanley, C.R.C. no. 77; Toronto, Hamilton & Buffalo, C.R.C. no. 1092; Thousand Island, C.R.C. no. 1092; Hull Electric, C.R.C. no. F-56; Glengarry & Stormont, C.R.C. no. 41; Windsor, Essex & Lake Shore Rapid, C.R.C. no. 177; Algoma Central & Hudson Bay, C.R.C. no. 348, C.R.C. no. 349; Central Vermont, C.R.C. no. 1101; Boston & Maine, C.R.C. no. 1705; New York Central, C.R.C. no. 719, C.R.C. no. 720; Chatham, Wallaceburg & Lake Erie, C.R.C. no. 403.

Lumber and Shingles from Eburne, B.C.

24857. April 4.—Re complaint of Hunting-Merritt Lumber Co., Ltd., of Vancouver, against the refusal of the British Columbia Electric Ry. to handle cars destined to or for furtherance via Great Northern or Northern Pacific Railways; and the rate on lumber and shingles of 1c per 100 lbs. over Vancouver rates which the complainants have to pay on shipments from Eburne to points in Canada and the United States. Upon hearing the complaints at Vancouver, June 1, 1915, the complainants and the Canadian Pacific and British Columbia Electric Railway Companies being represented at the hearing, and upon reading the further submissions filed, and the report of the Chief Traffic Officer of the Board, it is ordered that the complaints be dismissed.

Interswitching Charges at Ottawa.

24861. April 5.—Re complaint of J. R. Booth of Ottawa that the Grand Trunk Ry. charges its local mileage rates on traffic from and to the interchange with the Canadian Northern Ry., authorized to be constructed under order 24416, Nov. 5, 1915, instead of the toll prescribed by order 4988, July 8, 1908, known as the General Interswitching Order. Upon its appearing that the G.T.R. charges other than the toll prescribed by order 4988 for interswitching the Canadian Northern Ry. traffic to and from the transfer track at Ottawa, constructed under order 24416, it is ordered that the G.T.R. forthwith desist from charging for the said service any toll or tolls other than that prescribed under order 4988.

Interswitching Charges at Chatham.

24868. April 5.—Re complaint of T. H. Taylor and the Canada Flour Mills Co. of Chatham, Ont., against the interswitching charge of 2c per 100 lbs. on grain, ex lakes, milled in transit at Chatham. Upon hearing the complaint at Toronto, Feb. 22, the complainants and

the C.P.R. being represented, and upon the report of the Chief Traffic Officer of the Board, it is ordered that the complaint be dismissed.

Rates on Wood and Sulphite Pulp.

24915. April 22.—Re complaint of Price Bros. & Co., Riordan Pulp & Paper Co., Brompton Pulp & Paper Co., J. R. Booth, and the Laurentide Co., against the proposed increase in the rates on wood pulp and sulphite pulp from stations in Canada to points in the United States, it is ordered that the following tariffs be suspended, pending hearing on a date to be fixed by the Board, viz.: Canadian Pacific, C.R.C. no. E-3129; Grand Trunk, C.R.C. no. E-3345; Canadian Northern, Supplement 9 to C.R.C. no. 584.

Allowance for Slatted Floors in Fruit Cars.

24938. April 25.—Re application of Ontario Fruit Growers' Association for an allowance of 1,000 lbs. in weight to cover slatted or false floors used in carloads of fruit. Upon hearing the application at Ottawa, April 18, the complainant and the Grand Trunk and Canadian Pacific Railway Companies being represented, it is ordered that order 19570, June 13, 1913, be amended by adding thereto the following paragraph, viz.: "2. That where shippers furnish slats for the said cars, an allowance of 500 lbs. in weight per car be made."

Rates on Forest Products.

24945. May 5.—Re application of Mountain Lumber Manufacturers' Association of Nelson, B.C., complaining of proposed increase in minimum carload weights of forest products, as set forth on pg. 3 of Supplement 10 to C.P.R. Co's C.R.C., no. W. 2061; Esquimalt & Nanaimo Ry., C.R.C. no. 302, and Kettle Valley Ry., C.R.C. no. 52: it is ordered that the items above mentioned covering minimum carload weights on forest products, be suspended until further order.

Rates on Pig Lead.

24962. May 6.—Re complaint of J. W. Warren against increase by C.P.R. of rate on pig lead from Smelter, B.C., to Eastern points: It is ordered that item 20A on pg. 2 of Supplement 13 to C.P.R. Tariff, C.R.C. no. W.2110, showing rates on pig lead, spelter, and antimony, be suspended pending a hearing by the Board.

Express Shipments of Fruit.

24976. May 15.—Re complaint of Jordan Co-operative Co., Ltd., against alleged unsatisfactory handling of fruit shipments by the Canadian Express Co., at Jordan, Vineland, and other points in the Niagara District: It is ordered that the Canadian Express Co. and the Grand Trunk Ry. arrange as follows: That shipments of fruit ready to go forward be handled by the fruit special, due to leave Jordan at 2.05 p.m.; and that the Canadian Express Co. accept by train 97 from Jordan and Vineland stations, shipments of fruit for Ottawa, daily, except Sunday; and that, when necessary, train 97 be held at Vineland for three minutes to permit of express matter being loaded; the shippers to furnish the necessary help to place the shipments in the express car. That a car be placed at Jordan, daily, except Saturday and Sunday; and that shipments for the following points be accepted and loaded into each car, viz., Port Hope, Cobourg, Trenton, Belleville, Napanee, Kingston, Gananoque, Brockville, Prescott, Morrisburg, Cornwall, Lancaster, and Montreal; the said car to

be picked up by train 97 and transferred to train 20 at Hamilton, and afterwards to train 18 at Toronto, and hauled through to Montreal. That, when necessary, train 18 be held five minutes at Toronto, or until 8.35 p.m., in the event of no. 20 being late, to enable the transfer of the said car to be made. And it is further ordered that the service herein required be furnished from July 1 to Aug. 31 next, inclusive; and in the event of any crop failure or other conditions which will allow the shippers to do with a reduced service, the shippers to notify the express company accordingly.

Rates on Live Stock.

24982. May 17.—Re application on behalf of Prairie Provinces Branch of Canadian Manufacturers' Association for suspension of proposed increase in charges in connection with live stock shipments as covered by certain joint tariffs: It is ordered that the following tariffs, viz.: Canadian Pacific Ry. C.R.C. no. W-2075, Canadian Northern Ry. C.R.C. no. W-861, and Grand Trunk Pacific Ry. C. R.C. no. 100, be suspended pending a hearing by the Board.

Charges for Ice, etc., on Refrigerator Cars.

General order 165. May 16.—Re tariffs in railway companies showing charges for ice and salt in refrigerator cars, and General Order 164, suspending them in eastern Canada and from eastern Canada and from eastern to western Canada: The companies having filed tariffs covering similar service in western Canada and from western to eastern Canada: It is ordered that the following tariffs be suspended, pending a hearing by the Board, viz.: Canadian Pacific, C.R.R. no. W-2149; C.R.C. no. W-2150; Canadian Northern, C.R.C. no. W-927, C.R.C. no. W-930; Grand Trunk Pacific, C.R.C. no. 155, C.R.C. no. 156; Esquimalt & Nanaimo, C.R.C. no. 324; Kettle Valley, C.R.C. no. 80.

The London & North Western Ry. of England discontinued the use of dining cars on its trains, May 1, and has adopted the system of supplying cold luncheon baskets when required. It is not stated whether the discontinuance is merely for wartime purposes, or permanently, but the main reasons which brought about the decision, are the shortage of male labor, and the heavy cost of hauling the heavy restaurant cars. It is anticipated that other railways will follow suit. There are 543 restaurant cars in Great Britain, the first one which was run on a British railway on Oct. 25, 1879, having been built at Detroit, Mich., and operated on the Great Northern Ry. by the Pullman Co.

Halibut Shipments to United States.—

A bill was introduced in the U.S. Congress, May 20, requiring all halibut reaching the United States through foreign territories to be shipped in bond. The measure has been asked for by the people of Ketchikan, Alaska, which place has lost considerable trade by halibut fishers having transferred their headquarters from there to Prince Rupert, B.C., since the opening of the Grand Trunk Pacific Ry.

A locomotive crane with generator car trailers is a novel arrangement devised by necessity. Some time ago the Pennsylvania Rd. bought four 30-ton locomotive cranes. Recently it was desired to equip two of them with lifting magnets, but there was no room on the crane car for the necessary electric generator. Consequently a small flat trailer was built and a generator set installed on board. Both of these cranes are now in service.

Electric Railway Department

Electric Railway Statistics for Year Ended June 30, 1915.

The following abbreviations are used in the names of railways:—E, electric; E.R., electric railway; E.S.R., electric street railway; S.R., street railway. The minus mark (—) in the column for net income or deficit, shows that there was a deficit in the operation of the line to the extent of the figures given. The numbers following the names of the railways, refer to the notes following the table on this page.

	First Main Track Mileage	Gross earnings from Operation	Miscellaneous Earnings	Operating Expenses	Taxes Funded Debt, etc.	Net Income or Deficit	Total Car Mileage	Fare Passengers Carried
Berlin and Waterloo S.R.	3.28	\$ 50,426		\$ 35,989	\$ 9,503	\$ 4,933	211,178	975,514
Berlin and Northern Ry.	3.15	8,081		7,728	1,227	—875	35,317	108,197
Berlin, Waterloo, Wellesley and L. Huron Ry.	17.81	185,195		113,606	22,699	48,894	318,438	1,232,724
Brandon Municipal Ry.	8.50	35,969		28,394	19,467	—11,893	269,736	782,011
Brantford and Hamilton Ry.	23.00	183,591		102,482	138,706	—105,597	357,800	532,155
British Columbia E.R.	242.55	2,897,463	1,730,733	2,621,197	947,949	1,059,050	12,208,020	46,330,096
Calgary Municipal Ry.	55.00	611,826	13,660	428,797	112,711	83,979	2,822,699	14,073,278
Canadian Resources Development	1.75	1,125		2,471		—1,346	37,191	8,500
Cape Breton E.R.	30.52	191,736	113,613	129,493	113,885	61,972	678,271	3,636,452
Chatham, Wallaceburg & L. Erie Ry	36.94	126,557		91,529	38,545	—3,581	470,991	375,955
Cornwall E. R.	4.00	29,980	115	24,493	2,024	3,617	212,145	387,911
Edmonton Interurban Ry. (1)	8.19							
Edmonton Radial Ry.	52.37	584,577		429,337	331,464	—176,224	1,990,434	11,886,810
Fort William E. R.	19.88	128,820		96,650	81,887	—49,717	614,772	2,723,388
Grand Valley Ry.	29.96	75,917		59,728	5,000	11,188	364,801	981,475
Guelph Radial Ry.	8.50	48,086	143	35,358	1,653	11,216	246,230	1,142,699
Halifax Electric Tramway Co.	12.29	321,705	179,954	213,610	48,230	259,818	1,370,430	7,316,727
Hamilton and Dundas E.R.	7.00	60,900		50,873	6,479	3,548	149,460	731,544
Hamilton, Grimsby & Beamsville..	22.00	133,062		111,383	14,477	7,201	388,523	723,856
Hamilton Radial Ry.	25.00	165,150		137,083	63,943	—35,876	522,867	1,542,367
Hamilton S. R.	30.06	553,584		372,773	89,922	90,888	2,347,441	14,065,104
Hull Electric Co.	15.37	154,862	28,935	118,875	75,936	—11,014	835,199	2,351,808
International Transit Co.	4.30	61,125	7,419	39,380	15,630	12,533	301,295	1,408,376
Kingston, Portsmouth & Cataraqui	8.00	39,917	1,407	34,012	518	6,794	199,680	970,904
Lethbridge Municipal Ry.	11.00	41,053	720	37,145	32,982	—28,354	304,978	871,253
Levis County Ry.	11.75	88,461		69,551	22,325	—3,414	430,800	1,847,348
London S.R.	25.73	385,511		266,989	28,886	79,635	1,788,850	10,408,978
London & L. Erie Ry. & Transportation Co.	28.00	135,016	86	89,567	46,367	—832	400,461	671,381
Moncton Tramways Elec. & Gas Co.	4.47	16,861		19,071		—2,209	116,668	429,555
Montreal Tramways Co. (2)	124.26	6,525,231		3,713,996	1,332,364	1,478,870	18,144,098	153,576,271
Montreal & Southern Counties Ry.	36.84	214,684	372	209,050	2,638	3,369	604,337	1,951,811
Moose Jaw E.R.	9.00	81,961		101,329	335	—16,702	470,818	1,805,372
Nelson S.R.	2.13	12,472		11,702	2,445	—1,674	66,015	229,645
Niagara Falls Park & River Ry.	11.91	128,119	6,137	82,592	33,496	18,248	277,229	1,277,709
Niagara, St. Catharines & Toronto	60.89	605,664		439,539	8,047	158,076	1,341,477	4,771,004
Niagara, Welland & L. Erie Ry.	1.87	19,255		10,506	3,656	5,093	88,920	412,603
Nippising Central Ry.	15.37	111,426		82,706	4,878	23,841	293,178	1,423,148
Oshawa Ry.	9.00	71,561	827	53,256	4,237	14,895	79,455	215,224
Ottawa E. R.	24.99	1,069,988		690,634	45,772	303,577	4,970,177	25,321,547
Peterborough Radial Ry.	6.04	49,879		36,357	9,337	4,184	429,093	1,108,568
Port Arthur E. R.	12.43	109,160	1,271	83,314	68,442	—41,325	632,280	2,303,855
Pictou County E. Co. (3)	9.10							
Quebec Ry. Light & Power Co.								
Citadel Division	19.77	483,136		295,802		187,334	2,089,530	11,242,483
Montmorency Division	28.60	200,015		144,514		55,500	426,985	1,649,073
Regina Municipal Ry.	30.85	187,068		194,509	95,482	—102,923	966,866	3,937,742
Sandwich, Windsor & Amherstburg	40.27	291,798	37,202	190,466	39,141	99,392	1,034,702	5,074,297
Sarnia S. R.	8.25	58,999		46,265	4,405	8,329	209,196	1,000,402
Sherbrooke Ry. & Power Co.	9.00	45,068	48,220	37,368	55,896	24	436,988	1,030,257
St. John Ry. (4)	18.00							
St. Stephen S. R.	7.00	39,488		30,495	5,742	3,251	183,960	749,855
St. Thomas S. R.	7.00	23,680		31,208		—7,527	295,785	498,858
Suburban Rapid Transit Co.	21.02	188,655		63,389	28,044	—2,779	399,594	1,029,817
Saskatoon Municipal Ry.	12.63	137,656		120,679	33,532	—16,555	703,367	2,804,780
Toronto Ry.	62.29	5,877,224		3,496,117	1,257,510	1,123,596	22,417,103	146,603,051
Toronto Suburban Ry.	18.79	139,470	2,734	73,856	30,390	37,957	422,313	2,463,791
Toronto & York Radial Ry.	72.43	598,644		441,164	141,880	15,599	1,529,640	6,188,530
Winnipeg E. R.	108.42	2,164,505	741,583	1,477,198	549,684	879,204	9,589,702	53,630,490
Windsor, Essex & L. Shore Rapid Ry.	36.17	158,169		103,760	59,915	—4,505	385,289	509,973
Winnipeg, Selkirk & L. Winnipeg Ry.	39.40	122,859	8,592	75,459	26,515	29,440	439,371	676,313
Yarmouth E.R.	3.00	37,407	200	27,024	12,771	—2,186	97,128	268,911
Total	1,617.39	\$26,922,899	\$2,923,974	\$18,131,842	\$6,166,030	\$6,176,060 —627,058	115,091,929	562,302,375
						\$5,549,002		

Notes to Electric Railway Statistics.

The figures in the foregoing table are compiled from the annual returns to the Railways Department, which however are

incomplete, no returns having been received from the Montreal Tramways Co., the Pictou County Electric Co. and the St. John Ry. in regard to which companies the Department has in some cases

used figures for some preceding years. (1) The Edmonton Interurban Ry. was not in operation during the year ended June 30, 1915.

(2) The figures given for the Montreal

Tramways Co., for first main track mileage and for total car mileage, in some of the Department's tables, are stated to be for 1911, while in the table of earnings and expenses the figures are evidently taken from the company's annual report for the year ended June 30, 1915, and which were given in Canadian Railway and Marine World for September, 1915, page 355.

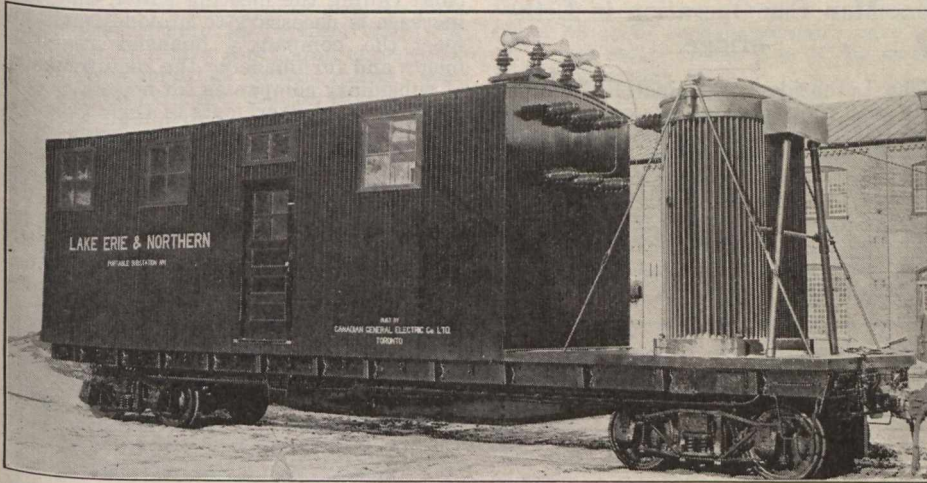
Portable Substation on Lake Erie and Northern Railway.

The Lake Erie & Northern Ry., which has been in operation for some little time between Galt and Brantford, Ont., and is now completed to Port Dover, has put in operation a portable substation for high voltage direct current generation, two

at the left of the photo.

The converter is 500 kw. capacity, 1,500 volts d.c. As it is a commutating pole rotary converter, the brushes are all raised during starting, with the exception of two narrow pilot brushes. There is, on the left of the frame of the rotary converter, a lever for raising and lowering the brushes, and a small semaphore at the top of the frame indicates the position of the brushes, so that the operator can tell at a glance whether the brushes are raised or down. The field break up switch is mounted, for convenience, as the bearing pedestal. The complete rotary converter is mounted on an adjustable base, which permits of ready adjustment for levelling in case the portable substation is standing on a grade.

The portable substation was built by Canadian General Electric Co. at Peterborough, Ont. When it was completed the railway company was not ready to take delivery and it was necessary to leave it standing outside during extremely cold weather. Although no attempt was made to supply excitation to the outdoor transformer during that period, it was found to be in excellent condition when instructions were received for shipment.



Portable Substation, Lake Erie & Northern Railway

(3) No figures are given by the Department for the Pictou County Electric Co. We have shown the first main track mileage as 9.1, the latest figures we have. Figures in regard to operation, etc., are not available.

(4) No figures are given by the Department for the St. John Ry. At Dec. 31, 1915, it had 18 miles of main track which we have included in our table. The gross earnings of its street railway for the year ended Dec. 31, 1915, were \$242,217.31 and the operating expenses \$250,714.34, a deficiency of \$8,497.03. The fare passengers carried were 5,541,417.

The total first main track mileage shown in the Department's report is 1590.29. Adding to this the Pictou County Electric Co., 9.1 miles, and the St. John Ry., 18 miles, as given in our table, makes a total of 1,617.39 miles.

Platforms for Interurban Railways.

At the Ontario Legislature's last session, G. H. Gooderham M.L.A. for South Toronto, introduced a bill to amend the Ontario Railway Act by adding a section as follows:

"106a.—(1) Electric railways operated on the side of a highway shall at all stopping places fixed by the bylaws or regulations of the company, or by order of the Board, construct on the side of the highway between the tracks and the line of the highway platforms for the use of passengers getting on or off any car of the company, and the company shall not allow any person to get on or off a car except from the side on which the platform is constructed.

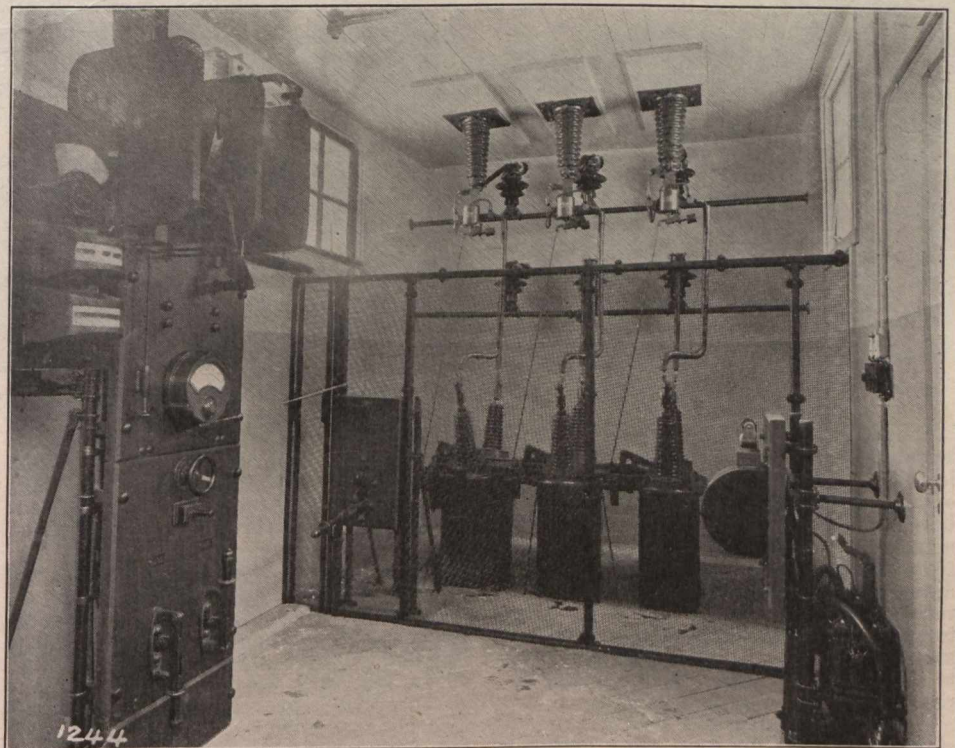
"(2) Such platforms shall be constructed in accordance with plans and specifications approved of by the Board."

The bill was killed by the Legislature's Municipal Committee, to which it was referred.

Morrisburg & Ottawa Electric Ry.—A special general meeting of shareholders was called to be held at the company's office, Ottawa, on May 30 to forfeit all stock on which any arrears for calls or interest were due.

illustrations of which are given herewith. The substation is built on a standard steel, 42 ft. flat car, of 60,000 lbs. capacity. The 555 k-va, three phase transformer is of the outdoor type, self cooled, and is mounted in the open. The primary

Snow Removal in Montreal.—At the recent Good Roads Congress in Montreal recently, Chief Engineer Mercier of that city read a paper on "Snow Removal in Montreal." He said that the average snow fall for 41 years had been 119 in., and there was snow on 79 days in 1915, with rain on 28 of these days. Mr. Mercier described the methods by which the



Interior of Portable Substation, Lake Erie & Northern Railway

of the transformer is arranged for a supply of 25 cycle energy at 6,600, 13,200 or 26,400 volts. The secondary leads are carried in conduit. The interior view shows the main oil switch and oil switch operating panel, together with the series relays; the high tension a. c. portion of the apparatus being separated from the rest of the cab by a wire screen. The starting switch for the rotary converter is shown to the right of the illustration, and the rotary converter panel is shown

city and the Montreal Tramways co-operated to clear the streets, and referred to the organization under A. Gaboury, Superintendent of the railway, as "wonderful." The cost of cleaning sidewalks was 7½c. a running foot, and clearing the roads cost \$2,500 a mile.

The G.T.R. sued the Sarnia St. Ry., at Sarnia, Ont., May 16, for damages to a train which left the track at a crossing of the street railway. Judgment was reserved.

Union Electric Railway Station for Brantford.

The Lake Erie & Northern Ry., a subsidiary of the C.P.R., and the Brantford & Hamilton Ry., a subsidiary of the Dominion Power & Transmission Co., entered into an agreement recently to build a joint station in Brantford, Ont., and, as already stated in Canadian Railway and Marine World, the contract for its erection was let to Schultz Bros. Co., contingent on satisfactory arrangements being made with the city council and subject to the Board of Railway Commissioners' approval.

The plans as shown in the accompanying illustration provide for a one story building, located over the tracks at the southwest corner of Colburn and Water Streets, with 38 ft. frontage on Colburn St. and 76 ft. on Water St., and tracks to pass beneath the main floor of the

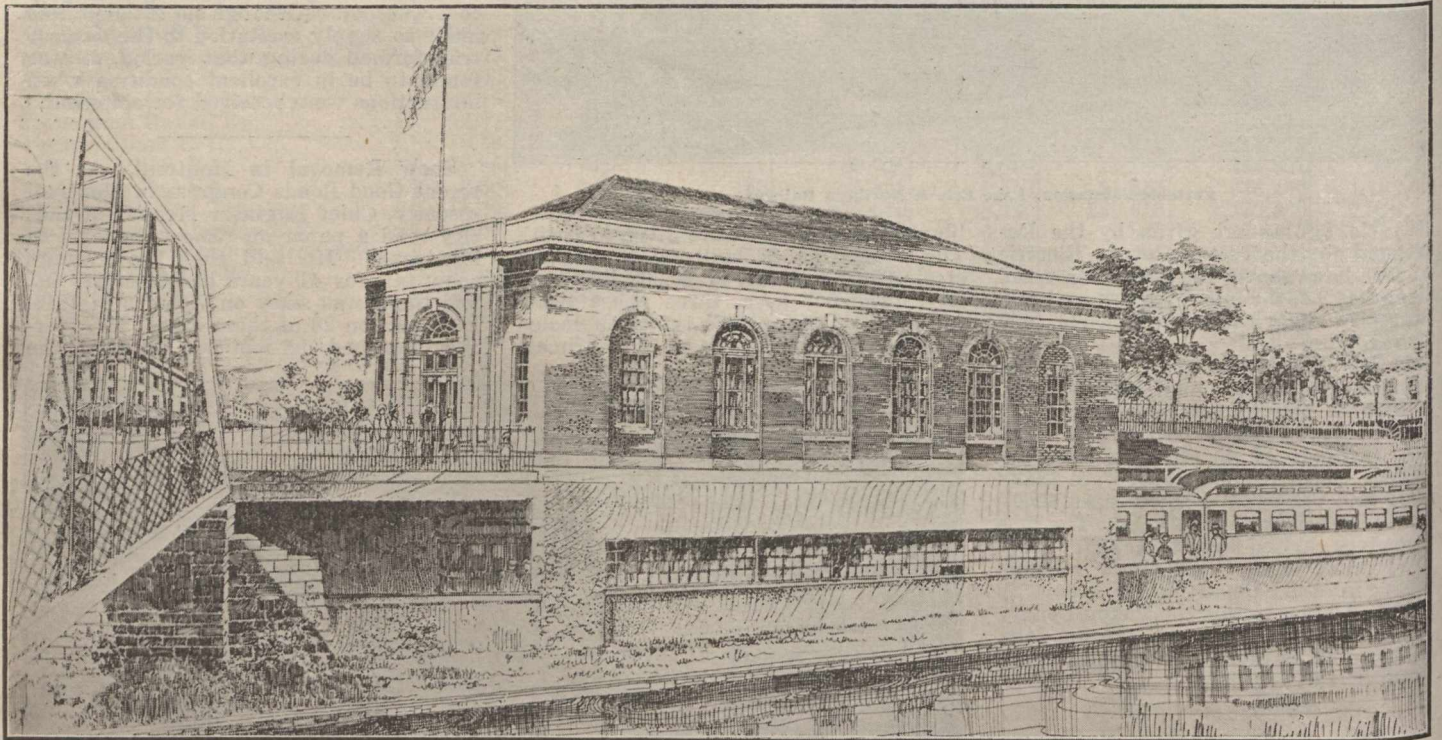
The Brantford City Council approved of the station plans, with a stipulation that the Lake Erie & Northern Ry. buy a strip of land opposite the station site. This the company refused to do, holding that it was not necessary, and the starting of work was deferred in order to bring the matter before the Board of Railway Commissioners.

One-Man Car Operation in Lethbridge.

The Lethbridge Municipal Ry. for the year 1913 showed a net loss on operating of \$4,147.75, and after providing for debenture and other interest and sinking fund there was a total deficit for the year of \$30,831.22. For the year 1914 the loss on operating was \$3,477.14, and after providing for debenture interest, sinking fund, taxes and fire insurance there was a total deficit for the year of \$37,202.33.

Increase of Toronto Railway Co's Capital.

A special general meeting of shareholders was held in Toronto, May 29, to sanction a proposed increase of capital stock by the creation of 30,000 new shares of \$100 each, making the aggregate capital stock \$15,000,000. The circular calling the meeting states that the increase is necessary to provide funds to meet the company's financial requirements and for financing the requirements of subsidiary companies for necessary extensions and betterments of their properties, in accordance with the company's statutory powers and for reasons more particularly indicated in accompanying memorandum. It is the directors' intention to have the new shares available for subscription pro rata by the shareholders, and if not subscribed, the same to be offered to the public.



Station for Lake Erie and Northern and Brantford & Hamilton Railways at Brantford, Ont.

building, with platforms, express and baggage accommodation at the lower level. The design is New England, Colonial style; red brick, with limestone trimmings and green slate roof. The main floor, at street level, with entrance from Colbourn Street, is to contain a main waiting room 35 x 50 ft., women's retiring room and lavatory, men's lavatory and ticket and telegraph offices. Two stairways will lead from the main floor to the track platforms. Baggage and express rooms and steam heating equipment will be located in a separate extension 14 x 76 ft. on the lower or track level. This extension will abut the retaining wall of Water St. and will be accessible for teams at the lower end of the street. The interior of the building will be finished in Canada ash; the walls and ceilings of main waiting room to be plastered and finished with plastered cornice. The floors will be concrete. The lavatories will have a marble wainscot 6 3/4 ft. high. Seats will extend the full length of the two outside walls in the waiting room, except in space occupied by the ticket and telegraph offices. The approximate cost is stated as \$25,000.

For the year 1915 there was a surplus from operating of \$3,677.64, and after providing for debenture interest, sinking fund, taxes and insurance, which totalled \$33,383.37, there was a net deficit of \$29,705.73 for the year.

Commissioner Freeman informs us that the change in operating results from a deficit to a surplus was undoubtedly owing to the one-man car operation which was started June 1, 1914. Financial conditions generally were worse in 1915 than in the previous year and had not the one-man car operation been started, the service would probably have had to be discontinued.

Peterborough Radial Ry. — As announced in Canadian Railway and Marine World for April, the Ontario Government bought the Electric Power Co., Ltd., properties in Eastern Ontario, including the Peterborough Radial Ry. By an order in council passed May 5, the control, administration and management of the properties has been vested in the Hydro Electric Power Commission of Ontario, which is to carry on the undertakings as a separate branch of its business.

The accompanying memorandum above referred to states that the Toronto Ry. Co. has express power by statute to acquire the shares and securities of the following companies and to lend its credit to them or guarantee their bonds or other securities or obligations, viz., Toronto & Mimico Ry. Co. (now Toronto Power Co., Ltd.), Toronto & Scarborough Electric Ry., Light & Power Co., Metropolitan Ry. Co., Schomberg & Aurora Ry. Co., Toronto & York Radial Ry. Co.

In reference to the various bonds issued the memorandum states that among other purposes part of their proceeds were used to purchase the Toronto & York Radial Ry.'s share capital, to build extensions and make betterments to its various divisions; also to purchase the Schomberg & Aurora Ry. Co.'s share capital and to build and equip the line.

The memorandum adds: "In addition to accomplishing the main object—i.e., assuring an adequate supply of power for the Toronto Ry.—steady progress has been made in the sale of power. In 1915 the gross sales of power were \$1,463,639, and in 1914 these are expected to reach a total of \$1,800,000. The gross revenue

from power sales in 1909—the first year of operation, and previous to the expenditures set forth were \$651,830.

"In acquiring the several properties now forming the Toronto & York Radial Ry. Co. and the Schomberg & Aurora Ry., the chief object of the directors was to foster the growth of suburban traffic, to feed the Toronto Ry. Co.'s city system. The resultant advantage to the shareholders of the Toronto Ry. Co. is that should the City of Toronto elect to purchase the Toronto Ry. system they will have left in 1921 a continuing enterprise, including a suburban electric railway system and an extensive and profitable plant for the production and distribution of electricity for light and power purposes."

Regulation of Vehicle Traffic for Protection of Electric Car Traffic.

Two important amendments to statutes were passed at the Ontario Legislature's last session, at the instigation of G. H. Gooderham, M.L.A. for South Toronto. The Motor Vehicles Act, Revised Statutes 1914, chap. 207, provided as follows:

"15. When a motor vehicle meets or overtakes a street car which is stationary for the purpose of taking on or discharging passengers, the motor vehicle shall not pass the car on the side on which passengers are getting on or off until such passengers have got on or off safely to the side of the street as the case may be."

In 1914 two persons were charged at Ingersoll, Ont., with driving an automobile past a Woodstock, Thames Valley & Ingersoll Electric Ry. car at Beachville. The magistrate dismissed the case, holding that the requirement that automobiles do not pass standing electric cars only applied to street railways in a city or town or within a mile and a half of urban limits, and not to interurban lines. The Canadian Electric Railway Association has ever since that decision urged that the act be amended, and at the Ontario Legislature's last session, Mr. Gooderham introduced a bill to carry the suggestion into effect. Its principle was approved of and with a slight amendment it was incorporated in a general bill to amend the Motor Vehicles Act, introduced by the Minister of Public Works, the section being passed as follows:

"8. Section 15 of The Motor Vehicles Act is amended by adding after the words 'street car' in the first line the words 'or a car of an electric railway which is operated in or near the centre of the travelled portion of the highway,' and by inserting after the word 'car' in the third line the words 'or approach nearer than 6 feet measured back or forward from the rear or front end, as the case may be, of the car.'"

Section 15 of the Act as amended therefore now reads as follows:

"When a motor vehicle meets or overtakes a street car, or a car of an electric railway which is operated in or near the centre of the traveller portion of the highway, which is stationary for the purpose of taking on or discharging passengers, the motor vehicle shall not pass the car or approach nearer than six feet, measured back or forward from the rear or front end as the case may be, of the car, on the side on which passengers are getting on or off, until such passengers have got on or got safely to the side of the street as the case may be."

The Highway Travel Act was amended by adding the following section:

"9a. Where a person travelling or being upon a highway in charge of a vehicle,

other than a motor vehicle, or on a bicycle or tricycle, or on horseback or leading a horse, meets or overtakes a street car or a car of an electric railway, operated in or near the centre of the travelled portion of the highway which is stationary for the purpose of taking on or discharging passengers, he shall not pass the car or approach nearer than 6 feet measured back or forward from the rear or front end, as the case may be, of the car on the side on which passengers are getting on or off until such passengers have got on or got safely to the side of the street, as the case may be."

Attempted Confiscation of Sandwich, Windsor and Amherstburg Ry. Rights.

Among several most unjustifiable bills introduced at the Ontario Legislature's last session was one promoted by the city of Windsor. The Sandwich, Windsor & Amherstburg Ry. Co. has a perpetual franchise to supply electric energy in the city for light, power and motive purposes. The city has installed a distribution system and takes power from the Hydro Electric Power Commission of Ontario. The bill referred to provided that the company's rights in regard to supplying power should cease on Dec. 31, 1922, on which date its franchise for the operation of a street railway in the city will expire. No provision was made in the bill for any compensation, and the company's rights were to be absolutely confiscated. When the bill came before the Private Bills Committee, Sir Adam Beck, Chairman of the Hydro Electric Power Commission of Ontario, appeared in support of it, but it was unanimously thrown out, the committee considering that to pass it would be a gross violation of undoubted vested rights.

Then the city had another bill presented, providing that it should have the power to expropriate the Sandwich, Windsor & Amherstburg Ry. Co.'s electric light and power business, and that in default of agreement as to price, it be determined by the Hydro Electric Power Commission of Ontario. No provision was made for arbitration, the Commission being named as the sole judge as to the price. This arbitrary and utterly unjustifiable proposal was also rejected by the committee and the second bill was also unanimously thrown out.

The Legislature is to be congratulated on its action in preserving the inviolability of a contract and for preventing the passage of legislation which would absolutely destroy the rights of investors.

Jitney Traffic Notes.

Winnipeg city authorities are having trouble with some jitney men who put a sign "Anywhere" on their cars, and then charge any fare they please instead of 5c, which is the standard jitney charge.

An auto service was started May 2, by V. N. Lawrence, between Moncton and Hillsboro, N.B., on Tuesdays, Thursdays and Saturdays, leaving Moncton at 8 a.m., and Hillsboro at 10.30 a.m.

The jitney service in Toronto shows signs of increasing, now that the weather is brightening, and riding in open cars is not prejudicial to health. The jitney cars now all carry a label in front marked "Jitney No. —."

The Winnipeg City Board of Trade, on May 10, extended the area within which jitneys may not stop to pick up passengers by including both sides of Notre

Dame, from Portage Ave. to Albert St.

About 60 jitney cars were reported to be operating in Hamilton, Ont., Mar. 20, half of them running on King and Barton Streets. The Hamilton Jitney Association has assigned for the benefit of its creditors, and the jitney men are operating individually.

The Vancouver Jitney Protective Association has been formed in Vancouver, B.C., to look after jitney men's interests. The association is preparing a statement for submission to the city council, and proposes to act in conjunction with the Victoria Jitney men's Association in all matters where joint action can be taken.

The British Columbia Electric Ry. has complained to the authorities that jitney men are not obeying the regulations requiring them to come to a stop 10 ft. behind a street car. The complaint was made as a result of an accident to an employe of the company, who was knocked down by a jitney as he was stepping off a street car, and sustained a fractured skull.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry., and allied companies:—

	Mar. 1916	Mar. 1915	Mar. 31, 1916	Mar. 31, 1915
Gross	\$485,117	\$557,135	\$4,982,147	\$5,755,041
Expenses	486,819	484,565	4,325,461	4,525,490
Net	91,298	72,570	656,686	1,229,551

Cape Breton Electric Co.—

	Feb. 1916	Feb. 1915	Jan. 1 to Feb. 29, 1916	Jan. 1 to Feb. 28, 1915
Gross	\$28,638.44	\$23,439.01	\$62,458.80	\$52,493.07
Expenses	18,579.05	15,059.10	37,768.61	32,841.48
Net	10,059.39	8,379.91	24,690.19	19,651.59

Detroit United Ry. directors have declared a dividend of 1 3/4 % for the current quarter, payable June 1, to shareholders of record May 16. This is at the rate of 7% a year, and is the largest dividend ever paid by the company, which also owns the Sandwich, Windsor and Amherstburg Ry. in Canada.

Grand Valley Ry.—In connection with the winding up of the affairs of this company, which included the Brantford Street Ry., the G.R.Ry. from Brantford to Galt, and the Woodstock, Thames Valley & Ingersoll Ry., an order was made by Justice Latchford, May 4, for the payment into court by the Receiver, of \$64,176. An application for the discharge of the Trusts and Guarantee Co., as trustee, and of E. R. Stockdale, as receiver, was not granted.

Toronto Civic Ry.—In the estimates prepared for the city council's consideration, the four isolated civic cars lines show an expected deficit for the year of slightly over \$250,000. The general maintenance account is placed at \$296,952, debt charges \$149,636; and claims for damages \$5,000. The estimated revenue is \$200,000.

Toronto Ry.—

	1916	City percentage	1915	City percentage
Jan.	\$473,784	\$68,847	\$471,226	\$70,486
Feb.	470,764	70,614	440,313	66,047
Mar.	518,555	97,237	488,468	93,141
Apr.	496,172	99,234	467,701	93,540
	\$1,959,275	\$335,932	\$1,867,708	\$323,214

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

	Mar. 1916	Mar. 1915	Mar. 31, 1916	Mar. 31, 1915
Gross	\$910,969	\$820,750	\$2,663,575	\$2,431,427
Expenses	477,081	456,755	1,408,863	3,309,088
Net	433,988	363,995	1,254,712	1,122,339

Winnipeg Electric Ry.:—

	Mar. 1916	Mar. 1915	Jan. 1 to Mar. 31, 1916	Jan. 1 to Mar. 31, 1915
Gross	\$296,500	\$303,209	\$887,210	\$968,549
Expenses	114,600	197,050	558,685	605,820
Net	111,900	106,159	328,525	362,729

Electric Railway Projects, Construction, Betterments Etc.

British Columbia Electric Ry.—A press report states that spur line is being built on the company's Fraser Valley line, between Mount Lehman and Gifford, to Cook's Mill, for logging purposes. The hauling will be done from the landing stage at Mount Lehman, over the main line and spur, at night. (April, pg. 156.)

The British Columbia Electric Ry. is completing the construction and equipment of an electrical receiving station near Horne-Payne station, on its Burnaby Lake line, the construction of which was temporarily discontinued about two years ago. (April, pg. 156.)

Buffalo, Fort Erie Ferry & Rd. Co.—The Ontario Legislature has passed an act incorporating this company. (April, pg. 156.)

Charlottetown Street Car Co.—The Prince Edward Island Legislature was asked recently to incorporate a company with this title to establish a line of street cars to be operated by gasoline and electric power or either and to be motor busses or passenger vans, with a carrying capacity of 15 passengers or upwards and to be operated in the streets of Charlottetown and Common, including Victoria Park Roadway, the roads of the Royalty of Charlottetown and such other roads in the province as might be from time to time available by law. Vehicles to be run every day in the week. It was also stated that the city of Charlottetown be empowered to exempt the company from civic taxation for 20 years and that the exclusive right to operate such vehicles or those of a like nature, be granted in the City and Royalty for 25 years. The provisional directors named were:—D. J. Riley, A. A. Alley, J. McKenna, B. Rogers and C. MacLure. After some discussion the bill was dropped May 3.

The Calgary Municipal Ry.'s temporary line of 2½ miles of single track to the Sarcee military camp is being completed rapidly and was expected to be opened on May 15. The Calgary Corporation had on hand 150 tons of rails and bought 100 tons 60 lb. 60 ft. rails which had been obtained from the receivers of the South East Calgary Corporation. (May, pg. 200.)

Lake Erie & Northern Ry.—A contract is reported to have been let to Schultz Brothers & Co., Ltd., Brantford, for the erection of a brick station on Colburn St., 36 x 76 ft., to be used jointly by the L. E. & N. R., and the Brantford & Hamilton Ry.

The electric installation on the section of the line from Brantford to Port Dover was expected to be completed as far as Simcoe by May 30, and the line to be ready for opening for traffic some time in June. (April, pg. 156.)

Montreal & Southern Counties Ry.—The extension from St. Cesaire to Granby, Que., was opened for traffic April 29. This gives the company a line of 46.63 miles, in addition to about 9 miles in St. Lambert, Montreal South and Longueuil. The first line built by the company extended from McGill St., Montreal, to St. Lambert, and was opened for traffic Nov. 1, 1909. Subsequently the Central Vermont Ry. Chambly Branch, was taken over and electrified, and the present extension from St. Cesaire to Granby has been built on an independent right of way. The principal points on the line

outside the Montreal South area are:—Chambly Basin, mileage 15.91 from McGill St.; Chambly Canton, mileage 17.27; Richelieu, mileage 18.14; Marieville, mileage 22.48; Rougemont, mileage 27.56; St. Cesaire, mileage 31.27; Abbottsford, 38.03; Granby, mileage 46.63. Sub power stations have been erected at St. Lambert, Chambly, Rougemont and Granby. It is proposed later on to extend the line to Sherbrooke, and to other points in the Eastern Townships. (April, pg. 156.)

Montreal Tramways Co.—The Board of Control has asked the company to extend its service from Park Ave. to the C.P.R. station at Mile End, over the tracks already laid but not utilized. (Feb., page 73.)

Nelson St. Ry.—Early in the year the Nelson, B.C., City Council instructed H. P. Thomas, City Electrical Engineer, who acts in a supervisory capacity in connection with the Street Railway Department, to prepare plans and estimate for extending the city car lines along Baker St. from Josephine to Cedar St., and on Vernon St. from Cedar to Josephine St., a total distance of about half a mile. We are officially advised that it has been decided not to go on with the proposed extension at present.

Niagara Falls Park & River Ry.—The work being done to ensure safety, which was undertaken in consequence of the serious accident at Queenston Heights, Ont., July 7, 1915, is reported to be largely completed. A. B. Ingram, Vice Chairman, Ontario Railway and Municipal Board, made a trip of inspection over the line, May 11, and is reported to have stated that the work so far was satisfactory, and that it would be fully completed before the summer traffic commenced. The Board will issue an order thoroughly covering the whole matter.

The Mount McKay & Kakabeka Falls Ry. has been granted permission by the Ontario Legislature to use steam as an alternative motive power to electricity on its railway, and has been given an extension of time to build the uncompleted portion. (April, p. 156.)

Ottawa Electric Ry.—We are officially advised that the laying of a new asphalt pavement on Rideau St., between Sussex and Waller streets, has been commenced by the city council. As a part of this work the company is relaying the section with T rails, 108 and 115 lbs. (May, pg. 200.)

Toronto Civic Ry.—The Toronto City Council has accepted the United States Steel Products Co.'s tender to supply a 3-track car barn special track work layout for St. Clair Ave. civic car barn extension at \$2,120. The City Council has also accepted J. J. Gartshore's tender for purchase of old rails and switches as follows: about 200 long tons of 30 lb. rail at \$21 a ton; 20 no. 5 30 lb. switches at \$6 each; 4 long tons of fish plates at \$28 a ton.

Toronto Civic Ry.—The Toronto City Council has given a contract to the General Railway Signal Co. of Canada, to install a signal system in connection with the operation of the Toronto Civic Ry's Lansdowne Ave. branch, at its crossings with the Toronto Suburban Ry's Davenport Road branch at Lansdowne Ave., for \$2,400.

We are officially advised that a new double track, 0.615 of a mile, is being

laid on Lansdowne Ave extension from St. Clair Ave to the C.P.R. tracks.

Winnipeg Electric Ry.—The West Kil-donan, Man., Municipal Council was informed May 12, that the company would proceed immediately to lay a second track on its line from the city limits to Kil-donan Park. (April, pg. 156.)

Brandon Municipal Railway Construction Costs.

The following figures show the cost of constructing 1.27 miles of track in 1915, using 60 lb. rail with gravel ballast, the work being done under the supervision of T. Boden, Superintendent:—

113.57 gross tons 60 A.S.C.E. rails.....	\$ 5,337.80
Tamarac ties	1,938.00
Angle bars	172.20
10 in. rail bonds.....	176.00
62 in. rail bonds.....	16.00
Spikes.....	165.00
Bolts.....	28.00
Special work	2,995.00
Miscellaneous	25.00

Total cost of track material.....	\$10,853.00
Ballast, excavation, tracklaying, tamping and surfacing.....	3,034.00
Supervision	200.00

Total cost of track construction.....	\$14,087.00
Total cost of track material per mile, not including special work.....	\$ 6,680.00
Labor and construction.....	2,370.00

Total cost of track construction per mile	\$ 9,050.00
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The following figures show the cost of overhead construction, including special work, for 1.34 miles:—

Material	\$ 1,343.00
Labor pay	497.00
Supervision	32.00

Total cost of overhead construction..	\$ 1,872.00
Total cost of track and overhead construction	\$15,959.00
Cost of electric line material per mile, not including special work and feeder	\$ 900.00
Labor and supervision.....	370.00

Total per mile.....	\$ 1,270.00
Cost of labor and supervision for electric line and track per mile.....	\$ 2,740.00
Total cost of electric line and track construction per mile, not including special work	10,320.00

At the end of 1913 the Brandon Municipal Ry. had 3.12 miles of track in concrete and 5.92 miles in gravel ballast, a total of 9.04 miles, the cost of labor and supervision to construct which was \$54,460. This does not include the cost of putting in concrete, which was done by contract. On the basis of cost of construction 1914 and 1915, which is the same as previous construction, the cost would have been as follows:—

LABOR AND SUPERVISION TO CONSTRUCT ELECTRIC LINE AND TRACK.	
Concrete foundation, 3.12 miles.....	\$ 5,000.00
Gravel ballast, 5.92 miles.....	16,220.00
Contingencies and extra labor on specials	\$21,220.00
	5,000.00
	\$26,220.00

These figures are significant and show apparently that a large amount of money was wasted in the original construction.

W. H. Dinsmore, whose appointment as Traffic Superintendent, British Columbia Electric Ry., Vancouver, was mentioned in our last issue, entered the company's service Feb. 1, 1901, as a conductor; on Nov. 1, 1909, was appointed inspector; and on Nov. 1, 1915, Chief Inspector.

The Toronto Board of Control received tenders to May 23, for the supply of one single truck, double end city car, completely equipped; one car body, double end, single truck; equipment for two single truck cars, all for the Toronto Civic Ry.'s Bloor St. Division.

Answers to Questions on Electric Railway Topics. Hydro Electric Power Commission of Ontario Legislation.

The following replies have been received to questions asked, regarding electric railway operation, etc., through the American Electric Railway Association's question box.

Grinding Joints.—What is a fair estimate of the cost of grinding joints, on new track and on old track? Give investment in grinding machinery, number of grinders used, men employed per grinder, whether work is done at night or during daytime, and if at night, whether an increase of wages is paid.

W. F. Graves, Chief Engineer, Montreal Tramways Co.—Have not kept the costs of grinding joints on old and new track separate. However have arrived at an average figure of \$1.18 per joint on a total of 2,622 joints. This includes overhead, machinery repairs, depreciations, renewals, interest, insurance and taxes. Investment in grinding machinery, \$4,500; grinders used, two; men per grinder, three; practically all night work except on construction work where track is dead. Two cents an hour extra is paid to ordinary laborers and 5c. an hour to the men in charge of machines.

Repairing Cup Joints.—How are cup joints repaired and what is the approximate cost?

W. F. Graves, Chief Engineer, Montreal Tramways Co. for the past two years we have been making a practice of repairing cupped joints by pouring mild steel which has been melted with a machine similar to the welder put out by the Indianapolis Frog and Switch Co., with considerable success. In fitting 674 joints in this manner during the past three months we used 510 lbs. of this mild steel or approximately 0.76 lb. per joint.

Traffic Counts.—What are the methods used in making traffic counts, what direct and tangible results are secured from such counts, and what determines the frequency with which they are made?

F. L. Hubbard, Assistant to General Manager, Toronto Ry. Co.—We maintain a staff of traffic counters attached to the transportation department, and independent of divisional inspection forces. Our regular counting is done by routes, the men being stationed at the point of maximum traffic and a count taken of passengers in each car passing that point in both directions. The count is forwarded to transportation department and graphically charted. Special counts are made of transfer passengers at intersections and to secure statistics relating to the trend of traffic, running time of cars, cars laying in at the end of the line, etc. The counts enable the management and officials of transportation department to keep in touch with actual traffic conditions, independent of the reports of traffic inspectors. We use the information in a follow up system of the outside supervising forces by daily sending typewritten extracts of special features from such counts to divisional superintendents. Counts are invaluable to transportation department in checking up requisitions for new time tables sent in by divisional superintendents. The charts form a handy record of traffic and service in dealing with complaints from individuals or before traffic commissions. We keep the staff regularly employed on a circuit of the different lines. The special counts are made as required.

Elimination of Time Points.—Have any companies experience with elimination

of time points and what has been the results?

F. L. Hubbard, Assistant to General Manager, Toronto Ry., No, but we have our doubts of the system proving a success. Even if scheduled time points were abolished, it would seem to us that the individual motor man would divide the route into time sections to guide him in arriving at the terminal on time, and if this assumption be correct, it is better to have this division of time uniform and scheduled for all the men rather than that it should be left to the individual. The lack of time points would prove a handicap to inspectors in checking the running time of cars, and in straightening the line after a block.

In accident prevention work, in schools and among the public generally, have better results been obtained by a organization controlled by the railway itself, or by contributing to and working with safety organization outside of the company?

F. L. Hubbard, Assistant to General Manager, Toronto Ry. Co.—We have obtained better results by contributing to and working with an independent public safety league, composed of representatives from the Ontario Railway and Municipal Board, Government Factory Inspection Bureau, City Council, Police Department, Board of Education, Manufacturers' Association, Trades and Labor Council, Motor League and railway companies. The League being a representative public body has a much broader field to work in than it is possible for the company to cover. Its educational work is not confined to street railway accidents, but covers accidents of all kinds and this is carried on with an entire absence of prejudice or anti corporation feeling on the part of the public.

Equipment Maintenance Cost.—What should be the cost of equipment maintenance: 25% city service, average rate of speed 9 miles an hour, and 75% inter-urban service, average rate of speed 22 miles an hour?

G. Gordon Gale, General Manager, Hull Electric Co., Hull, Que.—The cost of equipment maintenance as specified should be 2½c a car mile.

Repairs after Collisions.—In case of collision and wagon accidents, is it, as a general proposition, more expensive to repair a steel car than a wooden one?

M. Power, Master Car Builder, Toronto Ry., Toronto.—The steel car is the more expensive to repair.

Inspection of Freight Trailers.—What is considered the most efficient way of inspecting freight trailer cars on a property operating 30 trail cars, and where they are not available for daily inspection, being distributed over a line of 150 miles?

M. Power, Master Car Builder, Toronto Ry., Toronto.—This is a question hard to answer without a knowledge of the conditions. It may be quite possible that a system of inspection could be arranged at different points of such a system.

Good Intentions.—A contemporary states, "The Montreal & Southern Counties Ry. has been intended as far as Granby, Que." We have heard that the road to a certain place is laid with intentions, but, as far as memory serves, that place is not Granby.

The Canadian Northern Ex. Co. has placed its service in effect between Inwood and Hodgson, Man., 50 miles.

The Ontario Legislature at its recent session passed three acts affecting the water powers of the Province and the Hydro Electric Power Commission of Ontario's powers in respect thereto. The first is an act to regulate the use of provincial waters for power development purposes. It declares that it shall be the duty of the owner of a water power to ensure as far as possible the economical and efficient use of the water by him; and provides for the appointment of an inspector to examine into the manner in which the water power is being developed and used. Upon reports of the inspector, the Government may make order as to the power, and in the event of the owner feeling himself aggrieved, he may be granted compensation. Under this act it would appear that the Government may restrict and limit the development of water powers, and the distribution of electrical energy by private owners or by municipal corporations.

The second act deals with the development of water power in the vicinity of Niagara Falls, and authorizes the Hydro Electric Power Commission of Ontario to divert the Niagara River, Welland River and tributary waters, and convey them by aqueduct or canal or in any other manner from any point on the Welland River, or on the Niagara River above the Cataract and discharge their waters into the Niagara River, for the purpose of the production of electric energy, and for such purpose to use all the powers conferred by the Power Commission Act. The cost of such works is to be defrayed out of funds appropriated for that purpose by the Legislature, and to be designated the Niagara Power Development Works account. Until this power is developed the commission may secure such additional power as is necessary to meet the requirements of the municipalities over and above the 100,000 h.p. required under existing contracts, upon the best terms available, and the additional cost of such power to the municipalities shall be included in the price per horse power payable by municipal corporations under existing contracts.

The third act is an amendment of the Power Commission Act, in which the authority of the commission was specifically set out in regard to certain matters. Bylaws confirming agreements as to power between the commission and a number of municipalities, and other contracts, which are set out in the schedules are ratified and confirmed.

During the discussion upon these bills, it was stated on behalf of the Government that it is not proposed to encourage any expenditure upon radial electric railways under the Hydro Electric Ry. Act of 1914, during the continuance of the war. Preparations for the construction of such railways will, however, be continued.

The Toronto Ry. and Subway Construction.—The Supreme Court of Canada dismissed the Toronto Ry. Co.'s appeal, May 2, against an order of the Board of Railway Commissioners assessing the company with 10% of the cost of building a subway under the C.P.R. at Avenue Road. The chief grounds of the appeal were the question of the Board's power to assess a provincial railway in regard to a subway under a Dominion railway, and also the rights of the company to the use of city streets. The amount to be paid by the company is \$8,000.

Mainly About Electric Railway People.

Percy Lewis has been appointed Purchasing Agent, British Columbia Electric Ry., vice C. A. Lee, transferred to electrical engineering department.

J. P. McKenzie, heretofore Master Mechanic, has been appointed Assistant Superintendent, Saskatoon Municipal Ry., Saskatoon, Sask. This is a new position.

Capt. Guy Boyer, of the 22nd Battalion, C.E.F., and formerly a Montreal St. Ry. official, is reported as under eye treatment in England owing to lachrymose gas effects.

F. D. Burpee, Superintendent, Ottawa Electric Ry., who is on leave of absence for military service, has been promoted from captain to major in the 207th Battalion, now stationed at Ottawa.

F. S. Woodcock, Traffic Manager, Saskatoon Municipal Ry., Saskatoon, Sask., having resigned on enlistment for service with the Canadian Expeditionary Force, the position has been abolished.

D. L. Welch, heretofore General Freight Agent, Chatham, Wallaceburg & Lake Erie Ry., is reported to have been appointed Travelling Auditor, London & Port Stanley Ry., London, Ont.

L. G. Ireland, heretofore Manager, Brantford Municipal Ry., has been appointed Assistant Engineer, Hydro Electric Power Commission of Ontario, in charge of operation of distribution systems, Central Ontario Power System.

Nugent M. Clougher, who was in Ottawa some two years ago, attempting to promote the Ottawa Rideau Lakes & Kingston Ry., has been granted a temporary commission as lieutenant in the Royal Naval Volunteer Reserve, and has been appointed to the s.s. President, additional for Royal Naval Air Service.

Wilford Phillips has been appointed General Manager, Winnipeg Electric Ry. Co., instead of Manager as heretofore. He returned to Winnipeg recently, after four months leave of absence, which he spent in California, being a large part of the time in the open air and doing a great deal of motoring in the Los Angeles district, which improved his health very much.

J. M. Ahearn, heretofore Assistant Master Mechanic, Ottawa Electric Ry., has been appointed Assistant Superintendent in charge of equipment, with control of the repair shop and car barns, and of matters dealing with rolling stock. He has worked in street railway electrical departments for some 15 years and had considerable experience on the Pacific Coast.

W. G. Ferguson, Local Manager, Peterborough Radial Ry., which has been bought by the Ontario Government with other Electric Power Co. property, and transferred to the Hydro Electric Power Commission of Ontario for management, remains in the same position as heretofore, reporting to L. G. Ireland, who has been given charge of operation of distribution systems, Central Ontario Power System.

Major Norman C. Pilcher, General Manager, Sherbrooke Ry. & Power Co., Sherbrooke, Que., who went on active service a little more than a year ago, has been killed in action in France. He was appointed General Manager, Sherbrooke Ry. & Power Co., Sept. 1, 1910, and for some time prior to that had acted as Manager of the Fort William and Port Arthur Electric Railways, then being

operated jointly. He is survived by a widow and one son, both of whom are at present in England.

D. L. Welch, who is reported to have been appointed Travelling Auditor, London & Port Stanley Ry., London, Ont., was born at Clinton, Ont., Feb. 29, 1892, and entered railway service, Nov. 24, 1909, since when he has been, to June, 1911, relieving agent, Buffalo Division, Pere Marquette Rd.; June, 1911, to May, 1913, cashier, same road, Wallaceburg, Ont.; May, 1913, to Feb., 1916, local freight and passenger agent, Chatham, Wallaceburg & Lake Erie Ry., Chatham, Ont.; Feb. 20 to May 13, 1916, General Freight and Passenger Agent, same road, Chatham, Ont.

Electric Railway Notes.

The Winnipeg Electric Ry. is carrying all soldiers in uniform, during all hours of all days, on workmen's tickets, 8 of which are sold for 25c.

The Dominion Power & Transmission Co., Hamilton, Ont., has had 120 employes enlist for overseas service with the Canadian Expeditionary Force.

The City of Calgary, Alta., has passed a daylight saving bylaw, and the Calgary Municipal Ry. has been operated under the new time since May 7.

The Manitoba Public Utilities Commission has heard considerable further argument as to the expediency of compelling the Winnipeg Electric Ry. to operate its cars across the Arlington bridge, and decided May 10, to take the whole matter again into consideration. The question hinges upon what are adequate safety appliances on the cars.

The Winnipeg City Council, on April 24, adopted the daylight saving plan, and passed a bylaw declaring it in operation. The Winnipeg Electric Ry. started operating its cars in accordance therewith April 26. The Winnipeg, Selkirk & Lake Winnipeg Ry. cars to Selkirk and Stonewall continued to be operated on standard time.

The British Columbia Electric Ry. put a new time table in force April 10, between New Westminster and Chilliwack, the principal features of which are the allowance of more trains at the terminal, the last trains leaving each end an hour later than formerly, and the running of one train a day in each direction through between Vancouver and Chilliwack.

The Ontario Legislature has authorized the city of Windsor, and the towns of Walkerville, Sandwich, Ford City and Ojibway, to join in the formation of one public utilities commission to supervise all public utilities within their boundaries. It is claimed that this will effect some saving of expense, and that the unity of policy over a large area, will be of very great benefit to the area involved.

The Quebec Appeal Court, gave judgment, May 29, affirming the decision imposing a penalty of \$1,000 on M. Martin, Mayor of Montreal, for ignoring an interlocutory injunction restraining him, and the Montreal Board of Control from dealing with any proposed contract between the city of Montreal Tramways Co. The proposal referred to was the Hebert contract, which was before the Board in June, 1915.

The hearing of the case of Moodie against the Cataract Power Co., was concluded before an Ontario Supreme Court judge at Hamilton, Ont., May 6, the action being dispensed with costs. The

plaintiff, John Moodie, sought to recover \$6,624 alleged unpaid dividends on shares held by him. The Cataract Power Co., is one of the constituent companies of the Dominion Power and Transmission Co. The judge held that the plaintiff had failed to justify his claim.

The British Columbia Electric Ry. is substituting clear for ground glass windows in the partition between the motor-men's vestibule and the passenger section of its cars. Some 20 cars had been altered up to May 8, and if the experiment is approved by the public, the remainder of the cars will be altered accordingly. The opaque glass was put in some years ago because of a government order, but W. G. Murrin, General Superintendent, says it has many disadvantages.

An arrangement is reported to have been made between the British Columbia Government and the British Columbia Electric Ry., under which the company's employes are to have one day off work in every eight days, the agreement to come into effect June 15. The men are, as far as possible, to have short days on Sundays, but the entire working force is to hold itself in readiness for work on all holidays in addition.

A joint committee representing the municipal councils of Windsor and Walkerville, Ont., met May 18, to discuss a proposal to run motor busses on the streets in opposition to the Sandwich, Windsor & Amherstburg Ry.'s electric cars. Council has advised that a motor bus line is not a railway within the meaning of the agreement between the councils and the railway company, and may be operated by them without violating the franchise.

Brantford Municipal Ry. employes have asked the Department of Labor for the appointment of a conciliation board to enquire into conditions of service. Among other things which the men desire are one week holiday with pay, seniority in runs, abolition of outside running board on open cars, bi-weekly inspection, increased pay, shorter hours after the war, free uniform after one year of service, and abolition of charge for first \$10 worth of tickets.

The Manitoba Court of Appeal reserved judgment recently in the Winnipeg Electric Ry.'s appeal against an order of the Manitoba Public Utilities Commission, granted on the application of Winnipeg City Council, requiring the company to prevent the escape of electric current into the city's water pipes. The grounds on which the appeal were based were that the Public Utilities Act is unconstitutional, the Commissioners having the powers of a Superior Court judge, which powers can only be exercised by an officer appointed by the Dominion Government; and further, provided the Act were constitutional, then that the Commissioner exceeded his powers in making the order, the company's railway having been built in accordance with plans approved by the city.

Sale of International Transit Co.—The Algoma Steel Corporation has sold to the Great Lakes Power Co. its power plant and also the International Transit Co.'s street car line and ferry franchise at Sault Ste. Marie, Ont., but not the Trans St. Marys Traction Co.'s street car line in Sault Ste. Marie, Mich. The latter is still being handled by the Lake Superior Corporation's interests. James Heyworth, Harvester Building, Chicago, is the principal person interested in the Great Lakes Power Co.

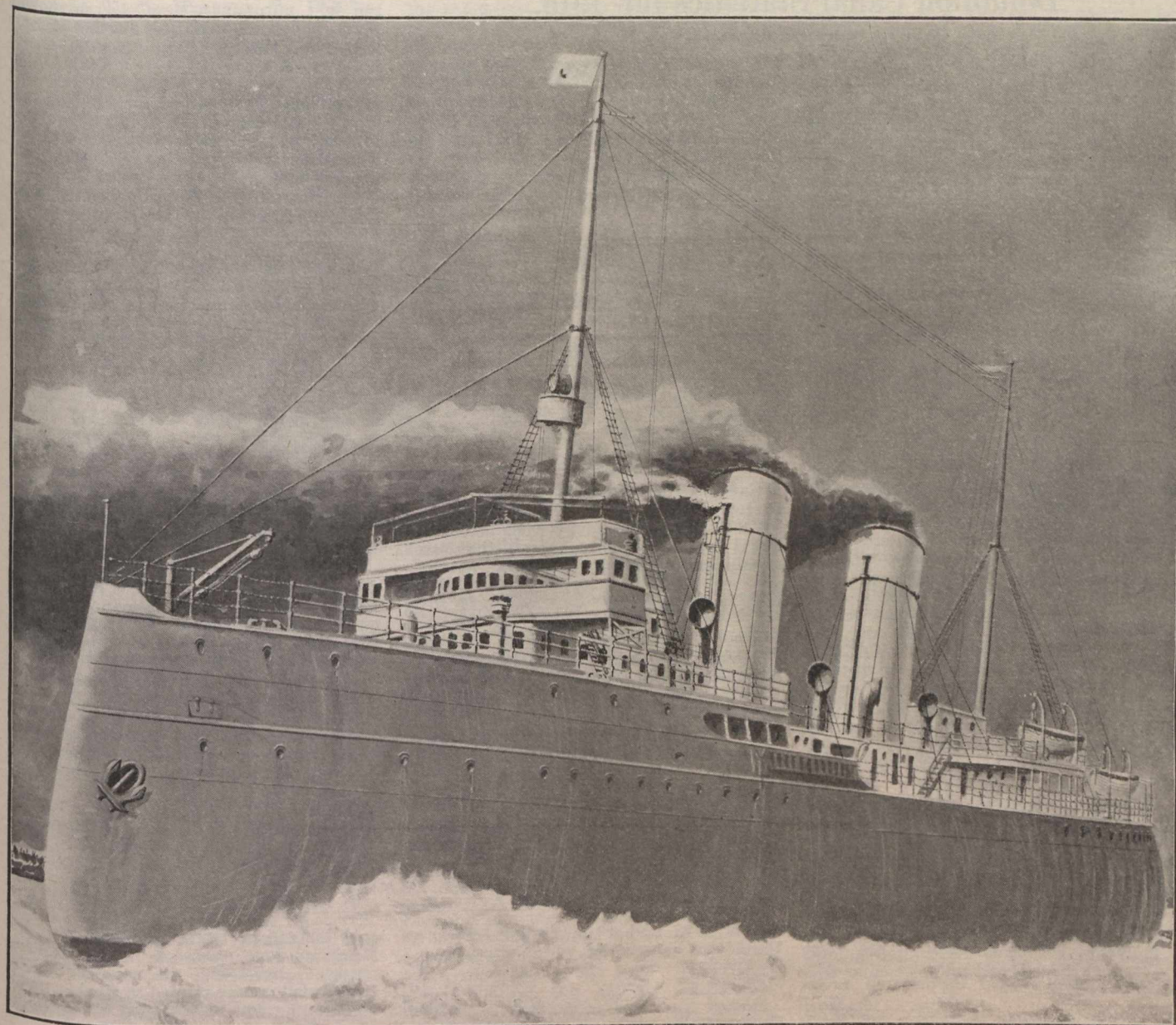
Marine Department

Launching of Icebreaking Steamship J. D. Hazen.

The Dominion Government icebreaking steamship, J. D. Hazen (named after the Minister of Marine), which was very fully described, with plans, in Canadian Railway and Marine World for May, was most successfully launched at Canadian Vickers, Ltd., works at Longue Pointe, Montreal, on May 15, at 2.30 p.m. The

two mechanical triggers, which were kept in position by an arrangement of levers and connected with two cords which led up to the launching platform. When Lady Borden cut the ribbons on the platform, this operated to release the two cords which held the triggers. The latter dropped, and the vessel started down the

Lewis referred to the fact that the building they were in had only a few years ago been a part of the St. Lawrence River's course, from which more than 36 acres had been reclaimed and filled in by dredging. He spoke of the work already accomplished in repairing a British cruiser and in building a number of submarines



Icebreaking Steamship J. D. Hazen.

christening was performed by Lady Borden, who was accompanied by the Prime Minister, Sir Robt. Borden, in the presence of a large company of invited guests. Lady Borden was presented by Canadian Vickers, Ltd., with a gold chain with a large diamond attached.

All the arrangements for the launching were carried out most successfully. At 7 a.m. the keel blocks on which the vessel was sitting were removed, so that she rested on her launch ways. On the arrival of the launching party, two bilge blocks on each side of the vessel were removed, and she was then held only by

ways. No hydraulic power was used. A novel checking arrangement was introduced. The vessel was checked, when off the ways, by chain drags fastened to one side of her only by flexible wire cables. This was arranged so that when the strain was taken on the ropes the vessel would not be deflected from her normal course.

After the launching the invited guests were entertained at luncheon in the moulding room, speeches being made by F. Orr Lewis, President of Canadian Vickers, Ltd., Sir Robt. Borden and Hon. C. J. Doherty, Minister of Justice. Mr.

for the British Navy.

Sir Robt. Borden referred, among other things, to the ancient pre-eminence of Canada in shipbuilding, more especially to what had been done in his native province of Nova Scotia. He saw no reason why Canada should not go forward to the undertaking of building steel ships, and why she should not rival in the future the record made by Nova Scotia in the past in building wooden vessels. He quoted a remark made to himself in Great Britain by the manager of one of the greatest shipbuilding companies there, that as the years roll by the cost of build-

ing steel ships in Canada will more and more approximate to the cost in the United Kingdom. He pointed out the great benefit to other industries which would result from the fact that a flourishing shipbuilding industry is nearly always associated with the products of iron and steel. The development here of a large shipbuilding industry would also be a great asset for Canada and the Empire should another great war occur.

P. L. Miller, General Manager, and H. Driver, Secretary-Treasurer, Canadian

Vickers, Ltd., who were in general charge of the arrangements for the launching, and for the entertaining of the guests, succeeded admirably, everything passing off most successfully and without a single hitch.

As stated in previous issues, the J. D. Hazen was intended for icebreaking work on the St. Lawrence River, particularly at Cap Rouge, but it is now said that she is to be transferred to the Russian Government. The vessel was designed by C. Duguid, Architect, Marine Department.

Canada Steamship Lines Ltd. Notes.

The s.s. Natironco, which was bought last year, has been thoroughly overhauled and had new boilers installed at the company's works at Sorel.

The s.s. Rosedale, which was given an extensive overhaul at Port Arthur recently, left Quebec May 16 for London with a cargo of deals.

The company is building a tug at Sorel for towing barges through the Welland Canal. She will be 65 ft. long, with 18 ft. beam, and will have fore and aft compound engines.

In consequence of the fire which occurred last autumn, a new electric power plant has been installed at the Manoir Richelieu, Murray Bay, and the entire hotel has been rewired.

The s.s. Syracuse, which will run this season between Quebec and Chicoutimi, on the Saguenay Division, has been fitted for salt water service at the company's works at Sorel by putting in surface condensers and fresh water tanks.

On account of the abnormally high price of fuel oil, owing largely to the

Dominion Canal Statistics for 1915.

The total traffic through Canadian canals during 1915, was 15,198,803 tons, a decrease of 21,824,434 tons from 1914.

The distribution among the various canals was:—

	Tons.	Increase Tons.	Decrease Tons.
Sault Ste. Marie..	7,750,957	.....	19,848,227
Welland.....	3,061,012	.....	799,957
St. Lawrence....	3,409,467	.....	982,026
Chambly.....	478,707	41,802	.....
St. Peters.....	2,895	.....	51,285
Murray.....	30,728	.....	53,179
Ottawa.....	272,370	.....	62,762
Rideau.....	120,781	.....	30,958
Trent.....	49,904	.....	17,811
St. Andrews....	21,982	.....	20,031
Total.....	15,198,803	41,802	21,866,236

The decrease at Sault Ste. Marie, which was equal to 91% of the whole, was 19,984,227 tons, and of this, 18,798,986 tons, or 94.9%, was U.S. traffic. The opening of a new lock on the U.S. side led to the diversion of a large amount of business which had in previous years taken the Canadian channel. This was particularly true during the autumn, when extreme pressure prevailed in the movement of Canadian wheat.

Following is a comparison of the freight movement, by months, in 1914 and 1915:—

	1914 Tons.	1915 Tons.
January.....	494	.....
April.....	554,111	398,350
May.....	5,307,123	1,426,805
June.....	6,136,657	1,472,670
July.....	6,339,831	1,587,611
August.....	6,261,380	1,829,021
September.....	6,069,946	2,424,717
October.....	4,660,484	3,354,829
November.....	1,470,471	2,278,245
December.....	222,740	426,555
Total.....	37,023,237	15,198,803

The net tonnage in 1915, eliminating all duplication, was 12,334,779. Of this, 4,931,954 tons were Canadian, and 7,402,825 tons U.S. Having regard, however, to Canadian traffic which passed through the U.S. canal at Sault Ste. Marie, the actual net tonnage of Canadian commerce was 6,734,223.

Traffic in 1915 was distributed among the various classes of commodities as follows:—

	1914 Tons.	1915 Tons.
Products of agriculture..	8,522,327	5,182,525
Animal products.....	19,301	11,289
Products of the forest...	1,678,925	1,096,111
Products of the mine....	39,951,661	1,494,778
Manufacturers.....	1,881,699	7,414,100
Total.....	37,023,237	15,198,803

The tonnage of Canadian and U.S. traffic in 1914 and 1915 was:—

	1914 Tons.	1915 Tons.
Canadian.....	9,382,206	6,789,423
United States.....	27,641,031	8,409,380

The foregoing figures apply to traffic through Canadian canals. A considerable volume of Canadian commerce has always passed through the U.S. canal at Sault Ste. Marie. In 1915 it amounted to 1,802,269 tons, which, added to the 6,789,423 tons transported through Canadian canals, creates a final total of 8,591,-

692 tons. As a matter of fact, the net tonnage of Canadian traffic was 144,183 tons greater in 1915 than in 1914.

In 1914 Canadian traffic through Canadian canals was equal to 25.3%. In 1915 it was 44.7%.

The proportions of Canadian and U.S. tonnage through the Canadian canals were:—

Canals.	Total Traffic	Canadian Tons.	Per Cent.	U.S. Tons.	Per Cent.
Sault Ste. Marie.....	7,750,957	2,561,734	33.0	5,189,223	67.0
Welland.....	3,061,012	1,426,256	46.6	1,634,756	53.4
St. Lawrence....	3,409,467	2,024,755	59.3	1,384,712	40.7
Chambly.....	478,707	292,191	61.0	186,516	39.0
St. Peters.....	2,895	2,895	100.0	.....	.....
Murray.....	30,728	27,942	90.9	2,786	9.1
Ottawa.....	272,370	267,406	98.1	4,964	1.9
Rideau.....	120,781	114,358	94.7	6,423	5.3
Trent.....	49,904	49,904	100.0	.....	.....
St. Andrews....	21,982	21,982	100.0	.....	.....
Total.....	15,198,803	6,789,423	44.67	8,409,380	55.33

Cargoes of Canadian wheat moved eastward by water in 1915 totalled 170,117,861 bush., compared with 95,032,066 bush. in 1914. This passed the Sault canals as follows:—

	1914 Bush.	1915 Bush.
Through Canadian canal..	77,467,833	48,727,911
Through U. S. canal....	17,564,233	121,389,950
Total.....	95,032,066	170,117,861

There were also 9,967,941 bush. of Canadian wheat brought down in the form of flour making the final aggregate 180,085,802 bush.

The distribution of Canadian wheat in 1915 and 1914:—

	1914 Bush.	Per cent.	1915 Bush.	Per cent.
From Port Arthur, Fort William and Duluth.	10,283,166	10.8	4,025,010	2.4
To Montreal.....	24,864,466	26.2	25,315,999	14.9
Georgian Bay Ports.....	34,350,700	36.2	33,067,613	19.4
Other Canadian Ports.....	25,533,734	26.8	107,709,239	63.3
Buffalo.....	.....	.....	.....	.....
Total.....	95,032,066	.....	170,117,861	.....

For 1915 and 1914, freight rates on Canadian waterborne wheat were:—

To Montreal:	1914.	1915.
Per ton per mile.....	0.124c.	0.132c.
Per bushel.....	4.58 c.	4.99 c.
Per ton.....	\$1.52	\$1.66
To Georgian Bay ports:		
Per ton per mile.....	0.095c.	0.282c.
Per bushel.....	1.46 c.	3.54 c.
Per ton.....	48.61 c.	\$1.18
To other Canadian ports:		
Per ton per mile.....	0.065c.	0.123c.
Per bushel.....	1.48 c.	2.84 c.
Per ton.....	49.29 c.	94.80 c.
To Buffalo:		
Per ton per mile.....	0.061c.	0.159c.
Per bushel.....	1.63 c.	3.97 c.
Per ton.....	53.72 c.	\$1.32

The New Brunswick Telephone Co. held its annual meeting at Fredericton, May 18, when the report showed that the business had been satisfactory for the year, although the general growth had not been up to the standard shown before the war. It was decided to continue the payment of the 8% dividend as hitherto.

demand from the munition factories, the company will use coal instead of oil on its St. Lawrence River steamships, Rapids King and Rapids Prince, this season.

The s.s. Acadian and the s.s. D. A. Gordon are being overhauled at Longue Pointe, Montreal, after 12 months charter on the Atlantic coast. They and the s.s. Glenellah, which have been carrying coal from New York to St. John's, Nfld., will load in Montreal with deals for London.

The company is fitting up a dock at Quebec for handling coal for its vessels, which, owing to the shortage of ocean going tonnage, will this year use Ohio

coal instead of being supplied from the Maritime Provinces. A Brown hoisting machine, heretofore in use at Sarnia, Ont., is being transferred to Quebec and a similar one will be installed at Sarnia.

Dominion Assistance for Shipbuilding.
An Ottawa press dispatch says that a subcommittee of the cabinet is to be appointed to deal with the question of the advisability and the means of federal assistance for the development of a shipbuilding industry in Canada. This question was discussed on several occasions during the recent session, principally on behalf of Canadian shippers, who have been encountering difficulties through the shortage of ocean tonnage. The appointment of a ministerial committee to deal with the question will be followed by a careful study of the problems surrounding the building up of a Canadian shipbuilding industry.

Sale of Canadian Northern Steamships to Cunard Steamship Co.

The Canadian Northern Steamships, Ltd., a subsidiary of the Canadian Northern Ry., has sold its interests to the Cunard Steamship Co., the arrangement having been negotiated by D. B. Hanna, Second Vice President, C. N. Steamships, and Sir Alfred Booth, Chairman of the Cunard Co., much of the work in connection with the negotiations having been carried out in England by the C.N.R.'s European Traffic Manager, W. Phillips, acting under Mr. Hanna's instructions. The following announcement was made by Mr. Hanna early in May:—

"An agreement of great importance to the development of trade and passenger traffic with Canada has been concluded between the Canadian Northern Ry. and the Cunard Steamship Co., which provides for a very close working arrangement between the two parties. The Cunard Co. will take over the steamships which were running before the war from Avonmouth and Rotterdam, and will maintain service between Canada and ports in the United Kingdom and on the European Continent. The C.N.R. throughout the vast territory covered by its railway lines from the Atlantic to the Pacific coast will direct its efforts in favor of the Cunard Line, while the Cunard Line will in the same way work in favor of the C.N.R. The various Canadian services of the Cunard Line and the C.N.R. will thus in effect become a single transportation unit between Europe and Canada. Steamship services on the Pacific Ocean are also in contemplation. The agreement becomes operative at once, but its full effect will not be seen until after the conclusion of the war. The C.N.R. will be on land, what the Cunard Steamship Co. is on water, in the formation of a complete system of freight and passenger transportation to and from the Dominion, and ports in the United Kingdom and the European continent."

Canadian Northern Steamships Ltd. was incorporated under the Dominion Companies Act in Oct., 1909, with an authorized capital of \$2,000,000, and office at Toronto, with the following provisional directors, all of whom are connected in various capacities with the Canadian Northern Ry. Co.: F. H. Phippen, K.C., G. G. Ruel, G. F. Macdonnell, R. H. M. Temple and A. J. Reid. Early in 1910, three steamships were acquired, the Heliospolis, Cairo and Volturmo. The first two named were built at Glasgow, Scotland, for the Egyptian Mail Steamship Co., and had been operated between Marseilles, France, and Alexandria, Egypt. They were sister vessels, of the following dimensions,—length over all 545 ft., breadth 60 ft. 3 ins., depth to shelter deck 38 ft., tonnage 11,000, i.h.p. 18,000. They were equipped luxuriously, and were each driven by three sets of Parsons' compound steam turbines, and after a thorough overhauling and some slight alterations to make them suitable for Atlantic travel, were renamed Royal George and Royal Edward, respectively, special permission having been granted for the use of the word Royal.

The Volturmo was purchased from the Northwest Transport Line, a concern in which Sir William Mackenzie was interested. She was built at Glasgow, Scotland, in 1906, and was of steel. Her dimensions were, length 340 ft., breadth 43 ft., depth 20.7 ft. tonnage 3,581 gross. She had been operated under charter by

the Uranium Steamship Co., between Halifax, New York and Rotterdam.

The company's Atlantic steamship service was inaugurated between Canada and England, May 13, 1910, when the s.s. Royal Edward sailed from Avonmouth, which place had been selected as the British port, for Montreal. She arrived at Quebec early in the morning of May 19, and at Montreal during the evening of the same day. This service was continued regularly, with Montreal and Halifax, as the summer and winter ports respectively, until the outbreak of war, except during the winter of 1913-14, when St. John was the winter port.

The s.s. Royal George, when making her last trip up the St. Lawrence before the winter of 1912, ran aground about a mile east of Point St. Lawrence, Island of Orleans, Nov. 5, and was considerably damaged in the bows. This however was soon repaired and she was replaced in service. The s.s. Volturmo was burned at sea Oct. 10, 1913, and a number of passengers and some of the crew lost their lives, the captain being very highly commended for bravery. In Dec., 1913, the s.s. Principe di Piedmonte, built at Sunderland, Eng., in 1907, with a tonnage of 6,365 gross and 4,044 register, was purchased, renamed Principello and leased to the Uranium Steamship Co. in place of the Volturmo, and in May 1914, Principello Steamships Ltd., was incorporated under the Dominion Companies Act, with \$150,000 authorized capital, to own the s.s. Principello.

On the outbreak of war in Aug. 1914, the steamship business carried on by the Uranium Steamship Co., of which company the Mackenzie and Mann interests were practical proprietors, came to an end; the s.s. Uranium was chartered to Canadian Northern Steamships Ltd., and Campanello Steamships Ltd. was incorporated under the Dominion Companies Act with \$100,000 authorized capital, to take over the s.s. Campanello. The Royal Edward and Royal George were requisitioned by the Admiralty, thus leaving the company with three steamships, Campanello, Principello and Uranium in its service. The s.s. Royal Edward, which was first utilized in the transportation of Canadian troops to Europe, was later used as a prison vessel for interned Germans, off the English coast, and later again served as a transport for troops between England and the Dardanelles, and while on her second voyage as such, was torpedoed and sunk in the Aegean Sea, Aug. 14, 1915, when about 1,000 lives were lost, including the captain, Lieutenant Wootten, R.N.R., who had been in command of her ever since her acquirement by Canadian Northern Steamships Ltd.

Canadian Lights and Fog Signals.—The Marine Department has issued three books of lists of lights and fog signals along the Atlantic Coast, including the Gulf of St. Lawrence to the head of ocean navigation; on the inland waters of the Dominion between Montreal and British Columbia, and on the Pacific Coast and the rivers and lakes of British Columbia. The lists are corrected to Apr. 1, and are distributed free to mariners on application.

G. D. Curtis, heretofore Manager, Western Department, Adams Ex. Co., has been appointed Vice President and General Manager.

Stranding of s.s. Camosun Investigated.

An investigation into the stranding of the Union Steamship Co. of British Columbia's s.s. Camosun, near Lima Point, Digby Island, B.C., Mar. 7, was held at Victoria recently, by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by Capt. R. Ridley and H. Parsons as nautical assessors. The court found that the stranding was entirely due to an abnormal current setting to the northward after a succession of southeast winds, and that in no sense can the master, E. A. Dickson, or any member of the crew, be blamed for the accident, and returned them their certificates with a considerable amount of satisfaction. The court also expressed its appreciation of the manner in which the Managing Director of the owning company spoke of the master of the Camosun, and stated that if those occupying the important and responsible position of steamship managers would take similar action, it might probably mean that accidents to steamships on British Columbia waters would be less frequent. The court also recommended that owing to this accident, a notice to mariners should be issued warning them that after a continuation of southeast or southerly winds, a set to northward must be expected along the shores of Digby Island. This, to the knowledge of the court, is a well known fact among the local fishermen in that district.

The s.s. William C. Moreland, which was formerly owned by the Interstate Steamship Co., Cleveland, Ohio, has been purchased by Canada Steamship Lines, Ltd., and is being repaired and overhauled at Superior, Wis. She was built there in 1910, and on her second trip, when downbound with iron ore, went ashore near Eagle River in Lake Superior, Oct. 18, 1910. The loss on the hull was \$420,000 and on the cargo \$40,000. At the time of the loss it was stated that she had been broken in two in two places, and that while wrecking operations might succeed in floating a portion of her, it was unlikely, the water being about 200 ft. deep within 30 ft. of where she stranded. She was abandoned to the underwriters, and later sold to the Reid Wrecking Co., Sarnia, salvaged and taken to Port Huron, where she was patched up sufficiently to allow of her being towed to Superior. Her dimensions were, length 580 ft., breadth 58 ft., depth 32 ft.; tonnage, 7,514 gross, 5,803 register. She was equipped with triple expansion engines with cylinders 24, 39 and 65 ins. diam. by 42 ins. stroke, supplied with steam by a single Scotch boiler 11½ by 16 ft.

The Dominion Government and Neutral Vessels.—The United States Secretary of State has officially announced that the Dominion regulations regarding the searching of neutral vessels are not intended by the Dominion Government to be applicable to vessels at river and lake ports, and any instructions that may have been issued in that behalf have been cancelled, but the rules will be enforced at all seaports.

The Dominion Government s.s. Quadra, which was sunk in collision with the C.P.R. s.s. Charmor, Feb. 26, off the entrance to Nanaimo harbor, has been raised by the Vancouver Dredging & Salvage Co., which bought the wreck. She was taken to Vancouver after raising, for examination.

Steel Shipbuilding and a Mercantile Marine for Canada.

In an address to the Canadian Manufacturers Association's Montreal Branch recently, Thos. Cantley, President and General Manager, Nova Scotia Steel & Coal Co., New Glasgow, N.S., dealt with the extraordinarily increased freight rates for ocean traffic, owing to the steadily decreasing tonnage available, and stated that so long as the war continued, no relief could be expected from outside sources. He pointed out that Canadian shipping only carried a small fraction of the lake freights, about one tenth of the whole of the produce sent from Canadian ports. He outlined the history of the up-building of the railways in the Dominion, and deplored the fact that the Government had not carried out a similar policy of assistance in regard to marine transportation. The canal system had cost over \$100,000,000 since confederation, but it was open to competitors, and over four-fifths of the traffic passing through the canals originated in the United States, while less than one-third of the vessels were Canadian. The Dominion had also spent \$150,000,000 on aids to navigation on the coast and inland waters, which were used by all in common, but the Government had done practically nothing towards building up the shipbuilding industry. There are a few Canadian ship yards equipped for the building of steel vessels, but they are all on the Great Lakes, and none on the Atlantic seaboard. He made comparisons in the output of wooden ships in the Maritime Provinces from 1874, when 190,756 tons were built in a year, and the tonnage on the register was 1,158,363, down to 1914, when the vessels built in the year were 43,436 tons, and the tonnage on the register was 932,422. He declared that he had no faith in any scheme for providing greater or more efficient transportation either through Government ownership, time charter or operation of a tramp steamer fleet, or by any other form of attempted control of ocean traffic by the Government, but considered that the Government would be justified in making a considerable expenditure by way of aiding in the development of shipbuilding at present. The iron and steel industry of Canada could never have reached the present output capacity save for the fostering influence of the combination of tariff protection and bounty. Steel shipbuilding on a comprehensive scale can be

developed if the Government is prepared to grapple with the matter in a broad and statesmanlike way. It is generally admitted that it requires from five to ten years to build up any good manufacturing organization, and this makes it necessary that any plan of assistance should be guaranteed for a period long enough for any new yards to get their organization established. Assistance might take the form of a rebate of duties paid on materials entering into the construction of a vessel, direct aid by way of bounty, or a combination of both. If vessels built outside Canada are to be admitted free to Canadian registry and trade, then at least an amount equal to the duty imposed on the material entering into the construction of Canadian built vessels should be returned to the builder. If the Government were to adopt the plan of ordering naval vessels and at the same time encourage mercantile construction, shipbuilding would expand rapidly, and Canada would the sooner be able to build naval tonnage at prices closely approaching those of other countries. Other matters dealt with were, marine insurance, inspection of machinery, re-casting of navigation laws, etc.

The question of aid to shipbuilding came up for discussion in the House of Commons, May 16, when immediate action by the Government was advocated in order to establish the building of steel vessels as a permanent industry. It was urged that the bonusing of steel vessel building was a natural corollary of bonusing the steel industry. The Prime Minister stated that the matter was being considered by the Government, but if a start were made now, either by way of subsidy or by Government ownership and construction, by the time manufacture was actually started the war might be over and the present premium on shipping be discounted by the return to normal conditions. He stated that from information he had received in England, he thought that in about 15 years vessels could be built as cheaply in Canada as in Great Britain. Several suggestions had been put forward by various companies interested in shipbuilding, but the Government did not feel justified in presenting any definite proposal to Parliament.

The name of the s.s. Onaping, no. 88-623, registered at Windsor, as owned by John Charlton, Lynedoch, Ont., has been changed to Lucknow. She was formerly a sailing vessel and was built at Saginaw, Mich., in 1870.

Steamship Service Between Prince Edward Island and the Mainland.

Canadian Railway and Marine World for May gave very full particulars of the withdrawal from business and of the new Charlottetown Steam Navigation Co.'s arrangements for steamship service between Prince Edward Island and the mainland. Some further particulars are now available. As stated in our last issue, the s.s. Northumberland, which formerly ran between Summerside and Pointe du Chene, and latterly between Charlottetown and Pictou, has been sold by the C. S. N. Co. to the Dominion Trade and Commerce Department, which has transferred her to the Canadian Government Railways, under whose management she will run between Summerside and Pointe du Chene as long as that route can be navigated this year. She will be under command of Capt. A. Cameron, who was in command of the s.s. Empress last year, and prior to that vessel being built commanded the s.s. Northumberland, having been in the service for many years.

The service between Charlottetown and Pictou, N.S., heretofore performed by the s.s. Northumberland, will be performed by the Canadian Government Railways car ferry s.s. Prince Edward Island and the D.G.S. Stanley. The s.s. Prince Edward Island, as previously stated, has been built to run all the year round between Carleton Point, P.E.I., and Cape Tormentine, N.B., as soon as the terminals at those places are finished, which is expected to be before next winter.

The steamships Prince Edward Island, Stanley and Northumberland will be under the immediate charge of Capt. C. T. Knowlton, Superintendent of Ferries, Canadian Government Railways, Moncton, N.B., who reports to the General Superintendent there, J. K. McNeillie. The business handled by these vessels will be attended to by Canadian Government Railways departmental officials.

The s.s. Empress, heretofore on the Summerside-Point du Chene route, has been sold by the Charlottetown Steam Navigation Co. to the C.P.R., and was taken recently from Charlottetown to Halifax, N.S., where she was put in dry-dock. She will be run across the Bay of Fundy, between Digby, N.S., and St. John, N.B., replacing the s.s. Yarmouth and giving a faster service. Captain Walsh, Assistant Manager, Canadian Pacific Ocean Services, Ltd., Montreal, is in charge of the Bay of Fundy service.

List of Steam Vessels Registered in Canada During April, 1916.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner	
126198	Case	Windsor, Ont.	Cleveland, Ohio	1889	286 0	42 5	22 0	2309	1347	130 sc.	W. N. Gatfield and Maisey, Sandwich, Ont.
138094	Henry B. Hall	Montreal	Detroit, Mich.	1881	220 0	35 0	17 6	1190	618	95 sc.	A. H. Lomer, Montreal
137899	M. Stewart (1)	Toronto	Buffalo, N.Y.	1899	58 0	16 0	6 0	52	32	27½ sc.	G. Osler and M. Lash, Toronto
137897	Modello	"	Kingston, Ont.	1915	66 4	12 2	4 8	46	29	6 sc.	Lake Simcoe Navigation Co., Toronto
137898	Riverton (2)	"	Bay City, Mich.	1896	451 0	46 6	23 1	4423	2684	196¾ sc.	Mathews Steamship Co., Toronto
138093	W. B. Morley	Montreal	Marine City, Mich.	1892	248 0	42 2	23 0	1913	1087	107½ sc.	A. Robineau, Montreal
130980	Willrose	Collingwood, Ont.	Collingwood, Ont.	1915	60 5	15 8	6 3	49	30	10½ sc.	W. Rose, Meaford, Ont.

(1) Formerly A. M. Stewart.

(2) Formerly L. C. Waldo.

List of Sailing Vessels and Barges Registered in Canada During April 1916.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner	
131210	Gwendolen Warren	Liverpool, N.S.	Schr.	Liverpool, N.S.	1916	125 0	30 8	10 7	274	F. K. Warren, Halifax, N.S.
138135	Josephus	Quebec, Que.	Schr.	St. Romuald, Que.	1900	76 5	24 0	6 8	72	W. Guimont, Matane, Que.
137960	Lobnitz Rock Breaker No. 2	Vancouver, B.C.	Dredge	Matane, Que.	1915					
				Vancouver, B.C.	1913	100 4	38 0	8 8	512	Minister of Public Works, Ottawa
134178	Winnifred Lee	Shelburne, N.S.	Schr.	Shelburne, N.S.	1916	106 5	24 0	10 3	77	G. A. Buffett, Grand Bank, Nfld.

Atlantic and Pacific Ocean Marine.

The New Zealand Shipping Co.'s s.s. Matatua, which was damaged by fire and explosion at St. John, N.B., recently, has been refloated and temporary repairs have been undertaken locally.

The British s.s. Ennisbrook, from Quebec outward bound, was caught in the ice near Glace Bay, N.S., May 16, and driven ashore. She was floated May 19 and proceeded to Sydney, N.S., in tow of the Douglas H. Thomas.

The British s.s. Hendon Hall, which sailed from Louisburg, N.S., Apr. 11, for Rotterdam, has been sunk. She was owned by the West Hartlepool Steam Navigation Co., and has been on the Canadian route for some time.

The Oceanic Steam Navigation Co. (White Star Line) reports a very successful year during 1915, with a surplus of \$9,841,425. This is in addition to the certain profits in excess of a certain percentage, payable to the British Government. The dividend of 65%, which dropped to 35% in 1914, has been resumed.

The Canadian Ex. Co. has been given judgment for \$10,800 due, and \$7,200 in lieu of notice, against the Hamburg-American Steamship Co., for rent of offices in the Canadian Express Building, Montreal. The company ceased to do business in Canada on the outbreak of war, and closed its offices.

The White Star s.s. Cymric, while en route from New York to a British port, was torpedoed off the Irish coast, May 8. An attempt was made to run her into an Irish port before she sank, but this was not successful. Five lives were lost in the explosion of the torpedo, but all the other members of the crew were saved.

The C.P.R. s.s. Empress of Asia arrived at Vancouver, May 6, from Hong Kong, on her first trip since being released from Admiralty service, in which she has been constantly engaged since the commencement of war. She was actually released about the beginning of the winter, and has since been thoroughly overhauled and refitted.

The Dollar Steamship Co. is reported to have purchased the British s.s. Strathardle from Burrell & Sons, Glasgow, Scotland, for operation on the Pacific Ocean between Vancouver, B.C., and the Orient. The company's s.s. Robert Dollar is reported to have been sold to Japanese parties for \$1,000,000 and delivered to the new owners at Vladivostock.

A press dispatch from Copenhagen, Denmark, states that owing to the exceptional shortage of shipping, any vessels, so long as they float, are being pressed into service between Scandinavian ports. Two sailing vessels, it is said, which were built, one in 1776 and the other in 1786, have been overhauled and rigged and placed in service.

The s.s. Bayern opened the St. Lawrence navigation season, when she arrived at Montreal, May 1. She was formerly German owned, but was captured by the Italians in the early stages of the war, and is now being operated under the Italian flag as a freighter. The Allan Line s.s. Sicilian was the first passenger vessel to arrive in the St. Lawrence, landing passengers at Quebec, May 2.

The Battle Line s.s. Eretria was sunk, presumably by a torpedo, near France, May 12. She was owned by the Steamship Eretria Co., Ltd., Rothesay, N.B., controlled by Wm. Thomson & Co., and was one of a number of vessels controlled by this firm, all with Grecian names. She

was built at Glasgow, Scotland, in 1901, and was screw driven by engine of 303 n.h.p. Her dimensions were, length 341 ft., breadth 47½ ft., depth 23.5 ft.; tonnage, 3,464 gross, 2,255 register. She was operated from Canadian ports to Great Britain, and has latterly been engaged in war transport service.

Maritime Provinces and Newfoundland.

The s.s. Cissy, under charter to the Dominion Coal Co., ran aground near St. Esprit, N.S., when en route to Sydney, May 1.

The Nova Scotia Steel & Coal Co. is establishing a shipbuilding plant at New Glasgow, the first vessel to be built at which will be for the company's own service.

The exports passing through St. John, N.B., for the fiscal year ended Mar. 31, were \$120,048,580, against \$43,872,932 for the previous year. The increase is largely due to the shipment of war supplies.

Liverpool, Eng., cablegram, May 23:—A provisional agreement for the amalgamation of the Cunard and the Commonwealth and Dominion Steamship Lines is officially announced. This extended the Cunard influence to Australia and New Zealand.

The Dominion Government has granted a subsidy to the St. John River Steamship Co., for a service to be given by the s.s. Elaine, between Gaspé Basin, Dalhousie and Campbellton. The report that the Government purchased, or chartered the vessel, is incorrect.

An order in council has been issued restoring the compulsory payment of pilotage dues in the pilotage district of Parrsboro, N.S. The original order in council providing for such compulsory payment was made in 1881, and cancelled in 1900.

The old shipping agency business of S. Cunard & Co., Halifax, N.S., has been transferred to the Robert Reford Co., Montreal, who will continue to act as agents for the Cunard Line, as well as the Donaldson, Thomson, Cairn and Crown Lines. S. Cunard & Co. were the first agents for the Cunard Line, which originated in Halifax.

The s.s. Hampstead, owned in St. John, N.B., will probably be placed on the Fredericton-Gagetown route this year, under a new ownership. It is reported that J. Williams, formerly chief engineer on the s.s. Victoria, destroyed by fire recently, will be the purchaser, and that the Dominion Government has promised a subsidy of \$800 for service over the route named.

Some attempts were made recently to salvage the s.s. Desola, formerly owned by the Reid-Donald Steamship Co., Montreal, which was practically destroyed by sulphuric acid and fire, and sunk, at St. John's, Nfld., some time ago. On account of the condition of the hull, which was found to be so corroded by the acid that it would not be able to stand any pressure, the attempts were abandoned.

The exports through St. John, N.B., by the C.P.R. for the winter season closed recently, were 916,103 tons, against 486,668 for the previous winter season. The total for April was 199,229 tons, against 66,084 tons in Apr., 1915. The imports by the C.P.R. for the same periods were: winter season 1915-16, 61,232 tons; for 1914-15, 59,107 tons; Apr., 1916, 14,410 tons; Apr., 1915, 8,816 tons. These fig-

ures do not include exports of grain and lumber.

The Shepody Navigation Co., which, as announced in our last issue, was offering its s.s. Wilfrid C. for sale, is requesting that the City of Moncton, N.B., pay the full subsidy for 1915, instead of only \$250 as suggested. It is claimed that the company performed the full service in the expectation of receiving the subsidy. F. W. Sumner, President, urged that the service be continued, as communication between the city and down river points was necessary.

The wooden vessel which is under construction at Meteghan, N.S., for A. B. Mackay, Hamilton, Ont., will be of the four masted schooner type and about 500 net tons, built to register 12 years in the American Bureau of Shipping. Her dimensions will be, length of keel 150 ft., beam 36 ft., depth of hold 13 ft.; tonnage, about 500 tons. She will be completed by about November. Construction is being carried on under the supervision of Capt. G. L. Wetmore, Yarmouth, N.S.

The Minister of Trade and Commerce announced in the House of Commons recently that he had been able to secure the s.s. Elaine for service between Campbellton and Gaspé ports, and that she would make fortnightly trips from Campbellton to Gaspé and from Campbellton to Paspébiac, one service through to Gaspé, and one service through to Paspébiac each week. The s.s. Elaine, which is registered as being owned by the St. John River Steamship Co., was built in 1888, and is screw driven by engine of 31 n.h.p. Her dimensions are, length 112.7 ft., breadth 23.8 ft., depth 7.8 ft.; tonnage, 272 gross, 156 register.

The C.P.R. has purchased the Charlottetown Steam Navigation Co.'s s.s. Empress, for its Bay of Fundy service. She was built at Newcastle upon Tyne, England, in 1906, and was operated by the company between Prince Edward Island and the mainland, from that time until the retirement of the company from business, as announced in our last issue. She is equipped with engine of 365 n.h.p. driving a screw, and her dimensions are, length 235 ft., breadth 34.2 ft., depth 20 ft.; tonnage, 1,342 gross, 612 register. She is said to have a speed of about 16½ knots, which is considerably faster than the s.s. Yarmouth, at present in the St. John-Digby service.

Province of Quebec Marine.

The Lachine Canal was refilled May 3, after having been empty for five days for repairs to water mains crossing under it.

A pontoon, 200 ft. long by 42 ft. deep, is to be placed at the Napoleon wharf, Quebec, this summer, for the safe mooring of steamships.

The name of the steamship William A. Haskell, no. 138,108, and William J. Averell, no. 138,108, of Montreal, have been changed to Joyland and Oatland respectively.

The Quebec & Levis Ferry Co.'s annual meeting was held at Quebec, May 16. Following are the directors for the current year:—C. H. Shaw, President; J. S. Thom, Vice President; A. Gourdeau, G. E. Allen Jones and L. C. Webster.

Steamer Colin W. Ltd. and steamer Marion W. Ltd., have been incorporated under the Quebec Companies Act, each with \$10,000 capital and office at Quebec, to carry on a general shipping business. The incorporators are L. C. Webster, H. Aird, Montreal, and W. Q. Stobo, H. C. Thorn and C. St. J. Griffis, Quebec.

The entrance piers to the graving dock under construction at St. Joseph de Levis, have been completed, and the excavation of the dock proper has commenced. The excavation will be to a depth of 60 ft., and the area will be about 138,000 sq. ft. The completed dock will be 1150 ft. long by 120 ft. wide at the base and 144 ft. at the top.

An order in Council has been passed approving a number of amendments to the bylaws for the Quebec pilotage district, the chief of which is the confirmation of the Minister of Marine as the pilotage authority, with power to appoint a Superintendent and Assistant Superintendents, who shall have immediate control of pilotage affairs under the direction of, and responsible to, the Minister.

An addition to the Montreal Harbor Commissioners' elevator 1, which was completed recently, was officially opened and machinery started, by Lady Borden, May 15. With this addition, Montreal has now the largest seaport elevator in the world. After the opening, a silver tray, with an engraving of the elevator on it, was presented to Lady Borden by W. G. Ross, Chairman of the Commissioners.

The Dominion Iron and Wrecking Co. has acquired the rights to the derelict s.s. Bavarian, formerly owned by the Allan Line Steamship Co., and which was wrecked at Indian Cove, Que., in 1906. J. G. Mayer, Quebec Manager of the company, is reported to have said that it is the intention to float and remove the wreck. The company has been successful in larger undertakings, notably in clearing the wreckage of the partially built Quebec Bridge which collapsed in 1907.

Ontario and the Great Lakes.

Canada Steamship Lines, Ltd., started its Toronto to Niagara service, May 8, with the s.s. Cayuga.

The Public Works Department received tenders May 30, for dredging at Port Maitland, the greater portion being required to be done by hydraulic dredge.

The Canadian Shipping Co.'s s.s. John B. Ketchum 2nd, which ran ashore on the

canal bank near Cardinal, Ont., May 7, was released May 10 with little damage.

The Bassett Steamship Co.'s s.s. Mariska lost her rudder during a heavy gale off Saginaw, Mich., May 11. She was taken into Detour, and later to Collingwood for repairs.

The Northern Navigation Co.'s s.s. Noronic has been chartered for a trip between Detroit, Mich., and the Georgian Bay, June 13, by a party of automobile engineers.

Canada Steamship Lines s.s. Aletha, which ran aground near Bath, May 1, on her first trip this year, to Picton, was released with comparatively small damage on the following day.

The service which has been in effect between Bay of Quinte ports and Charlotte, N.Y., for over 30 years, has been withdrawn, and the s.s. Caspian, now owned by Canada Steamship Lines, Ltd., has been transferred to other service.

The s.s. Centurion, owned by the Hopkins Transportation Co., Cleveland, Ohio, sank in the Livingstone Channel, Detroit River, May 17, after striking a bank some two miles above. She was refloated May 20, and was taken to Cleveland by the tug A. C. Harding.

The United States Lake Survey reports the levels of the Great Lakes in feet above tidewater for April, as follows:—Superior, 602.38; Michigan and Huron 579.92; Erie, 572.42; Ontario, 246.40. Compared with the average April levels for the past ten years, Superior was 0.84 ft. above; Michigan and Huron, 0.34 ft. below; Erie, 0.04 ft. above, and Ontario, 0.03 ft. above.

A deputation of business men from Chatham waited on the Minister of Public Works recently, to urge the dredging of the River Thames to a depth of 14 ft. from Chatham to the mouth of the river. A survey was made by the Government some time ago, and it was understood that the work was to be undertaken, but it is presumed that the war has postponed it for a time.

Press reports state that the Northern Navigation Co. will not operate a vessel on the through run between Georgian Bay ports and Cleveland, Ohio, this year. In

previous years, this service was given by the s.s. City of Midland, which was destroyed by fire last autumn, and for the current year, arrangements had been made with Canada Steamship Lines, Ltd., that the s.s. Rochester would take her place, but it is now stated that the Rochester will not be in service for the present owing to a lawsuit.

With the return of summer, the proposal to establish a dry dock at Owen Sound, is again to the fore. In the spring of 1915, F. F. Wood of Niagara Falls, since deceased, stated that a company to be named the Canadian Drydock & Shipbuilding Co. was to be organized for the purpose of locating a plant at Owen Sound, and that all the necessary financial arrangements had been completed, and negotiations were then proceeding with the Dominion Government with regard to a subsidy in aid being granted for a dock of the first class, instead of a second class type, as previously proposed. The ratepayers of Owen Sound have already passed a bylaw granting \$200,000 for the scheme. Since the death of F. F. Wood, the matter is being taken up afresh and hopes are being entertained in Owen Sound that something will be done.

Manitoba, Saskatchewan and Alberta.

The Peace River Tramway & Navigation Co.'s s.s. D. A. Thomas, was expected to be launched towards the end of May. She was built at Peace River Crossing, Alta., for operation during the summer, between Peace River and Vermillion Rapids. She has accommodation for 110 cabin passengers and about 300 tons of freight, and is equipped with engine of 800 n.h.p., with cylinders 20 by 84 ins. She is 165 ft. long with 35 ft. beam. J. P. Bucey has been appointed captain, and H. J. Hutchinson, chief engineer. The company is controlled by Baron Rhondda (D. A. Thomas), and its affairs are managed in Canada by C. F. Law, Vancouver, B.C.

British Columbia and Pacific Coast.

The Western Shipping Co., Ltd., has been incorporated under the British Columbia Companies Act, with \$40,000 authorized capital and office at Victoria, to build, own and operate steam and other vessels and to carry on a general navigation and transportation business.

Navigation has been reopened on the Fraser River between Prince George and Quesnel, a service between given by the motor boats Rounder and Circle W., each making two round trips a week. An automobile stage line is run by the Inland Express Co. between Quesnel and Barkerville twice a week.

It is reported that the Grand Trunk Pacific Coast Steamship Co. is providing stateroom accommodation for second class passengers on its steamships Prince George and Prince Rupert. Each vessel is to have 6 four-berth and 1 two-berth second class staterooms. The change is stated to have been made on the Prince Rupert, and to be in progress on the Prince George.

The Vancouver Shipmasters' Association is urging the installation of additional aids to navigation at various points along the coast. Among these are a fog signal at Kinnahan Islands, a lighted beacon on the rock at the entrance to Secret Cove, and a lighted beacon on the ledge of rock before Pender Harbor. It

Saulte Ste. Marie Canals Traffic.

The following commerce passed through the Saulte Ste. Marie Canals during April.

ARTICLES	U. S. CANAL	CANADIAN CANAL	TOTAL
Copper.....Eastbound.....Short tons			
Grain.....Bushels	2,144,744	1,430,880	3,575,624
Building stone.....Short tons			
Flour.....Barrels		25,260	25,260
Iron ore.....Short tons	693,591	181,716	875,307
Pig iron.....Short tons			
Lumber.....M. ft. b.m.		754	754
Wheat.....Bushels	16,207,085	4,654,832	20,861,917
General merchandise.....Short tons	19		19
Passengers.....Number		15	15
Coal, hard.....Short tons	100,800		100,800
Coal, soft.....Short tons	477,798	27,800	505,598
Flour.....Barrels			
Grain.....Bushels			
Manufactured iron.....Short tons	5,822	227	6,049
Iron ore.....Short tons			
Salt.....Barrels	31,999	14,000	45,999
General merchandise.....Short tons	19,762	9,438	29,200
Passengers.....Number		34	34
SUMMARY			
Vessel passages.....Number	530	168	698
Registered tonnage.....Net	1,721,949	378,445	2,100,394
Freight—Eastbound.....Short tons	1,216,228	350,687	1,566,915
—Westbound.....Short tons	608,982	39,465	648,447
Total freight.....Short tons	1,825,210	390,152	2,215,362

The Canadian canal opened April 18 and the U.S. canal opened April 20.

is suggested that the grounding of the s.s. Camosun on Digby Island recently might have been prevented if a signal had been placed on Kinnahan Islands.

Seamen employed on steamships sailing out of British Columbia are agitating for increases in pay and improvements in working conditions. They are asking as follows: deck hands \$55 a month for a 9 hour day, and 50c an hour overtime, Sunday and holiday work to be outside of ordinary duty; firemen, \$60 a month; stewards, an increase of \$10 a month. The matter is under consideration, and it is stated that the decision of Capt. J. W. Troup, Manager, B.C. Coast Service, C.P.R., will be accepted by the vessel owners.

Vancouver Island Marine, Ltd., has been incorporated under the B.C. Companies Act, with \$250,000 authorized capital and head office at Victoria, to carry on a general shipbuilding business, under the bill by which the Province is to grant aid to vessels built locally. C. J. V. Spratt, Victoria, is chiefly interested in the company, and it is stated that the building of one or more vessels for the off-shore lumber trade will be proceeded with as soon as possible. Plans have been prepared for a four masted barquentine, which type is considered the best for the trade. This is the first company formed to take advantage of the legislative aid.

The s.s. Algonquin, which was purchased recently from the Port Colborne and St. Lawrence Navigation Co., Toronto, a subsidiary of the Maple Leaf Milling Co., by A. B. Mackay, Hamilton, Ont., has been sold to the Wasie Steamship Co., Ltd., a subsidiary of the Nova Scotia Steel & Coal Co., New Glasgow, N.S. She is now being reclassified and refitted, but, at the time of writing, it has not been decided as to what route she will be operated over. She was built at Yoker, Scotland, in 1888, for Thomas Marks & Co., Port Arthur, Ont., and was sold in 1893 to the St. Lawrence & Chicago Steam Navigation Co., Toronto, and lengthened to her present full Welland Canal size. The latter company sold her to the Port Colborne & St. Lawrence Navigation Co. in 1913. She is of steel, divided into three compartments, and has hatches 24 ft. centres, and is equipped with triple expansion engines with cylinders 21, 33 and 54 ins. diam. by 36 ins. stroke, 1,000 i.h.p. at 70 r.p.m., and supplied with steam by two Scotch boilers under forced draught at 160 lbs. Her dimensions are, length 245 ft., breadth 40 ft. 1 in., depth 20½ ft.; tonnage, 1,806 gross, 1,172 register.

Wooden Shipbuilding in the Maritime Provinces.—Recent enquiries for the construction of six ocean going wooden barges of 3,000 tons dead weight capacity each within three months of placing the order, elicited the fact that owing to the difficulty of securing materials and labor, this could not be undertaken, but that three vessels of this type could be built. The cost was given as \$100 a registered ton, which is considered extremely high, and a further offer to build at cost plus 5% is under consideration.

The Buffalo & Fort Erie Steamship Co., Ltd., has been incorporated under the Ontario Companies Act, with authorized capital of \$100,000 and office at Fort Erie, to build, own and operate steam and other vessels, and to carry on a general merchandise and transportation business. The incorporators are, A. Fasken, D. McArthur, G. H. Sedgewick, J. O. Buckley and A. T. Struthers, Toronto.

Mainly About Marine People.

Richard Clancy, who has been in the Allan Line service for 32 years, has been appointed Port Agent, Canadian Pacific Ocean Services, Ltd., Quebec, Que.

D. R. Campbell, shipbuilder, Sydney, N.S., who died there recently aged 51, had been associated with the shipbuilding trade in Sydney for about 18 years.

W. C. Casey, General Agent, Passenger Department, Canadian Pacific Ocean Services, Ltd., Winnipeg, left during May for a two months trip to China and Japan.

James A. Allan, whose death was announced in our last issue, was a grandson of Capt. Alex. Allan, the founder of the Allan Line, and was connected with the service from early life. He was a director of the Allan Line from 1884 to 1909, and after the latter date took no active part in the business.

Capt. Edwin Dunn, a prominent lake navigator, for several years in command of Dominion Government fisheries protection steamships, died recently after a long illness. He was buried at Owen Sound, May 22. The last vessel under his command was the Vigilant, stationed on Lakes Ontario and Erie, and he retired to occupy a shore position for the Ontario Government, in 1907.

Joseph M. Shea, who has been appointed New England Passenger Agent, Canada Steamship Lines, Ltd., Boston, Mass., was born at Springfield, Mass., Feb. 14, 1879, and entered transportation service, June 24, 1899, since when he has been, to June 10, 1900, ticket agent, Boston and Maine Rd. and Central Vermont Ry., Brattleboro, Vt.; June 10, 1900, to Sept. 24, 1904, City Ticket Agent, G.T.R. and Central Vermont Ry., Boston, Mass.; Sept. 24, 1900, to May 1, 1916, Travelling Passenger Agent, same railways, Boston, Mass.

A. J. Blaisdell, who was appointed General Agent, Passenger Department, Canadian Pacific Ocean Services, Ltd., Shanghai, China, in January, died at Washington, D.C., May 10. He had been in C.P.R. service for several years, and prior to Oct., 1908, was City Passenger Agent, St. Louis, Mo.; Oct., 1908, to Mar., 1913, General Agent, Passenger Department, Cincinnati, Ohio; Mar., 1913, to July, 1914, General Tourist Agent, Montreal; July, 1914, to Jan., 1916, General Agent, Passenger Department, Railway and Steamship Lines, St. Louis, Mo.

J. F. Dolan, who has retired from the position of General Agent, Passenger Department, Canada Steamship Lines, Ltd., Boston, Mass., to enter private business in Montreal, was entertained to luncheon and presented with a silver tea set by a number of transportation representatives at Boston, May 2. He entered steamship service in 1893, as City Passenger and Ticket Agent, Richelieu and Ontario Navigation Co., Toronto, and in 1901 was appointed Passenger and Stock Transfer Agent, same company, Montreal. From 1913 to 1914, he was District Passenger Agent, same company at Boston, Mass., since when he has been General Agent, Passenger Department, Canada Steamship Lines Ltd., there.

C. E. Croft, recently appointed Chief of the Commissary Department, Canada Steamship Lines, Ltd., Toronto, was born at Cobourg, Ont., Aug. 26, 1882, and entered steamship service in Apr. 1904, since when he has been, to 1907, stenographer, Passenger Department, Richelieu & Ontario Navigation Co., Montreal; 1907 to 1911, secretary to Traffic Manager, same company, Montreal; 1911 to

1913, chief clerk, Traffic Department, Montreal; 1913 to 1914, chief clerk to Manager, Eastern Lines, same company, Montreal; 1914 to 1915, chief clerk to Operating Superintendent, Canada Steamship Lines, Ltd., Montreal; 1915 to March 1916, General Agent, same company, Toronto.

The Imperial Oil Co.'s s.s. Iocolite was launched at Collingwood, Apr. 29. This is the second of three vessels which the company is having built there. They are of steel, 258 ft. long, 43 ft. beam and 18 ft. deep to main deck, with an expansion trunk 7½ ft. above the deck running fore and aft. The hull is fitted with closely spaced bulkheads athwartships, and a continuous longitudinal bulkhead to divide the hold spaces into 10 tanks for crude or refined oil, and 4 tanks for carrying lubricating oil. A cross bunker for fuel oil is fitted forward of the boiler room, and the pump room is located at the fore end of the foremost tank. The vessel is to have a speed of 8 knots an hour when fully loaded.

British Government War Risk Insurance.—The British Government, in connection with the insurance of ships' cargoes against war risks, has adopted a new method of dealing with these insurances, which effects a considerable saving in clerical work, and at the same time is of advantage to merchants and brokers in the expedition of their business. Under the old system, a policy to cover war risk was issued for each insurance, but under the present scheme, a floating policy for a very large amount has been effected, and the slips, that is, the detailed applications for insurance, are themselves validated as certificates entitling the holders to the benefit of the floating policy.

Rules of the Road for the Great Lakes. The Marine Department has issued a booklet containing the rules of the road for the Great Lakes, as adopted by order in council, Feb. 4. They cover the territory including Georgian Bay and connecting and tributary waters and the St. Lawrence River as far east as the lower exit of the Lachine Canal, and the Victoria Bridge, Montreal, and are a revision of former rules, with no changes of importance with regard to the lights and signals to be used. Special regulations for the operation of motor boats are included in the new edition.

Quadra-Charmer Collision.—Subsequent to the delivery of the judgment on the collision between the Dominion Government s.s. Quadra and the C.P.R. s.s. Charmer, near Nanaimo, B.C., Feb. 26, in which the former vessel was lost, it was announced, as stated in our last issue, that the master of the Quadra intended, on the advice of counsel, to appeal to the Minister of Marine against the judgment, on the ground that the finding was opposed to the trend of the evidence. We were advised recently that the Department of Marine had received no intimation of an appeal. One of the nautical assessors dissented from the judgment rendered.

Coasting Voyages Extended.—The Dominion Parliament has amended the Canada Shipping Act, extending the definition of a coasting voyage, to mean a voyage between any port in Canada and any other port in Canada, Newfoundland, Labrador, St. Pierre-Miquelon, United States, Mexico, Central America, the West Indies or the eastern coast of South America, and on the coast of Alaska, or the western coast of South America, not farther south than 40 deg. south latitude.

Stranding of the s.s. Kenkon Maru Investigated.

An investigation was held at Victoria, B.C., recently, into the causes of the stranding of the Japanese s.s. Kenkon Maru No. 3, on the Belle Chain reef, on the south side of the Gulf of Georgia, Jan. 12. Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, presided, and was assisted by Capt. Ridley and Parsons as nautical assessors. The judgment stated that the evidence, so far as the captain, officers and crew of the Kenkon Maru were concerned, was clear and convincing, but that the reverse was the case with the only British witness examined, viz., J. E. Butler, a pilot belonging to the Nanaimo District, to whom the vessel had been entrusted. The court regretted to say that it had rarely heard evidence of a more evasive and contradictory nature, and it was evident that it was given for the sole purpose of misleading and deceiving the court as much as possible as to what were really the causes of the stranding. It was successful to a great extent, but as is generally the case in evidence of this character, it was too transparent, and proved the witness's undoing. The court therefore, after having studied the evidence, which, with the exception of Butler's, had all been translated from Japanese, found that the sole blame for the stranding must be imputed to J. E. Butler, the pilot in charge at the time. Instead of taking every precaution under the circumstances then existing, he navigated the vessel in a most careless and casual manner, taking no notes of time, courses or anything else, and when the weather became densely thick with snow, he, with absolute disregard of article 16, and uncertain of his position as he must have been, went on blindly at full speed, without even the engine room telegraph at stand by, until

the vessel struck the rocks. As this was not his first accident, and as a warning to others, he was fined the costs of the investigation, \$230. No blame was attached to the officers and crew of the Kenkon Maru, as they were strangers on the coast, and naturally had an instinctive respect for, and confidence in, a British pilot. There was no excessive deviation in the vessel's compasses, and any such did not contribute to the stranding.

We are advised that an appeal against the court's decision has been decided upon.

Rumored Sale of Montreal Transportation Co's Business.

In the early part of May, rumors were current to the effect that A. B. Mackay, formerly of R. O. & A. B. Mackay, Ltd., Hamilton, Ont., who has lately been dealing considerably as a vessel broker, in conjunction with "a prominent Chicago financier," had secured control of the Montreal Transportation Co., and that the Nova Scotia Steel & Coal Co. held the balance of the stock. A. B. Mackay's investment was mentioned as being in the neighborhood of \$500,000.

Montreal Transportation Co. officials were reported, May 8, to have declined to discuss the report more than to say that while there had been negotiations, nothing had been consummated. The Nova Scotia Steel & Coal Co. issued a statement, May 9, to the effect that the company was not interested in a syndicate which was stated to be negotiating for the control of the Montreal Transportation Co., and we were officially advised that the press reports that A. B. Mackay had secured control of the company were not correct. The facts appear to be that A. B. Mackay obtained an option on the M. T. Co.'s stock, or nearly the whole of

it, and the impression is that he will exercise it. The "prominent Chicago financier" referred to is said to be J. S. Norris, of the Norris Grain Co. A Montreal report mentions Sir Herbert Holt and L. C. Webster, of the Nova Scotia Steel & Coal Co., as being interested.

The Montreal Transportation Co., Ltd., is an old established business, and until 1903, had an authorized capital of \$300,000. In that year the company was re-organized with a capital of \$1,000,000. The paid up capital is about \$913,000, and there are no bonds outstanding. The steamships owned are: Advance, Glenmount, India, Kinmount, Rosemount, Simla, Stormount and Windsor; tugs, Bartlett, D. G. Thomson, Emerson, Glide, H. F. Bronson, M. P. Hall and Mary; lake barges, Augustus, Burma, Dunmore, Hamilton, Hiawatha, Kingston, Lapwing, Melrose, Muskoka, Quebec, Selkirk, Thrush, Ungava, Valencia and Winnipeg. In addition to this, the company owns the entire capital stock of the Prescott Terminal Co., \$500,000. The chief officials are, B. McLennan, President; Farquhar Robertson, Vice President; L. L. Henderson, Managing Director; A. Kingman, A. G. Thomson, H. A. Calvin and A. E. Ogilvie, other directors.

The International Mercantile Marine Co., which has been in the receiver's hands for some time, will, it is reported, pass under the American International Corporation's control shortly. This corporation was formed a few months ago, with an authorized capital of \$50,000,000, with the object of promoting U. S. trade in foreign fields. The Pacific Mail Steamship Co. has been acquired, and it is stated that control of the International Mercantile Marine Co.'s stock has been purchased in the open market.

Cost of Levis Car Ferry.—Hon. Mr. Lougheed stated in the Senate, May 4, that the total cost to date of the car ferry steamship plying between Quebec and Levis, was \$601,231.03. In January it made 62 trips across the river, carrying 904 cars and 9 locomotives, and in February, 63 trips, carrying 883 cars and 2 locomotives. The cost of operation was \$4,839.32 in January, and \$4,828.85 in February. The cost per car for ferriage was \$5.37.

Grain Trade Enquiry.—R. Magill, W. D. Staples and J. P. Jones, of the Dominion Grain Commission, have been appointed by the Dominion Government as a commission to investigate the handling and marketing of grain in Canada, and particularly its grading and weighing, shipment from country elevators, financing and shipment to lake and ocean ports.

The rule established during the war, in Great Britain, that blinds on the windows and doors of railway carriages, must be kept lowered when travelling with lights burning, is being strictly enforced. Several passengers have been fined for infractions recently.

J. S. Dennis, Assistant to President, C. P.R., Calgary, Alta., advised the Lethbridge Board of Trade, recently, that if the Alberta Government decided to erect a school for agriculture in that district, the company would consider making a grant of land for a site.

E. Pope, Superintendent, Dominion Government Telegraphs, Quebec, Que., is reported to be about to place a new multiplex telegraph system on the market. He has been actively engaged in telegraphy since 1855, and has held his present position since 1863.

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

Week ending May 12, 1916.	Wheat. bushels.	Oats. bushels.	Barley. bushels.	Flax. bushels.	Totals. bushels.
Port William—					
C. P. R.	1,929,004	403,242	314,453	131,383	2,646,699
Consolidated Elevator Co.	726,199	132,565	25,281	199,080	1,015,428
Empire Elevator Co.	1,109,390	323,667	72,640	199,080	1,704,777
Ogilvie Flour Mills Co.	897,961	121,727	40,273	1,059,961	1,959,961
Western Terminal Elevator Co.	542,145	220,017	7,857	197,454	967,473
G. T. Pacific	1,800,468	687,900	166,886	140,061	2,795,315
Grain Growers' Grain Co.	945,755	280,648	24,590	1,250,993	1,250,993
Port William Elevator Co.	302,740	181,291	65,008	7,035	556,074
Eastern Terminal Elevator Co.	414,757	194,739	26,755	.....	636,251
Port Arthur—					
Port Arthur Elevator Co.	2,292,375	640,377	270,203	129,317	3,332,272
D. Horn & Co.	132,058	58,971	32,046	230,288	453,363
Dominion Government elevator	1,004,311	347,935	38,341	82,340	1,472,927
Grain afloat	.....	.....	.....	.....	.....
Total terminal elevators	12,097,163	3,593,079	1,084,333	1,116,958	17,891,53
Calgary Dom. Govt. Elev.	667,294	411,072	11,854	1,069	1,091,283
Saskatoon Dom. Govt. Elev.	2,135,167	867,787	50,571	141,140	3,194,669
Moose Jaw Dom. Govt. Elev.	2,416,856	271,781	22,771	57,036	2,768,445
Total interior terminal elevators	5,219,317	1,550,640	85,196	199,245	7,054,398
Depot Harbor	477,206	.....	.....	.....	477,206
Midland—					
Aberdeen Elevator Co.	445,873	181,860	.....	.....	627,733
Midland Elevator Co.	765,734	49,870	.....	.....	815,604
Tiffin, G.T.P.	1,422,894	596,018	58,032	.....	2,076,944
Port McNicoll	611,116	746,812	.....	9,985	1,368,513
Collingwood	.....	.....	.....	.....	.....
Goderich Elevator & Transit Co.	351,716	11,350	.....	.....	362,466
Kingston—					
Montreal Transportation Co.	.....	.....	.....	.....	.....
Commercial Elevator Co.	.....	.....	.....	.....	.....
Port Colborne	517,441	182,186	186,318	8,000	893,945
Prescott	.....	.....	.....	.....	.....
Montreal—					
Harbor Commissioners no. 1	1,185,701	765,725	18,786	.....	1,970,212
Harbor Commissioners no. 2	606,664	1,485,471	23,992	25,332	2,141,459
Montreal Warehousing Co.	829,998	950,248	18,890	32,389	1,831,525
Quebec Harbor Commissioners	638,999	149,448	11,168	.....	799,615
West St. John, N.B.	827,161	260,938	37,094	.....	1,125,193
Halifax, N.S.	.....	.....	.....	.....	.....
Total public elevators	8,680,503	5,379,926	354,280	75,706	14,490,415
Total quantity in store	25,996,983	10,523,645	1,523,809	1,391,909	39,436,346

Marine Votes for 1916-17.

Marine votes for the fiscal year ending Mar. 31, 1917, recently dealt with by the House of Commons, include the following:

CHARGEABLE TO CAPITAL ACCOUNT.		
		Revotes.
Welland Ship Canal.....	\$4,500,000	\$ 500,000
Canals—		
Lachine	30,000	40,000
Rideau	40,000	200,000
Trent	1,000,000	
	\$1,070,000	\$ 240,000
Harbors and Rivers—		
Halifax dry dock.....	\$ 250,000	\$ 250,000
St. John harbor.....	1,000,000	
Quebec harbor	495,000	495,000
Lauzon dry dock.....	1,500,000	
St. Charles River.....	700,000	
Toronto harbor.....	600,000	600,000
French River waterway...	400,000	400,000
Port Arthur and Fort William	1,000,000	
Vancouver harbor	350,000	
Victoria harbor	1,000,000	
Esquimalt dry dock.....	200,000	200,000
	\$7,495,000	\$1,945,000
CHARGEABLE TO INCOME ACCOUNT.		
Canals—		
Chambly	\$ 5,000	\$ 5,000
Cornwall	9,500	9,500
Quebec	14,000	
Rideau	30,000	
St. Peter's	163,000	101,000
Soulanges	1,500	900
Trent	40,000	
Welland	30,000	
Williamsburg	2,500	
	\$ 295,500	\$ 116,400
Harbors and Rivers—		
Nova Scotia	\$ 736,150	\$ 425,150
Prince Edward Island....	66,400	41,800
New Brunswick	425,000	280,000
Maritime Provinces generally		
Quebec	853,150	468,900
Ontario	1,051,800	880,500
Manitoba	93,100	65,000
Saskatchewan and Alberta		
British Columbia	578,000	48,700
Yukon	5,000	
General	40,000	
Dredging	1,730,000	20,000
	\$5,613,100	\$2,244,550
Mail Subsidies—		
Atlantic Ocean	\$1,844,167	
Pacific Ocean	487,142	
Local services	310,625	
	\$2,641,934	
Mail service, authorized by statute—		
Canada, China and Japan.....	\$ 121,667	
Canada and France.....	200,000	
	\$ 321,667	
Naval service	\$2,250,400	
Ocean and river service.....	1,305,800	
Marine Department	2,134,715	
Lighthouse and coast service.....	2,409,700	
Scientific institutions	489,713	
Marine hospitals	78,000	
Steamboat inspection	79,170	
Authorized by statute—		
Collingwood dry dock, No. 1.....	\$ 15,000	
Collingwood dry dock, No. 2.....	9,209	
Montreal floating dock.....	105,000	

Progress on Welland Ship Canal Construction.

J. L. Weller, M.Can.Soc.C.E., Engineer in Charge, Welland Ship Canal, is reported to have said at St. Catharines, May 10, that notwithstanding the war, most satisfactory progress had been made on the four sections under contract, and that three of the sections at least, will be finished within the time limit of four years from the placing of the contract in 1913. The work on sections 1 and 2 is about 50% completed.

Sec. 1 extends from Lake Ontario for about three miles, and includes pier and trestle work at the entrance to the canal, the construction of lock 1, and canal work to bridge 2. The contract was awarded Aug. 1, 1913, and the date for completion set at Apr. 1, 1917. The amount of the contract as based on schedule rates is

\$3,487,727, and the contractors are the Dominion Dredging Co.

Sec. 2 covers the work from bridge 2 to bridge 5, about 4½ miles, including locks 2 and 3. This contract was awarded to Baldry, Yerburch & Hutchinson, Dec. 31, 1913, for completion by Apr. 1, 1917, and the amount based on schedule rates is \$5,377,185.75.

Sec. 3, from bridge 5 to about half way between bridges 9 and 10, covers the heaviest portion of the whole route, and includes the erection of twin guard gates at Thorold, the single lock 7, the construction of a short stretch of canal below lock 7, and also the three twin locks 6, 5 and 4 in flight, one flight for down bound vessels and the other for up bound vessels, overcoming a descent of 139½ ft. The contract was awarded to O'Brien & Doheny, Oct. 4, 1913, for completion by Apr. 1, 1917, and the amount based on schedule rates is \$9,540,050. This work is about 25% completed, and it is not expected that it will be finished on schedule time, but will be at least a year behind time. The work done has been very heavy, in some places rock having been blasted down to 80 ft. Some little labor difficulty has also been experienced, but it is stated that this has now been settled and the laborers, mostly foreign, have all returned to work.

Sec. 5, from just above bridge 12 to just above bridge 13, about 2¾ miles, is reported to be about 50% completed. This contract was awarded to the Canadian Dredging Co., for completion by Apr. 1, 1918, and the amount based on schedule rates is \$1,945,788.

The acting Minister of Railways and Canals has stated that no further contracts will be let this year.

The Venture-Wakena Collision Investigated.

An investigation was held recently at Vancouver, B.C., by Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, assisted by Commander Unwin, R.N.R., and Capt. H. S. Hilton, as nautical assessors, into the collision between the Union Steamship Co. of British Columbia's s.s. Venture, and the Clatskanie Transportation Co.'s s.s. Wakena, from Portland, Ore., in the first narrows of Burrard Inlet, Feb. 26. The evidence produced, was, owing to the fact that witnesses for the Venture alone were present, necessarily one sided. For some unexplained reason after having made all arrangements to be present, the witnesses for the Wakena failed to appear. The evidence adduced was, however, clear and convincing, and the court's opinion was that there can be no doubt that the Wakena's master, in the thick fog then prevailing, lost his bearings when entering the first narrows, and while endeavoring to get his vessel into midchannel, collided with the Venture. No blame can be attached to those in charge of the Venture, the master, John Park, being justified in entering the narrows, though undoubtedly the weather was very thick at the time, not only because he knew where his vessel was, but also because there are very efficient aids to navigation in that locality to meet the requirements of navigation under the conditions then prevailing. The Venture was handled in a proper and seamanlike manner, and the master had verified his position off Prospect Bluff, was going dead slow and sounding his whistle at proper intervals, was as close to the starboard side of the channel as he could be with safety, and

kept an efficient lookout. The court therefore absolved him from all blame. The court surmised that the non appearance of witnesses for the Wakena, implied that they knew they would not be held blameless.

Welland Canal Lock Accident.

On May 2, the wooden steamship W. J. Averell, Capt. Patterson, formerly owned by the Rutland Transit Co., Ogdensburg, N.Y., and now owned by the Canada Shipping Co., Montreal, while upbound to Cleveland with a small cargo of package freight, struck and carried out the two headgates at lock 8 in the Welland Canal. The rush of water from lock 8 level carried the vessel and towpath gate out into the lower reach. The heelpath gate remained near the head gate of the lock, clinging to its anchorage. The level above lock 8 is a short one and the reach below is about 1¼ miles long; consequently very little water overflowed the banks and there was no damage to the latter. The vessel was not damaged. It was necessary to place two spare gates before navigation could be resumed. Locking was resumed in the afternoon, navigation having only been delayed about eight hours. The damage is estimated to be \$3,000, which is said to be fully covered by insurance. The accident was caused by the steel hawser getting caught in the vessel's compressor and it was not even placed on the snubbing post on the lock wall to check her speed. The vessel's engines were reversed too late to avert the collision with the lock gates. We are indebted to L. D. Hara, Superintending Engineer, for these particulars.

Improvements to C. P. R. Great Lakes Steamships.

During the past winter, in addition to the usual overhaul, the steamships Kewatin and Assiniboia, of the C.P.R. Great Lakes fleet, have received a number of improvements. The most important of these is an extension of the upper and promenade decks right to the stern. This provides, abaft the verandah cafe, a roomy, covered in and sheltered space for evening dances. Immediately above, the promenade deck has been extended, giving a clear space of 50 x 36 ft., which, without interfering with the promenade, gives accommodation for quoits, shuffle deck and other shipboard games.

The dining saloons have been entirely remodelled, and have been fitted with a number of small tables to accommodate parties of two to six people. The windows have been enlarged, and now measure 4 ft. wide by 3 ft. deep, with a leaded glass top sash, which provides ventilation without draught. The new windows will provide a good view from any seat in the saloon. The smoking room windows have also been increased in size.

In addition to the original suites de luxe, several rooms have been fitted with connecting shower baths. The main entrance hall has been enlarged, and made adaptable for a quiet smoke or game of cards in the evenings. A new barber shop and news stand have been built off the entrance hall.

The Fort William Grain Co., Ltd., has been incorporated under the Dominion Companies Act, with \$40,000 authorized capital and office at Fort William, Ont., to carry on a general grain dealing business, and to own and operate steam and other vessels, wharves, docks, elevators, etc.

Reported Appeal of Quadra-Charmer Collision Decision.

Subsequent to the judgment on the causes of the collision between the Dominion Government s.s. Quadra and the C.P.R. s.s. Charmer at the entrance to Nanaimo Harbor, B.C., Feb. 26, it was stated that Capt. LeBlanc, master of the s.s. Quadra, had decided to appeal against the decision on the ground that it was opposed to the trend of the evidence. One of the nautical assessors dissented from the judgment rendered. We were officially advised early in May, that the Department of Marine at Ottawa had received no intimation of an appeal, and we were also officially advised that the Wreck Commissioner of British Columbia had not heard anything about an appeal and did not think there would be one.

In writing to the Victoria Times, May 10, regarding the report of an appeal, Capt. J. D. Macpherson, Wreck Commissioner for British Columbia, stated that Capt. LeBlanc, master of the s.s. Quadra, never appealed, never intended to do so, and had nothing to appeal about.

Interviewed by a representative of that paper, the solicitors representing Capt. LeBlanc, are reported to have said that immediately the judgment was made public, they asked the Marine Department at Ottawa for a rehearing before a disinterested and independent tribunal. They also claimed that the finding was not delivered in a legal manner, as it should have been made in open court.

The court dealing with the case consisted of the Wreck Commissioner for British Columbia, Capt. J. D. Macpherson, assisted by Capt. Ridley and Gardner as nautical assessors. The judgment delivered by the Commissioner was concurred in by one of the assessors, the other dissenting. It is being claimed on behalf of Capt. LeBlanc, that the judgment was not legally delivered, as it was not given in open court, and a section of the Canada Shipping Act is quoted, which has no bearing on the present case, as neither the suspension nor the cancellation of the master's certificate was in question, and under the circumstances the delivery of judgment in open court does not appear to be a legal necessity. The Act provides that the Minister of Marine may order a rehearing, "if new and important evidence which could not be produced at the investigation has been discovered, or if for any other reason there has been in his opinion ground for suspecting that a miscarriage of justice has occurred."

In arriving at a decision on such a matter, the Minister would be guided by the evidence submitted, the report of the Commissioner and assessors, and if one of the assessors dissented, his reasons for so doing would be considered with the evidence. In the present case, there seems to be no indication of new and important evidence for a proposed rehearing, and the reasons for Capt. Gardner's dissent chiefly refer to a possible contributory negligence on the part of the s.s. Charmer, while they confirm the wrongdoing of the s.s. Quadra in giving certain signals, which he admits are not international signals, but are the outcome of custom and long usage and recognized by local masters.

Dredging is proceeding in the Lake St. Clair channel, by the U. S. Government, and a loading draught of 19 ft. 5 ins. has been recommended for this year. This is an increase of 5 ins. since the reopening of navigation.

Aid for Shipbuilding in British Columbia.

The British Columbia Legislature is considering a bill to aid the development of the shipbuilding and shipping industries in the province. Two schemes are embodied, one providing for assistance in the building of wooden ships, and the other a bonusing of cargoes taken from B.C. ports for ten years after the conclusion of the war. A commission of three is to be appointed for the administration of the act, one of whom is to be the Minister of Finance, who will be unpaid, the other two being salaried. The scheme for providing financial assistance for shipbuilding covers advances to the extent of 55% of the value of the plant and of whatever ships may be built, and will be for a period to be determined by the commissioners, who will exercise considerable control over the construction and subsequent operations of vessels so built, which will remain under the commissioners' control in the same manner until the loans are repaid in full. The second form of assistance is designed to keep the vessels under the commissioners' control returning to British Columbia, to ensure an outlet for B.C. products. It is proposed to grant a bonus of \$5 a ton for ten years on all cargoes, based on the dead weight, taken from B.C. ports. The administration of the act, when it becomes effective, will be almost solely under the Government control, as practically every act of the commissioners is subject to an order in council.

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.

Canuck Supply Co., Ltd., railway material and supplies, Montreal, has removed from 404 St. James St. to spacious new offices at 418 St. James St.

The Brown Hoisting Machinery Co., Cleveland, Ohio, announces the appointment of its Vice President, Alex. C. Brown, as General Manager, succeeding R. B. Sheridan, who has resigned to accept another position.

Telegraph, Telephone and Cable Matters.

The Dominion Government Telegraph Lines are valued at \$2,411,550, showing a general average of \$244 a pole mile for the whole system.

The Grand Trunk Pacific Telegraph Co. estimates the average cost per mile of telegraph lines on the Lake Superior Division at \$291.22, with two wires to each pole, and on the Prairie Division at \$343 a mile, with four wires to a pole. On its Mountain Division, with two wires to a pole, the average cost per mile was \$606.93. For branch line construction, with an average of 1.12 wires to a pole, the average cost per mile was \$189.27.

The Canadian Northern Telegraph Co., which is now in working agreement with the Great North Western Telegraph Co., in giving figures to the Board of Railway

Commissioners recently, stated that at June 30, 1911, it had 4,440 miles of pole line estimated to be worth \$1,021,200, and 13,550 miles of telegraph wire worth \$273,500, making a total for pole lines and wires of \$1,294,700, which averages \$291 a mile.

The Great North Western Telegraph Co. has opened offices at St. Jean l'Évangéliste, Que.; Beaumaris, Cardinal Canal, Gogoma, Hagersville and Kashbaw, Ont.; Eriksdale, Man.; Errington, Jasper, Lavo, Stanmore and Tollerton, Alta.; Ashcroft, Blue River, Boston Bat, Chilliwack, Hope, Kamloops Jct., Langley, Lucerne, Lytton, Matsqui, Port Mann, Rosedale and Spences Bridge, B.C. Its offices at Marmora, Ruel and Stackpool, Ont., have been closed.

The C.P.R. telegraph plant was valued recently at \$6,696,421.40, made up as follows: pole line and equipment, \$3,897,238.39; wires, \$2,190,968.37; cables, \$275,044.11; call box system, Toronto, Montreal, etc., 4,865 boxes at \$7, \$34,055; 105 linemen's equipment at \$138.25, \$14,378; 37 gangs' equipments at \$646.49, \$23,920.13; instruments, \$119,149.40; batteries and dynamos, \$50,559; furniture, \$41,109; material in stock, \$50,000. The gross operating revenue of the C.P.R. telegraphs for the financial year ended June 30, 1915, was \$2,504,241.50, and the net operating revenue, \$1,121,734.34, against \$2,991,273.06 and \$1,377,585.42 respectively for the year ended June 30, 1914. The cost of the company's telegraph system is \$6,696,421. The number of messages sent was 3,842,779, received 3,596,07, for the year ended June 30, 1915, against 4,038,505 sent, and 3,694,784 received for the previous year. The company's telegraph system has been constructed, and is being operated, as a part of the railway, although a general commercial telegraph business is conducted.

Among the Express Companies.

C. H. S. Hammond has been appointed agent, Dominion Ex. Co., Weyburn, Sask., vice J. L. Weir, transferred.

B. P. Tretwell has been appointed cashier, Dominion Ex. Co., Windsor, Ont., vice E. Anderson, transferred.

L. I. Watts has been appointed agent, Canadian Northern Ex. Co., Moose Jaw, Sask., vice A. G. Douglas, transferred.

E. Anderson, heretofore cashier, Dominion Ex. Co., Windsor, Ont., has been appointed cashier at Peterborough, Ont.

F. S. Cox, a former employe of the Canadian Northern Ex. Co. at Saskatoon, Sask., has been awarded the distinguished conduct medal for services to the wounded at the front.

The Dominion Ex. Co. has placed its service on the Canadian Government Railways branch from Dartmouth to Upper Musquodoboit, N.S., 69 miles, and has opened offices at Musquodoboit Harbor and Middle and Upper Musquodoboit.

The Board of Railway Commissioners passed order 24976, May 15, requiring the Canadian Express Co. to provide an improved service for freight from the Niagara Peninsula. It is given in full under "Traffic Orders by Board of Railway Commissioners," on an earlier page of this issue.

The Marine and Fisheries Committee reported to the House of Commons, May 4, on the matter of the prices at which fish was sold at various points inland, and made certain recommendations for the widening of the market. Among these, were: the improvement of express