

Canadian Railway and Marine World.

April, 1913.

The Transportation Situation at the Head of the Great Lakes.

By Frederick H. Moody, B.A.Sc.

The twin cities of Port Arthur and Fort William occupy a unique position in the transportation of this country, being the focal point for all traffic both east and west, whether by rail or water. This might be qualified by the statement that the

position. On the one side is the vast manufacturing east; on the other the vast grain producing west, each producing that which the other lacks. Added to that is the fact that the middle west is devoid of coal, and requires to bring in its supplies from the

257,676 bushels. This shows the amount of elevator space required to accommodate even a portion of this vast production. Elevator accommodation seems to be the vital problem with which the twin cities have at present to contend.

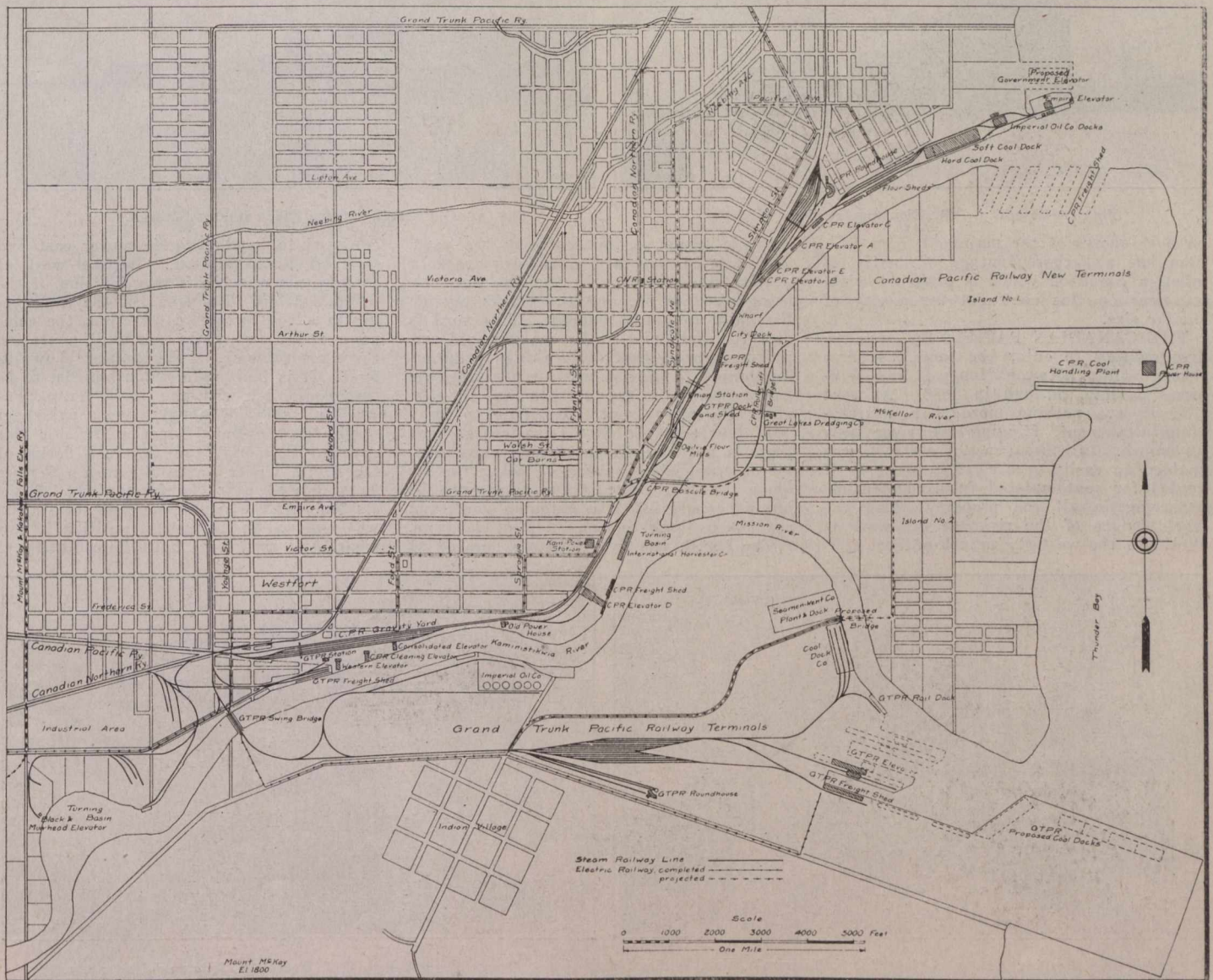


Fig. 1.—Plan Showing Railway Connections Around Fort William.

opening of the new National Transcontinental Ry. across the open country to the north of these two cities will, in a degree, deprive them of the unique position of requiring all traffic to pass through them. That is not to say the volume of traffic handled at these ports will in any degree diminish, as such will not be the case, as the grain crop is growing by such leaps and bounds, that several other outlets to that vast field are required, and would be unfelt at the head of lake navigation.

These twin cities occupy a decidedly novel

coal fields of the eastern United States. The greater part of this bulk freight, such as coal and grain, is transhipped at the head of the lakes, using water transportation on the eastern part of the journey, and rail, westerly. As an idea of the volume of traffic that passes through these two towns, the grain returns during the navigation season of 1912 are striking. Grain of all kinds, but principally wheat, was shipped out of the twin ports in Canadian and United States vessels to Canadian and United States ports, to the extent of 113,-

Fort William.

Fort William is most admirably situated with one of the finest natural harbors in the world. Originally founded as a fur trading post of the old Northwest Co., it clustered about the mouth of the Kaministiquia River, which at this point empties into Thunder Bay. The settlement grew up around the original fort, gradually forming the present city. The selection of this point for the original fort was ideal, as the Kaministiquia River with its tributaries opened up an extensive territory to the fur trader,

making the focal point of all the expeditions at a place favorably situated for the sending of furs and bringing in of supplies. Much the same conditions exist today, only the nature of the commerce conducted has changed, and with it the old style of transportation.

Reference to the map of Fort William, fig. 1, will give an idea of the layout of the port. The river, as it approaches the lake from the west, divides, forming three mouths, the two minor streams being called the Mission and McKellar Rivers. These three mouths form two islands—Island no. 1 and Island no. 2. Including the shore of the rivers along the islands, and

river, near the location of the present locomotive house. Here were located the original yards, station, etc., but the latter development has taken the major portion of the development along the line to the west.

For the handling of the incoming grain traffic from the west, a large yard was constructed in Westfort. About two years ago, this becoming congested, additions were required, and in view of the success of the hump yard in operation at Winnipeg, this old poling yard was converted into a hump yard, a description of which appeared in Canadian Railway and Marine World, Nov., 1911. The conversion of the yard was simply carried out, all that was required being

1,000,000; and Empire Elevator, 2,250,000. In addition, the Dominion Government has in prospect another elevator along the Thunder Bay frontage towards Port Arthur, to have a capacity of 3,500,000 bush. Other smaller elevators are located about town near the C.P.R. tracks.

Near the river mouth is located the old C.P.R. coaling plant, shown in fig 3, formerly employed for all kinds of coal, but in future to be used for coal not belonging to the company, the new plant on Island no. 1 handling the company's coal.

Near the point where the main line leaves the river are the old yards and roundhouse. The divisional shops adjoining are well

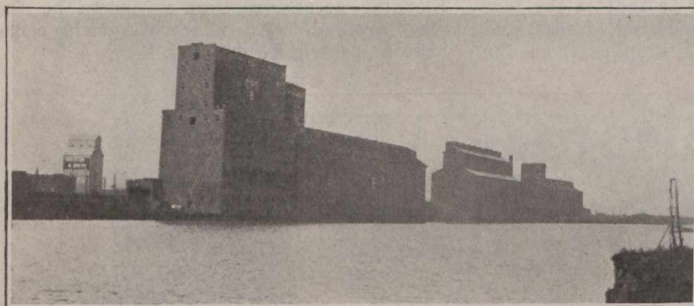


Fig. 2.—Several C.P.R. Elevators at Fort William.

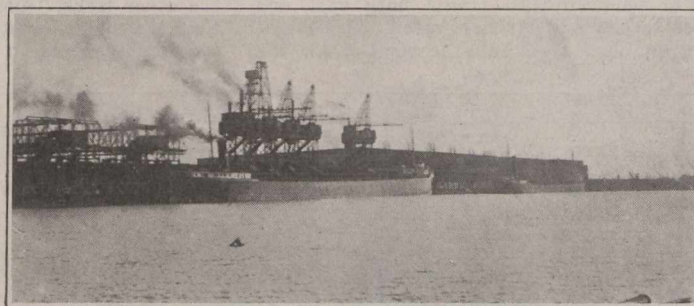


Fig. 3.—Old C.P.R. Coaling Plant at Fort William.

on both shores of the mainland, Fort William has a harbor frontage of nearly 28 miles, a condition which is probably without peer on this continent for a city of similar size.

THE CANADIAN PACIFIC RY. was the first railway to enter the town, the first through train between Montreal and Winnipeg passing through in 1886. At that time it was nothing more than a straggling settlement, fringing the river near its mouth. In consequence, the C.P.R. was enabled to easily secure what property it needed for contemplated future expansion, gathering in all the property along the whole length of the river as far west as Westfort, the westerly suburb of Fort Wil-

a single hump at the centre of the yard, in line with the yard cross over track, a similar cross over in the opposite direction being also put in, and the tracks outside the built up hump removed. This yard is only for eastbound traffic, its principal employment being that of breaking up incoming trains from the west, separating the various cars that are to go to each elevator along the river front. Reference to fig 1 will show that the yard is so located that there is not a single retrograde movement, all but two of the elevators being further along the river. The cars running over the hump descend into the outgoing yard, and are taken along to the different elevators.

The C.P.R. has five elevators, located at

equipped to handle motive power east and west of Fort William. To the west of these yards was the former location of the C.P.R. station. The trend of the town being in a southwesterly direction, the company about two years ago built a station further southwest, in the location shown in fig 1. It is built as a union station, to be used conjointly with the Grand Trunk Pacific Ry., which is inaugurating a passenger service on the Lake Superior Division this spring. Formerly, the terminal docks of the C.P.R. Upper Lakes Steamship Service were located near the former site of the station. At the same time that the station was removed to its present position, a new wharf and shed were built immediately to

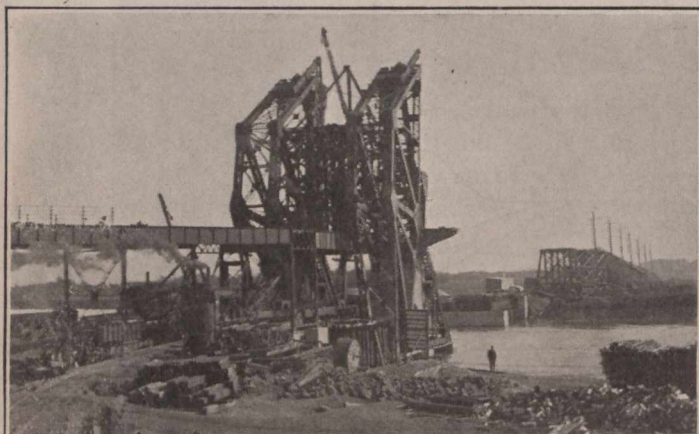


Fig. 4.—Bridge Leading Across to New C.P.R. Terminals, Fort William.

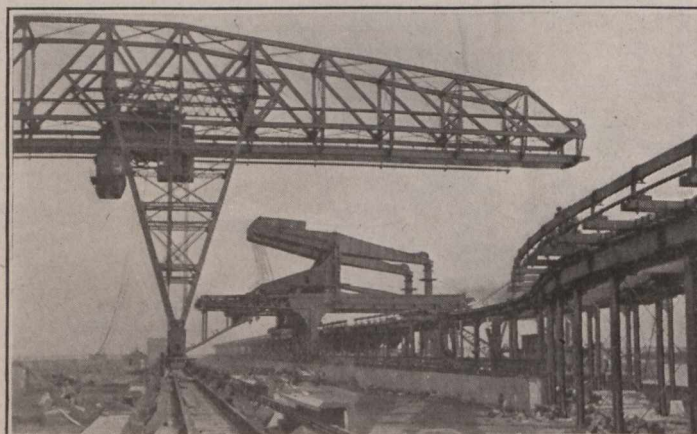


Fig. 5.—New C.P.R. Coal Handling Plant on Island no. 1.

liam. The C.P.R. has thus had a stretch of river front of upwards of four miles, which to the officials at that early day, seemed more than sufficient to meet the requirements for all future expansions. How short their vision has fallen has recently been witnessed by the cramped condition of the C.P.R. terminals, necessitating the purchase by the company of a large stretch of ground on Island no. 1.

The C.P.R. coming in from the west, strikes the river front near the western city limit, from that point following the river, leaving the latter near the northern city limit. The original ramifications of the company were near the mouth of the

points along the river from Westfort to the river mouth, as shown in fig 1. A has a capacity of 1,250,000 bush.; B, 500,000; C, 1,250,000; D, 3,750,000; and E, 2,000,000. In addition, a privately owned cleaning elevator at Westfort, is in process of construction. Four of these elevators are in pairs, C is an annex to A, which is the unloader, and similarly B is the unloader for its annex E, both of which are shown in fig 2.

Along the river front are other elevators, all served by C.P.R. tracks. From Westfort easterly, there are: Western Elevator, 1,250,000 bushels; Consolidated Elevator, 2,250,000; Ogilvie Flour Mill Elevator,

the east of the station, with which it is in easy communication through a subway under the tracks. This new freight shed and passenger terminal is 960 by 60 ft., and is one of the most complete terminal freight and passenger wharves in existence.

The mainland facilities becoming too crowded, and possibilities of further development in that direction becoming prohibitive on account of the high cost of the land, arrangements were completed whereby the C.P.R. obtained control of practically the whole of Island no. 1, on which it is the intention to construct large terminals to relieve the terminals on the mainland. To make possible the use of these two

islands for railway and industrial purposes, the city was instrumental in having the Dominion Government dredge the McKellar and Mission Rivers to the standard requirements adopted for the Fort William terminals, viz., 500 ft. channel, with a clear depth all over of 22 ft.

For the C.P.R. to make use of the islands, it was necessary to bridge the channels of the rivers. The way of approach was to first cross to Island no. 2, and then across to Island no. 1. The first bridge is of the

laid out into industrial sites, which will be convenient for both rail and water connections. The freight shed plans along the north side of the island contemplate 5 sheds, of which only one has as yet been completed. Much of the transhipment of package freight will be removed from the mainland when these are completed.

The coaling plant that has been constructed on the island, bordering on the McKellar River, is said to be the largest in the world. A description of it appeared in

which the coal is dropped, the exact loading of the car being thus accomplished without further trimming. In the western coal trade, box cars are used exclusively, grain travelling east in them, the same cars going west loaded with coal, thus maintaining a balance in the traffic, with a minimum of lights. The trackage has been so arranged that there is a continuous movement of the cars through the coaling plant, it being expected that a switch will be constantly employed bringing in and re-

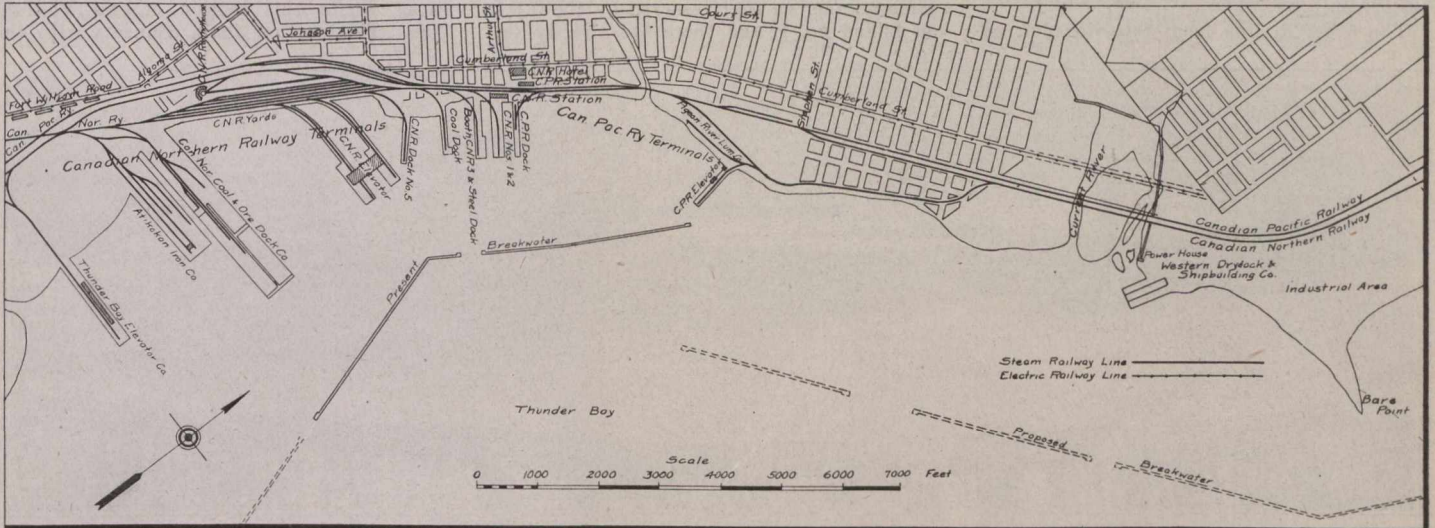


Fig. 6.—Plan Showing Railway Connections Around Port Arthur.

bascule type, double tracked and double decked, a full description of which appeared in Canadian Railway and Marine World for Sept., 1912. The bridge under construction is shown in fig. 4. An idea of its size may be gathered from the fact that it has a clear span of 186 ft., which, on account of its being set at an angle, gives a clear channel at the bridge of 125 ft. It is made double decked to carry street car and vehicular traffic on the upper deck, the me-

Canadian Railway and Marine World for Feb., 1912. It is for the exclusive use of the company's coal, and will ultimately have a storage capacity of over 2,000,000 tons. The old plant on the mainland will be used for all other coal that is taken up the lakes. An idea of the size of the plant can be gained from fig. 5. It extends nearly as far in the other direction as can be seen in that view, and the bridge on the left extends some 500 ft. On the extreme right is

moving the cars, the local movement in the plant being obtained through an electrical winch. The whole plant is electrically operated, a substation at the far end supplying the electricity for local use. The plant was put in operation last October, and about 100,000 tons of coal unloaded from vessels before the close of navigation. It will be stored there pending the completion of the two bridges across the channels to the two islands.

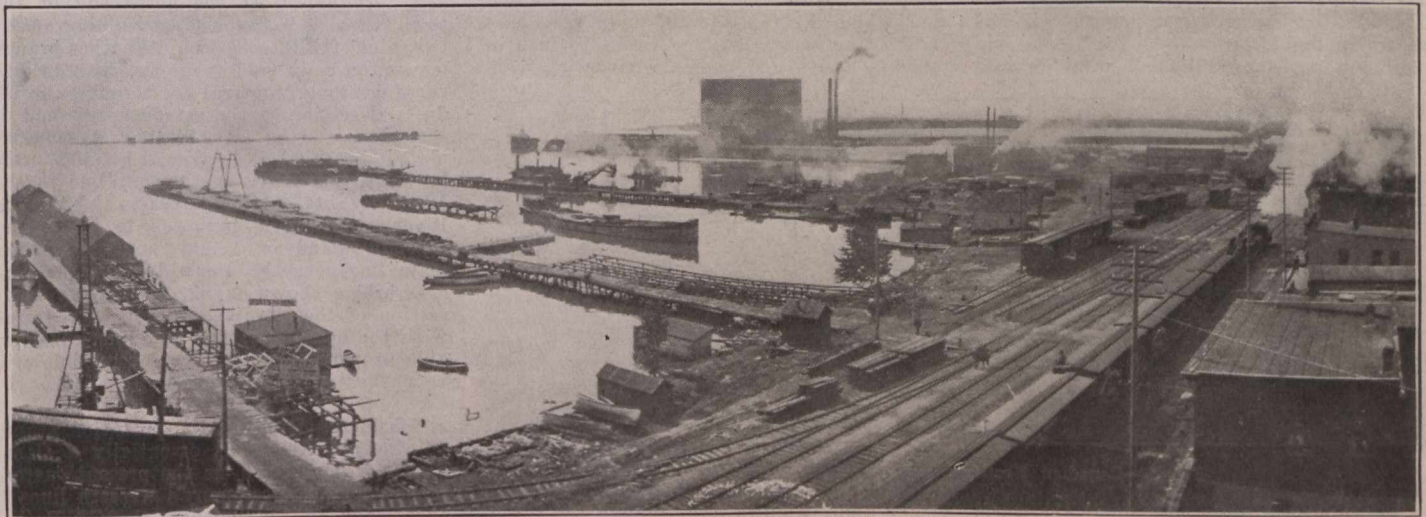


Fig. 7.—Panoramic View of Canadian Northern Ry. Terminals at Port Arthur.

thod of approach at each end being as shown in fig. 4. The crossing of the McKellar River is by means of a rolling lift bridge, giving a clear channel in that river for passing vessels.

The plans for the C.P.R. terminals on the island have not been completed, but a coaling plant and a freight shed and pier have already been built. In the centre of the island, it is the intention to lay out yards, but along the river front, except at the outer end of the island, the land is to be

the McKellar River. From the hold of the boat, the coal is lifted by the large full-crumed arms, deposited in the space between the walls shown, where it is picked up by the large crane on the left, carried and dropped in the vast storage space to the left. The loading of the cars is accomplished in a reverse order. On the elevated track to the right are scale cars that are loaded with coal from the travelling crane on the left, and which run along to loading machines under the elevated track, into

GRAND TRUNK PACIFIC RY.—The late advent of the G.T.P.R. into the western transportation field made it necessary for it to exercise considerable ingenuity in obtaining access to the different large terminal points reached by competitive lines. At the head of the lakes, considerable time was spent in determining the merits and determining circumstances that would influence it in going into Fort William or Port Arthur. The inducements, both natural and those offered by the town proving

most attractive, Fort William was decided upon as the lake terminal point. The city was instrumental in securing for the company a 1,600 acre tract of land to the south of the city, on what was known as the Mission property, a piece of land years ago set aside as an Indian reservation. This was the only available outlet to terminal water, as all the waterfront on the north side of the river and on Island no. 1 was already taken up or contracted for, and it has proved to be an ideal site for railway terminals in view of its 7 miles of waterfront.

The G.T.P.R. line from Superior Jet. en-

of company as well as private coal. The nature of the coal dock construction and plant has not yet been decided upon.

On the south side of the turning basin are to be three freight sheds, 900 by 60 ft. each, two of which have been built. To the north of the elevator site is a rail dock 600 by 60 ft. The whole frontage of the freight sheds and elevators in the dredged slip has a cribbed wharf with concrete top. The property on the Mission reserve north of the G.T.P.R. along the Mission River has all been set aside as industrial sites, in the same manner as that reserved by the C.P.R. on Island no. 1, and there are already sev-

ters the town near the same point as the other two lines, in the suburb of Westfort. From just north of the C.P.R. gravity yard, the line swings off in a northeasterly direction, continuing on a tangent nearly 3 miles long into the heart of Port Arthur, where its terminals are located. Other than the station, the C.N.R. has practically no connections in Fort William. The station is now located on the long tangent mentioned. A line branches off from this siding at Albert St., turning north 3 blocks west of Syndicate Ave., the station being located where this section crosses Victoria Ave. This section again connects with the

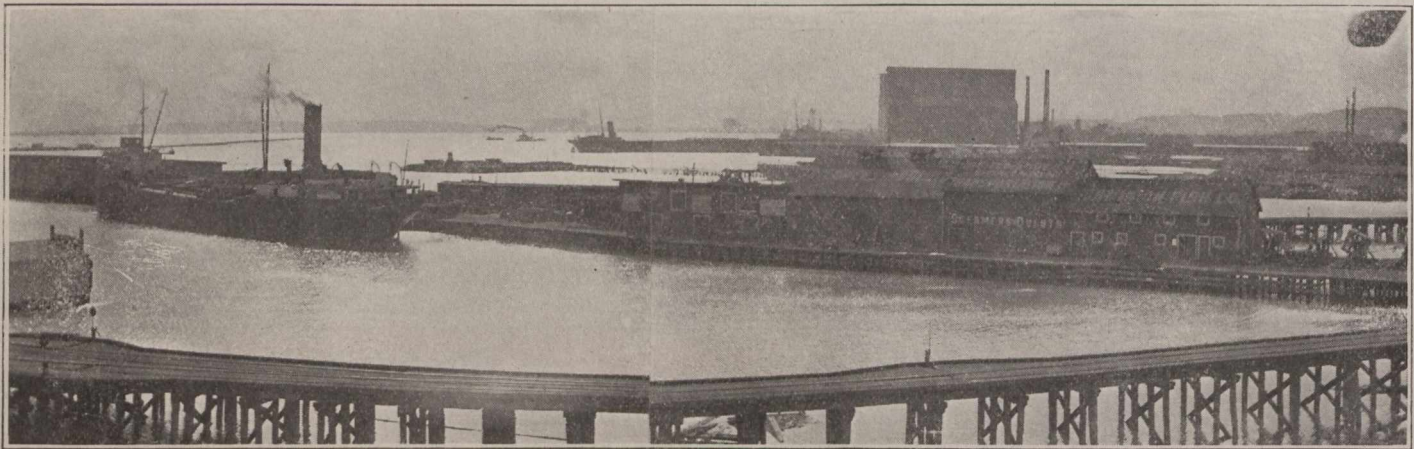


Fig. 8.—Piers to the Rear of Canadian Northern Ry. Station at Port Arthur.

ters Fort William from the west over Empire Ave., turning due south near the western city limits and crossing over the Kaministikwia River on a swing bridge. From that point, lying in an east and west direction, are the company's terminal yards, which include a 12 stall locomotive house, which it is intended to enlarge from time to time as occasion demands. The terminal wharves are to be at the east end of this projection of land, at the mouth of the Mission River, which, as mentioned earlier, has recently been dredged to standard conditions. The whole arrangement is as shown in fig. 1.

In the position indicated, what is said

eral large concerns established as indicated.

One of the big problems that confronted the G.T.P.R. was the entrance into the city for passenger trains. At present, the line that runs down over the Kaministikwia River to the Mission yards, has a branch leading down alongside the river, immediately to the south of the C.P.R. hump yard in Westfort. This comprises the present passenger and freight terminal for the line, a freight shed and pier having been completed at this point for temporary accommodation. Entrance to the union station is now being completed, the trains instead of turning south and over the river will con-

tangent near the northerly city limits.

THE PORT ARTHUR AND FORT WILLIAM Electric Ry. is owned and operated by the corporations of the two cities. The lines in Fort William are quite extensive, reaching from the north city limits, through Westfort, and on to the G.T.P.R. Mission terminals, following the main thoroughfares through the older section of the city to the bridge across the Kaministikwia River, from which point, through the Mission, it has blazed out a new road to the new terminals. At the north end of the town, there is a branch line running across to the old C.P.R. coal dock. Another branch leaves the main track near the river bridge, running along Montreal St. through the industrial section at the extreme west end of the town to the city limits. A contemplated line, that it is expected will shortly be built, will leave the present line in the Mission yards, cutting across to the Mission River, which it is proposed to bridge, up through Island no. 2, and then back to the main line over the upper deck of the bascule bridge shown in fig. 4. A very large section of the city is now well served, and with the opening of the new line, considerable property that is now inaccessible will be opened for development.

Port Arthur.

Considered from a transportation standpoint, Port Arthur is essentially a Canadian Northern town, as the present eastern terminus of the company's western lines is there, and in consequence, the C.N.R. has many activities in and around the city. The layout of the city is shown in fig. 6, a plan of the water front portion of the town, including all the railway connections into Port Arthur from both directions.

The harbor facilities have not been as well planned by nature as those at Fort William, as the whole harbor front is exposed to Thunder Bay, except in the small portion of the centre of the waterfront protected by a breakwater. Laboring under this disadvantage of limited harbor advantages, the most has been made of the situation with this limited breakwater, and

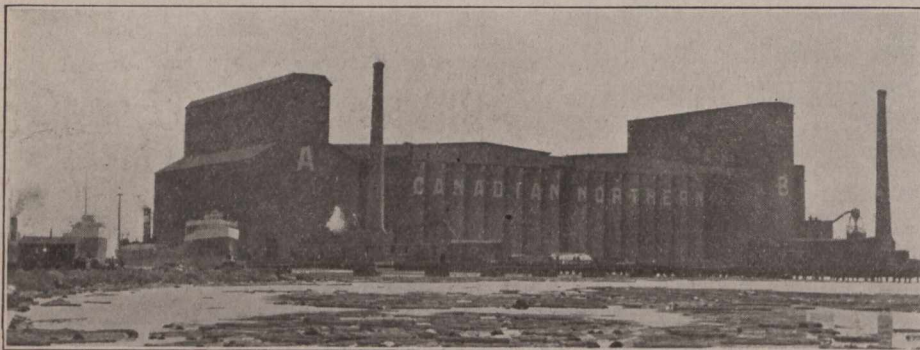


Fig. 9.—Canadian Northern Railway Grain Elevators.

to be the largest grain elevator in the world is in course of construction. The initial portion of the elevator, completed two years ago, had a capacity of 3,250,000 bush., and this has been added to during the last year, making a total storage capacity of 6,000,000 bush. The ultimate capacity of the first large unit will be 10,000,000 bush., with five more like it to follow as the grain traffic demands. In front of the elevator, there has been dredged out a turning basin, the dredgings from which have been used to form the land to the east of this point. On this made land, it is proposed to construct large coal docks for the handling

time along Empire Ave., joining the C.P.R. line a short distance south of the union station. By this means entrance to the heart of the city is obtained, the use of the street being under agreement with the municipality. Opposite the union station on the river front, the company has acquired a 600 ft. frontage on which a 600 ft. wharf and 400 by 60 ft. freight shed have been constructed, so that passengers from the boats may be landed conveniently to the station, there being a subway nearing completion under the railway yards to provide for access between the station and water front.

THE CANADIAN NORTHERN RY. en-

in the near future, it is expected that a breakwater will be completed from end to end of the city as indicated in the plan, fully compensating for the drawbacks given the harbor by nature. The ultimate plans will provide for a well equipped and commodious harbor.

CANADIAN NORTHERN RY.—The portion of the town occupied almost exclusively by the C.N.R. is the whole waterfront from Arthur St., the centre of the town, to the extreme southern border of the city, where it connects to Fort William. This section of the city is called the C.N.R. terminals. The C.N.R. station, which until recently was the end of steel and the terminal point for all traffic from the west, is at the foot of Arthur St., adjoining the shore end of a wharf. The station is in addition the headquarters of the division from Port Arthur to Winnipeg. At the corner of Cumberland and Arthur Sts., the main corner of the town, the C.N.R. built the first of a series of large hotels, the Prince Arthur occupying nearly a whole block, and looking down over the bay. This was completed and put in service about 3 years ago, and the impetus given to tourist traffic thereby has been considerable. The summer traffic coming up the lakes on the lines of steamships that make Port Arthur their port of call, mostly lands on the piers to the rear of the C.N.R. station, within a convenient distance of this large hotel, which has the characteristics of the large city hotels of the better class.

To the south of the station are the vari-

the north city limit, where the two lines separate, the C.N.R. following the lake shore more closely from there to Nipigon, where the lines finally separate. This section, from the station northeast, is a portion of the new line the C.N.R. is opening through the clay belt of New Ontario.

THE CANADIAN PACIFIC RY. terminals at Port Arthur are not very extensive, with its vast terminals so close at hand in Fort William. All the waterfront property for some little distance north of the C.N.R. station, is C.P.R. terminal property. The station is located diagonally opposite the C.N.R. station, between the C.N.R. hotel and the waterfront. Practically all the terminal water facility possessed by the C.P.R. in Port Arthur is a grain elevator about half a mile north of the station. The C.P.R. main line follows that of the C.N.R. in a general way to the centre of the town, coinciding with or paralleling it from that point to the north city limits.

PORT ARTHUR AND FORT WILLIAM Electric Ry.—The head office of this municipal enterprise is in Port Arthur, where are also located the shops. The line from Fort William, entering on the Fort William Road, finally strikes Cumberland St., which it follows to the north side of Current River, beyond which is located the large industrial tract of land owned by the municipality. A branch of the electric railway runs up Arthur St., branching off to the south when it reaches the top of the high ground back from the shore, this line

Tracing Carload and L. C. L. Traffic on the C. P. R.

W. R. MacInnes, Freight Traffic Manager, C.P.R., issued recently a circular dealing with the tracing of carload and less than carload traffic. The circular says that the indiscriminate and extensive commercial tracing now handled in the company's various offices, and originating directly or indirectly with shippers or consignees, has assumed such proportions that it is defeating the purpose sought by the shipping public, overloading the wires, and consuming the time of many clerks to no purpose. The tracing of either carload or less than carload shipments before they have had ample time to reach destination does not hurry the movement of shipments, but prevents prompt attention to legitimate tracing.

This matter came under the consideration of the Association of Transportation and Car Accounting Officers, which made a report to the American Railway Association. In the course of the enquiries it developed that shippers and consignees did not hesitate to start a tracer immediately their shipments were forwarded. As the result of the discussion the American Railway Association passed a resolution deprecating the practice of tracing from initial point to destination immediately the freight is offered for shipment, and advising delivery or furnishing passing reports to shippers or consignees, and recommending that the tracing of shipments should

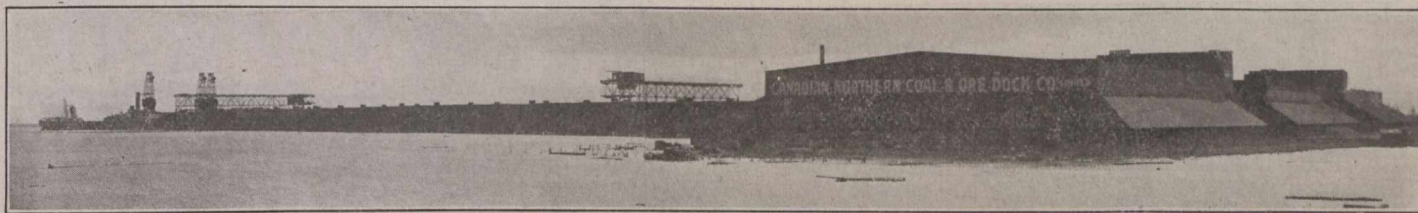


Fig. 10.—Plant of Canadian Northern Coal and Ore Dock Co., with Atikokan Iron Co., Beyond.

ous bulk freight wharves. Figs. 7 and 8 give a panoramic view of these terminal facilities as seen from the station. In the immediate foreground are the various C. N.R. package freight piers. Further along the harbor is the huge C.N.R. grain elevator, for many years the largest in the world, still holding that position, but there are larger ones under way. The capacity, 12,000,000 bush., has already been taxed to its limit and a considerable addition is being made, the unit construction of the elevator to be seen in fig. 9 making this possible. The location of the elevator is out in the harbor on a pile foundation, both sides of it being approached from the shore by a trestle.

Further along are the joint piers of the Canadian Northern Coal and Ore Dock Co. and the Atikokan Iron Co. The former plant is quite large, as shown in fig. 10, extending out into the harbor a considerable distance. The storage capacity of this plant is 500,000 tons of coal, handled by a system of belt conveyors, capable of discharging a 12,000 ton cargo in 12 hours.

Further along the harbor on the C.N.R. terminal property is the Thunder Bay Elevator Co.'s elevator.

The C.N.R. line entering Port Arthur from Fort William on the long tangent before referred to, runs into the terminal yards of the line, which are situated to the west of the C.N.R. elevators. Adjoining is the terminal locomotive house. Proceeding through the town, the line, after passing through the station, connects with the C. P.R. line, again following its own parallel right of way beyond Stephen St., to near

being about 1½ miles long. Between Fort William and Port Arthur, there is another branch line running out to the country club, along a road running due west. This line is upwards of a mile long.

Change in Intercolonial Railway's Accounting System.

In connection with the reorganization of the Government Railways operating and maintenance staff, which appears on another page of this issue, a change has been made in the system of accounting on the Intercolonial Ry., the system in use on the Canadian Pacific and many other lines having been adopted.

The system heretofore in use on the I.R.C. was one under which everything was assembled in Moncton, and the accounts kept in the general offices.

Under the new system which is being put into effect, the accounting will be done by divisions. An accounting staff is being placed in the four superintendents' offices, and these offices will report to Moncton, where the total accounts for the system will be assembled.

Under the new system it will be possible to hold each superintendent responsible for the expenses in connection with the operation of his division, and the management will be enabled to make comparisons, so as to ascertain which superintendent is carrying on the work in the most economical manner, and will be in a position to more quickly check any waste in construction or operation.

be confined to show unusual delay in transit, and that no tracing be done until, in the usual handling of freight, shipments should have reached destination.

The C.P.R. took up the matter as affecting its own lines, and after full discussion among the freight and car officials at Montreal and Winnipeg, the circular was issued. The rules set out in the circular are as follows:—Tracers must not be started, or requests made to trace freight, until the shipment has had a reasonable time in which to reach destination, and then only at the request of shipper or consignee. When tracing a shipment give the initials and number of car, point of origin, route, date forwarded, commodity, and destination. Tracers in connection with carload freight should be addressed to F. A. Gascoigne, Superintendent of Car Service, Montreal, for Eastern Lines; and A. Hatton, Superintendent of Car Service, Winnipeg, for Western Lines. In the case of less than carload shipments, the necessary information should be obtained through agent at shipping point or destination.

On account of the increased price of fuel oil the Australian government will change its oil-burning locomotives back to coal burning.

An ample supply of draft timber bolts should always be kept on hand at car repair points, as the time required to straighten and rethread old bolts may cause serious delay to important lading. If new bolts are always available, old ones can be fixed up at a more convenient time.

Canadian Northern Railway New Boiler Tools and Methods.

The common practice of rivetting over the heads of staybolts, with a low crowned head on the flat surface of the inner and outer sheets of the firebox, has been the cause of a great deal of trouble in maintenance. On the inner side of the firebox, or for that matter any part of the boiler against which the direct heat of the fire impinges, the thickness of metal should be as slight as practicable, in order that the difference in temperature between the two sides of the sheet may be small, as the greater the thickness, the slower the heat flows, and the greater must be the heat potential, so to speak. Projections of metal are also undesirable, catching the direct heat and absorbing it more rapidly than the smooth surface. The slight projection of the flattened rivet head in the old construction, as shown at the top in fig 1, catches the heat, and it is a no uncommon thing to frequently have trouble from burnt out staybolts on heavy runs, creating a fruitful source of expense.

The method adopted by the C.N.R. is that shown at the bottom of fig. 1, the plate being so depressed on the fire side that the top of the rivetted staybolt head is flush with the sheet, creating no projections for the gathering of heat. An added advantage is the ease with which the staybolt head can be efficiently caulked, the head resting in a depression presenting an excellent caulking edge around the rim of the depression. The staybolt as actually

drawing out the plate to the form shown below the punch. The sheet as actually drawn in practice is shown in fig. 3, the drawing out conforming very closely to the designed shape. It will be noted that the staybolt bearing is lengthened, a desirable factor. In inserting the rivet, a 4 thread length is projected through for rivetting

smaller than that of the top of the patchbolt head. The head of the tool is hexagonal. After tightening up as much as possible in the usual manner, with a wrench on the square head of the patchbolt, the tool is put on, and, under the vibration created by the hammer, the bolt is tightened down still further by a wrench on the hexagon of the tool. The hammering tends to draw the plates tighter together, creating a tight joint. The smaller radius cupping

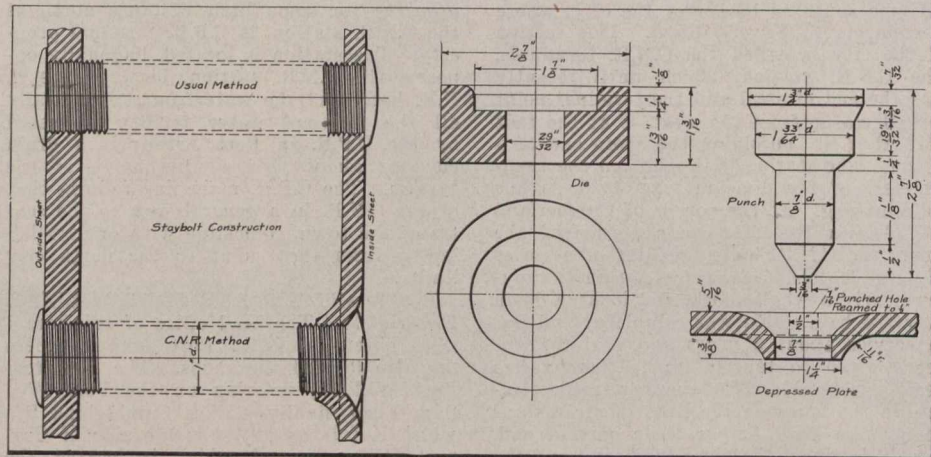


Fig. 1.—Punch and Die for Depressed Staybolt Holes.

over, which is a larger amount than would be possible with the flush plate. The heading snap is also shown in fig. 3, centering on the centre safety hole. The holding

on the end of the tool bears on the patch around the rim of the patchbolt head, raising a seam all round the bolt. A perfectly tight joint is assured.

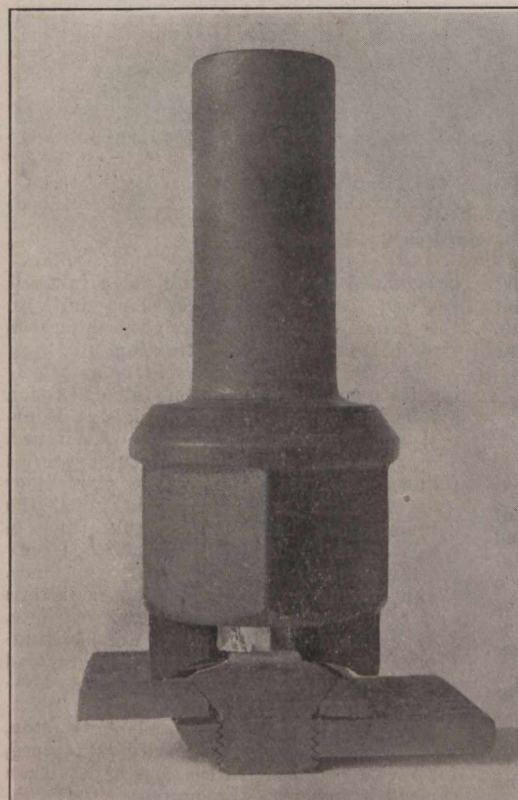


Fig. 2.—C.N.R. Patchbolt Practice.

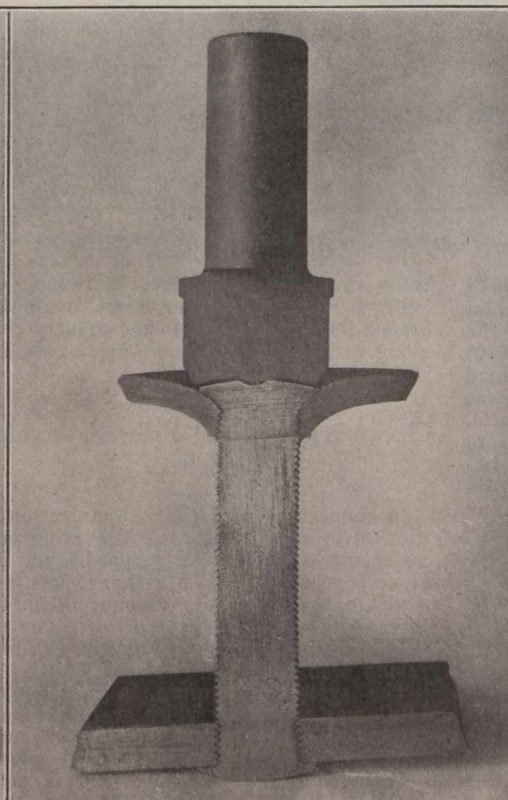


Fig. 3.—C.N.R. Staybolt Practice.

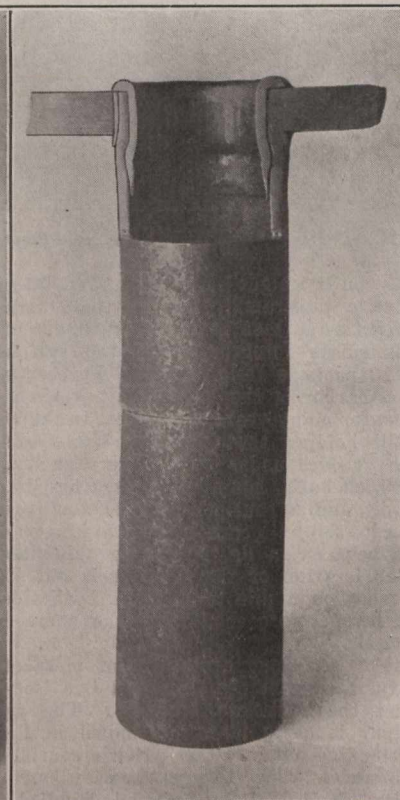


Fig. 4.—C.N.R. Tube End Strengthening Practice.

installed in a sheet is shown in fig. 3. It will be noted that the outer sheet is still treated in the usual manner.

The method of preparing the plate required the development of special tools. The plate is first perforated with a 7-16 in. punch, followed by a 1/2 in. reamer. The sheet is then annealed, prior to the depressing process. A punch and die of the form shown to the right in fig. 1 is employed for the depressing, the nose of the punch forcing itself through the 1/2 in. hole,

power thus obtained is considerably increased.

Patchbolts usually create trouble from their inability to be properly tightened down to hold the patch to the sheet, due to the roughness of the mating surfaces. The C.N.R. method is illustrated in fig. 2. The patchbolt is of the usual construction, partially severed under the square head for ease in cutting off. A special air hammer tool fits over top, the lower face of the tool being cupped to a radius slightly

The method of rivetting and the rivetting snaps employed are shown in fig. 5. On the right is a tightening up snap. The lower head of the rivet is held securely by the holder on. This hollow snap is slipped over the top of the red hot rivet, forcing the plates tightly together. The rivet head is then ready for forming. This would seem to be a much preferable method of tightening the plates than that of hammering all around the rivet on the plate as is the usual practice.

The snap on the left is that used for ordinary cone headed rivets, which of course centre themselves naturally. In the case of flat headed rivets, trouble is usually experienced with the rivet running over unless more than usual care is exercised by the boilermaker. The snap shown in the centre of the group overcomes this running over tendency in a very simple manner. In the centre of the snap, a $\frac{1}{8}$ in. hole is drilled to a depth of about $\frac{1}{2}$ in. The first

plate, there is the usual copper ring. The action of the expander is to so expand the tube in and around the plate opening as to form a solid joint. To finish, the outer edge is beaded over with a beading tool in the customary manner. The ends of tubes that have been thinned down by repeated expandings, to such a degree as are deemed unsafe, are reinforced by means of the same tool, inserting a short piece of smaller tubing in the end, after first cutting off the

proper use of the tools, resulting in a more uniform method of handling running and general repairs at all points.

Grand Trunk Pacific Railway Terminal Facilities at Edson, Alta.

For an outlying point on the G.T.P.R., Edson has been developed to a considerable extent in the short time the line has been running in there. The yards are fairly extensive, and the shops are equipped to handle repairs of a more or less heavy nature.

The car shop is 260 by 40 ft., and 24 ft. high, containing two through tracks, each of which can take 6 cars. Adjoining is a building 102 by 15 ft., 12 ft. high, for offices, store room and paint shop. Both buildings are of wood. All classes of cars are handled here, including passenger equipment, as many as 900 cars a month undergoing repairs either in the shops or yards.

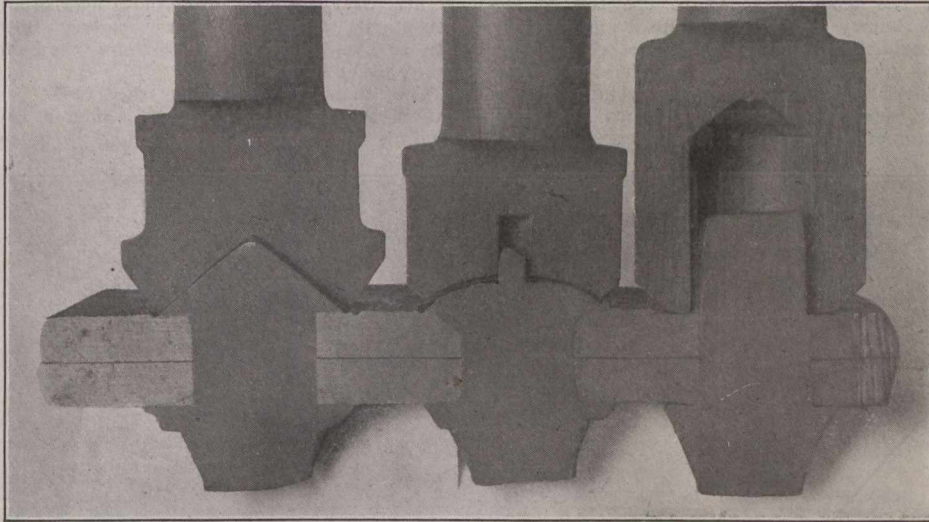


Fig. 5.—C.N.R. Practice in Expanding Tubes.

blow of the hammer on the head causes a small amount of the metal to flow up this hole, forming a small tit that automatically centres the snap on the rivet, a good rivet resulting.

Hand operated flue expanders, as almost universally used, are an ever fruitful cause of trouble. In the first place, they are far too slow in action, and the very fact that their action is a rotary one makes their use rather difficult in cramped places, such

inner beading, the reinforcing piece being beaded over in its place, all as in fig. 4.

The method of safe ending tubes is shown in fig. 7. The C.N.R. practice in this respect resembles that of many other lines. The safe end is flared, and slipped over the heated end of the tube, neither part being bevelled, a practice that is used with a considerable degree of success in some shops. After heating both parts, they are welded together in a rotary swedging machine, pro-

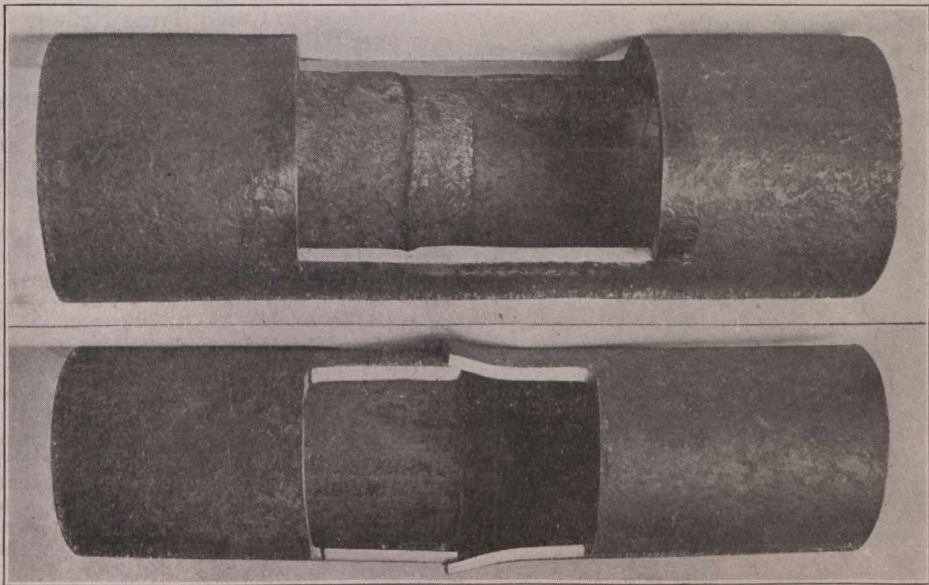


Fig. 7.—C.N.R. Practice of Safe Ending Tubes.

as the side tubes in the fire or smokebox. The C.N.R. practice is shown in fig. 6. An expanding member, made up of six segmental pieces of the form indicated, and held together by a stiff rubber band, are forced out against the tube wall by a tapered pin driven in by an air hammer. The annular recess around the expander, with rims around each side of the recess, forces the tube out in rings at each face of the tube plate. Between the tube and

ducing a joint like that shown in the lower part of the illustration. All the weld seam is on the inner surface.

The views that illustrate this article are from a set of photographs made up by the C.N.R. mechanical department for distribution to all the locomotive houses on the system. It is the intention to make them all up on a large card, which will be framed and hung up in a conspicuous place in the locomotive house, so that all will know the

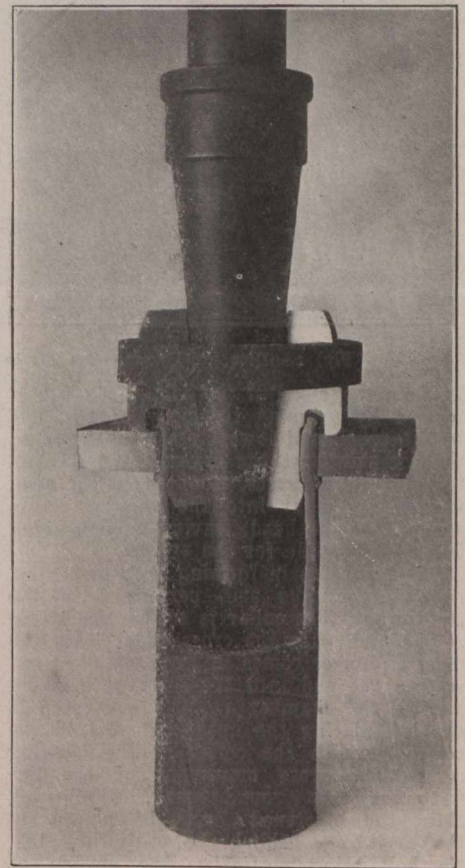


Fig. 6.—C.N.R. Practice of Expanding Tubes.

The car shop pay roll contains from 35 to 40 names.

There is also a 12 stall roundhouse, with a large divisional machine shop adjoining. This shop is equipped with both metal and woodworking machinery, the former for locomotive running repairs, and the latter for planing the lumber used over the system, being shipped east and west from Edson. Both roundhouse and machine shop are brick structure, employing about 75 men. The 1,000 ton coaling station was described in some detail in Canadian Railway and Marine World for July, 1912.

A blacksmith shop employs 3 blacksmiths. The equipment includes a steam hammer, steam shears and heavy punch. The yards contain in addition to the through main line track, 17 yard tracks.

We are indebted to J. Flynn, Car Foreman, Edson, for the foregoing information concerning the shops and yards.

Railway Mechanical Methods and Devices.

Forging Machine Work at the Canadian Northern Railway Shops.

Typical examples of the intricate kinds of work that can be handled on the forging machine in the C.N.R. Winnipeg blacksmith shop, J. Kiebler, Foreman, are shown in the two accompanying illustrations. Fig. 1 shows a finished eye bolt and the dies used in its production. F and R indicate the front and rear faces of the dies respectively. The initial step is that of forming the col-

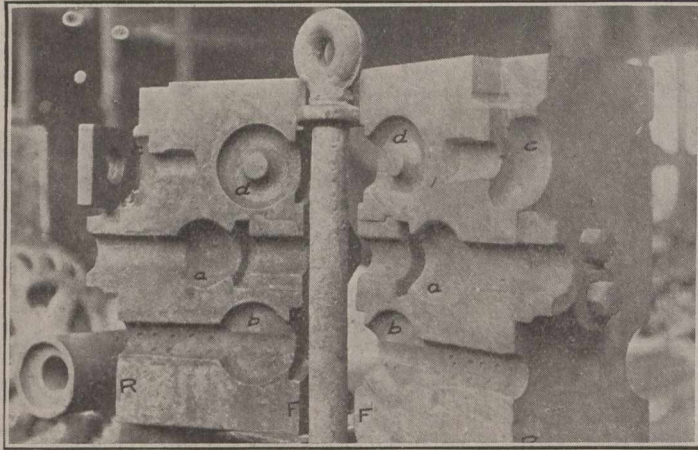


Fig. 1.—Dies for Forging Eyebolt in Forging Machine.

lar on the eye end of the bolt. This is performed by gripping the body of the bolt in the roughened lower recess in the dies; the die shown at the lower left hand corner of the two parts, mounted on the ram, upsets the collar into the annular recess around the die head, leaving enough stock in the hollow die for the eye.

The first step in forming the eye is that of upsetting the end, performed in the position a. The collar is set in the fitting recess, and after the cross slide closes the dies, a plunger comes in from the rear, upsetting the end into the form of a round ball in the chamber a. The next step is that of placing the upset ball end in the recess b, with the collar in the locating recess, the cross movement of the dies flattening the round head. Following this, the flattened head is placed in the cavity c, behind the projecting lug, the bolt being vertical. The closing of the dies holds the flattened head, a plunger on the ram then coming through the guiding hole in the lug at c, punching through the eye hole. The final operation is that of shaping the punched eye head at d, the cross slides on closing forming the eye into its final shape as shown supported between the dies.

The grab iron shown with its forming dies in fig. 2 is slightly more complicated in construction. The bar stock is placed in the groove a, from the front, placing the end against the rear stop. The cross movement of the dies gives the bar end an offset. This offset is next placed in the recess b, and held against the front of this chamber. The closing of the cross slide holds the stock, while a die on the end of the ram entering the chamber b upsets the end to the shape of the completed end of the grab iron. From b, the stock is carried to c, the upset end being placed therein, with the upset downward as in the upsetting operation. A punch on the end of the ram coming through the guiding hole in the

plate attached to the rear face of the stationary die at c, punches the bolt hole through the upset stock. All that is now required is that of bending the stock through a right angle, accomplished at d. The stock is placed in the groove in the top of the block attached to the top of the stationary die, with the upset end vertical, bearing out against the attached stop on the rear end. The lug on the top of the movable die on the cross movement of the die, bends the upset end into the cross channel in the rear face of the attached

which 3-16 in. screws can be fitted. Over each hole, a section of thick rubber is placed, backed up by a smaller sheet of thin metal. On this plate, in a recess in the centre, a ball headed screw bears, supported from the girdling frame. This holds the rubber tightly over the hole, providing a leak proof receptacle, which is used in a manner similar to the soldered hole mirrors used in many other shops.

The monetary saving in the time required by the plater to plate a mirror, including the time of preparation, is quite

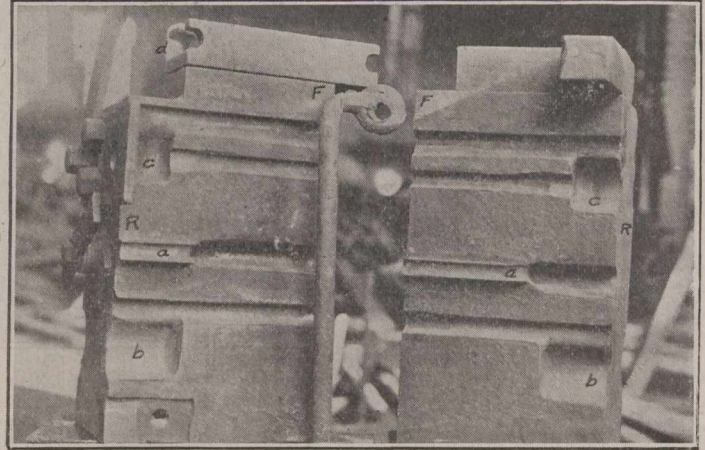
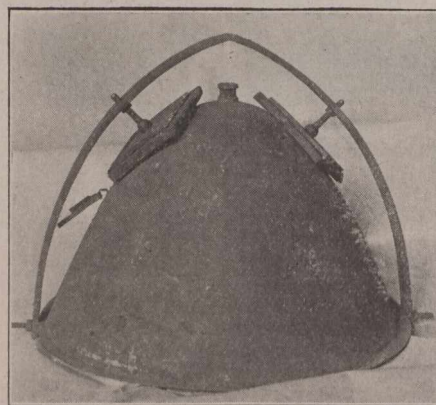


Fig. 2.—Dies for Forging Grab Iron in Forging Machine.

die, finishing the grab iron. The other end of the grab iron is finished in the same manner.

Plating Headlight Mirrors at Grand Trunk Railway Port Huron Shops.

The customary practice in plating the interior of the parabolic headlight mirrors used on locomotives is to solder pieces of sheet metal over the two electric carbon openings, and after making a tight job, to



Plating Headlight Mirrors.

fill the interior with the electrolytic fluid for the plating, making the headlight itself one electrode, and the suspended article in the bath, the other electrode.

The practice at the G.T.R. shops at Port Huron, Mich., is different from this, a simpler scheme having been devised, the arrangement being shown in the accompanying illustration. For each of the different sizes of headlights, there is a heart shaped loop similar to the one around the outside of the headlight mirror in the illustration. Opposite the openings for the carbons, there are slots in the girdling band, into

considerable. In addition, there is the factor of a better job being produced. When the openings are soldered up, extreme care must be exercised after the plating, in the removal of the patch, for if the metal be too hot, the plating will be injured.

Tire Clamp at Grand Trunk Railway Stratford Locomotive Shops.

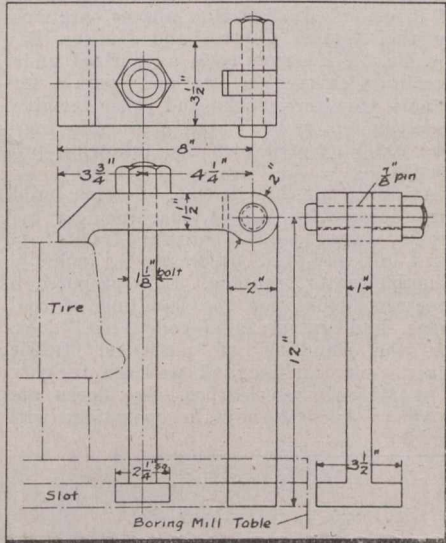
A handy tire clamp for the boring mill is shown in the accompanying illustration, as used in the G.T.R. locomotive shops at Stratford, Ont. The tire to be bored is clamped concentrically on the boring mill table, with the usual vise jaws clamped to the mill table, bearing inward on the tire flange. In addition to the vise holding, it is customary to hold the work down on the table with clamp bolts and strips resting on outside blocks. The clamping bolt has a T head on the lower end fitting into one of the channels in the table. A cross strip is held down on the work and a block of equal height by this bolt, clamping the work securely in place with the assistance of the centralizing vise jaws. This method is more or less unhandy from the fact that on every occasion the machine has a new tire inserted, the bolt, block and clamp require to be removed and replaced on the tire.

The tire clamp to be here described, combines all the advantages of the older method of clamping in a simpler form, for the whole device can be lifted bodily and placed in position on the mill. A 1 x 2 in. vertical rod of the requisite height, has the lower end formed to fit in the table slot, in which it remains permanently during the period in which tires are being bored. The clamp bar is hinged to this vertical bar at the top, and is tightened down on the tire by a 1 1/4 in. bolt fitting the table channel at the lower end. The bolt is off centre to give the greatest possible leverage on the tire. When removing the tire, all that it is necessary to

do is to remove the nut and swing back the clamp arm. It is a very valuable boring mill adjunct, and might be employed to equal advantage on other jobs of a duplicate nature. Its use on the drill press likewise suggests itself.

Air Hoist and Screw Drill.

The accompanying drawings show a home made air hoist for roundhouse use, which is very serviceable for hoisting or



Tire Clamp for Use on the Boring Mill.

lowering the heavy parts on locomotives. Fig. 1 shows the elevation view of the hoist and the air cylinder with piping attachments which may be arranged to suit connections. An extra attachment,

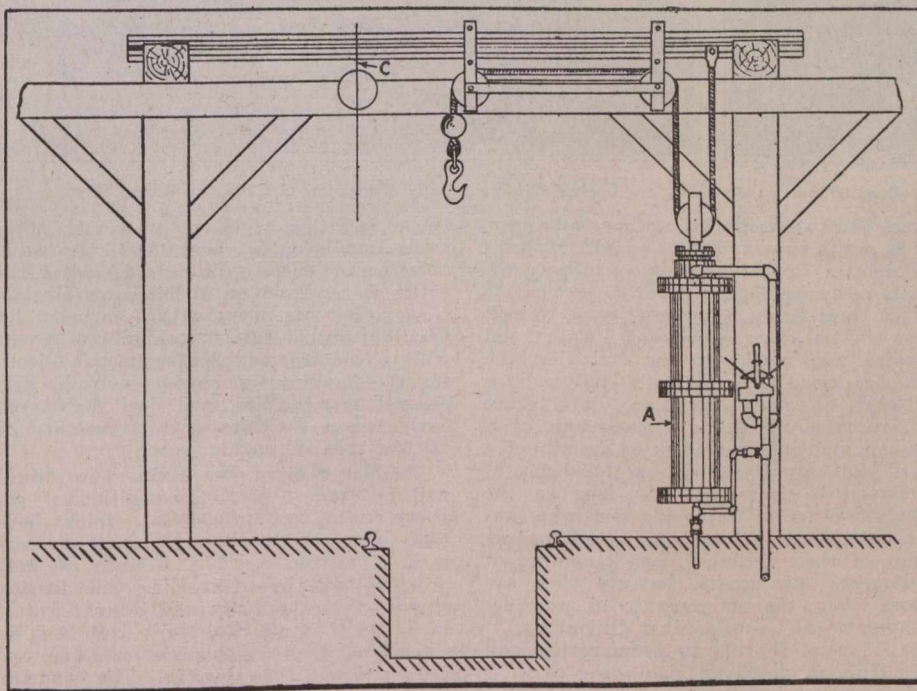


Fig. 1.—Air Hoist for Roundhouse.

which is put on at the position indicated in fig. 2, is available to put in the hoisting cable from one side when it may be required to raise or lower air pumps on the locomotive.

Fig. 3 shows a ratchet or screw drill specially adapted for work in places where the space for drilling is limited. The drill may be made as short as possible and is combined with a feeding screw as shown. The end of the drill into which the thread

is tapped may be made of a square form readily adaptable to an ordinary spanner wrench for turning the drill. The entire length of the device need not exceed 4 ins. Roundhouse men are well aware that it frequently happens that there are broken studs or bolts in spaces where the ordinary ratchet cannot be operated. A drill of this kind will be found not only of service in many instances, but will also help to avoid removing other parts of the locomotive to make room for the operation of a regular ratchet.—J. G. Koppell, in Railway and Locomotive Engineering.

The Canadian Pacific Railway's New Station at Edmonton.

One of the smaller works of construction which the C.P.R. is carrying out in the west is a new station at Edmonton, Alta., which is necessary owing to the rapid growth of the city. This station will have entrance both on Jasper Ave. and Ninth St., but the main entrance will be on the latter thoroughfare where a large carriage space has been provided. The tracks are elevated over Jasper Ave., and a stairway entrance leads to the concourse. At this point there is a turnstile exit from the tracks. The main entrance is imposing, and ample space has been provided for standing vehicles, with a sidewalk for foot passengers, fourteen feet wide. The entrance from Ninth St. into the main building opens directly into the general waiting room, which is 50 ft. square, and on one side have been conveniently placed the elaborate ticket offices. Leading from the main waiting room is a corridor 34 ft. long, at the end of which is arranged the baggage room, with large counter space, and adjoining this is the parcel room. On either side of the corridor a waiting room

for women and a smoking room for men have been provided, each fitted up with complete toilet service. Immigrant quarters have been arranged under the main building, and entrance is made through a suitable corridor from the tracks northwards. This accommodation contains every convenience, and is artificially ventilated. The remainder of the huge basement is occupied by the baggage department with the exception of an allotment to the Do-

minion Express Co. for its business.

The exterior of the main building and the retaining wall running along Jasper Ave., will consist of reinforced concrete, with a certain amount of metal facing to relieve the dullness of the concrete, which will be specially treated with carborundum blocks. These will be used for rubbing the surface of the concrete smooth, giving the structure somewhat the appearance of a stone building. It will be in reality a monolithic structure, and its appearance will depend a great deal on the manner in which the cement surface will be finished by the carborundum blocks. The marquee which is to be erected at the main entrance will be of cast and wrought iron, with a glass roof, and supported on columns which

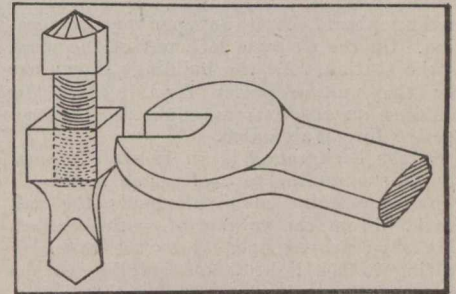


Fig. 3.—Screw Drill.

will stand out to the edge of the sidewalk. The interior of the waiting room will be finished in cement, which will have a beautiful white surface, and will be very attractive. It will wash and will have the

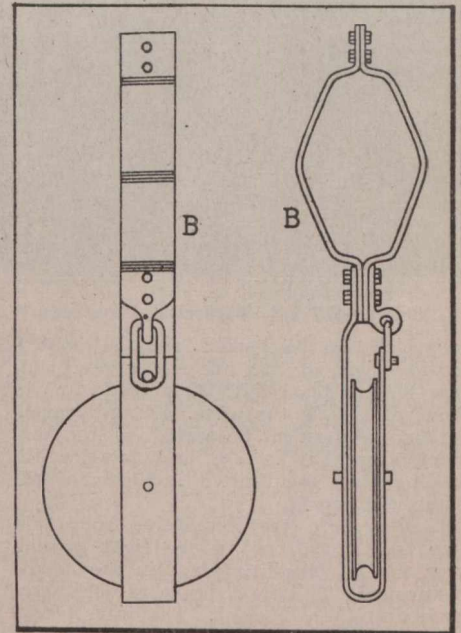


Fig. 2.—Attachment for Air Hoist.

appearance of plaster, but will be of a very much harder substance. The base of the room will be of marble and a terrazzo floor will be inserted. The wainscoting will be 4 ft. high, and above this the walls will be finished in pilasters and panneling with plaster cornices, and when colored or painted will give a very artistic effect. The front of the ticket offices, which are in the waiting room, will also be finished in cement, and above the counter will be iron grilles. There will be practically no wood used in the waiting room except the doors. The building was designed in the office of the Superintendent of Building Construction, F. L. Ellingwood, at Montreal, and the work is being carried out under the superintendence of the Chief Engineer, J. G. Sullivan, Winnipeg.

Grand Trunk Pacific Railway Terminals at Rivers.

Until last January, all the motive power work on the G.T.P.R. was handled at Rivers, Man., in shops built originally to accommodate divisional equipment only. Rivers is the first divisional point west of Winnipeg, and with the prospect of the new shops the National Transcontinental Ry. Commission was building for the company at Transcona, which have since been moved into, the divisional equipment was not made very extensive, and to accommodate the work, certain temporary arrangements and buildings were made necessary, as has been explained in previous articles.

Practically the whole divisional layout is shown in fig. 1, a view from the end of the coaling plant. It is an open prairie location. On the extreme left, out of the view, is the station. All the buildings shown are for the motive power department. The building on the extreme right is the locomotive foreman's office.

In the background is an 18 stall locomotive house, to the rear of which is the divisional machine shop, alongside the tall stack. From the volume of work handled, this shop proved unequal to the task, resulting in the light frame building to the right of the end of the locomotive house,

as to keep away building companies. The company, to relieve this situation, has been compelled to construct some temporary two room buildings, which may be noticed in the distance, to the rear of the buildings.

In the distance, on the right, there will be noted a long trestle bridge, shown in fig. 2 at closer range. This is typical of the type of construction used on the line pending the time when it will be advisable to replace these structures with permanent steel trestles.

Maintenance of Way by Contract.

A roadmaster in the Maritime Provinces writes:—I have read with much interest the articles on letting maintenance of way work by contract in Canadian Railway and Marine World for Oct. and Nov., 1912, and Feb., 1913. The article in the October issue favors a maintenance by contract, one reason given being that contractors are better equipped to do the work. I cannot understand why a railway company should not be able to equip its regular forces with material and tools as well as a contractor would be required to supply by specification.

My experience with contract work on railways has been, that in nearly every case after the contract was completed and passed by the engineers, the regular track

will follow in economical maintenance. Then we will hear no more of track repairs by contract.

Algoma Central Terminals Bonds

There was offered in London, Eng., recently, at 95, an issue of £500,000 5% 1st mortgage 50 year gold bonds of the Algoma Central Terminals, Ltd., principal and interest unconditionally guaranteed by the Lake Superior Corporation. The Algoma Central Terminals, Ltd., has a capital of \$100,000, all of which, with the exception of directors' qualification shares, are held by the Algoma Central and Hudson Bay Ry. Co. The company is authorized under Dominion charter to own and operate terminals, elevators, docks and other terminal facilities for railway and steamship lines. The company will own the following properties:—

At Sault Ste. Marie, Ont.—Station buildings, locomotive houses, machine, car and repair shops, yards, transfer tracks and right of way and other lands, including valuable water frontage. It is proposed to construct docks for the handling of coal, stone, and gravel; also commercial docks for the handling of passenger traffic, general merchandise and package freight.

At Michipicoten Harbor.—Ore docks and commercial docks now in operation, with

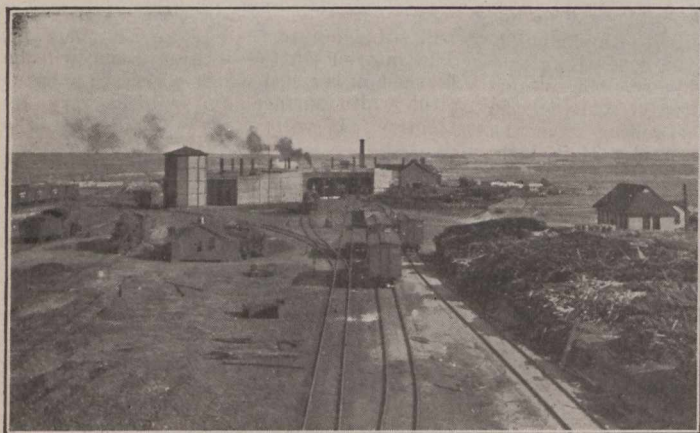


Fig. 1.—G.T.P.R. Mechanical Department Yard at Rivers, Man.

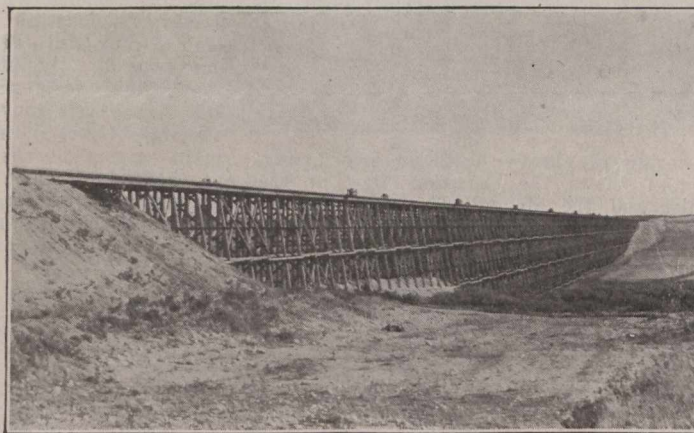


Fig. 2.—Typical Timber Trestle Bridge on G.T.P.R. at Rivers, Man.

in which the blacksmith shop is housed. To the right of this are the stores buildings for the blacksmith shop stock, and in front of this is the wheel storage ground, rather inconveniently located to the machine shop, but in the best location for loading that the limited facilities of the plant will permit.

Leading into the locomotive house are two tracks, the one to the right passing over the ash handling plant in the middle foreground. This track branches with three leads over the ash plant. The outer tracks of these three lead along beside the 400 ton coal plant, a description of which has appeared in these columns, and from which the view is taken. Wood for firing is piled on the right.

The buildings of the car shop are to the left, out of the view. These buildings are not very extensive, as all the car repairs of the system have been handled at Melville, Sask., the next divisional point west. As the view shows, the grounds are of such extent as to allow of considerable expansion. In addition, the company owns a tract to the right of the land now utilized. On this tract there has been until recently, a tented city of considerable extent to accommodate the employes, the temporary location of the motive power department at Rivers making the construction of many permanent buildings such a poor investment

forces had to spend a lot of time to bring it up to anything near the standard. My candid opinion is that as soon as railway officials recognize that in order to procure efficient track forces, they must cease to look upon the trackmen as common laborers, and navvies, and awake to the fact that the good trackman is a mechanic, and requires at least, as much education, intelligence and resourcefulness, as a brakeman or a fireman, and to be remunerated accordingly; then, and only then, will the efficiency of trackmen be increased. As long as the present system of employing men who cannot obtain any other employment, on account of their illiteracy, and ignorance of mechanical law exists, because they are cheap labor, the maintenance of way department will be up against difficulties.

It is, therefore, time to recognize the fact, that the man on whose faithfulness to duty, and on whose constructive intelligence, depends the safety of the lives of the great travelling public, and who holds up with his broad shoulders and honest hands, the foundation of the whole structure, should be rated, and his time and service valued as high as the men in the other departments. When this much needed reform is accomplished, and the track employes are recognized at their true value, the efficiency of the maintenance of way forces will be largely increased and progressive results

track facilities, right of way and other lands amounting to about 1,000 acres, suitable for additional terminals, including the entire water front on Michipicoten Harbor. New pocket ore docks with a capacity for handling over 1,000,000 tons of ore a year will be constructed, also commercial docks for the handling of passenger traffic and general merchandise, and coal docks and coal storage facilities with a capacity of 250,000 tons of coal a year.

The proceeds of the bonds now issued will be applied in the acquisition of the above mentioned properties, which have been taken over by the company at a valuation of £266,288. The balance of cash provided will be utilized for the further extension of the docks and other terminal facilities at Sault Ste. Marie and Michipicoten and the construction of docks and terminals at Little Current. The company has leased all its property at Sault Ste. Marie and Michipicoten to the Algoma Central & Hudson Bay Ry. for 999 years, the railway company agreeing to pay as rental all expenses of maintenance and operation of the properties, together with the interest on the bonds and a sinking fund sufficient to redeem them at maturity. The properties at Little Current belonging to Algoma Eastern Terminals, Ltd., have been leased on the same terms to the Algoma Eastern Ry.

Steam Railway Statistics for 1911-12.

The returns for the steam railways in Canada for the year ended June 30, 1912, issued by the Comptroller of Railway Statistics, J. L. Payne, show that there were 26,727.23 miles of railway in operation, an increase of 1,330.37 miles over June 30, 1911. Of this increase over 83% took place in the four western provinces. In addition to this increase of mileage in operation there were 1,622.50 miles of line, chiefly Grand Trunk Pacific Ry., in operation, which are still regarded officially as being "under construction." In addition there are 1,752.49 miles of second track (an increase of 142.53 miles), and 6,148.92 miles of yard track and sidings (an increase of 599.39 miles), making a total of 34,629 miles of all tracks in operation, against 32,559 miles on June 30, 1911. Of the 8,825.80 miles of track dealt with as being under construction, 1,622.50 miles were in operation, 1,738.04 were completed, 3,990.76 under contract, and 1,474.50 were ready to be placed under contract. The railway mileage in operation in the several provinces, as compared with June 30, 1911, was as follows:—

	Miles.	Miles.
Ontario	8,545.56	8,322
Quebec	3,882.61	3,882
Manitoba	3,520.42	3,466
Saskatchewan	3,753.85	3,121
Alberta	1,896.64	1,494
British Columbia	1,854.53	1,842
New Brunswick	1,545.10	1,548
Nova Scotia	1,357.48	1,554
Prince Edward Island	269.33	269
Yukon	101.71	102
Total	26,727.23	25,400

A difference of 3.50 miles is made in New Brunswick in correction of an error in the returns of the previous year.

The total capital liability was \$1,588,937,526, of which \$770,450,351 represented capital stock, and \$818,478,175 funded debt. This is an increase of \$21,251,664 in stocks, and \$38,996,661 in funded debt, a total of \$60,248,325 in the year. By eliminating the mileage of Government railways and duplication in stock and bond issues, the capital liability represents \$50,832 a mile, a relatively low figure. The total amount paid in dividends on capital stock was \$31,164,791, equal to a rate of 4.04%, as compared with \$30,577,740, equal to a rate of 4.08% paid for the year ended June 30, 1911. Of the dividends \$18,487,000 was paid on common stock, and \$12,677,791 on preferred stock.

The cash aid given during the year totalled \$5,892,818.34, of which \$5,858,163.34 was paid by the Dominion Government, \$26,115 by the provinces, and \$8,500 by municipalities. The great difference in the amount paid by the Dominion Government over 1910-11, is accounted for by the payment of \$4,994,416.34 paid to the Grand Trunk Pacific Ry., under the "implementing" clause of agreement guaranteeing its bond issue. These figures bring the amount paid in aid of railway construction by the Dominion Government to \$154,075,235.09; by the provincial governments to \$35,945,515.16, and by municipalities to \$18,051,323.60. In addition land grants by the Dominion (discontinued since 1894) and the Provinces have aggregated 56,052,055 acres, and bonds guaranteeing \$245,070,045 of bonds have been given by the several governments as follows:—

Dominion	\$91,983,553
Manitoba	20,889,660
Alberta	45,489,000
Saskatchewan	32,500,000
Ontario	7,860,000
Nova Scotia	5,022,000
British Columbia	38,946,832
New Brunswick	1,893,000
Quebec	476,000
Total	\$245,070,045

An increase of \$96,733,688, as compared with the amount outstanding June 30, 1911.

The earnings from all sources aggregated \$219,403,753, an increase of \$30,670,259, or 16.2% in the year, the source of revenue being as follows:—

	1910-11.	1911-12.
Passengers	\$50,566,894	\$56,543,664
Mails	1,869,414	1,914,720
Express	4,674,135	5,294,388
Baggage, parlor cars, etc.	1,207,555	1,295,415
Freight	126,570,534	149,961,140
Station and train privileges	826,252	1,086,687
Telegraphs, rents, etc.	3,018,710	3,307,739
Total	\$188,733,493	\$219,403,753

The operating expenses were \$150,736,540, or 68.7% of the gross income. The total increase in operating expenses was \$19,691,494 in the year, the distribution of the same, with the comparative figures for 1910-11, being:—

	1910-11.	1911-12.
Way and structures	\$29,246,093	\$31,514,098
Equipment	26,127,638	29,811,510
Traffic expenses	4,831,744	5,293,700
Transportation	66,343,269	78,969,544
General expenses	4,487,039	5,137,688
Total	\$131,034,784	\$150,736,540

The railways carried 41,124,181 passengers and 89,444,331 tons of freight, an increase of 4,026,463 passengers and 9,560,049 tons of freight over 1910-11. The following tables give general statistics regarding traffic:—

	1910-11.	1911-12.
PASSENGER TRAFFIC.		
Number of passengers	37,097,718	41,124,181
Passengers carried one mile	2,605,968,924	2,910,251,636
Passengers one mile per mile of line	102,597	108,888
Passengers per mile of line	1,460	1,539
Average passenger journey (miles)	70	71
Average number of passengers per train	60	62
Passenger train mileage	36,985,911	40,440,393
Mixed train mileage	6,277,468	6,473,882
Earnings from ticket sales	\$50,566,894	\$56,543,664
Earnings from passenger service	\$58,317,998	\$65,048,187
Average receipts per passenger	\$1.360	\$1.375
Average receipts per passenger per mile (cents)	1.944	1.943

	1910-11.	1911-12.
FREIGHT TRAFFIC.		
Tons hauled	79,884,282	89,444,331
Tons hauled one mile	16,048,478,295	19,558,190,527
Tons hauled one mile per mile of line	631,829	731,776
Average haul, miles	200	218
Freight train mileage	52,498,866	60,126,023
Mixed train mileage	6,277,468	6,473,882
Revenue from freight	\$124,743,015	\$148,030,269
Average tons per train	305	325
Average cars per train	18.03	18.19
Average tons per car	16.91	17.87
Average receipts per ton per mile (cents) .....	.777	.757

The freight tonnage was divided by classes as follows:—

	1910-11.	1911-12.
Products of agriculture	13,809,536	17,300,945
Products of animals	3,190,702	3,159,280
Products of mines	28,652,236	31,467,799
Products of forest	13,238,347	14,152,721
Manufactures	13,573,987	16,241,081
Merchandise	2,438,089	2,711,963
Miscellaneous	4,981,385	4,410,552
Total	Tons 79,884,282	89,444,331

Further details of earnings and operating expenses are as follows:—

	1910-11.	1911-12.
Gross earnings	\$188,733,494	\$219,726,540
Net earnings	57,698,709	68,677,213
Gross earnings per mile	7,430.45	8,209.94
Net earnings per mile	2,271.60	2,569.58
Earnings per passenger	1.363	1.375
Earnings per ton	1.561	1.655
Earnings per passenger train mile	1.348	1.390
Earnings per freight train mile	2.376	2.494
Earnings per train mile, all trains	2.103	2.174
Operating expenses	131,034,785	150,726,540
Operating expenses per mile	5,158.85	5,639.48
Cost of running trains per mile	1.460	1.493

TRAIN MILEAGE.

	1910-11.	1911-12.
Passenger trains	36,985,911	40,440,393
Freight trains	46,220,813	53,652,141
Mixed trains	6,277,468	6,473,882
Special trains	232,341	363,855
Total	89,716,533	100,930,271

FREIGHT CAR MILEAGE.

	1910-11.	1911-12.
Loaded freight cars	946,946,917	1,102,719,543
Empty freight cars	311,984,866	310,974,528
Caboose cars	47,834,318	55,692,091
Total	1,306,766,101	1,469,386,162

There were 4,484 locomotives, 4,946 passenger cars, 140,918 freight cars, and 10,466 company service cars in the service of the several companies, against 4,219 locomotives, 4,513 passenger cars, 127,158 freight cars, and 9,579 company service cars on June 30, 1911. In addition 181 locomotives and 7,593 cars were reported as being leased at June 30, 1912, and fast freight lines had 265 cars in service.

LOCOMOTIVE MILEAGE.

Freight	57,143,590
Passenger	40,944,058
Mixed	7,742,514
Switching	21,159,394
Special	411,924
Total	127,401,480

The locomotives consumed 7,783,736 tons of fuel, chiefly coal, at a cost of \$24,160,823. The use of oil as a fuel is reported for the first time officially, 1,729,577 gallons being used during the year.

The returns of accidents show that 568 persons were killed and 3,780 injured, an increase of 73 in the number killed and of 451 in the number injured, as compared with 1910-11. There were 545 persons killed and 2,437 injured by the movement of trains, distributed as follows:—

	Killed.	Injured.
Passengers	47	485
Employes	215	1,606
Trespassers	235	193
Non trespassers	48	120
Postal clerks and others .....	..	33
Total	545	2,437

One passenger in every 872,855 was killed, and one in every 84,792 was injured, as compared with one in every 1,324,919 killed and one in every 124,487 injured in 1910-11.

The number of railway employes on June 30, 1912, was 155,901, against 141,224 on June 30, 1911, and the aggregate salaries and wages was \$87,299,639, an increase of \$6,937,984.

Fifteen million ties, costing \$6,700,000, were used during the year; the amount paid in taxes increased from \$1,792,390 to \$2,200,529, and 3,544 miles of line were operated by telephone, an increase of 238 miles over that so operated in 1910-11.

Speed of Locomotives Running Tender First.

The Board of Railway Commissioners has issued a circular stating that it has been impressed with the number of injuries to enginemen (in some cases fatal), apparently due to locomotives being run tender first at excessive rates of speed; and it directs that steam railways issue instructions requiring that locomotives running tender first, other than suburban tank engines equipped with pilot on tender, shall not exceed a speed of 20 miles an hour, and that a copy of such instructions be filed with the Board.

By means of moving pictures, colored so as to be as realistic as possible, the Union Pacific Rd. is carrying on a campaign among its locomotive drivers and firemen. The fire, in its different stages, is depicted on a screen in a car equipped for the service, and so successful has the project proved that a marked decrease in the amount of coal consumed and the density of smoke given off by the locomotives has been noticed at the points where the illustrated lectures have been given.

Reorganization of the Government Railways Management.

As already announced in Canadian Railway and Marine World, some changes have recently been made in the organization of the Dominion Government railways management, particularly in regard to the abolition of the position of Chief Engineer, the placing of all engineering matters under the Engineer of Maintenance, subject to the direction of the General Superintendent, and the placing of the maintenance of way under the superintendents. The reorganization was effected under an order in council, which provides as follows:—

THE GENERAL SUPERINTENDENT, under the direction of the Managing Board, shall have charge of all property of the Intercolonial and Prince Edward Island Railways. He will be responsible for the economical and proper maintenance and repairs of all rolling stock, machinery and equipment at shops and repair yards, for the condition of roadbed, track, bridges and other structures, and for the proper and economical maintenance, repairs and renewals of the same. He will have charge of and be responsible for the safety and efficiency of transportation service, and for the economical operation thereof; for the execution of all expenditures made on account of revenue, together with such works on account of capital as the department may from time to time place under his direction; for the cost of forces and for the quantity of material and supplies used on the work under his charge, and will perform such other duties as the Board may direct. In case of accident upon any of the lines under his charge, he shall immediately report the facts to the Managing Board, and, as soon as possible, institute a thorough investigation into the causes which led to it, and communicate in writing the result, together with his views and action upon the case, to the Managing Board. He shall keep the Managing Board fully advised of all occurrences and transactions of importance connected with his department.

THE ENGINEER OF MAINTENANCE will, under the direction of the General Superintendent, have general supervision of all engineering and maintenance of way matters. He will issue, when approved by the General Superintendent, standard plans and specifications and rules and regulations for maintenance, repairs and renewal of bridges, buildings, roadbed and track, signals and other structures, and will see that standard plans and rules are carried out. He will prepare all plans and specifications as directed. He will compile and maintain all necessary records and statistics bearing on the physical condition of the railway, other than rolling stock and machinery. He will furnish superintendents and resident engineers with copies of standard approved plans and rules and regulations. He will supervise the preparation of all rail charts, bridge load charts, standard and special bridge plans, masonry and steel work, together with specifications for the same. He will arrange for proper inspection of all new steel bridge installations, and make special and periodical inspection of existing bridges, trestles and culverts, and will compile and maintain all necessary records and statistics in connection with the same, and perform such other duties as may be assigned him by the General Superintendent.

SUPERINTENDENTS will report to and receive instructions from the General Superintendent. They will have charge of all property on, and be responsible for the operation and maintenance of, their respective divisions. They will consult the

Engineer of Maintenance on all maintenance and engineering matters, and with the Superintendent of Motive Power on car and mechanical matters. They will approve all maintenance of way and engineering vouchers and pay rolls for their respective divisions, mark distribution voucher for the Auditor of Disbursements, and perform such other duties as the General Superintendent may direct.

RESIDENT ENGINEERS will report to the superintendents on general matters and to the Engineer of Maintenance on engineering and technical matters. They will prepare all necessary plans, specifications and estimates in connection with repairs, renewals and additions; will report to the Engineer of Maintenance any departure from standard and approved plans as to roadbed and track, and to the superintendents on all other matters; will make semi-annual inspections and send reports on same as above; will perform all engineering work on their respective divisions, compile and maintain complete records of the physical condition of the division and perform such other duties as may be assigned by the superintendents and Engineer of Maintenance.

ROADMASTERS will report to their respective superintendents.

THE SUPERINTENDENT OF MOTIVE POWER will, under the direction of the

The Canadian Pacific Railway's New Station at Vancouver.

A full description of the new passenger terminal and office facilities, which are under construction at Vancouver, was published in Canadian Railway and Marine World for July, 1912, and a ground plan was given in the issue for Aug., 1912. The accompanying illustration, shows the Cordova St. elevation of the new station, which is being built immediately adjoining the old site at the lower end of Granville St. The building, which is of classic type, was designed by Barott, Blackader and Webster, of Montreal.

The new building, which will be four stories high and extend 400 ft. on Cordova St., will be of an imposing character. The exterior will be of brick and limestone with a granite base. In the designing of this new terminal the comfort of the passengers has been considered from every point and it will be a most up to date terminal. The main waiting room will be 54 ft. 10 in. by 210½ ft. with an Ionic pilaster treatment and a coffered ceiling. The sub waiting and lunch rooms will be of simple design, in harmony with the main waiting room. The upper floors are to be arranged as offices for the operating and other local staffs. The present building on Granville



The C.P.R.'s New Station at Vancouver.

General Superintendent, have supervision of all matters pertaining to the construction, operation and maintenance of locomotives, cars, machinery, floating equipment, shops and roundhouses; will issue, when approved by the General Superintendent, standard plans and specifications and rules and regulations covering their construction, maintenance and repair, and will keep a record of all equipment and its condition, and perform such other duties as may be assigned by the General Superintendent.

THE RIGHT OF WAY AND LEASE agent will supervise the preparation of correct station, right of way and property plans; will supervise the preparation of leases, deeds, etc., and keep complete records of the same, and perform such other duties as may be assigned him by the General Superintendent.

A General Passenger Agent's Appreciation.—W. P. Hinton, General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, in remitting his renewal subscription, writes: "I congratulate you on the continued growth of Canadian Railway and Marine World and the valuable matter contained therein. It is absolutely essential to Canadian railway men."

Electric Traction on 450 miles of main line track of the Chicago, Milwaukee and Puget Sound bed between Harlowtown, Mont., and Avery, Idaho, is contemplated.

St. will remain until the completion of the new station.

Work has already started and the excavation and foundations are well under way. The contractors, Westinghouse, Church, Kerr and Co., are rushing the work with the greatest speed possible. The new terminals will cost nearly \$1,250,000, in addition to which some \$2,000,000 are being spent on the enlargement of the Hotel Vancouver.

Eight Large Wireless Telegraph Stations are to be built by the Marconi Wireless Telegraph Co. of America, according to a recent announcement. Half of these will be sending and half receiving stations; they will be in working pairs, but with sending and receiving units placed 30 miles apart to prevent interference. One pair is to be at Oahu, Hawaii, one at Tamales Bay and Bolinas, Calif., and the third near Belmar, N.J. The fourth will be in Eastern Massachusetts. It is reported that these stations will permit transmission of messages across the Pacific Ocean, and increase the capacity of the present service between New York and London. The range is designed to be from 4,000 to 6,000 miles. The towers will be 400 to 450 ft. high, it is reported, there being 12 at each station, arranged in a semicircle to support the antennae.

The best remedy for the protection of steel or ingot iron against failure by pitting, is the removal of the mill scale.

White Pass and Yukon Railway Co's. Annual Report, Etc.

Following are extracts from the directors' report for the year ended June 30, 1912, presented at the annual meeting in London, Eng., recently. The accounts include the results of the operations of the local companies, all of whose capital is owned by the W.P. and Y.R. Co., for their financial year, which ended Dec. 31, 1911:—

The profit and loss account, after providing for interest on debenture stock and debentures and all charges, shows a net profit for the year of £25,840 19s. 9d. Adding to this £9,249 8s. 5d. carried forward from the preceding year, there is a balance at credit of profit and loss of £35,090 8s. 2d. Out of this the full sinking fund instalment of £16,586 for the 5% consolidated debenture stock, and the instalment of £2,156 3s. 10d. for the sinking fund for the branch line bonds due in 1912 have been provided by the purchase of £18,742 of 5% consolidated debenture stock at a cost of £17,965 17s. 10d. The directors recommend that a dividend of 2s. per share be declared, payable Jan. 15, 1913, making 1% for the year. This will absorb £13,750, and there will remain £3,374 6s. 6d. to be carried forward to 1913.

The directors are glad to report that in March last the Canadian Board of Railway Commissioners rescinded the order to reduce the rates charged on the White Pass and Yukon Route, to which reference was made in the report last year.

Following is the profit and loss account:—

	£	s.	d.
Interest on securities of local companies paid and accrued to date.	52,944	9	0
Dividends on shares of local companies to Dec. 31, 1911.....	34,142	4	4
Transfer fees, etc.	44	10	0
	£87,131	3	4
	£	s.	d.
Interest on 5% consolidated first mortgage debenture stock	37,335	2	0
Interest on 6% mortgage debentures (navigation bonds).....	15,330	0	0
Directors' and trustees' fees	2,210	0	0
Management and London charges.....	2,798	3	3
Legal expenses and stamps	1,502	19	3
Audit fee to June 30, 1911.....	78	15	0
Income tax	1,543	19	10
Loss in exchange	491	4	3
Profit carried to balance sheet	25,840	19	9
	£87,131	3	4

Following are extracts from the report of the President of the local companies, O. L. Dickeson:—

RAIL DIVISION.—On this division we carried 10,441 passengers and 20,028 tons of revenue freight. The average haul was 71.93 miles per passenger, and 98.63 per ton of freight, and the average load per car was 9.15 tons. All necessary maintenance and general repair work for safe and efficient operation and general upkeep of the property was done. The south 192 ft. of bridge 5C was filled, 6,090 cubic yards of material being used to complete this work. 434 cubic yards of material was used to fill the station grounds surrounding the Broadway station in Skagway to facilitate the handling of mail and baggage and to afford adequate space for the handling of passengers. Ballasting was done between White Pass and White Horse with gravel hauled from pits at Watson and mile post 102. On section I considerable ballast work was also carried on to lessen the expense of the permanent upkeep. 7,942 new ties were laid in main line track, using the supply of ties on hand, which had been transported from the Puget Sound territory, to replace a considerable number of ties of native timber placed in the roadway during the construction days. This replacement of ties demonstrated conclusively that the life of native timber ties was at

least 13 years without having gone through the modern process of creosoting to prolong their usefulness, and serves to illustrate that our expenses in the future in this direction may be materially decreased. A new drill grinder was installed at Skagway shops. The necessary general repairs to rolling stock were made, placing the equipment in first-class condition. The operating expenses of the division show a decrease of \$67,127.70 compared with 1910.

The portion of the President's report dealing with the River division appears in the Marine Department of this issue on another page.

THE WINTER SERVICE for mail, passengers, parcels, etc., was carried on without unusual interruption by means of horse sleighs and four and six horse coaches, and a few trips completed by canoe and launch, which made 145 trips during 1911, equivalent to 47,850 miles, carrying 79,555 lbs. of mail, 543 passengers, 18,637 lbs. of parcels and 381,386 lbs. of ordinary freight. A saving of \$1,514.71 in operating expenses was effected as compared with 1910. During the year some experimental work has been carried on in an effort to operate a portion of the trail with gasoline equipment with considerable success, and it is confidently expected that we will make further progress in this direction during the coming year.

GENERAL REMARKS.—About June 1 a complete reorganization of the company's local operating forces was undertaken on the Rail and River divisions and Mail Service department, and the most modern methods of efficiency in operation were applied in each department, bringing about a general consolidation of offices and work in various positions, with the result that by the end of the year this had resulted in the saving of \$146,637.13 in the operation of the three divisions, without in any way impairing the efficiency of the service or interfering with the general upkeep of the property. It may be encouraging to know in advance that the reorganization thus made will be permanent and throughout the ensuing year will show further decreases.

The history of every mining country has been that a large number of prospectors came into the country seeking bonanzas, and when once their claims were developed they were usually consolidated and absorbed by larger companies to be operated by machinery, displacing men. Following this there are usually found a number of unsuccessful and somewhat visionary schemes of promotion, which have a tendency to retard capital into legitimate mining enterprise. The Yukon Territory has been no exception to these conditions, which have also had a tendency to decrease traffic. The country, however, is highly mineralized, and gold, silver, copper, lead, magnesite, coal and other minerals are to be found throughout the region contiguous to our transportation system, and there remain today splendid opportunities for legitimate investments in mining enterprise when conducted with efficient modern business methods. In the interest of creating traffic for the railway the company will undertake to conduct a detailed and intelligent investigation of the known natural resources with a view of interesting new industry in the country. With the progress of the investigation it is confidently believed that the result of these efforts will be eventually reflected in the railway earnings.

Alaska and Yukon Territory, as summer tourist resorts, have few equals, and as this becomes generally known increased earnings will accrue from this source. The

company is taking steps to create additional tourist traffic.

PRESIDENT'S ADDRESS.—Mr. Dickeson, in speaking at the annual meeting, said:—Beginning with June, 1911, which was the time I first reached the company's property, a complete reorganization of the methods of operating was undertaken in practically every department, eliminating work that was considered unnecessary and consolidating offices and various positions in individual offices, with the result that within three weeks from the time this reorganization work started we were able with equal efficiency to conduct the company's affairs and look after the interests of the public in respect of prompt and reasonable service with 291 fewer employes on the pay rolls than during the corresponding period of the previous year. Within 15 months from the time this reorganization work began a saving of \$229,000 had been made in the operating expenses. This was effected without interfering with the standard of wages paid. On the contrary, when the work of one position was eliminated entirely the duties of the position were added to the duties of another employe. In many such instances the wages of the employe were increased, with the result that those remaining in the service were better satisfied with the conditions of employment. While the main work of the reorganization has been effected, and it will not be possible during the ensuing year again to show so large a comparative decrease in the operating expenses, it would be idle to say that we had reached the limit of economies, for improvements in the operation of the property are still going on, and I am quite willing to assume the responsibility of saying that, with the new methods employed, the operating expenses will be very materially less than in previous years without impairing the general upkeep of the property or the efficiency of the service. For many reasons, quite beyond control, the company's traffic during 1911 was considerably less than in any previous year, but regardless of this I felt fully justified last year in telling you that I was able to take a hopefully confident view of the future, and now, after another season's experience, I am pleased indeed to say that the views then expressed have been confirmed. We shall be able to show that during 1912 there has been an increase in both freight and passenger traffic, and a very material increase in the net earnings as compared with 1911. Our net increase over and above everything—operating expenses and everything but depreciation—is \$96,000 down to October 31. Looking forward to 1913 I think I am justified in saying that there is every indication of a further gradual increase in the traffic. I feel that we are warranted in this prediction owing to the development work started this year and the constantly increasing interest in the country as a tourist resort.

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

	Acres.
Calgary and Edmonton Ry.	1,623.01
Canadian Northern Ry.	1,116.00
Canadian Pacific Ry.	79.75
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	3,359.00
Total	6,177.76

A General Storekeeper's Approval.—N. P. Tracy, General Storekeeper, Canadian Northern Quebec Ry. and Quebec and Lake St. John Ry., Limoilou, Que., writes: "I find Canadian Railway and Marine World exceedingly interesting and instructive."

Telegraph Statistics of the Dominion.

The first report of statistics of the telegraph companies operating throughout the Dominion has been issued for the year ended June 30, 1912, by the Department of Railways and Canals, having been compiled under the direction of the Comptroller of Statistics, J. L. Payne. They are provided for by an amendment to the Railway Act, passed in 1911, and relate entirely to companies engaged in commercial telegraph business, and have no reference to railway telegraph interests, that is, that companies conducting both railway and commercial telegraph business, report only as to commercial business.

The Comptroller says that in preparing schedules for companies to report on it was necessary to create bases, and the question of uniformity did not arise, as it is not known that any other country has in force a comprehensive scheme of telegraph statistics. The schedule may be elaborated later, but for primary purposes it was arranged to cover information relating to:—Organization, capitalization, cost of property and equipment, revenue from operation, operating expenses, balance sheet, pole mileage, wire mileage, and general statistics.

Reports were received from 14 companies out of 15 doing business in the Dominion. These have been divided into cable companies, land telegraph companies and cable and land telegraph companies combined. The first named comprise:—Anglo-American Telegraph Co., American Telegraph and Cable Co., Commercial Cable Co., Direct United States Cable Co., Halifax and Bermuda Cable Co., Pacific Cable Board; while those operating on land comprise:—Anglo-American Telegraph Co., Canadian Northern Telegraph Co., C.P.R. Telegraphs, Dominion Government Telegraphs, G.T. Pacific Telegraph Co., Great North Western Telegraph Co., North American Telegraph Co., Timiskaming and Northern Ontario Ry. Commission, and Western Union Telegraph Co.

The Anglo-American Telegraph Co. provides land and cable service, while the Marconi Wireless Telegraph Co. occupies a unique field, and cannot be classified with other telegraph organizations.

Geographically, the Dominion is served as follows:—The Maritime Provinces by the Western Union, C.P.R. and the Anglo-American companies, though the last-named lines are leased and operated by the first named; the Dominion Government operates lines in the unsettled portions of the Lower Provinces, chiefly as aids to navigation; Ontario and Quebec are served by the Great North Western, C.P.R., T. & N.O.R., and the North American companies, and the Western Provinces by C.P.R., G.N.W., G.T. Pacific, Canadian Northern, and the Dominion Government.

no capital liability is attached to the C.P.R., T. & N.O.R. and the Dominion Government service.

The cost of real property and equipment is given as \$184,149,677, of which a large percentage refers to foreign corporations. The revenue from operation was \$5,216,170.92, this referring wholly and definitely to Canadian business, with the qualification, so far as the Western Union Co. is concerned, that it was not possible to give exact information, an arbitrary assignment of income and outgo being made for the Canadian end of the business. In doing this there is cause for the inference that too low an apportionment was made for Canada's share, to which has been added the immense volume of business which passed through the offices of the three cable companies in Canada, which are operated by the Western Union. Operating expenses are reported as \$3,379,336.96. It was not practicable to assign wire mileage to cable lines, but with respect to land lines, a mileage of 168,017.23 was reported, being divided as follows:—galvanized, 116,974 miles; copper, overhead, 50,100 miles; copper, underground, 254 miles; copper, submarine, 689 miles. There were also reported, 36,218 miles of wire, chiefly copper, as being devoted to multiple operation, that is, the duplex and quadruplex systems, but it is not quite clear that such mileage is actually over and above the figures of the pole mileage and wire mileage according to provinces, as given below:—

	Pole mileage.	Wire mileage.
Nova Scotia	2,828	9,878
New Brunswick	1,867	8,376
Prince Edward Island...	14	14
Quebec	7,515	24,249
Ontario	10,514	58,207
Manitoba	3,803	18,184
Saskatchewan	5,382	21,257
Alberta	2,895	14,491
British Columbia	3,467	10,571
Yukon	2,498	2,713
Totals	40,783	167,939

The discrepancy of 78 miles between the wire mileage in the table, and the figures preceding, arose from the impracticability of classifying that number of miles of cable in two of the reports. The reason for the low figures assigned to Prince Edward Island is that the land lines there are almost wholly owned and operated by the Anglo-American Cable Co., and cable companies did not report any wire mileage.

There were transmitted, by the companies operating in the Dominion, during the year, 9,252,540 land messages, and 768,559 cablegrams. The business of cable companies, as distinct from land companies, is reckoned in words rather than messages. In so far as the facts are not revealed in the number of cablegrams reported as having been handled by the land companies, it was not found practicable for the purposes of the first report to ascertain the number of

words in the preceding year.

There were 4,828 persons employed, and of these 2,579 were classified as operators, of whom 2,413 were males and 166 females. The salaries and wages paid during the year were \$2,703,032.09, equal to 76.7 of the total operating expenses.

Canadian Pacific and Canadian Northern Railway Terminals in Victoria, B. C.

The Premier of British Columbia announced recently that an arrangement has been completed between his government, the C.P.R. and the C.N. Pacific Ry., for the erection of terminals, in Victoria. The site is to be the old Songhees Indian Reserve, which has recently been acquired from the Indian Department for public purposes. It is proposed to devote 102 acres for railway terminals, the C.P.R., through the Esquimalt and Nanaimo Ry., obtaining 34 acres, and the C.N. Ry., through the C.N. Pacific Ry., obtaining about a similar acreage, the balance being reserved for future extensions.

Owing to the different levels at which the two lines enter the city, it was found impossible to arrange for a union station, and it was equally impossible to arrange for joint freight terminals, hence the division of the available area. The passenger stations, however, will be under one roof; one station being on each side of the Johnson street extension. The C.P.R. station and platform will be on the street level, while the C.N.R. station will be about 26 ft. below the street level, with two entrances. In working out the final details, arrangements will be made under which other railway lines may obtain entrance to the station.

The C.P.R. yards will be located between the main Johnson St. extension through the middle of the Reserve and the Harbor front on the south, and the C.N.R. will be located north of the E. and N. Ry. tracks on the west side of the harbor. In connection with the laying out of the reserve the following works have been arranged for:—

An up to date traffic and rail bridge from Johnson Street to reserve, the street being extended to Victoria West, over which B.C. Electric Ry. tracks will run, giving a short cut to Esquimalt. Cost of bridge will be borne by the various interests. Point Ellice bridge approach to be raised to allow for passage of C.N. trains beneath. The two sections of C.N. P.R. will link up near junction of North Douglas street and Saanich road, and will be extended southward to the arm which it crosses at Selkirk water, Deadman's island being used in making the connection. The reserve will thus be entered at its northern boundary.

A strip of land on the reserve skirting the waterfront is being reserved by the Provincial Government for wharves, warehouses and industrial plants. It will be disposed of by lease only, and a railway will be built along it to serve the factories. These tracks and industrial site to be for common use of both companies. Another portion of the reserve has been assigned for use as a city park, and 20 acres are to be subdivided into lots and sold.

The Italian railway administration is to call for tenders to convert to electric traction the line from Monza to Lecco. In addition, orders have been placed for 58 electric locomotives, which will serve partly for this line and partly for the Giovi tunnel line. The section from Monza to Milan will be subsequently electrified.

	Capital Stock and Bonds	Property and Equipment	Operating Revenue	Operating Expenses	Mileage	
					Pole	Wire
Anglo-American	\$34,066,667	\$34,066,667				
American Telegraph and Cable.....	14,000,000					
Canadian Northern	1,300,000		\$ 226,446	\$ 108,143	4,442	13,575
C. P. R.		6,696,422	3,009,768	1,435,945	14,560*	86,825
Direct U. S. Cable	5,909,107	5,909,107				
Dominion Government		1,975,000	200,331	505,732	7,883	8,639
G. T. Pacific	100,000		55,393	48,265	2,081	6,879
G. N. W.	500,000		1,161,415	839,603	9,616	38,869
Halifax and Bermuda Cable	250,000	757,740	68,805	26,140		
Marconi Wireless	5,000,000		143,018	148,485		
North American	200,000	57,522	26,832	13,983	44	784
Pacific Cable	8,835,492	87,133	78,862	122,708		
T. & N. O. R.		84,250	38,982	11,960	297	1,541
Western Union	132,419,100	134,575,838	354,888	266,829	2,853	15,946

*Including 991 miles operated by another company.

The capital liability of the companies reporting was \$202,580,365, of which \$160,342,873 was represented in stocks, and \$42,237,492 in bonds. These figures relate to several companies with headquarters outside the Dominion, but on the other hand,

words transmitted through the cables which have termini in Canada. Much of that business has no reference to Canada, merely forming a link with Great Britain. The Pacific Cable Board, however, reported 2,131,376 words, as compared with 1,849,613

Orders by Board of Railway Commissioners.

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 given of orders, immediately following the numbers, are those on which the hearings took place, and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the dates assigned to them.

18611. Jan. 31.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build across 9 highways, Port Hope, Ont., mileage 125.67 to 126.92.

General Order 101. Feb. 1.—Declaring that General Order 98 shall not be construed as in substitution for order 15819, but as in addition thereto; and C.P.R. is directed to comply with order 15819.

18612. Jan. 31.—Authorizing C.P.R. to build spur to its Pontypool ballast pit, across road between cons. 2 and 3, Manvers tp., Ont.

18613. Feb. 1.—Ordering C.P.R. to move its yard at Herbert, Sask., from north to west side of crossing; passing and elevator track switches to be located west of and not less than 500 ft. from crossing; cattle pens, loading platform, Royal Elevator building and coal sheds to be moved to west end of yard, etc., work to be completed by June 1.

18614, 18615. Feb. 3.—Approving location Central Ry. of Canada's Montreal to Midland line, mileage 0 to 7 from Hawkesbury, Ont., and revised location from mileage 5 to 16, through Sault au Reclot, St. Martin Ste. Dorothee, and Ste. Rose parishes, Que.

18616, 18617. Jan. 30, Feb. 3.—Authorizing C.N. Ontario Ry. to build across public road between cons. 12 and 13, Chisholm tp., and to build bridge across Jackfish river, mileage 313.5 from Sudbury Jct.

18618. Feb. 3.—Authorizing C.P.R. to build bridge across Red river, on its Kildonan cutoff, near Winnipeg.

18619. Feb. 3.—Authorizing C.N. Ontario Ry. to build bridges across Goose river (first crossing), Sudbury district; and across Kabinakagami river, Algoma district.

18620. Feb. 3.—Approving location of Canadian Northern Ry. station at Briercrest, Sask.

18621. Feb. 3.—Approving Quebec, Montreal and Southern Ry. bylaw, authorizing N. J. Ferguson, General Freight and Passenger Agent, to issue special freight, competitive, and special passenger tariffs; and rescinding order 18584.

18622. Feb. 3.—Authorizing G.T. Pacific Ry. to build bridge across Fraser river, at mileage 468.4, east of Prince Rupert, B.C.

18623. Feb. 3.—Authorizing C.P.R. to build spur for A. Macdonald Co., Lethbridge, Alta.

18624. Feb. 3.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build a temporary connection with C.N. Ontario Ry., in Pickering tp., at mileage 176.11, for 18 months from date.

18625. Feb. 3.—Authorizing C.P.R. to build spur for Columbia River Lumber Co., near Sicamous, B.C.

18626. Feb. 6.—Approving regulations governing opening and closing of pivotal span of railway bridge over Fraser river, at New Westminster, B.C., and rescinding order 18490.

18627. Jan. 31.—Amending order 18479, Jan. 10, to provide that G.T.R. be authorized to cross Beaune St., Stoney Point, Ont.

18628. Feb. 4.—Amending order 5407, to provide that signalmen required at crossing of G.T. Pacific Ry. and Canadian Northern Ry. (Goose Lake branch), west of Saskatoon, Sask., be appointed by G.T.P.R., the wages to be paid by C.N.R.

18629. Feb. 3.—Approving, pending Board's decision in enquiry into rates charged generally by railway companies in British Columbia, the B.C. Electric Ry. Standard Freight Tariff of Maximum Mileage Rates, C.R.C. 1, to apply between stations on its Vancouver and Lulu Island Ry., and its Vancouver, Fraser Valley and Southern Ry.

18630. Feb. 6.—Approving Niagara, St. Catharines & Toronto Ry. revised location in St. Catharines, Ont., from mileage 0.7 to 1.8.

18631. Feb. 6.—Extending to Mar. 1, time within which C.N.R. station at Fort Frances, Ont., be built.

18632. Feb. 6.—Extending to Apr. 5, time within which C.P.R. shall install electric bell at highway crossing at east end of its yard at Sharbot Lake, Ont.

18633. Feb. 7.—Authorizing C.P.R. to build its Hawarden to Floral branch across highway between secs 19 and 29-31-4, w. 3 m., at mileage 18.17, Sask.

18634. Feb. 3.—Approving revised location of C.P.R. station at Redford, Sask.

18635. Feb. 4.—Amending order 16752, by substituting Vancouver Power Co. for British Columbia Electric Ry.

18636. Feb. 4.—Authorizing G.T. Pacific Ry. to build bridge across Fifty-Mile river at mileage 221, from Wolf creek west, B.C.

18637. Feb. 6.—Authorizing G.T.R. to build siding for the Berlin Trunk and Bag Co., Berlin, Ont.

18638. Feb. 6.—Authorizing G.T. Pacific Branch Lines Co. to build bridge over Bow river, at mileage 198 on Tofield-Calgary branch, Alta.; and rescinding order 13889.

18639. Feb. 4.—Authorizing G.T. Pacific Ry. to build bridges over Bulkley river at mileage 258 and 263, east of Prince Rupert, B.C.

18640. Feb. 6.—Approving revised location G.T.P. Branch Lines Co.'s Regina-Boundary branch from east line of sec. 13-3-4, w. 2 m., to international boundary, mileage 135.93 to 154.94, Cannington district, Sask.

18641. Feb. 4.—Authorizing G.T. Pacific Branch Lines Co. to build bridge across Assiniboine river at mileage 19.5, Brandon branch, Man.

18642. Feb. 8.—Authorizing G.T.R. to build siding for Barcher & Branberger, Bertie tp., Ont.

18643, 18644. Feb. 8.—Authorizing C.P.R. to build bridge 101.5 over Kanaka creek, and to build additional track across roadway at mileage 60.17, Cascade subdivision, B.C.

18645. Feb. 4.—Authorizing Algoma Central and Hudson Bay Ry. to build bridge over Chipewewa river, mileage 69.25, Algoma district, Ont.

18646. Feb. 8.—Authorizing C.P.R. to build extension to Brandon Pressed Brick & Tile Co.'s spur, in Trafalgar tp., Ont.

18647. Feb. 8.—Authorizing G.T. Pacific Ry. to build spurs for Gainford Collieries, North Alberta district.

18648. Feb. 8.—Authorizing G.T.R. to build siding for Canadian Glass Manufacturing Co., Hamilton, Ont.

18649. Feb. 10.—Dismissing application of Murray tp., Ont., for order directing G.T.R. to provide subway at crossing between lots 12 and 13.

18650, 18651. Feb. 6, 4.—Dismissing application of town of Arnprior, Ont., for orders directing G.T.R. to build crossing where its Canada Atlantic branch intersects Ida St.; and directing C.P.R. to build crossings where it intersects Hugh and Ida Sts.

18652. Feb. 4.—Approving, pending Board's decision in enquiry into rates charged generally by railway companies, in British Columbia, the B.C. Electric Ry. Standard Passenger Tariff of Maximum Mileage Tolls, C.R.C. 1, to apply between stations on Vancouver and Lulu Island Ry., and on Vancouver, Fraser Valley and Southern Ry.

18653. Feb. 6.—Authorizing G.T. Pacific Ry. to build bridge across Rau Shuswap river, at mileage 208, Wolf creek west, B.C.

18654. Feb. 6.—Authorizing G.T. Pacific Branch Lines Co. to build Y turning out from Biggar-Calgary branch at Loverna, Saskatoon district, Sask.

18655. Feb. 6.—Authorizing G.T. Pacific Ry. to build bridge across Goat river, mileage 243, from Wolf creek west, B.C.

18656. Feb. 11.—Authorizing C.P.R. to build bridge 10.4 on Farnham subdivision, Que.

18657. Feb. 10.—Authorizing C.P.R. to build two spurs for Pembroke Shook Mills, Pembroke tp., Ont.

18658. Feb. 6.—Authorizing C.P.R. to build spur for R. H. Smith, Etobicoke tp., Ont.

18659, 18660. Feb. 4.—Authorizing C.P.R. to build additional track across highways at mileages 57.4; and 61.5, Cascade subdivision, B.C.

18661. Feb. 10.—Approving Canadian Northern Ry. amended plan showing spur in s.e. sec. 9-15-22, w.p.m., Man.

18662. Feb. 10.—Authorizing G.T.R. to build siding and spur for Bonner Sand and Ballast, Durham tp., Que.

18663. Feb. 10.—Authorizing C.P.R. to build bridge 84.2, near Eady, in Medonte tp., Ont.

18664. Feb. 11.—Authorizing C.P.R. to build spur for Standard Paint Co. of Canada, Lachine parish, Que.

18665. Feb. 10.—Amending order 18351, re G.T.R. spur for Beardmore and Co., Acton, Ont.

18666. Feb. 4.—Relieving G.T.R. from providing further protection at crossing of second public highway, by its Port Rowan branch, ½ mile west of St. William, Ont.

18667. Feb. 10.—Rescinding order 18162, re divisions of highway in Saskatchewan by C.P.R.

18668. Feb. 12.—Approving location of Alberta Central Ry. Red Deer to Sounding Creek Line from Red Deer, to mileage 2 from Red Deer; and revised location from mileage 2 to mileage 10; and authorizing its building across 11 highways.

18669. Feb. 12.—Approving location C.P.R. Gleichen to Shepard branch, from mileage 0 to 40; and authorizing its building across 42 highways.

18670, 18671. Feb. 11.—Amending order 17823, Oct. 22, 1912, re crossing of Dundas street, Whitby tp., Ont., by Campbellford, Lake Ontario and Western Ry. (C.P.R.) to provide for

opening at least 25 ft., parallel to highway, 20 ft. for the roadway and a 5 ft. sidewalk; and authorizing building across highway between lots 13 and 14, con. 1, Cramahe tp., Ont., at mileage 100.44, at grade.

18672. Feb. 12.—Approving plan showing clearances of C.P.R. coal handling plant, Island 1, Fort William, Ont.

18673. Feb. 12.—Approving Campbellford, Lake Ontario and Western Ry. (C.P.R.) revised location from lot 6, con. 1, Tyendinaga tp., at mileage 68.5 to lot 30, con. 1, Thurlow tp., mileage 70.25; and authorizing crossing of G.T.R. by bridge in lot 3, con. 1, south of base line, Tyendinaga tp., at mileage 69.25.

18674. Feb. 12.—Authorizing C.P.R., to rearrange spurs and to build additional spurs for Swift Canadian Co., Union Stock Yards, Toronto.

18675. Feb. 7.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build across road allowance between lots 16 and 17, con. A, Haldimand tp., Ont., at mileage 110.44 from Glen Tay.

18676. Feb. 11.—Authorizing C.P.R., to build bridge 109.7 over Pitt river, Cascade subdivision, B.C.

18677. Feb. 11.—Ordering C.P.R. to install within 90 days an improved type of illuminated electric bell at La Croix St., Chatham, Ont.

18678. Feb. 12.—Authorizing G.T.R., to connect tracks of its Districts 2 and 4, and to cross Central Vermont Ry. at St. Lambert, Que.

18679. Feb. 10.—Authorizing Lachine, Jacques Cartier and Maisonneuve Ry. (G.T.R.) to divert certain lanes in Montreal.

18680. Feb. 11.—Approving, temporarily, G.T. Pacific Ry. Standard Freight Mileage Tariff, C.R.C. 14, to apply between stations in Alberta and British Columbia, between Thornton and Tete Jaune.

18681. Feb. 4.—Amending order 16029, permitting arbitrator to consider substitution of foot subway for overhead bridge at George St., Smiths Falls, Ont., and opening of certain streets.

18682. Feb. 14.—Ordering that transfer track between C.P.R. and Canadian Northern Ry. to be built by C.P.R., at Conquest, Sask., be completed by May 1.

18683. Feb. 13.—Approving Canadian Northern Ry. plan showing highway bridge proposed at MacLeod Trail, Calgary, Alta.

18684. Feb. 14.—Extending to May 31, time within which C.P.R. complete spur leading to its ballast pit near Olds, Alta.

18685. Feb. 13.—Authorizing G.T.R. to build siding, with spurs for J. Ransford, Tuckersmith tp., Ont.

18686. Feb. 12.—Authorizing G.T.R. to build, subject to consent of city of Toronto, additional track across John St., leading into its King Edward yard.

18687. Feb. 13.—Authorizing G.T.R., to renew bridge 6, over Queen St. West, Toronto, and reserving question of cost.

18688. Feb. 14.—Authorizing Massey-Harris Co. to build bridges over G.T.R. at Stafford St. and Wellington Ave., Toronto.

18689. Feb. 12.—Authorizing G.T. Pacific Ry. to build, subject to city's consent, spur for Alberta Agencies, Edmonton, Alta.

18690, 18691. Feb. 13.—Ordering G.T.R., to protect Greenwoods Ave., Toronto, and Hunter St., Peterboro, Ont., by gates operated both day and night.

18692. Feb. 13.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build across highways at mileage 145.33, 145.52 and 145.69.

18693. Feb. 13.—Dismissing application J. Cowie, Cramahe tp., Ont.; Campbellford, Lake Ontario and Western Ry. (C.P.R.) to move house and barn to whatever points the Board's Engineer may indicate, work to be done before any arbitration proceedings are taken; and company to be at liberty to serve fresh notice of expropriation.

18694 to 18696. Feb. 13.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build across road allowance between lots 10 and 11 and lots 20 and 21, broken front concession, Clarke tp., and divert road allowance in lot 34, con. 1, Camden tp.

18697, 18698. Feb. 13, 12.—Authorizing C.P.R., to build additional track across Overend St., and five additional tracks across Water St., between Tate and Front Sts., and ordering it to install gates, operated day and night by watchmen, at Bartlett Ave., Toronto.

18699. Feb. 13.—Authorizing C.P.R. to build spur for G. B. Ferguson & Co. at Six Mile Creek, B.C.

18700. Feb. 10.—Authorizing C.P.R., to build road diversion at mileage 19.7 from Kenway, Estevan Subdivision, Manitoba Division, existing crossing to be closed.

18701. Feb. 13.—Authorizing G.T.R. to build sidings across the Clay Road to the Ontario Paper Co.'s premises, Thorold tp., Ont.

18702, 18703. Feb. 13, 15.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build across road allowance between lots 12 and 13, con. 1, Murray Tp., at mileage 90.75, and across Ontario St., Trenton, by a bridge, at mileage 87.86 from Glen Tay, Ont.

18704. Feb. 14.—Authorizing C.P.R. to build across highway in B.C. Government lot 280, New

18794. Feb. 26.—Authorizing G.T.R. to lay additional 6 in. water main, 4 ft. below surface, from Lake Ontario to its terminals in New Toronto, across Lake Shore Road, under Toronto and York Radial Ry., along Sixth St., and across Toronto St., New Toronto, Ont.

18795. Feb. 28.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build across road allowance between Lots 20 and 21, Con. 1, Whitby Tp., at mileage 161.7 from Glen Tay, Ont.

18796. Feb. 28.—Authorizing G.T.R. to build Currie Drain under its Air Line Division, in Ekfrid Tp., Ont.; work to be completed by June 30.

18797. Feb. 28.—Authorizing Michigan Central Rd. to connect with Essex Terminal Ry. on northerly side of M.C.R. Windsor Yard, Sandwich West Tp., Ont.

18798. Feb. 27.—Authorizing Esquimalt and Nanaimo Ry. to build siding for Red Wing Lumber Co., at mileage 1.35, Victoria, B.C.

18799, 18800. Feb. 28.—Authorizing C.P.R. to build two spurs for Wilson and Clarry, Calgary, Alta., and extension to siding for Andrews and Sons, Winnipeg.

18801. Mar. 1.—Authorizing C.P.R. to build, subject to consent of British Columbia Public Works Department, additional track across highway between Provincial Government Lots 405 and 407, Tp. 14, r. 2, e. c. m., mileage 99.8, Cascade Subdivision.

18802 to 18807. Feb. 28 to Mar. 3.—Authorizing C.P.R. to build spurs for Marshall-Mitchell Hardware Co., Medicine Hat, Alta.; Redcliffe Rolling Mills and Bolt Co., Redcliffe, Alta.; P. Berg, Camrose, Alta.; Diamond Flint Glass Co., Redcliffe, Alta.; F. L. Moorehouse, Calgary, Alta.; and Alberta Ice Co., Calgary, Alta.

18808. Mar. 3.—Authorizing C.N. Ontario Ry. to build across Sturgeon River, west crossing, James Tp., at mileage 280.3 from Ottawa.

18809. Mar. 1.—Authorizing C.N. Ontario Ry. to build main line and siding across Mill and Fourth Sts., Deseronto.

18810. Mar. 1.—Authorizing Southwold Tp., Ont., to build Saywell Drain under G.T.R.

18811. Mar. 1.—Ordering C.P.R. to accept and transmit trans-Atlantic wireless telegraph messages over its land lines connecting with Marconi Wireless Telegraph Co.'s trans-Atlantic duplex stations at Glace Bay and Louisburg, N.S.

18812. Mar. 1.—Authorizing C.P.R. to build spur for Sawyer-Massey Co., Regina, Sask.

18813. Mar. 3.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build across Toronto Eastern Ry., at junction of Scugog and Wellington Sts., Bowmanville, Ont.

18814. Mar. 3.—Approving plan of Great Northern Ry. station at Salmo, B.C.

18815. Mar. 3.—Authorizing C.P.R. to build 400 ft. extension to spur for Riverside Lumber Co., Calgary, Alta.

18816. Mar. 1.—Approving change in location of C.P.R. station at Kelloe, Man.

18817. Mar. 3.—Relieving G.T.R. from providing further protection at crossing two miles west of St. Bazile, Que.

18818. Mar. 3.—Authorizing G.T. Pacific Ry. to build spur for Edmonton Gravel Co. in Secs. 16 and 21, Tp. 53, r. 23, w. 4 m., North Alberta District.

18819. Mar. 3.—Approving location of C.N. Ontario Ry. station grounds at Wasing, mileage 204.8 from Ottawa.

18820. Mar. 5. Authorizing C.P.R. to build additional track across roadway in Provincial Government Lot 476, G. 1, Tp. 17, r. 4 e. c. m., mileage 84.4 on Cascade Subdivision, B.C.

18821, 18822. Mar. 5.—Authorizing C.P.R. to build road allowance diversions between Sec. 16 and Sec. 9-10-15, Lethbridge Subdivision; and in s. w. ¼ Sec. 16-17-12, w. 4 m., Calgary Subdivision, Alberta Division, between mileage 50 and 51, and to close up roads so diverted within its right of way.

18823. Mar. 4.—Authorizing G.T. Pacific Branch Lines Co. to build highway between Secs. 12 and 13-1-3, w. 2 m., across Regina Boundary Branch, mileage 152.8, Cannington District, Sask.

18824. Mar. 4.—Ordering that cost of installation of gates at Lapiniere Road, between Greenfield Park and St. Lambert, Que., be paid,—20% out of railway grade crossing fund, 60% by G.T.R., and 20% by the three municipalities concerned, in equal proportions; and that cost of operation and maintenance be paid,—70% by G.T.R., and 30% by the municipalities in equal proportions.

18825. Mar. 5.—Dismissing applications for stop over privilege for completion of carload shipments in transit, at additional charge of \$3 a car for each such stop; ordering railway companies to re-establish arrangement, whereby apples were carried to concentration points for storage, inspection, or completion of carloads and reshipment, subject to certain conditions, at reduction of 1-3 from local tariff rates, to concentration points, to become effective within 30 days from date; and ordering G.T.R., G.T.P.R., C. P.R., and C.N.R., to notify Board, not later than Apr. 15 what number of their, and each of their, refrigerator cars in service are supplied with slatted floors, and what number are not.

18826. Mar. 5.—Authorizing C.P.R. to build additional track across roadway between s. w.

¼ Sec. 25 and s. e. ¼ Sec. 26-14, e. c. m., at mileage 90.99, Cascade Subdivision, B.C.

18827. Feb. 25.—Authorizing Canadian Northern Ry. to build its Craven Northerly Branch across C.P.R. Kirkella-Lanigan Branch, s. w. ¼ Sec. 10-23-19, w. 2 m., Sask.

18828. Mar. 6.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to take certain lands for diversion of highway in Con. 7, Camden Tp., Ont.

18829. Mar. 5.—Approving location of Canadian Northern Ry. third-class station at Inwood, Man.

18830. Mar. 6.—Authorizing C.P.R. to build spur for J. D. Fisk and W. R. Marshall, Calgary, Alta.

18831. Mar. 7.—Rescinding order 15263, Nov. 2, 1911, authorizing Dominion Atlantic Ry. to rebuild bridge across Little Joggins River, N.S.

18832. Feb. 28.—Authorizing C.P.R. to build spur for Redcliff Pressed Brick Co., Redcliff, Alta.

18833. Mar. 8.—Amending order 18581, Jan. 24, re classification of paraffin wax, to provide for issue of separate supplement, be made effective not later than Mar. 24.

18834. Mar. 7.—Extending, for two months from March 11, the time within which City of Hamilton, Ont., be required to make excavation to northern limit of Toronto, Hamilton & Buffalo Ry. track; city to retain priority over T.H. & B. Ry. spur.

18835. Mar. 7.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build across road allowance between Lots 16 and 17, Con. 1, Cramahe Tp., Ont., at mileage 101.22 from Glen Tay.

18836. Mar. 5.—Authorizing R. H. Edgar, Bowling Green, Ont., to place telephone wires across C.P.R. west of Orangeville, Ont.

18837. Mar. 12.—Authorizing G.T. Pacific Branch Lines Co. to operate trains on its Regina-Moose Jaw Branch, for construction purposes, across temporary undergrade crossing of C.P.R. Moose Jaw Northwesterly Branch, at Moose Jaw Sask.; provided it keeps men off tops and sides of cars.

18838. Mar. 13.—Ordering C.N. Ontario Ry. to build transfer track with G.T.R. in Port Hope, Ont.

18839. Mar. 13.—Authorizing C.N. Ontario Ry. to divert public road between lots 5 and 6, con. 11, Chisholm Tp.

18840. Mar. 11.—Authorizing Canadian Northern Ry. to build across public road between secs. 24 and 13-2-8, w. 2 m., Sask.

18841. Mar. 10.—Authorizing Canadian Northern Ry. and C.P.R. to operate over crossing near Forward, Sask., without first stopping trains.

18842. Mar. 13.—Authorizing Canadian Northern Ry. to build across C.P.R. Crowsnest Branch in Macleod, Alta.

18843. Mar. 11.—Authorizing C.P.R. to operate over G.T.R. crossing north of Woodstock, Ont., without first stopping trains.

18844. Mar. 12.—Authorizing C.P.R. to build extension to branch constructed for Sidney Brick and Tile Co., Sidney, Man.

18845. Mar. 11.—Authorizing C.P.R. to build additional track across highway at Maple Crescent, B.C.

18846. Mar. 7.—Authorizing C.P.R. to open for traffic portion of its second track between Hammond and Westminster Jct., B.C., 7.37 miles.

18847. Mar. 10.—Approving location of C.P.R. station at Wymark, Sask.

18848. Mar. 10.—Authorizing C.P.R. to use bridge 57-9, London Subdivision, Ont.

18849. Mar. 8.—Authorizing Campbellford Lake Ontario and Western Ry. (C.P.R.) to build temporary connection with Bay of Quinte Ry. at mileage 44.03 from Glen Tay to Lot 33, Con. 8, Camden Tp., Ont.

18850. Mar. 10.—Approving revised location of Campbellford, Lake Ontario and Western Ry. (C.P.R.) over lots 11 and 12, Broken Front Concession, Clark Tp., Ont.

18851. Mar. 12.—Approving clearance of canopy to be built over G.T.R. freight transfer platform at Windsor, Ont.; provided G.T.R. keeps men off sides of cars while passing through shed.

18852. Mar. 12.—Extending to June 1 time within which G.T.R. complete siding for Snelgrove and Teer, Beaverton, Ont.

18853. Mar. 8.—Authorizing G.T.R. to use bridge 161 over River Road, St. Lambert, Que.

18854. Mar. 12.—Approving plans and specifications of Saywell Drain, to be built under G.T.R. in Southwold Tp., Ont., and rescinding order 18810, Mar. 1.

18855. Mar. 13.—Amending order 18834, Mar. 7, re excavation by City of Hamilton, Ont., to the northerly limit of Toronto, Hamilton and Buffalo Ry.

18856. Mar. 6.—Approving, subject to terms Board may subsequently fix re property damage, revised location Canadian Northern Montreal Tunnel and Terminal Co.'s line from Cathcart St. to St. Antoine St., Montreal.

18857. Mar. 7.—Authorizing C.N. Ontario Ry. to take, for making connection with C.P.R., as provided by order 18218, Dec. 4, 1912, portions of W. Thompson's, M. McDonald's and R. Nelson's properties in Westmeath and Pembroke Tps.

18858. Mar. 12.—Ordering Canadian Northern

Ry. to erect gates at Frederica and Edward Sts., Fort William, Ont., to be operated by day and night watchmen.

18859. Mar. 13.—Authorizing G.T.R. to take, for building tracks for locomotive house to be built at St. Lambert, certain lands in Longueuil Parish, Que.

18860. Mar. 13.—Approving, temporarily, G. T. Pacific Ry. Standard Freight Mileage Tariff, C.R.C. 15, including and cancelling C.R.C. 13, to apply between stations in British Columbia, Prince Rupert to Beament, inclusive.

18861. Mar. 13.—Authorizing Montreal Light, Heat and Power Co. to build overhead conveyor across C.P.R. Lachine Canal South Bank Branch, in Cote St. Paul, Montreal.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those for 1911-12, from July 1, 1912:—

	Gross Earnings	Expenses	Net Earnings	Increase
July	\$1,829,700	\$1,335,100	\$494,600	\$133,000
Aug.	1,745,800	1,375,000	270,800	56,100
Sept.	1,671,500	1,248,000	423,500	4,100
Oct.	2,351,200	1,645,900	705,300	24,000
Nov.	2,509,700	1,631,900	877,800	212,600
Dec.	2,132,000	1,551,000	581,000	77,200
Jan.	1,513,400	1,243,200	270,200	46,500
	\$13,753,300	\$10,030,900	\$3,723,200	\$554,400
Incr.	\$2,190,500	\$1,636,100	\$554,400	.....

Mileage in operation during Jan., 4,297, against 3,981 in Jan., 1912.
Approximate gross earnings for Feb., 01,398,900, against \$1,203,400 for Feb., 1912.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases or decreases, compared with those for 1911-12, from July 1, 1912:—

	Gross Earnings	Expenses	Net Earnings	Increase
July	\$12,052,398.58	\$7,604,221.68	\$4,448,176.90	\$745,148.57
Aug.	12,251,715.87	7,533,790.21	4,717,925.66	642,354.65
Sept.	11,579,733.98	7,329,430.13	4,250,303.85	332,857.05
Oct.	13,060,397.80	7,999,510.61	5,060,887.19	379,732.44
Nov.	12,362,666.42	8,104,527.38	4,258,139.04	270,772.55
Dec.	12,219,278.72	7,823,559.21	4,395,719.51	289,989.25
Jan.	9,679,607.39	8,017,233.61	1,662,373.78	579,516.08

\$83,205,798.76 \$54,412,272.83 \$28,793,525.93 \$3,240,420.59
Inc. \$13,310,650.96 \$10,070,230.37 \$3,240,420.59

Approximate gross earnings for Feb., \$9,526,000, against \$8,743,000 for Feb., 1912.

Grand Trunk Railway Earnings, Etc.

The following figures show the earnings and expenses of the G.T.R., C.A.R., G.T. Western Ry. and D.G.H. & M.R. for Jan., 1913, as compared with those for Jan., 1912:—

	1913.	1912.
Grand Trunk Railway.		
Earnings	\$3,095,800	\$2,579,800
Expenses	2,695,700	2,276,600
Net earnings	\$ 400,100	\$ 303,200
Canada Atlantic Railway.		
Earnings	\$ 176,700	\$ 160,800
Expenses	186,400	160,600
Net earnings	\$ 9,700*	\$ 200
Grand Trunk Western Railway.		
Earnings	\$ 589,700	\$ 519,100
Expenses	544,600	477,900
Net earnings	\$ 45,100	\$ 41,200
Detroit, Grand Haven and Milwaukee Ry.		
Earnings	\$ 185,900	\$ 162,600
Expenses	213,200	190,600
Deficit	\$ 27,300	\$ 28,000

* Deficit.
Approximate gross earnings for Feb., \$3,763,463, against \$3,259,943 for Feb., 1912.

TRAFFIC RECEIPTS OF THE SYSTEM

Aggregate from Jan. 1 to Feb. 28:—

	1913	1912	Increase
G.T.R.	\$6,017,499	\$5,089,647	\$927,852
C.A.R.	345,239	290,817	54,422
G.T.W.R.	1,108,295	965,813	142,482
D.G.H. & M.R.	346,027	310,530	35,497
Totals.....	\$7,817,060	\$6,686,807	\$1,130,253

Grand Trunk Pacific Railway Earnings.

The earnings for February were \$374,064, and the aggregate earnings for two months ended Feb. 28, were \$751,928.

Railway Development

Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta Interurban Ry.—The Dominion Parliament is being asked to pass an act validating the proceedings at the organization meeting of the company held April 16, 1912, confirming the appointment of the directors, and validating their subsequent acts. (Feb., pg. 83.)

Algoma Central and Hudson Bay Ry.—The Board of Railway Commissioners has authorized the opening for traffic of the main line extension from West St. to Bruce St., Sault Ste. Marie, Ont., 7,000 ft. (Jan., pg. 20.)

Bow City to Cassells, Alta.—Press reports state that a line of about 15 miles is to be built this year from Bow City to Cassells, Alta., on the C.P.R. It would give an outlet for the coal mined in the Bow City district to the railway. H. N. Dunning, New York, and C. R. Henderson, Regina, Sask., are interested. (Sec. Bow River Ry.)

Bow River Collieries Ry.—The Alberta Legislature has granted an extension of time for the building of the lines authorized by chap. 28 of the statutes of 1908. Parlee, Freeman and Abbott, Edmonton, Alta., are solicitors for the applicants. (May, 1908, pg. 329.)

Bruce Mines and Algoma Ry.—Application is being made to the Ontario Legislature to change the name of the Lake Huron and Northern Ontario Ry. Co. and to authorize the increase of its capital stock from \$300,000 to \$12,000,000. Young and McEvoy, Toronto, are solicitors for applicants. (Aug. 1912, pg. 411.)

The Brule Lake Ry. Co. has been incorporated by the Alberta Legislature to build a railway from the G.T. Pacific Ry. east of Brule Lake, at mileage 994, southeasterly to tp. 49, range 26, west of the 5th meridian. The provisional directors are:—G. G. S. Lindsay, K.C., Toronto; S. R. Woods, K.C., O. M. Biggar, S. W. Field, J. T. J. Collison, Edmonton, Alta.

Burrard Inlet Tunnel and Bridge Co.—The various difficulties which have cropped up in connection with the projected bridge over the second narrows of Burrard Inlet, Vancouver, are being got rid of, and the directors state that construction will be started on the substructure within the next few months. The Provincial Legislature has provided \$400,000 towards the cost of the bridge, and arrangements are being made for its use by the Pacific Great Eastern Ry. The company has offered the C. P. R. its right of way from the bridge to Deep Cove, under certain conditions. The Dominion Parliament has granted an extension of time for construction. (Jan., pg. 20.)

Calgary, Edmonton and Fort McMurray Ry.—The provisional directors named in the application to Parliament for an act of incorporation are:—D. McGibbons, Jas. Ross, A. Violette, C. A. Violette, Edmonton, Alta., and T. J. S. Skinner, Calgary, Alta. (Jan., pg. 20.)

Canada and Gulf Terminal Ry.—Surveys for the extension of the line from Montreal to Gaspé Basin, Que., 223 miles, are being made. A preliminary survey of the whole distance has been completed, and a final survey for part of the line is being made. L. E. Rowley, Chief Engineer, did the first part of the work, and C. G. Holloway, acting Chief Engineer, is now in charge. Nothing definite has been arranged as to construction. (Nov., 1912, pg. 557.)

Canadian Terminal Ry.—The New Brunswick Legislature is being asked to consider a proposition to guarantee the company's bonds for \$25,000 a mile for a 65 mile railway from Fredericton to St. Stephen and L'Etang, N.B. G. W. Ganong, St. Stephen, N.B.; J. S. Clarke, St. George, N.B., and L. A. Marsh, Toronto, are interested. (June, 1912, pg. 299.)

Canadian Northwestern Ry.—Application is being made to the Dominion Parliament to incorporate a company with this title to build a railway from Lethbridge, Alta., northeasterly to Winnipeg, thence passing Dominion City, Manitou, Brandon and Grand View to Pas, Man., and a line from Lethbridge northeasterly via North Battleford and Prince Albert to Pas. Brosseau, Brosseau, Tansly and Angers, Ottawa, are solicitors for applicants.

Central Canada Ry.—The Alberta Legislature has incorporated a company with this title to build a railway from tp. 74 or 75, range 18 or 19, west of the 5th meridian to Peace River Landing, thence to tp. 81, range 4, west of the 6th meridian, with a branch from Peace River Landing northerly to the Battle River near tp. 94, range 22, west of the 5th meridian. The provisional directors are:—J. D. McArthur, Winnipeg; A. C. Galbraith, S. B. Woods, K.C., J. T. J. Collinson, Edmonton.

Central Ontario Ry.—We are officially advised that it has not yet been definitely decided that the proposed spur line of 1.5 miles from Marmora to the Deloro Mines, Ont., will be built this year. If it is built, as is probable, the work will be done by the C.O. Ry. staff. G. Collins, Trenton, Ont., is general manager. (Feb., 1911, pg. 141.)

Central Ry. of Canada.—The Railways Committee of the House of Commons by a vote of 19 to 8 threw out the company's bill for an extension of time for construction and other amendments to its charter.

The Board of Railway Commissioners has approved of location plans of this line between mileage 0 and 7, and revised location plans from mileage 5 to 16, in Quebec.

A contract has been entered into between the company and the Dominion Government for the building of a line from Ste. Agathe des Montes, passing near Lake St. Joseph and Ste. Marie, to Howard tp., Que., 15 miles. (Jan., pg. 20.)

A special meeting of shareholders has been called to be held at Montreal, April 22, to authorize an issue of bonds to provide for the building of the line from Montreal to Midland, Ont., and for other purposes. J. D. Wells, Montreal, is secretary.

The Chinook Ry. Co. has been incorporated by the Alberta Legislature to build a line from the Chinook Coal Co's. mines to Kipp on the C.P.R. Crowsnest branch. The provisional directors are:—J. C. Reid, L. G. DeVeber, S. J. Shepherd, Lethbridge, Alta. This line has already been built, and extends from the mines in sec. 12, tp. 10, range 22, west of the 4th meridian, to mileage 59.09 on the C.P.R. Kipp-Alderside branch. It is being operated by the C.P.R. for coal traffic under a recent order of the Board of Railway Commissioners. (Feb., pg. 83.)

Edmonton, Dunvegan and British Columbia Ry.—Track has been laid to Sunniebend, mileage 70, north of Edmonton, Alta., and work is being proceeded with rapidly. Grading has been completed for 80 miles, and the right of way has been cleared to the Athabasca River at Mirror. It is re-

ported that preparations are being made for the erection of a steel bridge at that point, and that large quantities of camp supplies and construction material have been shipped across the river and stored at various points up to Lesser Slave Lake in preparation for the season's construction work. Sub-contracts are reported let for 170 miles of grading this season. (Feb., pg. 83.)

Esquimalt and Nanaimo Ry.—We are officially advised that while there have been considerable negotiations with the British Columbia Government and the Canadian Northern Pacific Ry. as to the division of the Songhees Reserve, Victoria, and its disposition for railway purposes, all matters are not yet finally agreed upon.

A slip, with transfer apron and trestle complete with the necessary dolphin for moving barges at Esquimalt, B.C., was expected to be completed early in March. The slip is intended to furnish additional facilities for transferring rail freight by barge between Vancouver and Victoria. The contract was let to E. R. Doc, Victoria. (Jan., pg. 20.)

Essex Terminal Ry.—A large area has been acquired south of the race track in Windsor, Ont., by the company for laying out yards. The matter is under consideration by the city council, with a view to obtaining a street extension through the property before the yards are laid out. (Aug., 1912, pg. 411.)

Fredericton and Grand Lake Coal and Ry. Co.—Construction is reported to have been started on the spur line from Fredericton to Marysville, N.B., the contract for which is reported to have been let to A. E. Trites and Son. (Jan., pg. 20.)

Gananoque and Arnprior Ry.—The provisional directors named in the application to the Ontario Legislature for the incorporation of this company are:—F. A. Heney, R. A. Sibbit, J. C. Judd, Ottawa; W. T. Sampson, Gananoque, Ont.; J. A. Donovan, Toronto; F. B. Taber, Morton, Ont.; D. W. Green, Lyndhurst, Ont. (Feb., pg. 83.)

The Glengarry and Stormont Ry. is projected to run from the C.P.R. near St. Polycarpe Jet., via Williamstown and Martintown, to Cornwall, Ont. It is said that surveys have been completed; that M. J. McLennan, D.L.S., Williamstown, has been retained to purchase the right of way and that it is expected that construction will be started this summer. C. L. Hervey C.E., Montreal, is one of the provisional directors. (Aug., 1912, pg. 411.)

Ha Ha Bay Ry.—We are officially advised that the branch from Chicoutimi to Labrosse Jet., 2.5 miles, is now operated by electricity, two electric motors taking care of the freight and passenger service. The Laterriere branch is being extended to Lake Kenogami, four miles. The contractors are Riverin and Riverin. The grading is mostly completed, and it is expected to have track laid and the extension in operation by May 1. The steel superstructure of the bridge at the mouth of Riviere a Mars is in course of erection, and when this is finished it will be possible to complete the line as far as the government wharf at Bagotville. During 1912, one mile of new track was laid. J. E. Robitaille, Chicoutimi, Que., is Comptroller. (Dec., 1912, pg. 604.)

High River and Hudson Bay Ry.—The Alberta Legislature has authorized an increase of the capital stock from \$500,000 to \$1,000,000; an increase of the bonding powers from \$18,000 to \$30,000 a mile, and an extension of time within which the projected line may be built. A. A. Balchey, High River, Alta., is solicitor for applicants. (Feb., 1912, pg. 67.)

Huron Lake Shore Ry.—The application for the incorporation of a company with this title was defeated by 19 to 8 in the House of Commons railway committee. (Jan., pg. 20.)

International Ry. of New Brunswick.—The Maine Legislature has granted the right to build a bridge across the St. John River from Van Buren, Me., to St. Leonards, N.B. I. R. of N. B. officials are reported as stating that the bridge will be built during this year, the company already having authority from the Dominion Parliament. By the erection of this bridge the I. R. of N. B., would be able to connect its line with the Bangor and Aroostook Rd. at Van Buren. (April, 1911, pg. 321.)

Intermarine Ry. and Navigation Co.—This line, the construction of which has been authorized by the Manitoba Legislature, is projected to start near the head of Lake Winnipeg and run northeasterly for 122 miles to a junction with the Dominion Government Railway to Hudson Bay at mileage 191 from Pas, Man. The provisional directors are W. J. Robertson, P. J. Gordon, W. D. Boyd, K. Clemes, C. F. Just, Winnipeg. (Feb., pg. 83.)

Kettle Valley Lines.—The engineers making the final survey of the extension of this line westerly to Hope, B.C., have completed their work. C. J. Seymour was in charge. (Feb., pg. 83.)

Lake Erie and Northern Ry.—The Minister of Railways has approved route map for the line from Brantford to Galt, Ont., 21 miles. A considerable mileage of the right of way was reported to have been purchased Mar. 13, and it was also reported that a contract had been let for the grading to Johnson Bros., Port Hope, Ont., and for masonry work to P. H. Secord and Sons, Brantford. Work will be started as soon as the plans have been approved by the Board of Railway Commissioners. (Feb., pg. 90.)

Lake Winnipeg and Nelson River Ry.—The Manitoba Legislature has incorporated a company with this title to build a railway from tp. 48, range 14, west 1st meridian, northeasterly to tp. 56, range 11, thence northerly to the south of Burntwood Lake, with branches to the Nelson River, in tp. 62, range 2, in tp. 72, range 1, and tp. 68, range 5. The provisional directors are:—J. B. Henderson, G. G. Lennox, H. G. Holman, J. E. Kyle, J. Scott, Winnipeg.

London and Port Stanley Ry.—The London, Ont., City Council has decided not to enforce its claims against the company by foreclosure proceedings, and has decided to submit the question of the electrification of the line to the people at the earliest possible moment.

Application is being made to the Ontario Legislature by the city for power to lease the line, to authorize its electrification, and to operate it by commission or otherwise, after the passing of the necessary bylaws. (Oct., 1912, pg. 502.)

Michigan Central Rd.—The St. Thomas, Ont., City Council has been informed that the M.C.R. plans for a new powerhouse and machine shop in that city are about completed, and will be submitted for approval shortly. The cost of the new buildings is estimated at \$150,000.

The Board of Railway Commissioners has authorized the company to connect its line with the Essex Terminal Ry. on the northerly side of the company's yard at Windsor, Ont.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—An arrangement has been made, according to press reports, under which after July, 1912, the company will obtain

an entrance into the Grand Central Station, Chicago, Ill., owned by its leased line—the Wisconsin Central Ry., over the Baltimore and Ohio Rd. tracks. The present entrance to Chicago is over the Illinois Central Rd. tracks.

Press reports state that the company is preparing to spend \$25,000,000 upon the construction of about 725 miles of new line, from near Plaza, N.D., to the International boundary near the Montana-Idaho boundary. The line will cross the Missouri River 30 miles west of Plaza, and run along the Yellowstone River for about 250 miles, and finally reach the International boundary line in Flathead County. (Feb., pg. 83.)

New Brunswick Coal, Iron and Clay Co.—Application is being made to the New Brunswick Legislature to incorporate a company with this title having power among other things, to build railway lines connecting the company's properties with other railways and the water front. Inches and Hazen, St. John, N.B., are solicitors for applicants.

Newfoundland.—We are officially advised that the Government of the Colony has not entered into a contract with a British company for the building of an 80 mile line from Green Bay to the east coast at Bay of Islands, as stated in press reports. The construction of such a line has, however, been authorized, and its construction by British capitalists, as a part of a new short line of communication between Great Britain and Canada, is under consideration. (Feb., pg. 83.)

Northern Pacific Ry.—G. T. Reid, Assistant to the President, is reported to have stated during his recent visit to New Westminster, B.C., that the company's trains would enter Vancouver over the Great Northern Ry. from Somers. The company will use the new terminals on False Creek now being built. (Oct., 1912, pg. 502.)

Ontario-Michigan Ry.—The Dominion Parliament has extended the time for the construction of this projected railway from Sarnia to Windsor, Ont. (July, 1911, pg. 647.)

Pacific Coast Ry.—Application is being made to the Dominion Parliament to incorporate a company with this title to build a railway from Hardy Bay to Squamish, Vancouver Island, about 20 miles, and to operate a line of steamships from Hardy Bay to the mainland and elsewhere. Bernard and McKeown, Montreal, are solicitors for applicants.

Pacific Great Eastern Ry.—The Superintendent of Construction is reported as stating Feb. 27, that 150 men were engaged on building a wagon road, and 300 men were working on the railway right of way, between Howe Sound and Bear Mountain. From Burkenhead easterly to Lillooet, 500 men were at work on the right of way. Satisfactory progress is being made, track laying will soon be started, and it is expected to have the line from Howe Sound to Lillooet completed during this year.

The question of the route between North Vancouver and Howe Sound, is still the subject of negotiation with the municipalities and the Provincial Government. The location surveys between Lillooet and Fort George are nearly completed.

The British Columbia Legislature has amended the act of incorporation of 1912, by authorizing the company to build the line from Lillooet "in a generally northerly direction by the most feasible route," instead of "along the bank of the Fraser River north," and by making the rate of interest on the guarantee bonds 4½ instead of 4 per cent., and a second act has been passed amending chap. 36 of the statutes

of 1912 in accordance therewith. (Feb., pg. 84.)

Peace River Great Western Ry.—The Alberta Legislature has granted an extension of time for the building of the line authorized by chap. 50 of the statutes of the second session of 1910. (Jan., pg. 21.)

Pointe Aux Trembles Terminal Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway at the Canada Cement Co.'s plant, lot 74, Pointe Aux Trembles, Que., with terminals; the work to be for the general advantage of Canada. Brown, Montgomery and McMichael are solicitors for applicants.

Portage Radial Ry. and Canal Co.—The Manitoba Legislature has incorporated a company with this title, to build a railway from Portage la Prairie to Winnipeg; from Portage la Prairie to Delta, with branch lines; and a canal from Lake Manitoba through the municipality of Portage la Prairie to the Assiniboine River. The company may develop and distribute hydro-electric power, and use the same, steam or any other motive power for the operation of its railway. The provisional directors named are:—W. Richardson, H. Stephens, F. G. Taylor, Portage la Prairie, Man.; B. L. Grant, St. Francois Xavier, Man.; A. H. Oakes, Winnipeg.

Prince Edward Island Ry.—The Minister of Railways was asked in the House of Commons recently if it had been decided to change the P.E.I. Ry. to standard gauge. He replied that the matter was receiving the Government's attention, and answered other question as to when the work would be commenced and when it would be finished by saying, "The matter is under consideration."

The estimates submitted to Parliament provide for \$1,000 on account of original construction; \$5,000 to increase accommodation and facilities on the line; \$4,500 for machinery at Charlottetown; and \$1,000,000 to provide car ferry and the necessary alterations, and change from narrow to standard gauge.

Tenders are under consideration for the construction of a car ferry terminal at Carleton Point, P.E.I., and tenders will be received to April 15, for constructing car ferry terminals at Cape Tormentine, N.B. The estimated cost of these terminals is from \$1,500,000 to \$2,000,000. (Jan., pg. 21.)

Quebec and Saguenay Ry.—Press reports state that an arrangement has been made with the creditors, under which one half of the indebtedness was to have been paid Mar. 15, and the balance on April 15. The report also adds that the arrangements made include the resumption of work on the line, and its completion to Murray Harbor, Que., during the summer. (Nov., 1912, pg. 558.)

Quebec press reports Mar. 16, stated that Mackenzie, Mann and Co. interests had deposited \$350,000 to cover the balance owing by the company to O'Brien and Doheny, the general contractors, and that this was a preliminary step to the taking over of all length of 35 miles. The Trepossey branch

Reid Newfoundland Co.—We are officially advised that tracks were laid on the Hearts Content branch for 25 miles during 1912, completing the branch, which has a total length of 35 miles. The Trepassy branch will have a total length of 105 miles. Sixty miles of track had been laid up to the end of 1911, and an additional 40 miles were laid in 1912. The additional five miles will be laid this year, and it is expected to have this branch and the Heart's Content branch in operation by Aug. 1. Work is to be started this year on a branch of 52

miles from Carbonear to Bay-de-Verde, and for a branch of 54 miles from Come-by-Chance to Fortune Bay. Surveys have been made for a branch of 30 miles from Deer Lake to Bonne Bay, but it has not been decided when work will be started, though it is possible that something will be done this year. (Jan., pg. 21.)

St. John and Quebec Ry.—The Hibbard Co., Ltd., Fredericton, N.B., is considering subletting the track laying and ballasting on the contract between Fredericton and Woodstock, N.B.

Simcoe, Grey and Bruce Ry.—The Dominion Parliament has extended the time within which this projected railway from Kincardine to Orillia, Ont., may be built. (Dec., 1912, pg. 605.)

Taber Transit Co.—The Alberta Legislature has incorporated a company with this title to build a railway from sec. 31-9-16 west of the 4th meridian, north-westerly to sec. 12-10-7, with branches to sec. 33-9-17 and sec. 7-10-17; and a second line also from sec. 31-9-16 north and north-easterly to Bow City, Alta. The provisional directors are:—J. F. Kramer, V. O. Eastland, Calgary, Alta.; C. D. Holder, Dunmore, Alta.; J. Schissil, Canmore, Alta.; W. E. Bullock, F. Barton, Taber, Alta.; E. S. Kramer, Philadelphia, Pa.

Timiskaming and Northern Ontario Ry.—We are officially advised that a contract has been let to Macdougall and McCluskey, Cochrane, Ont., for the clearing and grading of a private line to be known as the Iroquois Falls Branch. It will start from the main line at Iroquois Falls Jct., 225 miles from North Bay, and run north-easterly through Calvert Tp. to the Abitibi Pulp and Paper Mills Co.'s plant at Iroquois Falls on the Abitibi River, about seven miles. The work is very light, and it is expected to have the branch in operation by July 1.

The Elk Lake branch has been completed, and a regular train service is being operated. Engineers are in the field locating an extension of the branch from Elk Lake City into the Gowganda district.

Press reports state that plans have been made for the diversion of the line near the union station at Cochrane, and for the laying out of the yards there. It is said that the work will call for the removal of about 90,000 cubic yards of material.

Press reports stated that a survey party was to start from Cochrane, Mar. 20, in charge of P. Jobin, to make a hydrographic survey of certain parts of Hudson Bay, with a view of selecting a terminus for the proposed extension of the line to a port on the Bay. (Feb., pg. 84.)

Toronto, Hamilton and Buffalo Ry.—J. N. Beckley, President, has addressed a letter to the citizens of Hamilton, Ont., on the question of the Hunter street crossing. He states that the engineers employed by the company to examine into the whole question have reported, and that the company had replied to the petition of the Hunter St. residents to the Board of Railway Commissioners. The company claims that the tracks, as at present laid out, are lawfully located on Hunter St., and that it has the absolute right to maintain them at their present level and to operate thereon subject to the reasonable requirements imposed upon the company. Some time ago the company realized that at an early date crossings in the vicinity of the station should be eliminated. The whole of the data collected by the company's engineers was submitted to Westinghouse, Church, Kerr and Co., New York. After conferences with that company's engineer, and those representing the C.P.R., the New York Central Rd. and the Michigan Central Rd., a re-

port was prepared recommending a plan of track elevation and subways for the streets as the only practicable solution of the problem. The estimated cost of this work is \$760,590, against \$2,940,000, the estimated cost of depressing the tracks and providing bridges over them for the streets. If the tracks were covered for the entire distance the estimated cost would be \$3,825,000, exclusive of the cost of land and abutment damages. The letter adds that copies of the engineer's reports have been sent to the city council, and that a drawing showing the recommended works had been sent for exhibition.

The company received tenders up to Mar. 31 for building a second track from Smithville to Welland, Ont., 16½ miles. (Mar., 1912, pg. 559.)

Western Canada Ry.—Application is being made to the Dominion Parliament for the incorporation of a company with this title to build a railway from Fort Churchill, Hudson Bay, to Sea Falls, Nelson River, thence north of Lake Winnipeg to Prince Albert, Sask., thence to Calgary, Alta., with a branch line from near Manitoba Lake to Edmonton, Alta. Vincent, Seguin and Labelle, Ottawa, are solicitors for applicants.

Wetaskiwin, Yellowhead and Pacific Ry.—The Dominion Parliament has incorporated a company with this title, to build a line from Wetaskiwin, Alta., along the Saskatchewan and Brazeau Rivers to the Yellowhead Pass, thence to Revelstoke, B.C. (Dec., 1912, pg. 605.)

Railway Rolling Stock Notes.

The Duluth, Winnipeg and Pacific Ry. (C.N.R.) has ordered 400 box cars from the Mount Vernon Car Co.

The Algoma Eastern Ry. has received 3 forty ton steel frame box cars from Canadian Car and Foundry Co.

The C.P.R., between Feb. 12 and Mar. 12, ordered 2 buffet parlor cars from its Angus shops, and 10 wrecking cranes from F. H. Hopkins & Co.

The Canadian Northern Ry., between Feb. 15 and Mar. 14, ordered 6 sleeping cars from the Barney and Smith Car Co., and 55 cabooses from the Mount Vernon Car Co.

The Canadian Northern Ry., between Feb. 15 and Mar. 14, received the following additions to rolling stock:—150 box cars, 7 first class cars and 2 snow ploughs from the Canadian Car and Foundry Co.; 45 box cars from the Rathbun Co., and 22 cabooses from its Winnipeg shops.

The G.T.R. has received the following additions to rolling stock:—25 box cars and 4 refrigerator cars from the Canadian Car and Foundry Co.; 428 box cars from the Pressed Steel Car Co.; 15 Pacific type locomotives, 69 in. wheel, and 9 Pacific type locomotives, 73 in. wheel, from Montreal Locomotive Works; 9 switching locomotives from Canadian Locomotive Co., and 17 Mikado locomotives from American Locomotive Co.

An Ottawa press dispatch of Mar. 24 states that orders have been placed for locomotives for the Canadian Government Railways as follows:—4 Pacific type and 5 consolidation freight locomotives at \$24,500 each, with the Montreal Locomotive Works; 5 switching locomotives, at \$17,600 each, and 10 freight locomotives, at \$24,000 each, with the Canadian Locomotive Co.; and 10 freight locomotives, at \$24,000 each, with the Canada Foundry Co.

The C.P.R., between Feb. 12 and Mar. 12, received the following additions to rolling stock:—1 flat car, 4 dining cars, 4 first class

and smoking cars, 1 smoking car, 7 tourist cars, 8 second class cars, 11 box baggage cars, 1 superintendent's business car, 4 D.4 locomotives and 2 G.1 locomotives from its Angus shops; 121 steel frame box cars, 152 automobile cars from Canadian Car and Foundry Co.; 94 steel frame box cars from National Steel Car Co.; 16 steel frame box cars from Standard Steel Car Co.; 448 steel frame box cars from Barney and Smith Car Co.

The Intercolonial Ry., between Jan. 15 and Mar. 17, received the following additions to rolling stock:—100 flat cars, 80,000 lbs. capacity, 2 sleeping cars, 1 dining car and 1 tank car, from Canadian Car and Foundry Co.; 1 first class car from Preston Car and Coach Co.; 280 box cars from Nova Scotia Car Works; 5 refrigerator cars from E. E. Armstrong, Falmouth, N.S.; 3 locomotives from Canadian Locomotive Co., and 2 locomotives from Canada Foundry Co.

The Canadian Car and Foundry Co., between Feb. 15 and Mar. 15, delivered the following rolling stock:—To Algoma Eastern Ry., 3 forty ton steel frame box cars; Canadian Northern Ry., 6 first class cars, 158 thirty ton wood box cars; Canadian Pacific Ry., 8 forty ton steel frame box cars, 111 steel frame drop bottom box cars, 190 forty ton steel frame automobile cars, 1 forty ton steel underframe flat car; Canadian Steel Foundries, 6 slag cars; Dominion Coal Co., 50 fifteen ton wood hopper cars; F. H. Hopkins and Co., 2 thirty ton Lidgerwood flat cars, 3 thirty ton Rodger distributing ploughs; Grand Trunk Ry., 2 thirty ton steel underframe box cars; Grand Trunk Pacific Ry., 1 thirty ton refrigerator car; Intercolonial Ry., 1 forty ton steel tank car; 1 steel underframe dining car, 19 thirty ton wooden refrigerator cars; Montreal Tramways Co., 6 steel street car bodies.

J. D. McArthur Co., railway contractors, have ordered two mogul freight locomotives from the Montreal Locomotive Works. Following are the chief details:—

Cylinder, dia. and stroke	19 by 26 ins.
Tractive power	28,720 lbs.
Factor of adhesion	3.93
Wheel base, driving	12 ft. 6 ins.
Wheel base, total	20 ft. 6½ ins.
Wheel base, engine and tender	49 ft. 5¼ ins.
Weight in working order	130,000 lbs.
Weight on drivers	113,000 lbs.
Weight on engine truck	17,000 lbs.
Weight, engine and tender	246,500 lbs.
Boiler, type	Extended wagon top.
Boiler, dia.	62 ins.
Boiler pressure	180 lbs.
Tubes, no. and dia.	240-2 ins.
Heating surface, tubes	1,301 sq. ft.
Heating surface, firebox	133 sq. ft.
Heating surface, total	1,434 sq. ft.
Grate area	28.1 sq. ft.
Driving wheels, dia.	50 ins.
Driving journals (main)	8½ x 12 ins.
" (others)	8 x 12 ins.
Brakes	Westinghouse American.
Tank	U shape, level top.
Capacity, water	5,000 imp. gals.
Capacity, coal	8 tons.

Railway Accidents in January.—In connection with railway construction in Canada there were 7 fatal and 5 non fatal accidents during January. The deaths were caused by two separate explosions of dynamite. In steam railway operation, 43 fatal, and 114 non fatal accidents were reported. Of the fatalities, 11 were due to being run over, 9 to collisions, 7 to being crushed between cars, 5 each to being struck by trains, light locomotives, and cars, and to falls, and one each to a derailment, to striking an obstacle, to machinery, to electricity, to falling material, and to being run over by a horse at a level crossing.

The Quebec Central Ry. tracks are reported to have been considerably damaged as the result of serious floods in Beauce County.

Mainly About Transportation People.

Mrs. Angus, wife of R. B. ANGUS, director, C.P.R., died at Montreal Mar. 13, aged 80.

HAYTER REED, Manager in Chief, C.P.R. Hotels, returned to Montreal from England at the end of March.

W. WILKIE, for over 30 years Toronto manager for Hendrie and Co., cartage agents, died there Mar. 13, aged 87.

SIR WILLIAM MACKENZIE, accompanied by Lady Mackenzie, sailed from New York Mar. 5 for Great Britain.

G. H. PEDLAR, President of The Pedlar People, Ltd., Oshawa, Ont., died there Mar. 16 suddenly from heart failure.

H. H. BREWER, General Superintendent, G.T. Pacific Ry., returned to Winnipeg Feb. 28, after spending a holiday in California.

D. B. HANNA, Third Vice President, Canadian Northern Ry., has been elected a director of the Title and Trust Co., Toronto.

R. W. LEONARD, Commissioner, National Transcontinental Ry., and Mrs. Leonard, returned to Canada early in March from Great Britain.

G. FORD, General Superintendent, Dominion Express Co., at Winnipeg, Man., returned there Mar. 15 from California, where he spent some time.

W. I. GEAR, Vice President, Robert Reford Co., Ltd., Montreal, has been elected a director of the Bank of Toronto, to succeed the late R. Reford.

G. C. MURRAY, who has been appointed Telephone Inspector, G.T.R., Stratford, Ont., is a son of B. S. Murray, route agent, Canadian Express Co., London, Ont.

R. W. SCOTT, whose appointment as Superintendent of Montreal Terminals, G.T.R., was announced in our last issue, has been relieved of duty on account of poor health.

J. S. DENNIS, Assistant to the President, C.P.R., Calgary, Alta., who recently underwent an operation for gallstones, is reported to be making satisfactory progress.

Hon F. E. HODGINS, Judge of the Ontario Court of Appeal, has been appointed Deputy Judge in Admiralty for the Toronto Admiralty District of the Exchequer Court.

C. J. SMITH, ex-General Manager, Richelieu and Ontario Navigation Co., has opened an office in the Merchants' Bank Building, Montreal.

Miss Mary G. Hanna, elder daughter of D. B. HANNA, Third Vice President, Canadian Northern Ry., was married at Toronto, Mar. 6, to A. V. Lewis.

A. R. HUSTON, for the past three years station agent, G.T.R., at Woodstock, Ont., has been transferred to the General Superintendent's office, Montreal.

C. L. BARDON, heretofore Assistant to General Manager, Lehigh Valley Rd., has been appointed General Manager, New York, New Haven and Hartford Rd.

N. KINSELLA, private secretary to E. J. Chamberlin, President G.T.R. and G.T.P.R., has resigned to engage in business in Winnipeg.

B. D. ATKINSON was presented with a clock by the headquarter staff of the Canadian Express Co. at Montreal, Mar. 10, on resigning the position of office supply clerk to enter private employ.

The Canadian Ticket Agents' Association has admitted to membership W. S. Metzler, North Bay, Ont.; H. B. Elliott, G.T.R., Wingham, Ont., and H. W. Bell, G.T.R., Midland, Ont.

E. J. CHAMBERLIN, President G.T.R. and G.T.P.R., and Mrs. Chamberlin, have

moved from Ottawa to Montreal, where they have taken up their residence at 257 Peel St.

W. E. COSTELLO, who recently resigned as Superintendent, Central Vermont Ry., New London, Conn., has been appointed Superintendent, Houston and Texas Central Rd., Ennis, Tex.

SIR DONALD MANN was recently described by a New York correspondent of a Canadian daily paper as "of the Canadian Parliament." Thus the honor is thrust on the man.

SIR JOHN JACKSON arrived in Montreal from England, Mar. 4, and subsequently went to Victoria, B.C., where his firm has a contract for the improvement and extension of the harbor.

J. A. DUFFLE, who died in the Victoria Hospital, Montreal, Feb. 23, was for 30 years in G.T.R. service, serving until his illness as chief clerk in the Motive Power Department.

The late J. P. MABEE, Chief Commis-



A. P. Walker, M. Can. Soc. C.E., Division Surveyor, Ontario Division, Canadian Pacific Railway.

sioner of the Board of Railway Commissioners, died intestate, and his estate, valued at \$42,000, will be divided between his two children.

JAS. PLAYFAIR, Vice President and Managing Director, Richelieu and Ontario Navigation Co., and Mrs. Playfair, left Midland, Ont., Mar. 5, for a trip to Florida, and are expected to return early in April.

SIR WILLIAM H. WHITE, K.C.B., formerly Director of Naval Construction and Assistant Controller of the British Navy, who died in London, Eng., Feb. 27, was a director of the G.T. Pacific Ry.

R. WILSON, of the Cowan Construction Co., Winnipeg, died there recently, aged 54. He was born in England, and was engaged in railway construction work in western Canada since 1882.

A. F. DION was recently presented with a leather travelling bag and address on leaving the Canadian Northern Ry. freight department, Montreal, to become Traffic Manager, Quebec Harbor Commission.

J. E. MORAZAIN was presented with a gold watch and chain by the C.P.R. staff at Quebec on his recent transfer from the position of agent to that of Assistant Superintendent.

J. STEWART, of the contracting firm of Foley, Welch and Stewart, is reported by a London cable to have purchased 50,000 acres of land in his native county of Sutherland, Scotland, from the Duke of Sutherland.

J. POWELL, Chief Draughtsman, G.T.R. Motive Power Department, Montreal, and Secretary, Canadian Railway Club, has just recovered from a broken left wrist, occasioned by a fall when skating during the latter part of January.

C. THACKER, who has retired from the C.P.R. car department, with which he has been engaged for about 30 years, was presented recently with a suitably engraved clock by the car department staff at Winnipeg.

G. W. BOYD, for more than 12 years General Passenger Agent, Pennsylvania Rd., has been appointed Passenger Traffic Manager, vice J. R. Wood, retired under the pension rules on attaining 70 years of age.

W. RUSSELL, a private banker, who died in Winnipeg, Man., Mar. 3, was engaged in the C.P.R. service in its early years in the province, having been station agent at Brandon, North Portal, Gretna and Portage la Prairie.

F. H. CLERGUE, who is associated with the North Ry. enterprise, addressed the McGill University Canadian Club, Mar. 10, on the resources of the country lying between Montreal and Hudson Bay, through which the railway will pass.

C. N. ARMSTRONG, principal promoter of the Central Ry. of Canada and other railway enterprises, will, it is said, contest the Colne Valley district of Yorkshire for the House of Commons at the next general election in England.

J. K. McNEILLIE, who has been appointed Superintendent C.P.R. Terminals at Montreal, was entertained at dinner and made the recipient of a testimonial from residents of Farnham, Que., Mar. 1, on his leaving to take up his new position.

J. J. BRIGNALL, who recently resigned the position of Travelling Passenger Agent, C.P.R., Toronto, on his appointment as Travelling Passenger Agent, Robt. Reford Co., as announced in our last issue, was on Mar. 14 presented with a purse of gold and a bag by a number of his associates.

J. E. BEDFORD, who has been appointed Master Car Painter, Intercolonial Ry. Shops, Moncton, N.B., entered I.R.C. service as a painter's apprentice, Mar., 1877, and was appointed charge hand of the paint stock room in 1902, which position he held until his present appointment.

SIR WILLIAM WHYTE, who intended joining the party making an all round the world trip on the C.P.R. s.s. Empress of Russia, decided to abandon the journey on account of illness. He will probably take a somewhat shorter trip later on, as soon as his health will permit.

G. H. DUGGAN, M. Can. Soc. C.E., heretofore Chief Engineer, Dominion Bridge Co., Montreal, has been appointed General Manager, and has been succeeded in the former position by R. S. Buck, M. Can. Soc. C.E., M. Am. Soc. C.E., who has been practising in New York as a consulting engineer.

C. O. FOSS, to whom reference was made under the heading of Birthdays of Transportation Men in March, in our last issue, is District Engineer, National Transcontinental Ry., St. John, N.B., but by trans-

position of lines, his position was wrongly described.

Hon. JOHN HAGGART, M.P., who died at Ottawa Mar. 13, was born at Perth, Ont., Nov. 14, 1836. He was Minister of Railways and Canals from Jan. 11, 1892, to June, 1896, under four successive premiers.

W. E. BISHOP, formerly General Manager, Hamilton Steamboat Co., Hamilton, Ont., and since the absorption of that company by the Richelieu and Ontario Navigation Co., General Agent of the latter company there, has resigned to enter private business in the same city.

J. G. SULLIVAN, Chief Engineer, Western Lines, C.P.R., Winnipeg, was elected a director of the American Railway Engineering Association at the recent annual meeting. H. R. SAFFORD, Chief Engineer, G.T.R., was elected a member of the nominating committee.

T. C. KEEFER, C.M.G., Hon. M. Can. Soc. C.E., and a past President of that society, has been elected an honorary member of the Institute of Civil Engineers, of Great Britain. The list of honorary members of this society, which in 1912 consisted of 20 persons, includes a number of royal personages and members of the British peerage.

JAS. ATKINSON was presented with an arm chair and a reading lamp by the Car Foremen's and Inspectors' Association at Windsor, Ont., Feb. 26. He entered the Canada Southern Ry. service in 1872, subsequently becoming car foreman at Windsor, and latterly acting as chief joint inspector of cars and arbitrator for the different railways entering Windsor.

W. FRASER, who died at Kentville, N.S., Feb. 20, aged 70, was superannuated from the Dominion Atlantic Ry. service in 1911. In 1879 he was appointed station master on the old Western Counties Ry., and passing over to the D.A. Ry., became General Freight Agent at Halifax in 1897; and in 1900 Traffic Superintendent at Kentville. He was also Manager of the Maritime Express Co.

A. B. CHOWN, who has been appointed Travelling Passenger Agent, G.T.R., Pittsburgh, Pa., was born at Belleville, Ont., Aug. 4, 1887, and entered G.T.R. service Apr. 1, 1907, since when he has been, to June, 1909, night ticket clerk, Belleville station, Ont.; June, 1909, to Mar. 1, 1911, day ticket clerk, Belleville station, Ont.; Mar. 1, 1911, to Mar. 1, 1913, Soliciting Passenger Agent, Toronto City Office.

E. H. EDEN, Commercial Agent, Delaware, Lackawanna and Western Rd., who died at Minneapolis, Minn., Mar. 11, began his railway career with the G.T.R. at Buffalo, and prior to joining the D.L. and W. Rd. service was on the auditing staff of the Minneapolis, St. Paul and Sault Ste. Marie Ry. One of his sons, John C., was formerly Assistant Traffic Manager, Great Northern Ry., at Minneapolis.

A. H. HOGELAND, M. Am. Soc. C.E., who was recently appointed Consulting Engineer, Great Northern Ry., St. Paul, Minn., was born in Pennsylvania in 1858, and commenced his railway career as rodman and leveller on surveys and construction, St. Paul and Pacific Ry., in 1879. From 1890 to 1896, he was Engineer of Maintenance of Way, Eastern District, 1896 to 1902, Resident Engineer, Eastern District, 1902 to 1903, Assistant Chief Engineer, and 1903 to the date of his present appointment, Chief Engineer, Great Northern Ry.

J. I. HOBSON, who has been appointed Comptroller and Treasurer, Richelieu and Ontario Navigation Co., Montreal, was born at Guelph, Ont., Mar. 30, 1872, and entered transportation service Mar., 1910, prior to which he was, from July 1888, to Apr.,

1892, with Knox, Morgan and Co., wholesale merchants, Hamilton, Ont., and subsequently, to Mar., 1910, with the Bank of Hamilton, the latter four years, as Manager at Owen Sound, Ont. Before receiving



C. Forrester,
Superintendent, Stratford Division, Ontario Lines,
Grand Trunk Railway.

his present appointment, he was Treasurer, Inland Lines, Ltd., Hamilton, Ont.

E. W. HOLTON, who has been appointed General Passenger Agent, Northern Navigation Co., Sarnia, Ont., was born at Belleville, Ont., Dec. 15, 1872, and entered



W. B. Way,
Superintendent, District 1, Eastern Division, Canadian Pacific Railway.

transportation service as junior clerk in the local freight office, at Belleville, Ont., and until Mar., 1904, was chief clerk to General Freight and Passenger Agent, Bay of Quinte Ry., Deseronto, Ont.; Mar., 1904, to

Feb. 1, 1910, chief clerk to Traffic Manager, Northern Navigation Co., Sarnia, Ont.; Feb. 1, 1910, to Mar. 12, 1913, Eastern Passenger Agent, same company, Sarnia, Ont.

PETER PATON, who has been appointed Manager, Northern Navigation Co., Sarnia, Ont., was born at New Lowell, Ont., Mar. 13, 1869, and entered Northern Navigation Co.'s service May 1, 1911, as Western Travelling Agent, Winnipeg. He was appointed Assistant to the President at Sarnia, Ont., May 1, 1912, which position he held to Mar. 1, 1913, the date of his present appointment. Prior to entering transportation service, he was from June, 1885, to May 1, 1911, in mercantile business, during the latter portion of this period as Manager, Collingwood Packing Co., Ltd.

H. D. PATERSON, who has been appointed General Agent, Passenger Department, Richelieu and Ontario Navigation Co., Toronto, was born at Port Perry, Ont., Sept. 5, 1881, and entered transportation service in 1897, since when he has been, to 1898, clerk, City Ticket Office, G.T.R., Toronto; from 1899 to Mar. 1, 1913, consecutively, clerk and stenographer, District Passenger Agent's office, C.P.R., Toronto; clerk and stenographer, General Agent's office, Chicago and North Western Ry., Toronto, and Travelling Passenger Agent, Richelieu and Ontario Navigation Co., Toronto.

T. A. WILSON, who was recently appointed Assistant Superintendent, District 3, Lake Superior Division, C.P.R., Schreiber, Ont., was born at Stratford, Ont., Jan. 27, 1872. Prior to Feb., 1891, he was car checker, G.T.R., Stratford, Ont., and assistant agent, same road, Kincardine, Ont.; Feb., 1891, to Aug., 1892, consecutively, operator and agent, same road at various points between Toronto and Sarnia, and in train service at Windsor and Allandale, Ont.; Aug., 1892, to Oct., 1900, agent, C. P.R., at various points on the Lake Superior Division; Oct., 1900, to Oct., 1912, Yard Agent, C.P.R., Ottawa.

L. A. W. DOHERTY, who has been appointed Freight Traffic Manager, Richelieu and Ontario Navigation Co., Toronto, was born there, April 10, 1878, and entered transportation service, July, 1896, since when he has been, to 1897, clerk to Assistant Freight Traffic Manager, C.P.R., Toronto; 1897 to 1906, chief clerk to General Freight Agent, C.P.R., Toronto; 1907 to 1908, chief clerk to Assistant Freight Traffic Manager, C.P.R., Toronto; 1908 to 1910, Assistant Manager, Inland Navigation Co., Hamilton, Ont.; 1911 to Feb. 27, 1913, Traffic Manager, Inland Lines Ltd., Hamilton, Ont.

H. H. GILDERSLEEVE, who has been appointed Manager, Western Lines, Richelieu and Ontario Navigation Co., Toronto, and whose portrait appears in this issue, was born at Kingston, Ont., Dec. 15, 1865, and after spending six years in the Bank of Montreal, entered Lake Ontario and Bay of Quinte Steamboat Co.'s service in 1890, since when he has been, to 1894, purser on one of the company's vessels, book-keeper and auditor in the company's office, and Freight and Passenger Agent; 1894 to Feb., 1904, General Manager, same company; Feb., 1904, to Feb. 27, 1913, Manager, Northern Navigation Co., Collingwood, and latterly at Sarnia, Ont.

W. B. WAY, whose appointment as Superintendent, District 1, Eastern Division, C.P.R., Farnham, Que., was announced in our last issue, and whose portrait appears in this issue, was born at Bowmanville, Ont., Aug. 22, 1867, and entered C.P.R. service, Sept., 1884, since when he has been, to Feb., 1888, telegraph operator, North Bay, Ont.; Feb., 1888, to Oct., 1899, dispatcher, North Bay, Ont.; Oct., 1899, to Nov., 1906,

Chief Dispatcher, Chapleau, Ont.; Nov., 1906, to Sept., 1907, Trainmaster, White River, Ont.; Sept., 1907, to May, 1911, Assistant Superintendent, Chapleau, Ont.; May, 1911, to Feb., 1913, Assistant Superintendent, District 3, Eastern Division, Montreal.

W. M. HOOD, who has been appointed Travelling Passenger Agent, Canadian Northern Ry. and Canadian Northern Steamships Ltd., Toronto, was born at Harrow, Ont., Nov. 25, 1872, and entered transportation service, Nov. 1, 1892, since when he has been, to 1900, Local Freight and Passenger Agent, Lake Erie and Detroit River Rd., McGregor, Ont.; 1900 to 1901, Travelling Freight and Passenger Agent, same road, Cleveland, Ohio; 1901 to 1905, Local Freight Agent, same road, Sarnia, Ont.; 1905 to 1910, Local Freight Agent, Pere Marquette Rd., Chatham, Ont.; 1910 to Feb., 1913, Travelling Passenger Agent, same road, London, Ont.

L. L. HENDERSON, General Manager, Montreal Transportation Co., who has been elected President, Dominion Marine Association and whose portrait appears in this issue, was born at Kingston, Ont., Mar. 5, 1866, and entered the Montreal Transportation Co.'s service in 1884 as clerk, and passing through the various departments was appointed agent at Kingston in 1896, and General Manager in 1909. He is also a director of the Montreal Transportation Co., and a director of the Montreal Dry Dock and Ship Repairing Co., besides being connected with some realty and investment companies, and was a member of the council of the Montreal Board of Trade for 1911-12.

A. T. SHORTT, whose appointment as Superintendent of Ogdan Shops, C.P.R., Calgary, Alta., was announced in a recent issue, was born in Quebec in 1873, and entered railway service in 1880, since when he has been, to 1884, apprentice machinist, G.T.R.; 1884 to 1885, machine fitter, G.T.R.; 1885 to 1898, fitter, Canadian Locomotive Co., Kingston, Ont.; 1898 to 1905, fitter, C.P.R.; 1905 to 1906, Foreman, Calgary Shops, C.P.R.; 1906 to 1908, General Foreman, Calgary Shops, C.P.R.; 1908 to 1910, District Master Mechanic, Crowsnest District, C.P.R.; 1910 to 1912, General Master Mechanic, Saskatchewan Division, C.P.R.; 1912 to Jan. 18, 1913, General Master Mechanic, Alberta Division, C.P.R.

T. HENRY, who has been appointed Manager, Eastern Lines, Richelieu and Ontario Navigation Co., Montreal, and whose portrait appears in this issue, was born in Montreal, May 29, 1865, and entered transportation service in 1879, since when he has been, to 1881, ticket agent, Ottawa River Navigation Co., Montreal; 1881, local freight agent, same company, Montreal; 1881 to 1882, clerk in audit office, G.T.R., Montreal; 1882 to 1884, ticket clerk, City Ticket Office, G.T.R., Montreal; 1884 to 1887, clerk, Northern Pacific Ry.; 1887 to 1900, District Freight and Passenger Agent, Northern Pacific Ry., Montreal; 1900 to Feb. 27, 1913, Traffic Manager, Richelieu and Ontario Navigation Co., Montreal.

ROBERT REFORD, President Robert Reford Co., Ltd., shipping agents, Montreal, died there Mar. 15, aged 82. A native of Belfast, Ireland, he came to Canada in 1845, settling in Toronto, where he conducted a wholesale grocery and shipping business. He moved to Montreal in 1865, continuing in the same business, but the shipping end of it became the most important, and he ultimately devoted himself entirely to it. The business was incorporated under the present title in 1897, and acts as agents for the Donaldson, Cunard, and Lord Lines of steamers. During the last few years he

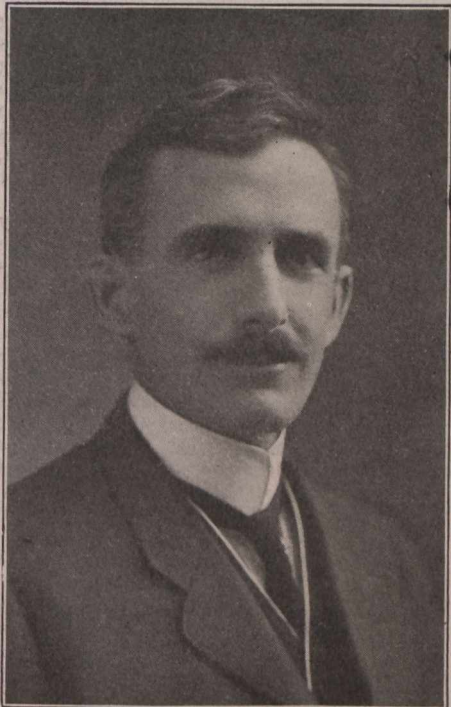
gave large sums to public institutions, including \$150,000 to McGill University; \$35,000 to Montreal General Hospital, and \$10,000 to Montreal Y.M.C.A.

R. F. MORKILL, who has been appointed



M. B. Dube,
General Foreman of Shops, Grand Trunk Pacific
Ry., North Transcona, Man.

Signal Engineer, G.T.R., Montreal, was born at Sherbrooke, Que., June 7, 1878. From 1898 to 1899 he was Assistant Engineer, West Kootenay Electric Power Co., Rossland, B.C.; 1899 to 1901, Superintendent, St. John's Electric Ry. Power and Lighting



G. H. Jerkins,
Assistant to General Purchasing Agent, Grand
Trunk Railway.

Co., Reid Newfoundland Co., St. John's, Nfld.; 1902, Assistant Electrical Engineer, Simmer and Jack Gold Mines, Ltd., Johannesburg, South Africa; 1902 to 1908, Engineer in charge of Signalling, Central South

African Railways, Johannesburg, S.A.; 1910 to 1911, Assistant Engineer of Signalling for Union Switch and Signal Co., New York; 1911 to Mar. 1, 1913, Sales Manager and Assistant General Manager, Railway Signal Co. of Canada, Montreal.

H. FOSTER CHAFFEE, who has been appointed Passenger Traffic Manager, Richelieu and Ontario Navigation Co., Montreal, and whose portrait appears in this issue, was born at Knowlton, Que., Dec. 18, 1868, and entered transportation service in 1883, since when he has been, to 1884, ticket clerk, South Eastern Ry., Montreal; 1884 to 1885, ticket clerk, C.P.R., Montreal; 1885 to 1895, City Passenger and Ticket Agent, Richelieu and Ontario Navigation Co., Montreal; 1895 to 1900, also in charge of the company's transfer books; 1900 to Feb., 1907, Western Passenger Agent, same company, Toronto; Feb., 1907 to June, 1912, Assistant General Passenger Agent, same company, Toronto; June, 1912, to Feb. 27, 1913, General Passenger Agent, same company, lines west of Prescott, Ont., Toronto.

J. H. CORMICK, whose appointment as Signal Engineer, Canadian Northern Ry., Winnipeg, was announced in our last issue, has been connected with the manufacturing side of the signalling business since 1890, when he entered the Union Switch and Signal Co.'s service, during which period he acted for that company as battery man on the Boston and Albany Rd., subsequently being engaged by the B. & A.R., and remaining with that company for five years. He later returned to the manufacturing business with the American Automatic Switch and Signal Co., and again re-entered railway service, his subsequent experience covering service with the Boston and Maine Rd., New York, New Haven and Hartford Rd., Boston Elevated Ry., Interborough Rapid Transit Co., U.S. Government, Hall Signal Co., General Railway Signal Co., and Northern Pacific Ry., latterly as Signal Inspector, St. Paul, Minn.

A. P. WALKER, M. Can. Soc. C.E., whose appointment as Assistant Division Engineer, C.P.R., Toronto, was announced in our last issue, was born at West Hartlepool, Eng., Dec. 9, 1860, and entered Canadian railway service Apr. 15, 1882, since when he has been, to July, 1882, right of way surveyor, C.P.R., Norwood, Ont.; July, 1882, to Dec., 1883, Assistant Engineer of Construction, C.P.R., Bethany, Ont.; Mar. to Nov., 1884, Assistant Engineer of Construction, C.P.R., Peterboro, Ont.; Nov., 1884, to Mar., 1885, Assistant Engineer of Construction, G.T.R., South River, Ont.; Feb. to Apr., 1886, on special surveys, C.P.R., Montreal; Apr., 1886, to Apr., 1887, Assistant Engineer of Construction, C.P.R., Green Valley, Ont.; Apr., 1887, to Jan., 1889, Engineer in charge of location, C.P.R., Ottawa, Ont.; Apr., 1890, to Apr., 1891, on special surveys, C.P.R., Toronto; Apr., 1891, to Feb., 1913, Assistant Division Engineer, C.P.R., Toronto.

PETER S. ARCHIBALD, M. Can. Soc. C.E., who died at Moncton, N.B., Mar. 16, of Bright's disease after a brief illness, was born at Truro, N.S., Mar. 21, 1848, and was educated at the Truro Normal and Model schools. He joined the Intercolonial Ry. survey staff in 1867, under Sir Sandford Fleming, and acted as assistant and resident engineer during the construction period. He became Assistant Engineer of Maintenance of Way in 1874, and in 1879 was appointed Chief Engineer at Moncton in succession to Collingwood Schreiber, which position he retained until 1898. He was a member of both the Canadian and the American Societies of Civil Engineers, of the former of which he was Councillor in 1894, 1895, 1901 and 1912. In 1894 he was

appointed a member of the Royal Commission to enquire into the alleged excessive freight rates charged by the C.P.R. in Manitoba and the Northwest. On leaving the Dominion Government Railways, he engaged in practice as a consulting engineer, and his services were in constant request. In 1902 he was chairman of the board of arbitrators appointed to settle the \$2,000,000 claims made by the Reid Newfoundland Co. against the Newfoundland Government; subsequently he was engaged as the engineering expert in the settlement of disputes arising out of the construction of the Algoma Central and Hudson Bay Ry., and in 1907 acted as a member of the conciliation

board in settlement of disputes between the Cumberland Ry. and Coal Co. and its employes. In 1908 he was appointed a member of the commission operating the New Brunswick Coal and Ry. Co.'s line for the N.B. Government, which appointment he held up to his death. He was also General Manager of the Elgin and Havelock Ry. up to his death. He made a number of surveys in 1902 in connection with a project for building a bridge across the Strait of Canso. The funeral took place Mar. 19, the body being taken from Moncton, N.B., to Antigonish, N.S., in the private car of D. Pottinger, Assistant Chairman, Government Railways Managing Board.

Chambers, McQuaig, McCaffrey and Cochran; from mileage 120 to Devon, mileage 132.4, Chapleau Subdivision, Dominion Construction Co., Toronto, which company has also secured the following mileages:— from Esher, mileage 7.1 to 40, White River Subdivision; from mileage 43 to Heron Bay, mileage 55.5, Schreiber Subdivision; from Selim, mileage 8.7 to 23, and from mileage 29 to 40, Nipigon Subdivision. It is also proposed to carry out some work of grade revision on the Sault Ste. Marie Branch during this year.

Manitoba Division.—The substructure has been completed for the double track bascule bridge at Island No. 2, Fort William, Ont., and considerable work has been done towards the preparation of the steel superstructure. An additional story is being added to the company's freight office building on the Kaministikwia River, Fort William, which will be devoted to the grain business. Tenders are under consideration for the erection of an extension to the car shops at Fort William.

New station buildings are to be built during this year at Edrans, Stony Mountain and Arnaud, Man.

Saskatchewan Division.—Tenders are under consideration for the erection of A2 stations at 20 points on this division, and for a boiler and machine shop at Wilkie.

The Board of Railway Commissioners has approved revised location plans for the Kerrobert northeasterly branch, mileage 20.2 to 36.10, and the Minister of Railways has approved the route map for revision of branch line from Lanigan to Prince Albert, Sask., 117.14 miles.

Alberta Division.—Tenders are under consideration for the construction of a reinforced concrete bridge at Anthony St., Strathcona; A2 stations at nine points on the division; and additions to locomotive houses at Strathcona and Calgary.

Construction is being pushed on the Weyburn-Lethbridge line, from both directions, and it is expected to have the grading practically completed, and most of the track laying done this year.

Kootenay Central Ry.—Press reports state that contracts were signed Mar. 14, for the completion of this line, 80 miles, which will give a direct connection between the Crownsnest Pass line near Galloway, and the transcontinental line at Golden. Burns and Jordan, Spokane, Wash., are reported to have a contract for 60 miles; and Boomer and Hughes, Spokane, Wash., for the remaining 20 miles. The work is to be completed by the end of 1914.

Pacific Division.—A contract has been let to W. P. Tierney, Vancouver, for the completion of the standard gauge line on the Kaslo and Slocan Ry., recently taken over by the C. P. R., including the mileage between Whitewater and Kaslo. Work has been started, J. R. Paget, Kaslo, B.C., engineer in charge.

Work has been resumed on the Port Moody line, a large gang of men being engaged in ballasting operations, broken rock being used.

Press reports state that work will be started early in April relaying the New Westminster Branch with 90 lb. steel.

C.P.R. Elevator Construction at Fort William.—A contract is reported to have been let to the Canadian Stewart Co. for the erection of a 3,000,000 bush. addition of the C.P.R. elevator D. W. R. Sinks, General Manager of the contracting firm, is reported to have stated that the material for the building has been ordered, and that it is expected to have the work completed by the fall.

Canadian Pacific Railway, Construction, Betterments, Etc.

Branch Lines Legislation.—The Dominion Parliament has granted extensions of time for the building of lines under construction or projected by the following companies, whose charters are held in the interests of the C.P.R.: Ottawa, Northern and Western Ry.; Collingwood Southern Ry.; Manitoba and Northwestern Ry.; Alberta Central Ry.; Alberta Ry. and Irrigation Co.; British Columbia Southern Ry.; Kootenay and Arrowhead Ry.

Atlantic Division.—It has been stated by a member of the New Brunswick Government that the C.P.R. is arranging to build a new railway bridge near the present cantilever bridge across the St. John River at the Reversible Falls.

Tenders are being asked for the erection of a concrete machine shop at McAdam Jet., N.B., to replace the present shop.

W. Downie, General Superintendent, is reported to have stated Mar. 13, that 715 miles of track on the division will be relaid with heavier rails, and block signalling will be installed between St. John and Vanceboro during the year.

Eastern Division.—Work is to be carried on this year on the second track from St. John to Farnham Jet., Que.

Interprovincial and James Bay Ry.—We are officially advised that the only work in immediate construction on this projected railway, is on a 10 mile section northerly from Kipawa, Que., contract for which was let in Sept., 1912. The work is in charge of C. W. P. Ramsey, Engineer of Construction, C.P.R., Montreal. (Nov. 1912, pg. 558.)

Campbellford, Lake Ontario and Western Ry.—The Dominion Parliament has extended the time within which this line may be built. This line extends from Glen Tay, Ont., to which point there is a double track from Montreal, to the Lake Ontario shore near Brockville, and thence parallel to the G.T.R. on the south side to Port Hope, thence on the north side to Agincourt, from which point the existing line is to be made a double track one this year. The entire line is under contract, and well advanced to completion so far as grading and bridge work are concerned. A start to be made on track laying early in April.

A meeting of shareholders has been called to be held in Montreal, April 16, for the purpose of approving a lease of the line when completed, to the C.P.R.; to arrange for the raising of money for construction by the issue of bonds.

Ontario Division.—A second track is to be built from Agincourt, Ont., where the Campbellford, Lake Ontario and Western Ry. joins the Montreal-Toronto line, into Toronto, 15 miles. Engineers are completing the surveys and plans.

Tenders are under consideration for building the substructures of subways at Davenport and Spadina Roads, Howland Ave., and Bathurst St., North Toronto. These are

a part of the grade separation work now in progress there, in the carrying out of which the Canadian Northern Ry. is interested. B. Ripley, 262 Avenue Road, Toronto, is engineer in charge of the work.

D. McNicoll, Vice President, was in Toronto, Mar. 14, and is reported to have said the work was not being pushed ahead as fast as it might be, on account of the objection raised by the city to the height of the subways. As soon as this matter was settled, the work would proceed without interruption.

The Ontario Legislature has before it for confirmation the sale of the old Government House property in Toronto to the C.P.R. by the Ontario Government. The purchase price was \$800,000. The company acquired considerable additional land adjoining, and the work of laying out the area as yards is nearly completed. Several large sheds and an office building are about ready for occupation. Access to the yard is obtained by a line leaving the C.P.R. main tracks near Bathurst St.

Engineers are completing the surveys for the second track work from near Islington to Guelph Jet., 30 miles. There will be apparently a slight deviation from the present tracks from near Dixie to the crossing of Dundas St. at Cooksville station, as right of way agents have been negotiating for an 80 ft. strip to the south of the present track. This will reduce the curve approaching Cooksville. A contract has been let to Jones and Girouard, Ottawa, for this 30 miles of second track and it is expected to be completed this year.

The taxpayers of Stratford, Mar. 10, by 1,063 votes to 936, defeated a bylaw granting a right of way by what is known as the South River route through Stratford, for a line which would connect the St. Marys and Western Ontario Ry. at St. Marys, with the Guelph and Goderich line near Millbank. H. P. Timmerman, of the C.P.R., who was in Stratford recently, is reported to have stated that the alternative route would cost \$500,000 more than the South River one, and was not so convenient. J. W. Leonard, Assistant to the Vice President, was reported to have stated, Mar. 16, that the project for the line into Stratford was abandoned for the present as the result of the defeat of the bylaw.

Lake Superior Division.—Surveys are in progress for the carrying out of plans for building a second track between Romford, the junction of the line from Toronto with the new transcontinental line, and Fort William, 553 miles. About 75 miles in short sections were completed last year, and we are officially advised that contracts have been let for the following additional mileages to be gone on with this year:—Agilda, mileage 86.1 to Cartier, mileage 114.6, Cartier Subdivision, Cook Construction Co., Sudbury, Ont.; from Tarpon, mileage 3.3 to Moberg, mileage 23.5, Schreiber Subdivision,

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TORONTO, CANADA, APRIL, 1913.

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Clearing Railway Right of Way of Grass, Weeds, Etc.

The Secretary of the Board of Railway Commissioners has issued the following circular to railway companies:—"I am directed to call your attention to sec. 297 of the Railway Act, which provides that railway companies shall at all times maintain and keep their right of way free from dead or dry grass, weeds and other unnecessary combustible matter. On account of the large amount of rain during the summer of 1912, the growth of vegetation was unusually heavy. On this account the fire danger along railway lines is likely to be great during the early spring of 1913 and the ensuing summer, unless prompt and vigorous action is taken as required by the section above quoted. The work of burning or otherwise disposing of combustible matter on rights of way should accordingly be begun at the earliest possible date in the spring and prosecuted vigorously until completed. As required by regulation 10 of order 16570 such supervision of burning must be provided as will prevent fires from spreading beyond the strip being cleared. Experience has shown that along portions of some lines, right of way clearing can be handled satisfactorily only by the employment of extra gangs. It is essential that each company takes whatever steps are necessary to ensure prompt and efficient compliance with the requirements of the section referred to. The Board requests that you submit a statement showing what arrangements have been or will be made for handling this work on your lines."

Intercolonial Railway Extensions and Betterments.

The estimates for this year submitted to Parliament for betterments and extensions on the line include the following:—

Original construction	\$ 800
Bridges, to strengthen	190,000
General protection of highways	65,000
To increase accommodation and facilities along the line	126,100
To increase water supply	41,500
Surveys and inspections	25,000
Halifax—Dock and wharves	400,000
—Increased accommodation, etc.	111,500
—New terminal facilities	2,500,000
Dartmouth to Deans Settlement, new branch line, on account	1,000,000
Mulgrave, increased accommodation....	33,000
" new car ferry and dock....	460,100
Point Tupper, improvements	90,000
Sydney Mines diversion	40,000
Truro, increased accommodation	155,000
Wallace Harbor, spur line	69,500
St. John, increased accommodation	18,000
Sussex, improvements	35,000
Moncton, locomotive and car shops, etc. .	136,000
Fredericton, increased accommodation ..	20,000
Chatham, diversion of line	128,000
Nelson and Derby Jct.	128,000
Levis to St. Romauld, second track ...	173,000
Levis, improvements	160,000
Riviere du Loup, additional facilities..	78,000
St. Flavie, increased accommodation....	18,000

Plans have been filed at Halifax showing the land required for the rearrangement of the terminals there. The property included extends for more than a mile along the southern water front of the city to Point Pleasant Park, and westward from the harbor to Young Ave.

The other extension work for which a vote has been provided is the building of a line from Dartmouth to Deans Settlement. The Minister of Railways recently said in the House of Commons that this line had not been placed under construction because the government felt that further information, particularly as to probable traffic, was required. The late government had let a contract, which the present government had

held up for consideration. The government also felt that complete surveys did not appear to have been made for the building of the proposed 24 mile line from Alva to Baddeck, for which \$200,000 had been voted by the last parliament. When the tenders came in the prices were found to be too high, and no contract was let. With respect to the main line, particularly between Truro and Sydney, N.S., the bridges must be strengthened, heavier steel laid, a better alignment secured, and the gradients lowered. By spending a sufficient sum on these works the haulage power of the locomotives could be increased 50%. When there was sufficient trade to warrant it, the line would be double tracked from St. John to Halifax. It would not be long before this was necessary, and the government was willing and ready to proceed with such work as soon as the proper information was obtained, the surveys made, and the necessity proved. (Feb., pg. 83.)

Bridge Work on the Canadian Pacific Railway.

It is estimated that during last year about \$10,000,000 was expended by the C.P.R. bridge department on new and old structure and a very large amount of bridge work is still in progress and proposed, exclusive of the very costly and extensive constructions that will be required soon for the proposed abolition of grade crossings in Montreal. The magnitude of the bridge work is indicated by the following summary taken from the annual report of P. B. Motley, Engineer of Bridges, for the year ended June 30, 1912: At the end of the fiscal year there were in existence 3771 bridges and open culverts. These had an aggregate length 68.69 miles. There were 25,125 culverts other than open, of which 14,032 were permanent and 11,093 of a temporary nature. During the year 778 old bridges and open culverts were replaced, aggregating 39,402 lineal feet, including 24 old iron and steel bridges, too light for present traffic, and having a total length of 2438 lin. ft. There were 923 culverts other than open and overhead bridges replaced. New bridges to the number of 109, aggregating 2.3 miles, were added. The number of temporary bridges was reduced during the year by 629, aggregating 3.89 miles.

Rates on brick from the United States to Canada:—In the matter of the investigation and suspension of advances in rates by carriers for the transportation of building brick and other articles in carloads from Orchard Park and Jewettville, N.Y., to Canadian points in which the Ellicott Brick Co., Buffalo, Rochester & Pittsburgh Ry., Michigan Central Rd., Wabash Rd., and Grand Trunk Ry., were represented, the Interstate Commerce Commission decided Feb. 3 as follows:—1. The Committee's decision in the Stowe-Fuller case, 12 I.C.C., 213, to the effect that various grades of brick should take the same rate, has no application to common brick. 2. Proposed increased rates on common or building brick from Orchard Park and Jewettville, N.Y., to Canadian points not shown to be reasonable, and tariffs under suspension required to be withdrawn.

London St. Ry.—Gross earnings for Jan., \$26,646.49; expenses, \$18,104.45; net earnings, \$8,542.04; deductions, \$2,450; net income, \$6,092.04; gross earnings for Feb., \$23,453.32; expenses, \$16,731.68; net earnings, \$6,721.64; deductions, \$2,222.10; net income, \$4,499.54.

Transportation Appointments Throughout Canada.

The information under this head, which is almost entirely gathered 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.

Board of Railway Commissioners.—E. J. ZAVITZ and W. J. C. HALL have been appointed Provincial Fire Inspectors for the Board, for Ontario and Quebec respectively, for the enforcement of the Board's fire regulations as contained in order 16570. These appointments do not carry any salary from the Board. A number of fire inspectors, already employed by the Provincial Governments, have also been appointed by the Board.

Canadian Lake Line.—H. A. YOUNG, Traffic Manager, having resigned, the position has been abolished.

A. V. COLLINS, heretofore chief clerk to Traffic Manager, has been appointed General Freight Agent, in charge of all matters pertaining to traffic, rates and claims. Office, Toronto.

Canadian Northern Ontario Ry.—T. R. McLEOD, heretofore Master Mechanic, Halifax and Southwestern Ry., has been appointed Master Mechanic, Canadian Northern Ontario Ry., vice C. L. Webster. He will also have jurisdiction over the Central Ontario, Bay of Quinte, and Irondale, Bancroft and Ottawa Railways. Office, Toronto.

Canadian Northern Ry.—LEWIS LUKES, who has been in Mackenzie, Mann and Co.'s service for a number of years, in various capacities, has been appointed Assistant to the President, C.N.R. Office, Toronto.

A. GUENETTE, heretofore chief clerk and accountant, Montreal, has been appointed Freight Agent there, vice A. F. Dion, whose appointment as Traffic Manager, Quebec Harbor Commission, was announced in our last issue.

W. M. HOOD, heretofore ticket passenger agent, Pere Marquette Rd., London, Ont., has been appointed Travelling Passenger Agent, C.N.R., Toronto.

R. LOGAN, heretofore Soliciting Freight Agent, Hamilton, Ont., has been appointed Soliciting Freight Agent, Toronto.

B. H. DORLAND, heretofore chief clerk, Freight Department, Hamilton, Ont., has been appointed Soliciting Freight Agent there, vice R. Logan, transferred to Toronto.

Canadian Northern Steamships, Ltd.—W. M. HOOD, heretofore ticket passenger agent, Pere Marquette Rd., London, Ont., has been appointed Travelling Passenger Agent, C.N.S. Ltd., Toronto.

Canadian Pacific Ry.—H. A. CHANDLER is reported to have been appointed Division Surveyor, Atlantic Division, his duties including the preparation of plans and descriptions for purchases, sales and leases of land, re-surveys of right of way, and such other land survey work as comes within the jurisdiction of the Operation and Maintenance Department. Office, St. John, N.B.

D. H. RYAN, heretofore Chief Dispatcher and Trainmaster, District 1, Atlantic Division, Brownville Jct., Me., has been appointed Assistant Superintendent, District 1, Atlantic Division, vice W. B. Brown, transferred. Office, St. John, N.B.

W. R. HOWARD, heretofore dispatcher, and latterly acting as Chief Dispatcher, has been appointed Chief Dispatcher and Trainmaster, District 1, Atlantic Division, vice D. H. Ryan, promoted. Office, Brownville Jct., Me.

The limits of District 2 (Montreal Terminals), Eastern Division, J. K. Me-

NEILLIE, Superintendent, have been extended to include south switch at Adirondack Jct., and west switch at Jacques Cartier Jct., Que.

G. E. FISET, A.M. Can. Soc. C.E., is reported to have been appointed Division Surveyor, Eastern Division, his duties including the preparation of plans and descriptions for purchases, sales and leases of lands, re-surveys of right of way, and such other land survey work as comes within the jurisdiction of the Operation and Maintenance Department. Office, Montreal.

A. J. BLAISDELL, heretofore General Agent, Passenger Department, Cincinnati, Ohio, has been appointed General Tourist Agent, vice C. E. Benjamin, transferred. Office, Montreal.

A. C. BRADY has been appointed Assistant Superintendent, District 2, Eastern Division, with special jurisdiction over station staffs and service. Office, Montreal.

W. B. BROWN, heretofore Assistant Superintendent, District 1, Atlantic Division, St. John, N.B., has been appointed Assistant Superintendent, District 2, Eastern Division, with special jurisdiction over the transfer, switching and train service. Office, Montreal.

E. J. MELROSE, heretofore General Yardmaster, has been appointed Assistant Superintendent, District 2, Eastern Division, in charge of operation during the night. Office, Montreal.

E. G. WHITE has been appointed Assistant to the Manager, Department of Natural Resources. Office, Montreal.

A. McNAUGHTON, heretofore Secretary-Treasurer, Kingston and Pembroke Ry., Kingston, Ont., has been appointed to a position in the Accounting Department, C.P.R., Montreal.

A. P. WALKER, M. Can. Soc. C.E., heretofore Assistant Division Engineer, Ontario Division, Toronto, has been appointed Division Surveyor, Ontario Division, including the preparation of plans and descriptions for purchases, sales and leases of land, re-surveys of right of way, and such other land survey work as comes within the jurisdiction of the Operating and Maintenance Department. Office, Toronto.

G. H. DAVIS, heretofore Resident Engineer, Toronto Terminals, has been appointed Assistant Division Engineer, Ontario Division, vice A. P. Walker, transferred. Office, Toronto.

W. C. ELMER, heretofore chief clerk, City Ticket Office, Chatham, Ont., has been appointed Travelling Passenger Agent, Toronto, vice J. J. Brignall, resigned.

J. A. IRVINE has been appointed Resident Engineer, Toronto Terminals, vice G. H. Davis, promoted.

E. W. HUTCHISON, heretofore fitter, has been appointed Assistant General Foreman, West Toronto Shops, vice G. Black.

W. A. SIBBETT is reported to have been appointed Division Surveyor, Lake Superior Division, his duties including the preparation of plans and descriptions for purchases, sales and leases of land, re-surveys of right of way, and such other land survey work as comes within the jurisdiction of the Operation and Maintenance Department. Office, North Bay, Ont.

R. HUNTER has been appointed Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Manitoba Division, vice D. S. Fraser, promoted. Office, Winnipeg.

D. S. FRASER, heretofore Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Manitoba Division, Winnipeg, has been appointed Superintendent, same department, Saskatchewan

Division, vice S. A. Simpson, transferred. Office, Moose Jaw.

J. L. DOUPE, formerly General Town-site Agent, Department of Natural Resources, Calgary, Alta., is reported to have been appointed Chief Surveyor for the Operating Department, Western Lines, his duties to include the surveying of new townsites in the west.

C. BAKER has been appointed Locomotive Foreman at Outlook, Sask.

S. A. SIMPSON, heretofore Superintendent, Sleeping, Dining and Parlor Cars and News Service, Saskatchewan Division, Moose Jaw, has been appointed Superintendent, same department, Alberta Division, vice E. W. Kolb, resigned. Office, Calgary.

G. WHITELEY, heretofore District Master Mechanic, Moose Jaw, Sask., has been appointed Master Mechanic, Alberta Division, vice A. T. Shortt, appointed Superintendent, Ogden Shops, Calgary, Alta., as announced in our last issue. Office, Calgary.

F. G. BANNISTER, heretofore Storekeeper, Strathcona, Alta., has been appointed General Foreman of Stores, Ogden Shops, Calgary, Alta.

We are officially advised that the press report to the effect that — Mitchell, heretofore Park Superintendent, Lethbridge, Alta., has been appointed Landscape Gardener of the Forestry Branch of the Department of Natural Resources, C.P.R., Calgary, Alta., is merely a press rumor, as he is not employed by the Department.

G. R. BLAKE has been appointed Storekeeper at Strathcona, Alta., vice F. G. Bannister, promoted.

W. McKINTY, heretofore Building Inspector, Brocket, Alta., has been appointed Bridge and Building Master, Cranbrook, B.C., vice R. Sinclair.

L. NORMAN has been appointed Storekeeper at Kamloops, B.C., vice T. R. McSwain, resigned.

W. C. MACKENZIE, heretofore in the Audit Department, has been appointed Storekeeper at Grand Forks, B.C.

A. E. BENNETT, Locomotive Foreman at Grand Forks, B.C., has had his headquarters moved to Eholt, B.C.

J. V. MURPHY has been appointed District Passenger Agent, Nelson, B.C., vice M. E. Malone, transferred.

W. H. Evans, heretofore Road Foreman of Locomotives, District 2, British Columbia Division, Vancouver, has been appointed District Master Mechanic, District 2, British Columbia Division, his former position having been abolished. Office, Vancouver.

J. T. HAGGIN, heretofore city ticket agent, Seattle, Wash., has been appointed City Passenger Agent there, vice H. W. Edwards, resigned.

L. J. SPECK, heretofore City Passenger Agent, Western Pacific Ry., San Francisco, Cal., has been appointed City Ticket Agent, C.P.R., Seattle, Wash., vice J. T. Haggin, promoted.

G. W. WATSON, heretofore City Passenger and Ticket Agent, Detroit, Mich., has been appointed Passenger Agent, Bay City, Mich., vice F. C. Wherrett, transferred.

F. C. WHERRETT, heretofore Passenger Agent, Bay City, Mich., has been appointed Travelling Passenger Agent, Detroit, Mich., vice C. M. Harwood, transferred.

C. M. HARWOOD, heretofore Travelling Passenger Agent, Detroit, Mich., has been appointed City Passenger and Ticket Agent, Detroit, Mich., vice G. W. Watson, transferred.

Duluth, Winnipeg and Pacific Ry.—C. J. WILSON, heretofore Superintendent, District 3, Central Division, Canadian Northern Ry., Winnipeg, has been appointed Superin-

tendent, D.W. and P.R., vice C. W. Houston, resigned. Office, Virginia, Minn.

Esquimalt and Nanaimo Ry.—W. M. STOKES has been appointed acting Resident Engineer, vice A. W. R. Wilby, Resident Engineer, resigned. Office, Victoria, B.C.

T. S. WILSON has been appointed Assistant Roadmaster, Victoria, B.C. All employees of the Road Department report to him instead of to the Roadmaster, as heretofore.

Grand Trunk Ry.—W. M. MACPHERSON, of Quebec, a director of the G.T. Pacific Ry., has also been elected a director of the G.T.R.

R. GILMOUR, heretofore General Yardmaster, Montreal Terminals, has been appointed Superintendent of Montreal Terminals, vice R. W. Scott, relieved on account of ill health.

A. KASTELIA, heretofore electrical engineer, G.T.R., Stratford, Ont., has been appointed engineer in charge of light, heat and power, G.T.R. station and Chateau Laurier, Ottawa.

C. E. HORNING, heretofore City Passenger and Ticket Agent, Toronto, has been appointed District Passenger Agent there, reporting to General Passenger Agent, Montreal, vice A. E. Duff, resigned to enter commercial life.

C. E. JENNEY, heretofore Travelling Passenger Agent, Pittsburgh, Pa., has been appointed City Passenger and Ticket Agent, Toronto, vice C. E. Horning, promoted.

W. A. MASON has been appointed Soliciting Passenger Agent, Toronto, vice A. B. Chown, promoted.

J. WALKER, heretofore Resident Engineer, Northern Division, Allandale, Ont., has been appointed Assistant Engineer, Barrie Division, Ontario Lines, and his former position has been abolished. Office, Allandale.

A. WARREN, heretofore Roadmaster, Woodstock, Ont., has been appointed Supervisor of Track, with territory from Paris Jet. to Hyde Park, and Hyde Park to Wingham Jet., London Division, Ontario Lines. Headquarters, London.

G. H. ALLEN, heretofore Roadmaster, London, Ont., has been appointed Supervisor of Track, with territory, Hyde Park to Sarnia, Petrolia Branch, Komoka to Glencoe, Kingscourt Jet. Branch, Sarnia Tunnel to Point Edward and St. Clair Tunnel, London Division, Ontario Lines. Headquarters, London.

M. J. O'LEARY, heretofore Night Yardmaster, London, Ont., has been appointed General Yardmaster there, vice J. C. Cloghesy, transferred.

W. OGLIVIE has been appointed Night Yardmaster, London, Ont., vice M. J. O'Leary, promoted.

G. C. MURRAY, heretofore in Bell Telephone Co.'s service, London, Ont., has been appointed Telephone Inspector, G.T.R., Stratford, Ont.

R. WRIGHT, heretofore chief clerk, Freight Department, London, Ont., has been appointed Freight Agent at Brantford, Ont.

W. MCGAR, heretofore Roadmaster, Stratford, Ont., has been appointed Supervisor of Track, with territory Fort Erie to Goderich, Paris Jet. to Lynden Jet., London Division, Ontario Lines. Headquarters, Brantford.

J. PIPER, heretofore Roadmaster, Brantford, Ont., has been appointed Supervisor of Track, with territory, Tavistock to Port Dover, Simcoe to Port Rowan, Harrisburg to Tillsonburg, Junction Cut, District 16 to Alford, B. & G. to B. & T. to Lynden Jet., London Division, Ontario Lines. Headquarters, Brantford.

D. P. DREWERY, Travelling Passenger Agent, Cortland, N.Y., has been transferred to 285 Main St., Buffalo, N.Y.

A. B. CHOWN, heretofore Soliciting Passenger Agent, Toronto, has been appointed Travelling Passenger Agent, Pittsburgh, Pa., reporting to General Passenger Agent, Montreal, vice C. E. Jenney, transferred.

Great Northern Ry.—A. H. HOGELAND, heretofore Chief Engineer, has been appointed Consulting Engineer. Office, St. Paul, Minn.

R. BUDD, heretofore Assistant to the President, has been appointed Chief Engineer, vice A. H. Hogeland. Office, St. Paul, Minn.

C. A. DUNHAM, heretofore Signal Engineer, G.T.R., Montreal, has been appointed Assistant Signal Engineer, Lake District, G.N.R., vice H. E. Brashares. Office, St. Paul, Minn.

Halifax and Southwestern Ry.—G. H. GREEN, heretofore General Foreman, Bridgewater, has been appointed acting Master Mechanic, vice T. R. McLeod, appointed Master Mechanic, Canadian Northern Ontario Ry. Office, Bridgewater, N.S.

Intercolonial Ry.—J. E. BEDFORD, heretofore charge hand painter, has been appointed Master Car Painter, Moncton Shops, vice A. S. Coleman, deceased.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—J. G. SHELDRIK, heretofore Resident Engineer, Superior, Wis., has been appointed Division Engineer there.

New York Central and Hudson River Rd.—M. A. DOW has been appointed General Safety Agent, reporting to the General Claims Attorney and to the General Manager, vice G. Bradshaw, resigned. Office, New York, N.Y.

New York Central Lines.—A. H. SMITH, heretofore Vice President, has been appointed Senior Vice President, N.Y.C. & H.R.R. and its leased lines, L.S. & M.S.R., T. & O.C.R., Z. & W.R., L.E. & W. Rd., C.I. & S. Rd., C.C.C. & St. L.R., P. & E.R., C.N. Rd., M.C. Rd., P. & L.E. Rd., R. Rd., O. & N.Y.R., and I.H.B. Rd. He will, under the direction of the President, have general charge of the property and business of these companies, and will perform such duties as may be assigned to him by the Board of Directors, the Executive Committee or the President. Office, New York.

A. T. HARDIN, heretofore Assistant Vice President, has been appointed Vice President, N.Y.C. & H.R. Rd. and O. & N.Y.R., in charge of operation, maintenance and construction. Office, New York.

J. J. BERNET, heretofore Assistant Vice President, Lake Shore and Michigan Southern Ry., Chicago, Ill., has been appointed Vice President, L.S. & M.R., L.E. & W. Rd., C.C.C. & St. L.R., P. & E.R., C.N. Rd., M.C. Rd., T. & O. C.R., Z. & W.R., C.I. & S. Rd., and I.H.B. Rd., in charge of operation, maintenance and construction. Office, Chicago, Ill.

Pere Marquette Rd.—W. M. HOOD having resigned as Travelling Passenger Agent, London, Ont., the position has been abolished, and the office closed.

Richelieu and Ontario Navigation Co.—Full particulars of the changes in the official organization will be found in the Marine Department on page 193 of this issue.

Wabash Rd.—T. O'CONNELL, heretofore Contracting Freight Agent, has been appointed Travelling Freight Agent, vice S. C. Lockman, promoted, reporting to Division Freight Agent, Detroit, Mich. Office, Detroit.

C. H. Gaunt, General Manager, Western Union Telegraph Co., was on a tour of the company's system recently, and visited Victoria and Vancouver, inspecting the company's stations there and in the neighborhood.

Great Northern Railway Lines in Canada.

The Midland Ry. Co. of Manitoba has been authorized by the Manitoba Legislature to increase its capital stock from \$50,000 to \$10,000,000.

U. S. press reports state that it is likely that work will be started this year on a line from Neche, N.D., to Winnipeg, Man.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—In an interview at Hope, B.C., Feb. 25, J. H. Kennedy, Chief Engineer, is reported to have stated that construction would be started there June 1.

The British Columbia Legislature has amended the description of the lands mentioned in the False Creek Confirmatory Act of 1911, conveyed by the City of Vancouver to the V.V. and E.R. and N. Co.

The Board of Railway Commissioners has authorized the construction of a transfer track connecting with the C.P.R. near Hawkes Ave., Vancouver. (Feb., pg. 75.)

Dominion Government Railway to Hudson Bay.

We are officially advised that negotiations are in progress with the Department of the Interior for the necessary land for terminals at Pas. Man. The plans for these terminals are being prepared by the engineers, but they will not be ready for some time. Referring to the proposed terminals press reports state that the passenger station will occupy an entire block, and that the freight shed and locomotive house will adjoin the freight yards, on which 40 tracks will be laid, with accommodation for 100 cars on each.

The question of harbor construction at the Hudson Bay terminal is under consideration, H. T. Hazen, who spent the winter at the Bay, having arrived at Ottawa to consult with the Minister on the matter. The problem of finally selecting a harbor, the Minister recently stated, is a difficult one, as there is much to say for and against both Port Nelson and Fort Churchill as sites. (Feb., pg. 77.)

Railway Route Maps Approved

The Minister of Railways has approved the following railway route maps:—

Canadian Northern Branch Lines Co., Feb. 26, Canora to Hudson Bay Jct., Sask., revision of line from Sturgis northerly for 21.09 miles.

Canadian Pacific Ry., Feb. 26, revision of Lanigan to Prince Albert Branch, 117.14 miles.

Grand Trunk Pacific Branch Lines Co., Feb. 26, Canora to Eteimami, Sask., revision of line between tp. 39, r. 3, and tp. 34, r. 5, w. 2 m., about 28 miles.

Lake Erie and Northern Ry., Mar. 5, from Brantford to Galt, Ont., about 21 miles.

Michigan Central Rd. Tunnel Taxation.—The Ontario Railway and Municipal Board, in the appeal of the M.C.R. against the assessment of the city of Windsor, Ont., of \$2,500,000 on the Detroit River tunnel, has decided that the property is not assessable under the section of the Railway Act which states that a company assessed under that act shall be exempt from municipal taxes, had previously agreed to pay taxes on an assessment of \$444,444 on the tunnel.

B. S. Jenkins, General Superintendent of Telegraphs, C.P.R., Winnipeg, was presented recently, with an engraved cane, and a cut glass set for Mrs. Jenkins, on the occasion of the removal of the offices to new quarters in Empress Block.

Traffic Orders by the Board of Railway Commissioners.

The dates given for orders are those on which the hearings took place, and not those on which the orders were issued:—

B. C. Electric Railway's Freight Tariff.

18629. Feb. 3. Re application of British Columbia Electric Ry., under section 328 of the Railway Act, for approval of its Standard Freight Tariff of Maximum Mileage Rates, C.R.C. 1, to apply between stations on the Vancouver & Lulu Island Ry. and the Vancouver, Fraser Valley & Southern Ry.:—It is ordered that, pending the Board's decision in the inquiry into rates charged generally by railway companies in British Columbia, the company's said tariff be approved.

B. C. Electric Railway's Passenger Tariff.

18652. Feb. 4. Re application of British Columbia Electric Ry., under sec. 331 of the Railway Act, for approval of its Standard Passenger Tariff of Maximum Mileage Tolls, C.R.C. 1, to apply between stations on the Vancouver & Lulu Island Ry. and between stations on the Vancouver, Fraser Valley & Southern Ry.:—It is ordered that, pending the Board's decision in the inquiry into rates charged generally by railway companies in British Columbia, the company's said tariff be approved, subject to the condition that the lower tolls already approved between certain stations of the Vancouver, Fraser Valley & Southern Ry. be not advanced without the Board's approval.

G.T.P.R. Standard Freight Mileage Tariff.

18680. Feb. 11. Re application of Grand Trunk Pacific Ry., under sec. 327 of the Railway Act, for approval of its Standard Freight Mileage Tariff, C.R.C. 14, to apply between stations between Thornton, Alta., and Tete Jaune, B.C., inclusive:—It is ordered that the said tariff be temporarily approved, pending the result of the Board's inquiry into rates charged generally by railway companies west of and including Crow'snest, Canmore and Thornton.

Rates on Lumber to Eastern Manitoba.

18738. Feb. 19. Re complaint of G. R. Scruton, of Beausejour, Man., that rates charged by the C.P.R. on lumber and shingles from British Columbia points, and on lumber from Keewatin, Ont., to Beausejour are excessive and discriminatory as compared with rates charged from the same points to Winnipeg:—It is ordered that the Canadian Pacific, the Canadian Northern, and the Grand Trunk Pacific Railway Companies be required to reduce the local and joint rates on lumber, and on other commodities carried at the lumber rates, from shipping points west of and including Blairmore, Alta., and Laggan, Alta., to points east of the Red River, as shown in the special joint tariffs published and filed, so as to graduate less abruptly from the Winnipeg basis to the maximum basis west of Lake Superior, and that in so doing, the rates to Molson, Man., and to intermediate points on the company's Kenora and Lac du Bonnet subdivisions, also to Giroux, Man., on the Canadian Northern Ry., and Hazel, Man., on the G.T.P. Ry., be reduced so as not to be higher than 2c. per 100 lbs. over and above the respective rates to Winnipeg on the said commodities: the said reduced rates to be published and filed so as to become effective not later than April 1, 1913. The complaint with respect to the rate from Keewatin is dismissed.

Lumber Rates from Mountain Shipping Points.

18771. Feb. 19. Re application of Mountain Lumber Manufacturers' Association for

an order (1) compelling the publication of rates on lumber from the so-called mountain shipping points to all stations in Alberta, Saskatchewan, and Manitoba, where the mileages involved do not exceed those to Winnipeg, to 33c. per 100 lbs.; and (2) requiring that the rates from Golden, B.C., to prairie destinations be the same as those applying from Crow'snest where the mileages involved from Golden do not exceed those from Crow'snest: 1. The Canadian Pacific, Canadian Northern, and Grand Trunk Pacific Railway Companies are required to adjust the special joint tariffs filed so that, without increasing any rates shown therein, the rates on lumber, and on other commodities carried at the lumber rates, from shipping points west of and including Blairmore, Alta., and Laggan, Alta., to Winnipeg shall not be exceeded for similar or less distances from the same shipping points to points in Alberta, Saskatchewan, and Manitoba; the companies to have leave reasonably to grade up the local and joint rates for distances greater than those to Winnipeg; the schedules to give effect to this order to be filed so as to become effective by April 1, 1913. 2. The disposition of the application for a reduction of the rates from Golden, B.C., to prairie destinations, as applied for, is reserved pending the Board's decision in the inquiry now being made into the western freight rates generally.

Rates on Wire Fencing, Etc.

18775. Feb. 22. Re application of Montreal Board of Trade, under sec. 315 of the Railway Act, for an order directing the G.T.R. and C.P.R. to equalize their rates on wire fencing and wire netting, also staples and wire gates, in carloads, from Montreal to Ontario points, on a basis similar to that prescribed by order 6844, April 6, 1909, in the application of the Canadian Freight Association:—It is ordered that the G.T.R. and C.P.R. be required to file, so as to become effective by April 1, 1913, commodity rates on wire fencing and wire netting, in carloads (including staples and wire gates, when forming part of the said carloads), from Montreal on the following basis:—To Sarnia, Walkerville, Woodstock, Hamilton, and Toronto at the rates charged from those points to Montreal under the commodity tariffs filed; to Port Hope and Peterboro at the rate charged for approximately the same distance from Toronto to Cornwall, and to Kingston and Sharbot Lake at the rate charged thereto from Toronto; rates to be provided to those points west of Kingston and Sharbot Lake and east of Toronto which are provided with commodity rates from Toronto, also to all points south of the G.T.R. main line between Toronto and Sarnia, in reasonable proportions to the basing rates specifically prescribed above; the said basing rates to be the maxima to intermediate points on the direct lines.

Pulpwood Tariffs in Eastern Canada.

18787. Feb. 27. Re application of International Paper Co. and others, under sec. 323 of the Railway Act, for an order disallowing the tariffs of the Canadian Pacific, Grand Trunk, Canadian Northern, and Temiscouata Railway Companies, namely, C.R.C. no. 2424, C.R.C. no. E. 2500, C.R.C. no. E. 131, and C.R.C. no. 203, respectively, increasing rates on pulpwood from Ontario, Quebec, and New Brunswick to Eastern United States points, published and filed to become effective September 1 and 2, 1912; and reinstating the present rates of the railway companies:—It is ordered—1. The application is refused. 2. Subject to the condition that the rates from C.P.R. stations west of Avonmore to and

including Smiths Falls, in effect at the date of this order, be restored,—the said tariffs of the railway companies, increasing the rates on shipments of pulpwood, in carloads, are allowed; provided that such increases shall not become effective before Aug. 15, 1913.

Transportation of Apples.

18825. Mar. 5. Re application of Simcoe Fruits, Limited, of Barrie, Ont., for order restoring the arrangement in effect prior to Mar. 29, 1911, whereby apples (green) carried by the railways in less than carload lots for aggregation into carload shipments, received, on reshipment, a reduction of one-third from the inwards less than carload rates; or, as an alternative, for the application of the through carload rate, subject to the minimum carload weight, from the original shipping point to the final railway destination, plus a reasonable charge (\$3 a car suggested) for the stopover at the intermediate point of consolidation, with the privilege of inspection and repacking thereat; and re the application of the Fruit Growers' Association of Ontario, for an order directing the railway companies (a) to accept and forward part carloads of fruit at the carload rate, subject to the carload minimum weight, from the original shipping point to the final railway destination, to be stopped in transit for completion of the carload at an additional charge of \$3 a car for each such stop; (b) for the carriage of fruit, to furnish refrigerator cars equipped with rack or slatted floors, so as to ensure free circulation of cold or warm air; (c) to reimburse the cost of such rack or slatted floors when they have to be furnished by shippers themselves; and (d) to reimburse the cost of the slatted floors and paper linings necessary to adapt box cars for this traffic when the railway companies are unable to furnish refrigerator cars on reasonable notice:—It is ordered—1. That the applications for the stopover privilege for completion of carload shipments in transit, at an additional charge of \$3 a car for each such stop, be refused. 2. That the railway companies re-establish the arrangement formerly in effect, whereby apples were carried to concentration points for storage, inspection, or for completion of carloads and re-shipment, subject to certain conditions, at a reduction of one third from the local tariff rates, to the concentration points, so as to become effective within 30 days from the date of this order. 3. That the Grand Trunk, Grand Trunk Pacific, Canadian Pacific, and Canadian Northern Railway Companies notify the Board, not later than April 15, 1913, what number of their, and each of their, refrigerator cars in service are supplied with slatted floors, and what number are not.

Classification of Paraffine Wax.

18833. Mar. 8. Re order 18581, Jan. 24, 1913, directing the addition of paraffine wax to the 'chemicals' list in the first supplement to be issued to Canadian Freight Classification 16:—Upon its appearing from the report of the Chief Traffic Officer that the proof of the said supplement has not yet been submitted for the Board's approval, and that in all probability there will be considerable delay before the same can be approved and made effective. It is ordered that order 18581 be amended to provide that its requirements be complied with by the issue of a separate supplement to be made effective not later than Mar. 24, 1913.

The Montreal Tramways Co. has received 6 steel frame car bodies from the Canadian Car and Foundry Co.

National Transcontinental Railway Construction.

The Dominion Parliament has passed an act extending for one year, the time within which the line is to be completed. It is also being asked to vote \$19,000,000 on account of construction and \$3,000,000 on account of the building of the bridge over the St. Lawrence at Quebec.

A contract is reported to have been let by M. P. and J. T. Davis, general contractors, for the Levis-New Brunswick boundary section, 130 miles, to W. Daly, Montreal, for the completion of work on the section. There is about nine miles of track to be laid, and some bridging is to be done, and there is also a good deal of ballasting and the general finishing up. It is expected that the work will be completed by Sept. 30.

Tenders are under consideration for the supply of 1,732 long tons of 80 lb. steel rails for delivery, June 1 at St. Anselme, Que., and 4,349 long tons of 80 lb. steel rails for delivery June 1 at Harvey Jet., Que. (Feb., pg. 82.)

Grand Trunk Pacific Railway Construction.

The Dominion Parliament has passed acts granting an extension of time for the construction of the main line and branches of the G.T.P. Ry., and of the various lines of the G.T.P. Branch Lines Co., and authorizing the Dominion Government to purchase at par the company's bonds at present unissued and subject to the "implementing" clauses of the guarantee agreement.

Construction on the main line is being proceeded with between the end of steel at Rau Shuswap River, B.C., 1,123 miles west of Winnipeg, and at mileage 195 east of Prince Rupert. The work has been in progress westerly to Fort George and easterly to the Enderka River, leaving about 140 miles on which no work has been done. The general contractors, Foley, Welch and Stewart, are reported to have let sub-contracts for grading, etc., on this mileage in sections to Carlton, Griffin, Burns and Jordan; John Bostock; Stuart Bros.; Duncan Ross; M. Sheedy; H. McLeod; and Feilburg and Stone. It is also reported that a contract has been let to Bates, Rogers and Co., Spokane, Wash., for the bridge construction on the line from mileage 1,094 to 1,486 west of Winnipeg, at a cost of about \$2,000,000. The bridge work is said to include the following structures:—McLellan Creek crossing 249 ft. long; Little Shuswap crossing 129 ft.; Rau Shuswap crossing 1,032 ft.; Cottonwood Creek crossing 129 ft.; Fifty Mile River crossing 129 ft.; Goat River crossing 308 ft.; Dome Creek crossing 129 ft.; Second Fraser River crossing 689 ft.; Third Fraser River crossing 968 ft.; Willow River 459 ft.; Fourth Fraser River crossing 1,227 ft.; Upper Nechaco River crossing 642 ft.; Bulkley River crossing mile 1,481, 154 ft., and crossing the same river at mile 1,486, 364 ft.

Press reports state that an arrangement has been made with the Canadian Northern Ry., under which the G.T.P. Ry. will build a second track for 12 miles from about 20 miles west of Yellowhead Pass, to be used jointly by the two companies.

The branch line construction programme for the current year, it is reported, embraces the completion of the various branch lines on which work was in progress in 1912. These include:—The line from Harte to Brandon, Man., in respect of which it is reported that a contract for the bridges has been let to the Hyland Navigation and Trading Co. The completion of the line from

Regina to the International Boundary to a junction with the Great Northern Ry. Niobe Branch, on which about two miles of track has yet to be laid. The branch into Weyburn from this line will also be completed. Work will be done on laying out terminals in Moose Jaw, and it is reported that connection will be made via the Moose Jaw line with Swift Current. Ballasting and other finishing up work will be done on the branch to Battleford. The most important line which will be completed is that from Tofield to Calgary, Alta. The grading has been completed into Calgary, and the track-laying was expected to be completed close to the city by Mar. 31. Steel bridges are being erected over the Elbow and Bow Rivers, and until these are completed the line will not be opened. It is expected that this work will be done and the line be ready for operation by Aug. 31. A connection will be made with Lethbridge at a later date, but the proposed line from Calgary to Coutts has been abandoned, according to a recent statement by President E. J. Chamberlin. The Alberta Coal Branch from Bickerdike is in operation to mileage 56.4. A branch line is reported to be under construction to the Yellowhead Coke Co.'s mine and to the Mountain Park mine. On this latter line track is reported to have been laid to five miles west of Edson. (Feb., pg. 82.)

Birthdays of Transportation Men in April.

Many happy returns of the day to—

F. T. Anderson, Car Service Agent, C.P.R. Western Lines, Calgary, Alta., born at Lambeth, Ont., April 1, 1878.

W. H. Ardley, General Auditor, G.T.R., Montreal, born at London, Eng., Apr. 24, 1858.

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

C. G. Bowker, General Superintendent, Eastern Lines, G.T.R., Montreal, born at Medford, N.J., Apr. 21, 1871.

S. P. Brown, M. Am. Soc. C.E., M. Am. Soc. M.E., Chief Engineer, Canadian Northern Montreal Tunnel and Terminal Co., Montreal, born at Dover, Me., Apr. 29, 1877.

W. J. Camp, Assistant Manager Telegraphs, C.P.R., Montreal, born at Oakville, Ont., Apr. 22, 1855.

G. Cobb, Superintendent, Reid Newfoundland Co., St. John's, Nfld., born at Coupar Angus, Scotland, Apr. 21, 1885.

A. E. Edmonds, District Passenger Agent, C.P.R., Detroit, Mich., born at Woodstock, Ont., Apr. 8, 1866.

J. H. Flock, K.C., Honorary Counsel, Canadian Ticket Agents' Association, London, Ont., born at Toronto, Apr. 6, 1834.

B. C. Gesner, Moncton, N.B., formerly Air Brake Inspector, I.C.R., now Eastern Sales Agent, Galena Signal Oil Co., born at Cornwallis, N.S., April 23, 1859.

J. Murray Gibbon, Advertising Agent, C.P.R., London, Eng., born at Udewella, Ceylon, Apr. 12, 1875.

V. A. Harshaw, Superintendent, District 2, Atlantic Division, C.P.R., Woodstock, N.B., born at Mono, Ont., Apr. 26, 1865.

A. Hatton, Superintendent of Car Service, Western Lines, C.P.R., Winnipeg, born at London, Eng., Apr. 12, 1869.

J. M. Horn, District Freight Agent, Canadian Northern Ry., Edmonton, Alta., born at Allanton Mills, Lanarkshire, Scotland, Apr. 12, 1880.

B. S. Jenkins, General Superintendent, C.P.R. Telegraphs, Winnipeg, born Apr. 8, 1859.

J. H. Johnston, Superintendent of Bridges and Buildings, Eastern Lines, G.T.R., Montreal, born at Uxbridge, Ont., Apr. 22, 1860.

J. Kyle, Master Mechanic, Western Division, Canadian Northern Ry., Edmonton, Alta., born at Toronto, Apr. 11, 1877.

D. McNicoll, Vice President, C.P.R., Montreal, born at Arbroath, Scotland, Apr. 7, 1852.

P. Mooney, General Freight and Passenger Agent, Halifax and South Western Ry., Halifax, N.S., born at St. Catherines, Que., April 19, 1871.

J. O. Norrie, Travelling Passenger Agent, C.P.R., Atlantic Steamship Lines, Winnipeg, born at Belfast, Ireland, Apr. 20, 1879.

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

R. A. Pyne, Superintendent of Shops, C.P.R., Winnipeg, born at Toronto, April 10, 1874.

R. S. Richardson, Superintendent, Macdonnell & O'Brien, contractors, National Transcontinental Ry., La Tuque, Que., born at Napanee, Ont., April 9, 1865.

F. Rioux, Assistant to the President, Reid Newfoundland Co., St. John's, Nfld., born at Trois Pistoles, Que., Apr. 18, 1867.

W. A. Ritchie, District Superintendent, Pullman Co., Montreal, born at Edinburgh, Scotland, Apr. 13, 1854.

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

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

W. Wainwright, Vice President, G.T.R., and G.T.P.R., Montreal, born at Manchester, Eng., Apr. 30, 1840.

W. Woolatt, Walkerville, Ont., ex-General Superintendent, Buffalo Division, Pere Marquette Rd., born at Weedon, Hertfordshire, Eng., Apr. 2, 1855.

C.P.R. Main Line Diversion in the Selkirk Mountains.

Tenders will be received to April 15 for the construction of a diversion of the C.P.R. main transcontinental line starting from mile 69, Mountain Subdivision, which is one mile west of Six Mile Creek, B.C., and ending at mile 92, two miles west of Cambie, mileage 89 on the new line.

We are officially advised that the grades on the present line from mile 69 to 84 are plus 2.2% compensated; from mile 84 to 85 at the summit, Rogers Pass, they average plus 0.5%, and from mile 85 to 92 they are minus 2.2% compensated. On the new line the grades from mile 69 to 75 $\frac{1}{4}$ will be 1% compensated; from mile 75 $\frac{1}{4}$ to 76 $\frac{1}{2}$ plus 0.5%, from mile 76 $\frac{1}{2}$ to 81 $\frac{1}{2}$ plus 2.2% compensated, from mile 81 $\frac{1}{2}$ to 86 $\frac{1}{2}$ plus 1%, from mile 86 $\frac{1}{2}$ to 86 $\frac{3}{4}$ minus 0.10%, from mile 86 $\frac{3}{4}$ to 87 $\frac{1}{2}$ minus 0.50%, and from mile 87 $\frac{1}{2}$ to 89 minus 2.2% compensated.

On the new line the summit will be lowered 533 ft. and the distance shortened 3 miles, and the curvature reduced by 2,356 degrees. There will be 4 $\frac{1}{2}$ miles of snowsheds and 2,260 ft. of steel bridges eliminated.

There will be a double track tunnel, 28,000 ft. long, on tangent with plus 1% grades from the east portal for five miles, and a minus 0.1% grade to the west portal for 1,600 ft. Where found necessary it will be lined with concrete.

F. F. Busted, Kamloops, B.C., is engineer in charge of second track work between Calgary and Vancouver. J. G. Sullivan, Winnipeg, is Chief Engineer.

Canadian Northern Railway, Construction Betterments, Etc.

Canadian Northern Montreal and Terminal Co.—Recent reports state that about a mile and a half of the headings of the tunnel under Mount Royal, Montreal, have been completed. An injunction was obtained, Mar. 10, by Hon. H. B. Rainville against further work on the tunnel so far as it passes under his property, under the old civil code which sets out "Ownership of the soil carries with it ownership of what is above and what is below it." An arrangement was, however, arrived at under which work was resumed.

The Board of Railway Commissioners has approved, subject to terms to be fixed, of revised location of the projected line from St. Catherine St. to St. Antoine St., Montreal.

Montreal-Ottawa-Port Arthur Line.—It is reported that grading has been so far advanced on the various sections of this line that there is a probability of steel being laid between the present track end west of Sudbury and the present track end east of Port Arthur by the fall.

Canadian Northern Ontario Ry.—Track is reported to have been laid on the Toronto-Ottawa line between Chaffey's Locks and Lombardy, and that only about seven miles of tracklaying is required to complete the line.

In connection with the building of the line into Toronto, the company is asking for the incorporation of Leaside, or its annexation to the city. The Board of Control was informed, Mar. 5, that a car building plant and other industries will be established there. The plans for an entrance to the yards on Eastern Ave. have been filed with the Toronto City Council. The line connects with the Ottawa-North Toronto line at the junction with the C.P.R. just outside the city, crossing the Don River, paralleling the C.P.R. to Winchester St., crossing the C.P.R. and parallel to the Don River, to south of Queen St., then across the river to Eastern Ave.

Canadian Northern Ry.—Hugh Sutherland, Executive Agent, in an interview at Winnipeg, Mar. 13, is reported as stating that no further development plans will be considered until the financial conditions are improved. All that will be done will be the completion of work already in hand, for which the money had been provided.

The Canadian Northern Coal and Ore Docks Co. proposes to build a new dock at Port Arthur, Ont., east of the present one, to be about 500 ft. wide at the head and equipped with storage sheds and loading pockets.

It is reported that a new station, to cost about \$50,000, will be built on Victoria Ave., Fort William, Ont., this year.

Application is being made to the Board of Railway Commissioners for permission to build a branch from mileage 111.89 on the Oak Point branch, in Manitoba, through sections 29, 32 and 33, tp. 26, and sections 16, 15 and 22, tp. 27, range 7 west principal meridian.

The Minister of Railways has approved a route map for a revision from Sturgis northerly for 21.09 miles, of the projected line of the Canadian Northern Branch Lines Co. from Canora to Hudson Bay Jet., Sask.

The Alberta Legislature, Mar. 15, authorized the building of the following lines under guarantee of bonds:—From Taber to Consort; from Medicine Hat to a junction with the Saskatoon-Calgary line; from range 12 to 14 of last mentioned line, northerly to the main line in ranges 6 to 9, and northeasterly to the eastern boundary of Al-

berta; from Merking Creek, on the Vegreville-Calgary line to Wetaskiwin, thence by Pigeon Lake to the Edmonton-Pincher Creek line; from Cardston to the western boundary of the province, and from Drumheller, on the Vegreville-Calgary line, to Carbon.

Grading has been completed on the branch line out of Macleod as far as Fishburn, Alta., and the right of way is being purchased westward of Fishburn. Construction gangs are being taken in to Pincher Creek, which will be the centre of work during the year.

An arrangement is reported to have been made with the G. T. Pacific Ry. for the building of a second track on its line for about 12 miles along the shore of Moose Lake, about 20 miles west of Yellowhead Pass, in order to avoid engineering difficulties in the way of building a second line.

Canadian Northern Pacific Ry.—The British Columbia Legislature has authorized the company to construct or acquire railway yards, terminals, wharves, shops and works, connecting lines, telegraph and telephone lines, hotels, etc., and to carry on any business incidental thereto. A second act confirms an agreement made with the Vancouver City Council for the laying out of terminals at False Creek, the Canadian Northern Ry. being a party thereto. A third act authorizes the guaranteeing by the province of \$10,000,000 of 4½% bonds, in aid of the laying out of terminals at Port Mann, including the tunnel approaches, Victoria, Steveston, and at Union Bay on Vancouver Island. A fourth act authorizes the building of the following lines:—From the north end of the Westminster bridge to Vancouver, 11 miles; from the north end of Westminster bridge to Steveston, 15 miles; and from near Victoria to Union Bay, 18 miles, and the province is authorized to guarantee the company's bonds for \$35,000 a mile to aid in the building of the same.

Grading has been completed on the main line between Yale and Kamloops, and the bridge work is well advanced. Track was expected to be laid into Yale by Mar. 31, and tracklaying was expected to be started westerly from Kamloops early in April. Fourteen station buildings are to be erected between Port Mann and Yale during the summer. About 85% of the grading from Kamloops east to the B.C. boundary is reported to have been completed, and according to some reports it is expected to have the greater part of the steel laid this year. A good deal of the terminal and bridge work, however, will not be completed until the end of 1914.

The right of way for the line on Lulu Island has been cleared, and grading was started Mar. 6 by C. R. Schacht, who is reported to have received a subcontract for five miles.

The bylaw confirming the agreement between the company and the city of Vancouver was voted on by the taxpayers Mar. 15, and approved by 5,032 votes to 1,485. (Mar., pg. 119.)

New Train Service on Grand Trunk Pacific Ry.—A Winnipeg press dispatch says:—General Passenger Agent Hinton, of the G.T.P., announces six new daily trains, to be run each way, this summer as follows:—Winnipeg and Fort William, starting June 1; Regina, Moose Jaw and end of steel, starting Aug. 1; Calgary and Edmonton, starting Aug. 1; Brandon branch from Harte, starting Aug. 1; Regina to Boundary, starting Aug. 1; Battleford to Oban, starting June 1.

Recent Provincial Legislation

Acts affecting transportation interests were passed at the recent sessions of Provincial Legislatures as follows:—

BRITISH COLUMBIA.

Canadian Northern Pacific Ry.—Amending the original act of incorporation of 1910; confirming an agreement between the company, the C.N. Ry. Co., and the city of Vancouver; providing for the extension of the company's lines and granting aid towards their construction, and granting aid for construction of terminals.

Esquimalt and Nanaimo Ry.—Authorizing issuance of Crown grants of certain lands.

False Creek.—Amending act relating to reclamation of False Creek, Vancouver, and amending the False Creek Confirmatory Act. These affect the Canadian Northern Pacific Ry. and the Great Northern Ry.

Pacific Great Eastern Ry.—Two acts amending act of incorporation of 1912.

Railway Act.—Amending Railway Act.

MANITOBA.

Intermarine Ry. and Navigation Co.—Incorporation.

Lake Winnipeg and Nelson River Ry.—Incorporation.

Midland Ry. of Manitoba.—Extending time for construction.

Portage Radial Ry. and Canal Co.—Incorporation.

Public Utilities Act.—Amending original statute.

Railway Act.—Amending Railway Act.

Winnipeg Electric Ry.—Respecting company's powers.

Recent Dominion Legislation.

The first lot of measures receiving the Royal assent at the current session of the Dominion Parliament includes the following affecting transportation interests:—

Alberta Central Ry.—Extending time for construction.

Alberta Ry. and Irrigation Co.—Amending company's powers.

British Columbia Southern Ry.—Extending time for construction.

Burrard Inlet Tunnel and Bridge Co.—Extending time for construction and increasing bonding powers.

Campbellford, Lake Ontario and Western Ry.—Extending time for construction.

Canada Shipping Act.—Amending various provisions.

Collingwood Southern Ry.—Extending time for construction.

Grand Trunk Pacific Ry.—Extending time for construction; amending financial provisions, and extending time for construction of lines to be built by the G.T.P. Branch Lines Co.

Grand Trunk Ry.—Amending various provisions.

Kootenay and Arrowhead Ry.—Extending time for construction.

Manitoba and Northwestern Ry.—Extending time for construction.

Montreal Harbor Commission.—Respecting powers of commissioners.

Montreal, Ottawa and Georgian Bay Canal Co.—Extending time for construction.

National Transcontinental Ry.—Extending time for construction.

Ontario-Michigan Ry.—Extending time for construction.

Ottawa, Northern and Western Ry.—Extending time for construction.

Ottawa Terminals Ry.—Extending time for construction.

Simcoe, Grey and Bruce Ry.—Extending time for construction.

Wetaskiwin, Yellowhead and Pacific Ry.—Incorporation.

Grand Trunk Railway Betterments, Construction, Etc.

Southern New England Ry.—The special committee appointed by the Rhode Island Legislature to consider the company's application for a guarantee of \$6,000,000 of bonds to complete the line under construction to Providence has reported against the proposal. M. M. Reynolds, Vice President, G.T.R., is reported to have stated in an interview at Providence, Mar. 13, that every effort to obtain the money has failed, and that under no circumstances could the G.T.R. secure it unless with the guarantee of the State.

Ontario Terminals Ry.—The Dominion Parliament has extended the time within which the company may complete the laying out of the terminals at Ottawa.

Black Rock Terminals, etc.—The Buffalo, N.Y., Park Commissioners have under consideration an application from the G.T.R. through the International Bridge Co., for the right to use certain properties on Porter Square for building a new station.

Toronto Grade Separation.—The first section of the railway grade separation work at Toronto has been practically completed. This consists of 4.5 miles from Mimico, through South Parkdale, and is entirely a G.T.R. work. It has already been fully described in these columns.

London Terminals.—Recent press reports from London, Ont., state that it is expected work will be started this spring on the rearrangement and extension of the company's terminals there. The dispatch reports H. E. Whittenberger, General Superintendent Ontario Lines, as stating that a considerable area of land has been purchased in the east end of London for ward extension, and that six new tracks will be laid at once.

London to Windsor, Ont.—In connection with the relaying of the track with 100 lb. steel, large quantities of new rails are being distributed west of Strathroy to Windsor, and other preliminary work is being done. The work will be rushed to a completion as speedily as possible. (Feb., pg. 71.)

Additions to G.T.R. Point St. Charles Shops.

Several additions have been made recently, or are nearing completion, to the buildings of both the G.T.R. motive power and car departments at Point St. Charles, Montreal. Along the north side of the locomotive machine shop, a brick addition, 150 by 40 ft., has been completed, and with the additional space provided, it is expected that a better grouping of the machine tools will be possible, as the old shop was very cramped. The new section has had a cement floor laid, and in the older section, as the machines that are to be rearranged are moved, a cement floor will also be laid, a section at a time, so as not to interfere with the progress of the locomotive work. The boilers in the locomotive department boiler house are being replaced with more modern boilers.

The car department is undergoing more extensive changes. To the east end of the freight car shop a 7 track addition, 130 ft. wide by 170 ft. long, the full width of the old shop, has been added. This addition is of wood, like the old shop, but of more modern construction. The roof is about half as high again as in the old shop, giving greater head room. Through the whole of the freight car shop it is the intention to have adjustable scaffolding constructed along the sides of the tracks. A 200 foot section of the south wall of the old freight

shop has been knocked out, and a leanto building, 40 ft. wide, built along that length. This section is to house the locomotive department carpenter work, such as pilots, cabs, etc.

An exhaust fan system is being installed in both the freight and passenger car wood shops for the removal of the shavings, etc., to the car department boiler house. This system will consist of one 70 in. double, two 70 in. single, and one 60 in. double exhaust fans, all delivering to the boiler house.

The passenger car shop is not being added to, but on each side of every shop track there has just been constructed an adjustable scaffolding system, for convenience in working on the sides of cars.

The car department blacksmith shop, heretofore a round building, 50 ft. diameter, has been extended by an addition to the east, the full width of the former building, making the complete building 130 ft. long. This will provide much needed room, in which will be installed a bulldozer, steam hammer, and additional forges.

The car department power house is undergoing extensive changes. All the machinery in the car department is being changed over from line to individual motor drive, necessitating conversion of the power units. Power for the Montreal and Southern Counties Ry. is generated in this station. The main 600 volt generator for this service will be left as before. Up to the present there has been an additional 500 h.p. unit for this service, held principally in reserve. This engine has been rebored, and the 600 volt generator on it replaced by a 250 volt machine for supplying power for the variable speed individual drive motors throughout the shops. The 600 volt generator from this machine is being added to the old 450 h.p. line shaft engine, and will be held as a reserve for the M. and S.C. Ry. A new 16 by 26 by 25 by 16 by 18 in. air compressor, with a capacity of 1,500 cu. ft., has also been installed in the power house.

Railway Finance, Meetings, Etc.

Buffalo and Lake Huron Ry.—The report for the half year ended Dec. 31, 1912, presented at the general meeting of shareholders at Liverpool, Eng., Mar. 5, shows that the available balance, including the amount brought forward from the previous half year, was £15,069 14s. 5d., from which a dividend of 5s. 3d. a share was declared, absorbing £13,784 13s. 3d., leaving a balance of £1,285 1s. 2d. to be carried forward to the current half year. The directors have decided to write up their investments to full market value, and debit the balance sheet with the surplus thus created, under the heading of investments reserve account. T. Lindley was elected a director in place of J. M. Synge, deceased. The line is operated under lease by the G.T.R.

Canadian Northern Ry.—A lease of rolling stock from the Imperial Rolling Stock Co., to the C.N.R., dated Mar. 1, and numbered Series F. 1, has been deposited with the Secretary of State at Ottawa. Bonds to cover the rolling stock in this lease are being offered by W. A. Reid and Co., Philadelphia, Pa., to the amount of \$4,000,000, bearing 4½ per cent. interest. The issue price will net 5 per cent. The value of the rolling stock secured by the bonds is \$5,333,600.

Dominion Atlantic Ry.—Estimated passenger earnings for Feb., \$20,309.14; freight earnings, \$41,309.83; total earnings \$61,618.97.

Esquimalt and Nanaimo Ry.—Under an agreement of Mar. 1910, subsequently

ratified by the Legislature, the E. and N. Ry. became entitled to 20,000 acres of land on Vancouver Island to be selected within three years. Certain lands have been selected, viz., 16,293 acres in the Nootka and Rupert Districts, and 3,484 acres in Sec. 2A Nelson District. The Legislature has passed an act authorizing the issuance of Crown Licenses for the same, subject to the company acquiring rights which had been granted to the Nelson District areas under the Coal and Petroleum Act, and extending to April 1914 the time within which the remaining area may be selected.

Grand Trunk Pacific Ry.—A special meeting of shareholders is called for April 11, in Montreal, to pass a by-law authorizing the issue of debenture stock created by the G.T. Pacific Act of 1913, to which assent was given recently.

Pacific Great Eastern Ry.—A London, Eng., press dispatch of Mar. 7, states that arrangements are in progress for an issue of \$1,000,000 4½ per cent. debentures at 99, principal and interest guaranteed by the British Columbia Government.

Railway Building in Alberta.

A statement recently issued by the Alberta Minister of Railways shows that the total mileage of railways built in Alberta during 1912 by the various companies was 955 miles, made up as follows:—Canadian Northern Ry., 583 miles; Grand Trunk Pacific Ry., 254 miles; C.P.R., 93 miles; Edmonton, Dunvegan and B.C. Ry., 25 miles. In addition to this, 518 miles of grade had been prepared ready for laying steel. The total mileage on which steel had been laid in the province to the end of the year was 3,055 miles, divided as follows:—C.P.R., 1,480 miles; Canadian Northern Ry., 912 miles; Grand Trunk Pacific Ry., 658 miles; Edmonton, Dunvegan and B.C. Ry., 25 miles. Since the policy of guaranteeing railway companies' bonds was adopted by the province in 1909 more miles of railway had been built than in all the previous history of the province. Of 1,550 miles of steel laid by the various companies within the last three years more than 50% were built under guarantee. Of the total guaranteed mileage 782 miles of steel had been laid, equal to 25%; while 266 miles of grade were ready for the steel, equal to 34% of the total mileage for which bonds had been guaranteed.

The following information was recently given by the Government in the Legislature as to the bonds of the several companies guaranteed by the province. The amounts received from the sale of the guaranteed bonds were:—Canadian Northern Ry. (1909-1911-12), \$6,477,325.22; Canadian Northern Western Ry., \$2,215,500; G.T. Pacific Ry. (1909), \$2,246,807.50, (1911) \$1,046,261; Edmonton, Dunvegan and British Columbia Ry., \$3,194,546.69. The amounts paid out of these sums to the companies on account of construction were:—Canadian Northern Ry. (1909), \$4,803,727.72, (1911-12) \$1,530,295; Canadian Northern Western Ry., \$2,054,715.80; G.T. Pacific Ry. (1909), \$2,246,807.50, (1911-12), \$1,406,260; Edmonton, Dunvegan and British Columbia Ry., \$1,351,600. The amounts, with interest, to Jan. 31, standing to the credit of these companies were:—Canadian Northern Ry., \$99,966.52; Canadian Northern Western Ry., \$109,202.20; G.T. Pacific Ry., \$1; Edmonton, Dunvegan and British Columbia Ry., \$1,878,946.69.

The Great North Western Telegraph Co. has reopened its office at Cobden, Ont., and has closed its office at Ameliasburg, Ont.; Dunham, Little Metis, and Paspébiac, Que.

Changes in National Transcontinental Railway Gradients.

The Minister of Railways, Hon. F. Cochrane, gave the following answers in the House of Commons, Mar. 19, to questions asked by the ex-Minister, Hon. G. P. Graham:—

No temporary trestles on the eastern division of the National Transcontinental Ry., originally intended to have been permanently filled, have been substituted for permanent structures.

No temporary or wooden bridges have been substituted where concrete and steel or permanent bridges were to have been constructed.

None of the momentum grades, or any portion of them, are on trestles.

The changes in gradients, bridges and trestles were suggested and recommended by the Commission's Chief Engineer. The estimated saving in cost to date is \$27,797, the estimate having been made by H. M. Balkam, District Engineer.

No yards or divisional points have been reduced from the original plans in area, trackage, buildings or efficiency.

In addressing the Quebec Board of Trade, Feb. 21, referring to the correspondence published in Canadian Railway and Marine World for February, the Minister of Railways is reported to have said:—"At two points on the line, viz.:—near mileage 395, and near mileage 397, west from Quebec, gradients eastbound of 4.1%, and westbound 6.1%, have, for economy of construction and operation, been adopted for the present. These are what are known as velocity gradients and do not injuriously affect the operation of the road. Should it become advisable for any reason in the future to eliminate these sags, it can be done at one half the cost that the present contract prices call for." (March, pg. 118.)

Among the Express Companies.

W. G. Burrell has been appointed Supply Agent, Canadian Ex. Co., Montreal, vice D. B. Atkinson, resigned.

E. C. Miner, heretofore Assistant General Agent, Canadian Ex. Co., Montreal, has been appointed acting General Agent, there, vice R. Murphy, General Agent, resigned.

H. Y. Knox, heretofore chief clerk to Superintendent, Dominion Ex. Co., Winnipeg, has been appointed agent at Saskatoon, Sask., vice C. H. S. Hammond, resigned.

E. W. Redmond, a Dominion Ex. Co. messenger, was recently found guilty of stealing a package containing \$1,678.03 from one of the company's bags at Sharbot Lake, Ont.

R. Murphy, agent, Canadian Ex. Co., Montreal, who has resigned to enter private business, was presented, Feb. 10, with a diamond pin and cuff links by his associates.

L. Trent, one of the Canadian Ex. Co.'s messengers between Detroit and Port Huron, Mich., has been retired after 40 years' service. It is stated that he traveled about 2,000,000 miles without mishap.

The Dominion Ex. Co. has opened an office at 1 Mount St., Manchester, Eng., in charge of D. H. M. Park, who has been appointed agent for Manchester and District, reporting to London, Eng. The company will act as Freight and Passenger Agents for Manchester and District, for the C.P.R.

The territory of the route agents of the Canadian Ex. Co.'s Northwestern Division, has been divided as follows:—from Port Arthur, Ont., to Watrous, Sask., inclusive, route agent, F. M. Smith, with headquar-

ers at Winnipeg; lines west of Watrous, Sask., route agent, W. H. Nattress, with headquarters at Edmonton, Alta.

The Dominion Ex. Co. was organized May 23, 1873, the capital stock consisting of 20,000 shares of \$100 each, all of which have been issued and are outstanding. The directors are: Sir Thos. G. Shaughnessy, W. S. Stout, R. B. Angus, C. F. Smith and C. R. Hosmer, who are trustees of the entire capital stock on behalf of the C.P.R. A dividend of 8% was declared June 30, 1912. The company's officers are: President and General Manager, W. S. Stout; Vice President, R. Paton Lea; Secretary, H. C. Oswald; Treasurer, G. A. Newman; General Auditor, W. H. Plant.

The British Columbia Ex. Co., which operates stage, automobile and steamboat lines, chiefly in northern British Columbia, is making considerable alterations and improvements in its service, in order to accommodate itself to the changed conditions in the territory covered by it, on account of railway expansion, etc. A warehouse is being built at Tete Jaune Cache, and one of its vessels will ply on the Upper Fraser River between the end of steel on the G. T. Pacific Ry. and Grand Canyon, and possibly Fort George.

The Dominion Ex. Co. commenced its service over the Intercolonial Ry. and Prince Edward Island Ry., Feb. 1, with direct connection to Newfoundland, and at the same time its service was placed in operation over the Atlantic, Quebec and Western Ry., Caraquet and Gulf Shore Ry., Kent Northern Ry., New Brunswick Coal and Ry. Co., North Shore Ry., and Quebec Oriental Ry. The company now has 385 offices in New Brunswick, 210 in Nova Scotia, 93 in Prince Edward Island, and 504 in Quebec.

The Canadian Ex. Co. was organized Feb. 16, 1865, with an authorized capital of \$3,000,000, in shares of \$100, of which, \$1,705,200 has been issued and are outstanding. The cash realized from the sale of these shares is given as \$865,200. The G.T.R. acquired the capital stock of the company in 1891, by payment of \$660,000 in cash, the total capital liability at that time being \$1,500,000. This has since been raised to \$1,705,200, the whole of which is held in trust for the G.T.R., by various officials of that company. The officials of the express company are: President and General Manager, John Pullen; Secretary-Treasurer, Frank Scott; General Counsel, W. H. Biggar, K.C.; General Auditor, W. W. Williamson.

In connection with the recent arrangement between the Dominion Government Railways management and the Dominion Ex. Co. by which the latter's service was put in operation over the Intercolonial and Prince Edward Island Railways, in addition to that of the Canadian Ex. Co., a dispute arose early in January, when the G.T.R. objected to carrying Dominion Express messengers and matter between Ste. Rosalie, Que., and Montreal, and claimed that Bonaventure Station, Montreal, was too congested to permit of the Dominion Ex. Co. handling matter there. After some little delay the G.T.R. permitted the Dominion Ex. Co. to carry on its business as arranged with the Government, pending some permanent arrangement being arrived at.

The Canadian Northern Ex. Co. was organized June 13, 1902. It has a capital stock of \$1,000,000, in \$100 shares, of which \$300,000 was outstanding on June 30, 1912, but on which no dividend was declared. The control of the company is in the hands of Mackenzie, Mann and Co., by right of ownership of 90% of the capital stock. The directors are: Sir William Mackenzie,

Sir Donald Mann, R. J. Mackenzie and Z. A. Lash. The company's officers are: President, Sir William Mackenzie; Vice President, Sir Donald Mann; Third Vice President, D. B. Hanna; Secretary, R. P. Ormsby; Treasurer, L. W. Mitchell; General Counsel, F. H. Phippen, K.C.; Chief Solicitor, G. G. Ruel; Auditor, J. D. Morton; General Superintendent, W. C. Muir; Superintendent, C. A. Cunningham.

Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co. has opened an office at Kenogami, on the Quebec and Lake St. John Ry.

The G.T. Pacific Telegraph Co. announces that it has placed in operation telegraph circuits between Regina, Canora, Yorkton and Winnipeg.

The Great North Western Telegraph Co. has appointed Miss A. Lord, local manager at Barrie, Ont., vice W. M. Dobbs; and J. W. Deslauriers, local manager, at Sherbrooke, Que., vice S. F. Butzer, resigned.

It is reported that the Dominion Government is arranging for the erection of wireless telegraph stations at Pas, Man., and the proposed terminus of the Hudson Bay Ry. on Hudson Bay, in order to facilitate construction.

H. Hughes, who died at Canso, N.S., recently, was connected with the Commercial Cable Co., for several years, chiefly in underground cable construction in Nova Scotia, Newfoundland and New England states.

The Board of Railway Commissioners has ordered the C.P.R. to accept and transmit over its land lines, transatlantic wireless messages received by the Marconi Wireless Telegraph Co., connecting with the Marconi stations at Glace Bay and Louisburg, N.S.

F. A. Hamilton, Chief Electrician, Commercial Cable Co.'s s.s. Mackay-Bennett, who died at Halifax, N.S., recently, was connected with telegraph construction from its early days, and took part in several cable expeditions to various parts of the world. Some of his work was connected with the laying of cables between Sydney, N.S., and Placentia, Nfld.

An additional cable is being laid to connect Prince Edward Island with New Brunswick, at an approximate cost of \$45,000. The rate of 30c. for 5 words for night lettergrams has been extended to include all offices on the Island. The telegraph system is operated by the Western Union Telegraph Co., under a lease for 99 years from Jan. 1, 1912. The property taken over consists of 317.5 miles of land lines in P. E.I., about 9 miles of cable between Cape Traverse and Cape Tormentine, and about 35 miles of land lines between Cape Tormentine and Sackville, N.B., and there are 28 telegraph offices.

The Mackay Companies' annual meeting was held at Boston, Mass., Feb. 15. The financial statement for 1912 showed that \$4,136,000, sufficient for the dividend on preferred and common stock, and for administration expenses, was drawn from the operating companies and disbursed. The investments in other companies were \$92,013,000. The amount realized from the sale of the holdings in the American Telegraph and Telephone Co., some three years ago, is still held in easily convertible form as an emergency fund and for extensions. The earnings for 1912 were reported to have shown a considerable increase over 1911, there was no increase in capital stock, and the company has no debts. Sympathetic reference was made to the loss sustained in the death of one of the trustees, R. A. Smith, Toronto, and Sir Edmund Osler was elected in his place.

Electric Railway Department.

Winnipeg Electric Railway Company's Car Shops.

About six years ago the Winnipeg Electric Ry. management took up the policy of constructing such rolling stock as would be required by the company, and in pursuance of that policy built the shops now in use in Fort Rouge, Winnipeg, to the rear of the Fort Rouge car barns, on a large tract of land connected with the Canadian Northern Ry. by a siding, and utilized as

I beams are supported on concrete footings that have a 4 ft. square base. All the departments, save the blacksmith, are paved with concrete.

The erecting shop, which occupies the main portion of the building, opening through large car doors to the east, facing on the rear of the car barns, is 150 by 50 ft., occupying two bays, the northerly

The paint shop, fig. 3, occupies the northerly bay of the building, and is the same length as the erecting shop, and 25 ft. wide. It is arranged to accommodate only two cars at a time, the rear portion of the shop from which the view in fig. 3 was taken, being set out with racks and benches for the finishing and drying of sash and other removable car parts. In general

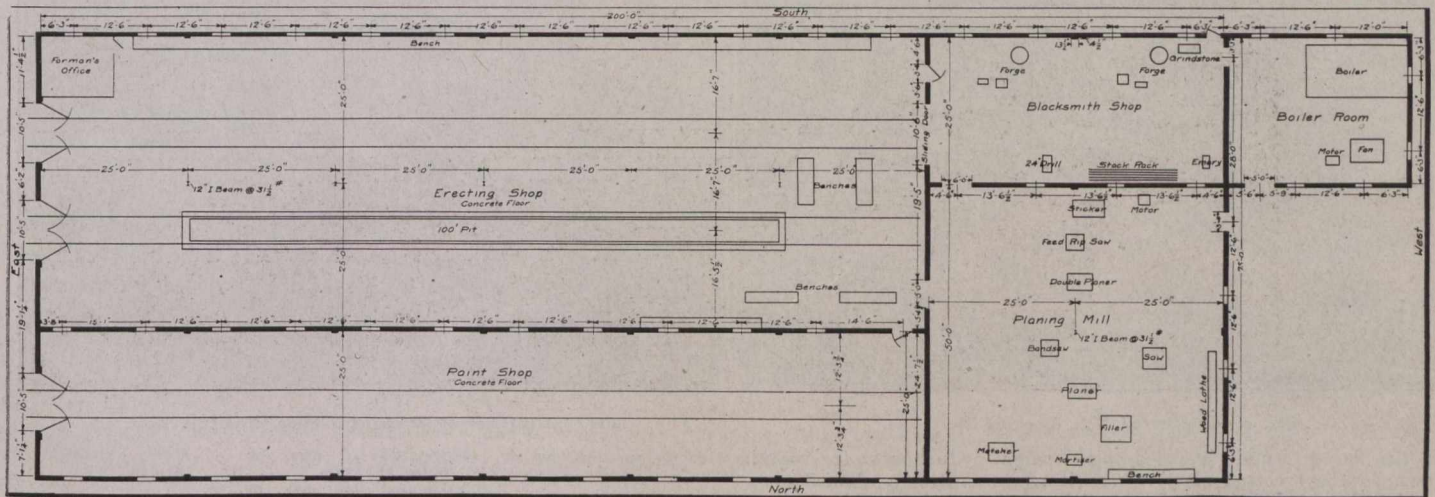


Fig. 1.—Plan of Winnipeg Electric Railway Car Building Shops in Fort Rouge.

a storage for such outside material as is used on the lines. The location of the shop in this reservation, alongside the railway siding, gives easy access to the bringing in of the materials for car construction.

A plan of the shops is given in fig. 1, and the different departments in the other illustrations. The main structure is of brick, a 9 in. brick wall resting on a con-

crete footing 6 ft. deep, and 2½ ft. wide at the base, owing to the soft nature of the soil on which the shops stand, this providing ample footing. The building is 200 ft. by 75 ft., with a leanto addition to the rear of the boiler room. In the centre of the building there is a clear height of 18 ft., sloping to each side, there being three bays the length of the building, supported either by a brick wall or 12 in I beams, according to the position in the building. The bents are 25 ft. apart. The

one being divided off by a brick wall. The interior arrangement is shown in fig. 2, and the plan in fig. 1. In the southeast corner is the foreman's office, from the top of which the view, fig. 2, was taken. Along the south side, and on the tracks at the west end, are sundry carpenters' and fitters' benches, for the men fitting the cars together.

it resembles the usual railway varnish room, for such is most of the work on a street car.

The mill, fig. 4, is to the rear of the paint shop, occupying two bay widths of the building. It is 50 ft. square and of the same general characteristics as the other rooms. The machinery equipment, as noted on fig. 1, is sufficiently extensive to handle the car work to advantage, and

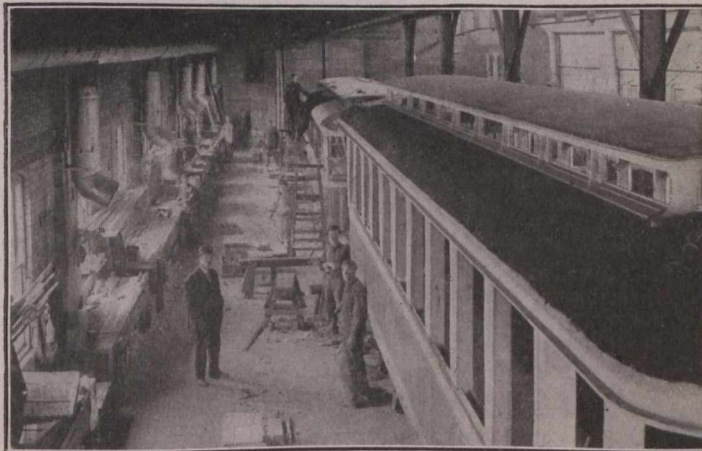


Fig. 2.—Interior of Erecting Shop, from the East.



Fig. 3.—Interior of Paint Shop, from the West.

crete footing 6 ft. deep, and 2½ ft. wide at the base, owing to the soft nature of the soil on which the shops stand, this providing ample footing. The building is 200 ft. by 75 ft., with a leanto addition to the rear of the boiler room. In the centre of the building there is a clear height of 18 ft., sloping to each side, there being three bays the length of the building, supported either by a brick wall or 12 in I beams, according to the position in the building. The bents are 25 ft. apart. The

tracks, which will each hold two cars with plenty of room at each end, in the space to the east of the bench space at the west end of the room. The northerly track has a 100 ft. pit, centrally located in the shop length. It is 4 ft. 2 ins. wide and 5 ft. deep, the bottom being of concrete, with a 13 in. brick wall, on the top of which is an 8 by 10 in. timber carrying the rail. The pit slopes from the centre and ends to points a quarter the length of the pit from each end, draining out into the sewer.

includes the usual run of mill machinery. The arrangement of the machines is shown in the two illustrations.

The blacksmith shop, fig. 5, to the south of the mill, is 25 by 50 ft. It is only lightly equipped, containing two forges, with an anvil and die block accompanying each, and in addition, a 24 in. drill press, double emery wheels and a grindstone. The drive for this machinery is from the line shaft in the mill projecting through the wall. A 35 h.p. induction motor on the

floor in the mill provides ample power for all purposes. The air blast for the forges is derived from an 18 in. centrifugal fan on the wall at the end of the room.

All power being electrical, obtained from the company's lines, the only requirement of a boiler room is for heating purposes. It contains a small unit, about 30 h.p., maintaining a low pressure of steam. On top and to the rear of the boiler are mounted heating coils, in batteries in the usual manner. Air is forced in among these coils by an 8 ft. fan, operated by a 10 h.p. induction motor. A large pipe leads out from the top of the fan, branching off

banks. Track has been laid to Kintail, but requires to be lifted, lined up and ballasted. The culverts are in good condition, but the wing walls will have to be enlarged so as to take the slopes for a 14 ft. bank. The trestle work at the Port Albert bridge is in poor condition; and the piers for the steel superstructure are in an unsatisfactory condition. "To sum up," adds Mr. Middlemist, "this section is in a very bad state and is far from being completed in a satisfactory manner. . . In making the estimate I have endeavored to keep down the expense as far as I could conscientiously do so. No provision has been made for any

Ballasting	6,960.00	
Ties	22,310.00	
Laying track	7,250.00	
Road and farm crossings	420.00	
Bridges and culverts..	31,243.00	
Temporary trestle at Port Albert	11,633.00	
Engine shed	3,000.00	\$216,801.00
Engineering, 5%		10,840.00

Profit, 15%	\$227,641.00
	34,146.00
	<hr/> \$261,787.00

Add for material as far as could be found:
 70 foot steel span ... \$ 2,605.00
 859 tons of rails at \$36 30,924.00
 55 tons of fish plates at \$37 2,035.00

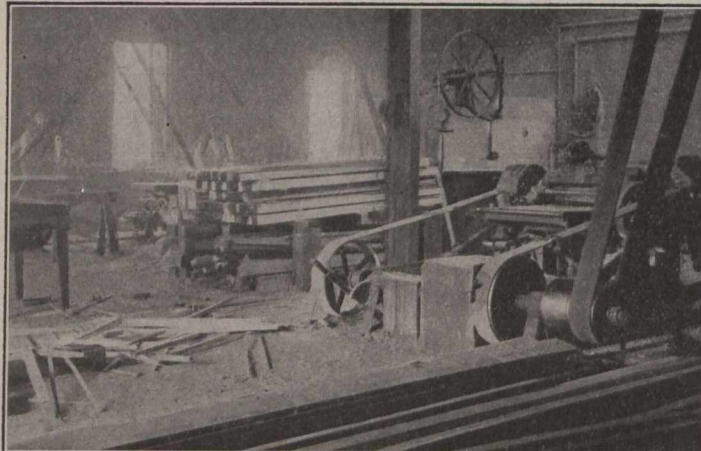


Fig. 4.—Interior of Mill, Looking Northeast.



Fig. 5.—Interior of Blacksmith Shop, from the East.

in the boiler room, one leading straight down to the erecting shop, where it again divides, with a branch along each wall, while the other branch from the main pipe passes diagonally across the mill, and runs along the north wall of the paint shop. The nature of the pipe and the type of outlet used are shown in the several illustrations.

The type of cars under construction in this plant was described in Canadian Railway and Marine World for February, this plant being equipped to turn out one of these cars a week. This capacity is not maintained throughout the year, it having been the policy the last two years to turn out about 40 cars a year, running the shops on short time during a portion of the year. Everything pertaining to the car body is constructed in the shops, with the exception of the heavier forgings and some of the machine work, which is produced in the company's Assiniboine Ave. repair shops. Standard equipment, such as trucks and electrical equipment, is all obtained on the outside.

The shops are under the direction of G. Garrett, Master Mechanic, from whom the information above has been obtained.

Report on the Ontario West Shore Railway's Condition.

A report prepared by H. W. Middlemist, C.E., Toronto, upon the condition of the partially constructed Ontario, West Shore Ry., was recently laid before a meeting representing the municipalities which had guaranteed the company's bonds, held in Goderich, Ont. The report states that the work done on the line may be divided into two sections—first, from the junction with the C.P.R., opposite Goderich, in Colborne Tp., to Kintail, and from Kintail to Pine River. The grading has been done along the whole of the first section for a width of 9 ft. for the top of the embankment, and the deep cuts about 20 ft., but there is considerable dilapidation, owing to the falling away of

turnouts for passing cars on the work already done."

The section from Kintail to Kincardine has been partially graded, but only to the same average width of 9 ft. There is considerable excavating yet to be done in the deep cuts, and the bank should be widened to 14 ft. The abutments for one bridge have been partly put in, but will have to be reconstructed. In order to make up his estimates Mr. Middlemist made the necessary designs for the bridges on this section.

His enquiries showed that 859 tons of steel rails have been delivered sufficient to lay 7.8 miles of track, and there are fishplates, bolts and spikes on hand sufficient to properly lay these rails. It would require 1,066 tons of rails to complete the 9.7 miles remaining into Kincardine. The other material on hand includes 4,050 ties, one 70 ft. steel span, two 20 ft. steel spans, and a quantity of bridge timber and fence posts, available for these two sections of the line.

The two miles of line required to carry the line from the Kincardine road into Goderich would be the most expensive to build on the whole line. This section would require a steel bridge of three spans of 150 ft. each; a steel bridge of 100 ft. span; considerable trestle work and subways under the C.P.R. and the G.T.R. He submitted four propositions as to this section, and recommended the adoption of the fourth. This plan gives a road with a 3% gradient to the Goderich northern road, a 1,500 ft. on the flats by the side of the river, and a 500 ft. trestle to the G.T.R., thence to North St. and on to the court house.

Appended to the report are detailed estimates, and the following:—

Valuation of Works Already Executed.	
Right of way	\$ 1,725.00
Fencing on one side ..	11,431.00
Excavation, including overhaul	46,901.00
Pipe culverts	3,640.00
Rails, fish plates, bolts, spikes, etc., including switches and crossings	70,288.00

Estimated 95 cwt. of bolts at \$3.90	370.50
Estimated 458 cwt. of spikes at \$2.65	1,213.70
Estimated 7,000 ties at 50c	3,500.00
Estimated 431 bridge ties at \$1.50	775.80
Two plat girder spans of 25 feet, 17,550 feet at 4 1/2 c.	789.75
Estimated 1,000 fence posts, 8 feet long, at 15c.	1,200.00
	<hr/> \$43,413.75

Total \$305,200.75

Summary of Total Cost of Work to be Done and Rolling Stock.

Cost of line into Goderich	\$129,969.34
Cost of line from C.P.R. junction to Kintail	86,189.71
Cost of line from Kintail to Lambton Street, Kincardine	279,807.15
Cost of electrical equipment for 35 miles	196,770.00
Total cost with rolling stock	<hr/> \$797,536.20
	*104,800.00

Total cost with rolling stock ... \$797,536.20
 Estimate for rolling stock includes 6 passenger cars, 2 baggage cars for light freight, 1 electric locomotive, 10 flat cars, 10 box cars.

The municipalities interested had guaranteed bonds for \$400,000, as follows:—Town of Goderich, \$150,000; Town of Kincardine, \$50,000; Ashfield Tp., \$125,000; Huron Tp., \$75,000. On these bonds the municipalities are paying 5% interest.

The representatives at the meeting passed a resolution, stating that the situation disclosed by the report was unsatisfactory to the municipalities which had guaranteed the bonds, and asking the Ontario Railway and Municipal Board to investigate "generally everything in connection with the affairs of the said company, and to apply any and all remedies within its power."

The O. & W.S. Ry. is a project that Canadian Railway and Marine World has never been able to obtain any official information in regard to, communications asking for the same having almost always been ignored. J. W. Moyes, of Toronto, appears to have had charge of construction and is said to be one of the principal promoters.

Electric Railway Projects, Construction, Betterments, Etc.

The Alberta Metropolitan Ry., which was incorporated by the Alberta Legislature in 1912, has been granted an extension of time for the construction of its authorized line from Calgary to Shepard, Alta. The provisional directors are:—W. J. C. Madden, J. M. Empey, G. P. Madden, W. T. Lathwell, Calgary, Alta.; W. H. Clipper-ton, Toronto; D. B. Waller, Dresden, Ont.; M. E. Brown, St. Thomas, Ont.

British Columbia Electric Ry.—The civic authorities of Vancouver recently met Chief Engineer Conway, of the B.C.E.R., and discussed the possibility of the company placing its wires through the centre of the city in underground conduits. It is stated that Mr. Conway promised that within a few weeks he would submit plans showing an extensive system of underground conduit work for the city business district. In carrying out this project the city will, as far as possible, have conduits laid in the lanes.

The New Westminster City Council is considering the company's plans for the laying out of a new yard at a cost of about \$100,000. There will be track accommodation for 480 cars, and repair tracks.

A new substation, with a capacity of 2,000 k.w., is to be equipped at Victoria, according to press reports. The ballasting and other work necessary on the completion of the Saanich Peninsula line is being pushed forward, and it is expected that the line will be opened as far as Todd Inlet early in April.

In connection with the development of the power plant at Jordan River, contracts are reported to have been let for much of the machinery necessary for the development of an additional 12,000 h.p. The company has purchased the Vancouver tug Protective to take the place of the Nidge, which was recently lost while carrying supplies from Victoria to Jordan River. (Mar., pg. 141.)

Buffalo and Fort Erie Ferry Ry.—Press reports state that plans are being made for the electrification of the line between Fort Erie Ferry and Fort Erie Beach, Ont., and to extend the line to Bridgeburg and to Port Colborne, connecting at the latter place with the Niagara, St. Catharines and Toronto Ry. (Mar., pg. 141.)

Burrard, Westminster Boundary Ry. and Navigation Co.—The Dominion Parliament is being asked to extend the time for the construction of the several lines authorized; to increase the capital stock from \$1,000,000 to \$2,000,000, and the bonding powers from \$30,000 to \$40,000 a mile. Tupper, Kitts and Wightman, Vancouver, B.C., are the solicitors.

In connection with the building of the proposed line from Stave River Falls to Mission City and New Westminster, the first section of which, from the Falls to Pitt River, is expected to be put under construction in May, the British Columbia Legislature voted \$200,000 towards the construction of a railway and general traffic bridge across the Pitt River at Coquitlam. The estimated cost of the bridge is \$700,000, and it is expected to have it, and the entire electric railway, 40 miles, completed during 1915. (Mar., pg. 141.)

Edmonton Radial Ry.—The following track construction is projected for this year on this municipally owned line at Edmonton, Alta.:—Permanent (double track basis) 54,748 ft.; temporary (single track basis) approximately 5,000 ft. W. T. Woodroffe is Superintendent.

The Edmonton, Stoney Plain and Wabamun Ry. Co. has been incorporated by the

Alberta Legislature to build a railway from Edmonton to Stoney Plain, thence to the shores of Lake Wabamun, Alta. The provisional directors are:—A. Boileau, E. S. McQuaid, Edmonton; A. V. Pujebet, Paris, France.

The Elbow River Suburban Ry. Co. has been incorporated by the Alberta Legislature to build a line from the junction of Canyon Creek with the Elbow River, northerly and easterly, starting the Sarcee Reserve on the west, and finally returning into Calgary along a line just south of and parallel to the Springbank Trail. The provisional directors are:—W. Georgeson, G. L. Peet, O. S. Chapin, Dr. G. A. Ings, A. D. Connors, Calgary, Alta.

Forest Hill Electric Ry.—The provisional directors named in the application to the Ontario Legislature for the incorporation of a company with this title are:—W. E. Grierson, T. J. Glover, R. H. C. Harris, W. T. Rogers and J. Hales, Toronto. (Mar., pg. 141.)

Halifax Electric Tramway Co.—It is proposed, we are officially advised, to build about a mile of new track on Quinpool Road, from Oxford St. to the Arm Bridge, Halifax, N.S., during this year. Application has been made to the city council to build a second track on about one mile of existing lines in the city. J. W. Crosby is Manager and Purchasing Agent. (Feb., pg. 90.)

Hamilton Incline Ry.—Plans have been filed with the Hamilton, Ont., City Council, for an incline railway from Wentworth St. to the top of the Mountain. The gradient will be 35 ft. in 100, and the line will be equipped to carry street cars, as well as vehicles and pedestrians.

Hamilton Mountain Electric Ry.—The Ontario Legislature is being asked to incorporate a company with this title to build a railway from the point where the Horning Mountain Road is crossed by the Brantford and Hamilton Ry., easterly to Mount Albion, with branch lines. The provisional directors are:—T. H. Crerar, L. E. Awrey, S. B. Thomson, G. E. Armstrong and T. H. Sturson, Hamilton.

Hamilton St. Ry.—Press reports state that it is proposed during this year to re-lay the tracks on King St., Locke St., and Sherman Ave., Hamilton, Ont. (Dec., 1912, pg. 622.)

Hamilton, Waterloo and Guelph Ry.—Press reports state that owing to the death of Jno. Patterson, this project will be dropped, and the lands acquired for the right of way sold. (Aug., 1912, pg. 421.)

Hull Electric Ry.—Press reports state that plans have been prepared for an extension to Connaught Park and the Jockey Club race track; to build a second track on about half a mile, and to lay out terminal facilities at Connaught Park, Hull, Que. (Feb., pg. 90.)

International Ry. and Development Co.—G. R. McDuff, the company's engineer, is reported to have completed surveys for an electric railway through the Delta district to New Westminster, B.C., and to have gone to England to arrange the financing for its construction. This information was made public at a recent dinner of the Delta Board of Trade. (Aug., 1912, pg. 421.)

Kingston, Portsmouth and Catarqui Ry.—An agreement has been signed between the company and the Kingston, Ont., City Council, under which the Princess St. line is to be reconstructed. (Jan., pag. 39.)

Lethbridge Municipal Ry.—The City Council of Lethbridge, Alta., is considering plans for the building of an additional four

miles of line in the city. (Nov., 1912, pg. 573.)

Montreal Tramways Co.—In an interview, Mar. 7, E. A. Robert, President, is reported as stating that the proceeds of the issue of additional capital stock will be utilized in improvements and betterments. It is estimated that during this year at least \$2,000,000 will be required for this purpose, and the plans made call for a total expenditure of \$4,000,000. The work will be taken in hand at once, and the shares will be issued as the money is required. (Mar., pg. 141.)

Port Arthur and Fort William Electric Ry.—The city of Fort William, Ont., will take over, Dec. 1, the portion of the lines, situated within its own borders, now operated by the joint commission with Port Arthur. The lines to be taken over are 14.875 miles, the remaining mileage—10.45—is within the boundary of Port Arthur. After the date mentioned each city will operate the lines within its own boundary and the present joint commission will be dissolved. During the period within which the joint commission has been operating the lines each city has been spending money on betterments and extensions, and in the purchase of additional rolling stock. The city of Fort William proposes during this year to add six miles of new tracks as follows:—Franklin St. to Walsh St., single track, 3,600 ft.; Syndicate St. to Franklin St., double track, 3,618 ft.; Dease to Simpson St., single track, 4,500 ft.; Victoria to Dease St., single track, 4,460 ft.; on Island no. 2, 8,800 ft.; Mission Road across G.T. Pacific Ry. property to Mission River, 8,800 ft. The first of these lines to be built will be the last mentioned. (Feb., pg. 90.)

Regina and Moose Jaw Interurban Ry.—Press reports state that work is to be started early in the spring on the construction of an electric railway between Regina and Moose Jaw, Sask., 42 miles. The line will pass through Belle Plaine, Grand Coulee, and Pense. S. Friedman, Moose Jaw, is one of the provisional directors. (Feb., pg. 90.)

Regina Municipal Ry.—Among the by-laws carried by the taxpayers of Regina, Sask., Feb. 25, was one providing for the expenditure of \$825,000 upon street railway construction. Tenders are under consideration for the supply of track intersections, track curves and turnouts. It is proposed to invite tenders for a 1,000 k.w. motor generator set, and one 400 k.w. steam driven unit to be installed in the new addition to the power house.

The City Council has granted permission to Anderson and Luney to build an electric line on 16th Ave. from McDonald St. to Park St. The line will be operated as part of the city system. (Nov., 1912, pg. 574.)

St. John, N.B.—A contract has been let to the Dominion Bridge Co., by the Provincial Government, for the superstructure of a bridge to replace the present suspension one at St. John, N.B. The new bridge will be of the spandrel arch type, and is estimated to cost \$275,000. It will have a concrete floor, 50 ft. wide, on which will be laid a double track for electric cars, two driveways, and two sidewalks. The contract calls for the completion of the work by June 1, 1914.

St. John Ry.—Application is being made to the St. John, N.B., City Council for permission to extend some lines, and to build a second track on other lines. (Dec., 1912, pg. 623.)

St. Thomas Street Ry.—The City Engineer has been directed to prepare estimates for the thorough reconstruction of the Tal-

bot St. line, St. Thomas, Ont. (Aug., 1912, pg. 623.)

Sherbrooke Ry. and Power Co.—We are officially advised that it is intended to build about a mile of new track this year. The route has not been definitely decided, but it is likely that it will be on Drummond, Belvedere, Armoury, Alexander and Aberdeen Sts. to the G.T.R. station. (May, 1912, pg. 252.)

Toronto and York Radial Ry.—Surveys are reported to have been completed for an extension of the Metropolitan Division easterly to Unionville, Markham and Stouffville, Ont., and local reports state that construction will be started at an early date. There have been several conferences between officials of the company and the city respecting the electric railway situation at the north end of Yonge St., and it is expected that an arrangement may be made for the building of a double track line on Yonge St. to York Mills, to be used jointly by the company and the city owned lines. (Mar., pg. 141.)

Tramways, Limited.—The Alberta Legislature has incorporated a company with this title to build the following lines:—From Edmonton northerly to Bon Accord, with a branch to Fort Saskatchewan Settlement; from Edmonton northeasterly to Fort Saskatchewan Settlement, and from Edmonton easterly and northerly on the south bank of the Saskatchewan River to Fort Saskatchewan Settlement, with branch lines not exceeding in any one case six miles in length. The provisional directors are:—G. Cresswell, S. Carson, W. Golley and S. H. Smith, Edmonton.

White Horse to Dawson, Y.T.—A Dawson, Yukon, press report states that representatives of the White Pass and Yukon Ry., the Klondike Mines Ry., and the Noyle Concessions, Ltd., are negotiating for the joint construction of an electric railway from White Horse to Dawson.

Winnipeg Electric Ry.—The Winnipeg Board of Works passed a resolution, Mar. 5, calling upon the company to build a number of additional lines during this year.

We are officially advised that the company proposes to build a car barn, plans for which are being made, but no definite arrangements have been made as to when it will be erected. (Mar., pg. 142.)

Taxation of Electric Railways in Ontario.

The Ontario Government collected \$12,833.10 in taxation from the electric railways operated in the province for the year ended Oct. 31, 1912. This was made up as follows:—Berlin and Northern Ry., \$22.70; Brantford and Hamilton Ry., \$251.60; Chatham, Wallaceburg and Lake Erie Ry. (for 1911), \$597.10; Cornwall St. Ry. Light and Power Co., \$40; Galt, Preston and Hespeler St. Ry., \$77; Hamilton, Grimsby and Beamsville E. Ry., \$254.40; Hamilton St. Ry., \$785.75; Hamilton and Dundas St. Ry., \$55.72; Hamilton Radial Ry., \$377.30; International Ry., \$175.10; International Transit Co., \$37; Kingston, Portsmouth and Cataraqui St. Ry., \$104; London St. Ry., \$451.20; London and Lake Erie Ry. and Transportation Co., \$290; Niagara Falls, Wesley Park and Clifton Tramway Co., \$76.60; Niagara, Welland and Lake Erie Ry., \$15.20; Oshawa Ry., \$38.90; Ottawa Electric Ry., \$1,372.50; Peterborough Radial Ry., \$105.82; Preston and Berlin St. Ry., \$72.50; Sandwich, Windsor and Amherstburg Ry., \$397.06; Sarnia St. Ry., \$92.50; Toronto Ry., \$6,422.82; Toronto Suburban Ry., \$130.54; Windsor, Essex and Lake Shore Rapid Ry., \$553.59.

St. John Railway Company's Annual Report.

The following report for 1912 was presented at the recent annual meeting:—

The past year's business shows a net profit after providing for interest on bonds and all other charges of \$58,158.06, out of which there have been paid 4 quarterly dividends of 1½%, amounting to \$48,000, leaving a balance of \$10,158.06, which has been transferred to profit and loss account. Our street railway earnings were reduced during the year in consequence of paving by the city of Mill, Dock, King and Charlotte Sts. This work was done during our rush season and prevented us operating our full service. We have recognized the efficient service given by our employes by increasing their wages.

Careful attention has been paid to the maintenance of the plant, rolling stock and other properties, the physical condition of which is equal to that of any other electric light and street railway system in Canada. During the year we purchased six p.a.y.e. combination cars, seven acres land adjoining our Seaside Park property, and built a line for the transmission of electric current for light and power to Rothesay, and through Simonds Parish as far as Crouchville. We are now building an auxiliary boiler house for three boilers. We have on hand all the rails, ties, etc., required for the extension of our railway to Crouchville, the cemetery, and for the new line on Broad St. We have also built a fireproof car barn on Wentworth St. We propose during the coming year to purchase additional cars, to erect another fireproof car barn, to install additional engine and generators, to extend our street railway to Crouchville, and the cemetery, and to lay a new track on Broad St. Other extensions of the railway are also proposed.

We were able to come to an agreement with the local Government as to crossing the new bridge to be erected at the Falls. We regret to report that the terms exacted by the Government are in our opinion too onerous. Our company is required to pay an annual rental, starting with \$3,000, increasing to \$5,000. In addition, we are obliged to pay half the cost of protecting the railway crossing, which includes wages of gatemen. We are also to pay the cost of connecting our railway and laying tracks on the bridge. This will require an expenditure of upwards of \$68,000. When the bridge is completed, it will enable us to give a through service between East and West St. John. We applied to the City Commissioners for permission to lay double tracks on the proposed extension to Kane's Corner. Negotiations in connection therewith have been pending for some time. The Commissioners have notified us that they will not give us the right to put down double tracks unless we will pave from curb to curb with granite blocks on a concrete base from Walsh's Corner to the northeast side line of Erin St., and from there to Kane's Corner between the tracks and 18 ins. on each side. Under the company's charter the duty imposed on it is to maintain and keep in repair that part of the street occupied by the company and 18 ins. outside of the rails. The work required by the city would cost upwards of \$30,000. Your directors did not feel warranted in committing the company to such a large additional expenditure. A double track would have enabled us to furnish the public with an up to date and efficient service. We do not expect that this extension will be profitable for some time, but we hope in the future as the suburbs are built up that it will pay. Your directors

have been able to obtain permission from the Dominion Government to cross the Intercolonial Ry. at Haymarket Square.

In answer to enquiries that have been made by prominent shareholders and citizens as to our running large double truck cars, we have to say that in consequence of the narrow strip between the two tracks and the sharp curves and steep hills, we are not able to operate them. We would be glad to put such cars in commission if it were practicable, as it would effect a considerable saving in the wages of motormen and conductors.

Press reports state that an offer of \$1,200,000 for the company's stock, equal to \$150 a share, was considered at the meeting, the same having been made by J. P. Graham, President, Bangor St. Ry., and Portland St. Ry., and H. W. Cushman, President of the Merrill Trust Co., of Bangor, Me., and who are said to be promoting the New Brunswick Hydro Electric Co. The matter was referred to a committee, but it was stated later by the Vice President, H. H. McLean, K.C., M.P., who presided in the absence of the President, Jas. Ross, of Montreal, that the property was not for sale.

Building for British Columbia Electric Railway Employees.

The B.C. Electric Ry. Co. has called for tenders for the construction of a building for the use of its motormen, conductors and shop employes, stationed in Vancouver. It will be located at the corner of Main and Prior Streets, in the heart of the city, and directly opposite the principal car barns and repair shops.

It will be 25 by 60 ft. and five stories high, built of reinforced concrete, with facings of brick and artificial stone. The estimated cost is about \$35,000. There will be two entrances to the ground floor, one from Main St. and the other from Prior St. On the Main St. frontage will be located the Station Master's office and behind this a large waiting room for the men. The entrance from Prior St. will be at the rear of the block and will lead to the elevator and stairways by means of which the upper stories will be reached. Above the ground floor, the first floor will be used for lockers for the men, the second floor for a reading room and the third floor for a billiard room with one billiard and two pool tables. In the upper story will be a gymnasium 18 ft. high, the entire area of the floor being left clear for this purpose. The company will equip the gymnasium with a full outfit of apparatus. Lavatory accommodation will be provided on each floor and shower baths are planned for the gymnasium. The entire building will be heated with hot water. Work will be started at once and it is planned to have the building ready for use during next summer.

The Regina Municipal Ry. Employes have organized a club to further athletics and social gatherings among themselves, and have elected as President the Superintendent, H. Doughty, who takes a strong interest in the movement.

Height of Street Car Steps.—The New York State Public Service Commission is reported to have ordered that all closed street cars in New York City be equipped with steps not higher than 15 ins. from the ground by Jan. 1, 1914.

In connection with the operation of electric railways in Canada, two non fatal accidents were reported in January, one being due to a collision, and the other to a falling crane.

Report on the Street Railway Situation in Winnipeg.

The report submitted to the Manitoba Public Utilities Commission by R. M. Fenstel, C.E., a civil engineer of Madison, Wis., who is connected with the Wisconsin Railway Commission, on the street railway traffic in Winnipeg, is a preliminary one. It is a lengthy document and deals with the general problem, the special problems, such as bad rail conditions, subways and engineering difficulties. The general problem outlined was that of investigation as to the general character of the service furnished, but this Mr. Fenstel states can only be dealt with after an exhaustive study of all the conditions by special observation. The special problems can be considered before a general study is made. Referring to these Mr. Fenstel states it is generally recognized that the Main St. subway is taxed beyond its capacity. It was thought that the Arlington St. overway would have relieved this congestion but the company has protested against its use on the ground that the gradient of the approaches made it dangerous for the operation of traffic. The approaches were found to have a gradient of 7.1% each, and there should be no difficulty in operating an average car in use in the city, fully loaded, with the track in "good average condition." The three words quoted are stated to mean the conditions which usually obtain during the whole year, excepting certain times in Jan., Feb. and Mar. There are times during the year when very bad rut conditions exist owing to fine snow which combines with the sand used, forming a black scale. In Duluth cars are operated over 6.95 and 8.3% gradients; in Minneapolis cars are operated over a 7% gradient, and in other cities over equally steep gradients under practically the same conditions. In each case the operation of the cars is considered a serious problem to be met with "continuous vigilance." The survey of Logan and Dufferin avenues intersections with Arlington St. developed the fact that connecting curves could be installed for both east and west directions off the driveway. The operation of cars on the Arlington St. overway would benefit the movement of traffic from north of Dufferin Ave. and east of McPhillips St. to and from the C.P.R. shops, and from north of Dufferin Ave. and west of Arlington St. to the south of the C.P.R. and east to the downtown district. This traffic, however, could be taken care of by the connection of the line from Selkirk Ave. across under the McPhillips St. subway to Logan Ave. The territory served in this way would be larger than that served by the Arlington St. overway. This would give some relief to the Main St. subway, but further data was required to form a definite opinion. An additional crossing of the C.P.R. is required between Main St. and Arlington Ave., and two propositions have been considered—a subway at Princess St., and an overway or subway at Salter St. Even if it were proved desirable for general traffic purposes to have a subway at Princess St., there were features which made it undesirable as a street railway proposition. A subway or overhead bridge at Salter St. would be more suitable and, that being at present a residential district, which would ultimately become a retail district, it could be constructed at a reasonable cost. The single track on Main St. bridge was the cause of much congestion. The strengthening of this bridge to carry a second track would be impracticable from the standpoint of economy, and the building of a new bridge is the only solution of the problem. The delays at the St. James single track subway are a source of considerable

irregularity in the operation of the Deer Lodge line. The grade conditions and the narrowness of the subway are a source of danger. A subway for general, as well as for street railway traffic, could be constructed at moderate expense, and would meet the needs of a rapidly developing district.

British Columbia Electric Railway Co.'s New Receiving and Sub Stations.

Operations have been started by the B.C. Electric Ry. Co. on the construction of a large receiving station, which will regulate the distribution of current to the company's territory on the southern mainland of B. C. The site for the building is in D.L. 118, Burnaby, just on the boundary line of the city of Vancouver, where the company has a large tract of land. The total expenditure which will be made on the property is estimated at \$250,000. Two buildings are to be erected, a main receiving station and a small sub station. Both will be of steel frame and reinforced concrete, and fire proof throughout. They will be one story high with an additional story for the transformer galleries. In the receiving station there will be four incoming lines, delivering the current at 60,000 volts. The electrical equipment will consist of 4 banks of 3 transformers each, with a total capacity of 36,000 k.w., by which the current will be stepped down from 60,000 to 11,000 volts for distribution to the sub station. The sub station which will be erected in connection with the receiving station will be equipped with 2 motor generator sets and a bank of 11,000-2,200 volt transformers. From this station will be regulated the supply of current for railway purposes and for public and private lighting in the vicinity of the station. The electrical equipment of both stations will include the usual installation of a full outfit of lighting arresters, switching apparatus, etc., the company's electrical engineers having designed the stations in accordance with the latest methods followed by central station and electric railway companies. At present the current from the company's generating station is sent to the Vancouver and other sub stations at high voltage. When the new sub station is completed, the Vancouver station and other stations now connected with the transmission lines will be used as sub stations, receiving their current at 11,000 volts from the Burnaby station. In connection with the new arrangement the company will reconstruct its transmission system from the power house on the North Arm of Burrard Inlet to Burnaby, in order to enable the current to be carried at 60,000 volts.

As soon as the Burnaby receiving station is completed, the company will erect a similar station near Sapperton, just on the outskirts of New Westminster. The equipment of this plant will be almost identical with the Burnaby station and the plans call for an expenditure of about \$200,000. From the Sapperton station, power will be sent to the sub stations in the South Fraser Valley, which cover the supply of the Fraser Valley interurban railway and the demands of private parties for light and power in the district at 34,000 volts. From the point will also be distributed the current for the various sub stations lying to the east of Sapperton. In the plans arrangement has been made whereby in case of accident to the transmission line, current from either the Burnaby or Hastings station may be supplied to any point in the company's territory.

In Vancouver the company is erecting a sub station covering the west end of the city, the residential and apartment house centre. This building will be 60 by 68 ft. and one story high, with an additional story for the transmission gallery, and fire proof throughout. Structural steel with brick curtain walls and a concrete roof are being planned. The estimated expenditure on the station will be about \$100,000. Current will be fed to the building at 11,000 volts, transmission lines being arranged from the Vancouver sub station as well as the Burnaby receiving station, thus affording an alternate base of supply in case of accident to either line. The electrical equipment of the building will consist of two 1,000 k.w. d.c. motor generator sets, consisting of 11,000 volt motors and 600 volt generators, this equipment regulating the current for the tram lines in the section and the d.c. current used by elevators in apartment houses. The station will also be equipped with one bank of three transformers of 7,500 k.w. capacity for regulating the private and street lighting.

Port Arthur and Fort William Electric Railway.

The report for 1912 was submitted to the commission operating the joint systems, recently, and shows that 5,447,927 revenue passengers were carried, against 3,863,068 in 1911. There was an increase of 37% in the revenue, 31% in the expenditure, and 48% in the net earnings. The details of receipts and expenses are as follows:

RECEIPTS.

Passenger fares	\$212,299.35
Baggage fares	4,026.26
Freight	4,902.46
Advertising	783.50
Power	750.00
Scrap sold	546.81
Mail contract	350.00
Arthur St. branch line	9,336.81
Interest	3,927.91

Total

1911	\$236,923.10
1912	\$172,976.75

EXPENDITURE.

Arthur St. branch line	\$ 5,289.73
Maintenance of way, etc.	18,323.00
Maintenance of equipment, etc.	21,096.05
Conducting transportation	56,459.22
Power purchased	30,813.98
General expenses	10,095.83
Reserve for accidents	12,351.25

Total

1911	\$154,429.06
1912	\$117,469.67

Net operating earnings for 1912 \$82,494.04

The Fort William Electric Railway.

The Mayor of Fort William, Ont., in his inaugural address to the City Council, recently, said:—"During the present year the street railway system will be extended to serve the Islands industrial centre at the Grand Trunk Pacific Ry. terminals, and also through the residential sections of Fairview, Victoria Ave. and Franklin St. The city, during this year, will take over its own street railway, money has been provided by the ratepayers to complete the car barn, supply generators and everything necessary for this work. It is now the duty of the council to plan for the management of this very important utility."

The electric railway in Fort William is now operated by a joint commission appointed by the cities of Fort William and Port Arthur, the whole system being known as the Port Arthur and Fort William Electric Ry.

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for Jan., \$584,032; operating expenses, \$370,116; net operating earnings, \$213,916; renewal funds, \$51,620; net earnings, \$162,296; approximate income from investments, \$35,000; net income, \$197,296; against \$517,247 gross earnings; \$313,408 operating expenses; \$203,839 net operating earnings; \$37,935 renewal funds; \$165,904 net earnings; \$25,000 approximate income from investments; \$190,904 net income, for Jan., 1912. Aggregate gross earnings for 7 months ended Jan. 31, \$4,020,498; net earnings, \$1,387,711; against \$3,318,641 aggregate gross earnings; \$1,170,091 net earnings for same period 1911-12. The exceptional increase in operating expenses during January was caused by the heaviest snowstorm which the company has had to contend with.

Calgary Municipal Ry.—Passenger earnings for 1912, \$595,413.42; miscellaneous and special earnings, \$8,561.96; total earnings, \$603,975.38; expenditure, \$509,095.12; net profit, \$94,880.26. In connection with the railway, the city is authorized to issue debentures for \$1,875,000, of which \$1,375,000 have been issued, and \$1,364,850 has been spent on plant.

Halifax Electric Tramway Co.—The Halifax City Council is asking the Nova Scotia Legislature to authorize it to acquire the property and franchises of the company at \$170 a share, or at a price to be fixed by arbitration.

E. A. Robert and associates are applying to the Legislature for an act incorporating the Halifax Tramways and Power Co., with a capital of \$5,000,000, and with authority to acquire and amalgamate the H.E.T. Co., and the Nova Scotia Power Co.

Hamilton St. Ry.—E. P. Coleman, General Manager, Dominion Power and Transmission Co., wrote the Hamilton, Ont., City Council, Mar. 14, stating that the company had no intention of selling the Hamilton St. Ry.

Moncton Tramways, Electricity and Gas Co.—Following are the directors for the current year:—President, R. Law, jr.; Vice President and General Manager, E. B. Reeser; other directors:—F. W. Sumner, O. P. Boggs, E. O. Bartlett, W. M. Stewart, J. L. Henderson.

Montreal Tramways Co.—At a special general meeting of shareholders Mar. 7, the directors were authorized to issue the unallotted capital stock amounting to \$4,250,000 at par to present shareholders. This is considered a more economical means of financing than by making a further issue of bonds.

An issue of \$2,000,000 first and refunding bonds has been placed on the New York market by N. W. Harris & Co.

The gross earnings for 12 months ended Jan. 31, were \$6,378,212; operating expenses, \$4,286,517; net earnings, \$2,091,694; bond interest, \$865,560; surplus, \$1,226,134.

Moose Jaw Electric Ry.—An increase of capital from \$500,000 to \$1,000,000 has been authorized by the Saskatchewan Government, under the provisions of the Provincial Railway Act.

St. Thomas Street Ry.—Cash fares received in Jan., \$446.19; sale of tickets, \$1,001.50; total receipts, \$1,447.69. Operating expenses, \$1,164.07; barn expenditures, \$287.44; outlay on track, \$93.16.

Saskatoon Municipal Ry.—Receipts for Feb., \$10,505.65; approximate operating expenses, \$13,489; average miles per car, 156; passengers per car mile, 5.62.

Toronto and York Radial Ry.—After two

months' hearing of evidence as to the value of the Sunnyside-Humber section of the Mimico Division, which the City of Toronto is about to take over, the Ontario Railway and Municipal Board reserved judgment, Mar. 14.

Toronto Ry., Toronto and York Radial Ry., and allied companies.—Gross earnings for Jan., \$776,928; operating expenses, maintenance, etc., \$401,155; net earnings, \$375,773, against \$656,110 gross earnings; \$326,672 operating expenses, maintenance, etc.; \$329,438 net earnings, for Jan., 1912.

Winnipeg Electric Ry.—Gross earnings for Jan., \$351,497; operating expenses, \$199,532; net earnings, \$151,965, against \$319,433 gross earnings; \$175,412 operating expenses; \$144,021 net earnings, for Jan., 1912.

Electric Railway Notes.

The Saskatoon, Sask., City Council is considering a report recommending the purchase of six new cars for its lines.

The Quebec Public Utilities Commission has approved the Montreal Tramways Co.'s plans for putting its wires underground on certain streets.

The town of Walkerville, Ont., has entered an action against the Sandwich, Windsor and Amherstburg Ry., alleging failure to give the service called for in the franchise.

The Edmonton Radial Ry. is to have the following equipment added during this year:—35 semi convertible p.a.y.e. cars, 2 Simplex dump cars (1 already ordered), one 4,000 gal. sprinkler, 1 line car, 1 bonding car.

The bylaw recently submitted to the taxpayers of Saskatoon, Sask., in connection with the proposed operation of cars on the municipal street railway on Sundays, was passed by 419 votes to 150, and a Sunday service was started Mar. 9.

The Nipissing Central Ry., which is operated by the Timiskaming and Northern Ontario Ry. Commission, between Cobalt and Liskeard, Ont., has received two electric cars from the Preston Car and Coach Co.

A new schedule of wages for street car men was put in force in Fort William and Port Arthur, Ont., Mar. 1. The new rates of pay are: First six months, 24c. an hour; second six months, 26c.; second year, 28c.; third year, 30c.; fourth year, 32c. The men have a 10 hour day.

The Sandwich, Windsor and Amherstburg Ry. has put into service a new type double-ended pay-as-you-enter car. It is equipped with two Canadian Westinghouse motors, two trolleys, electric heating system, push buttons and leather upholstered seats, and was built by the Preston Car and Coach Co.

The Regina Municipal Ry. has recently received from the Preston Car and Coach Co., 8 double truck city cars. Following are the chief details:—

Length of car body	28 ft.
Length of front vestibule, outside	5 ft.
Length of rear vestibule, outside	7 ft.
Projection of buffers	6 ins.
Length over buffers	41 ft.
Width inside	7 ft. 8 ins.
Width over sheathing	8½ ft.
Height from bottom of sill to top of roof	8 ft. 9 ins.
Width of front vestibule door	30 ins.
Width of rear vestibule door	48 ins.
Seating capacity	38
Seats	Cross, with longitudinal at ends.
Trucks, type	27-G-1
Wheel base	4 ft. 6 ins.
Brakes	Westinghouse S.M. 1 straight air
	4 Canadian General Electric, G.E. 80a, 40 h.p., with K28 controllers.

The Electric Railway Situation in Montreal.

The Quebec Public Utilities Commission gave judgment, Mar. 14, dismissing the Montreal Tramways Co.'s exception to the Commission's jurisdiction, and directing the company and the city to get together and reach a settlement upon the matters in dispute.

In connection with this discussion of the betterment of service, etc., on the company's lines in Montreal, a report by J. P. Fox of New York, who was engaged by the Montreal Star, was made public Mar. 15. The suggestions made cover the abolition of cross seats; removal of heavy partitions between the rear platform and the body of the car; installation of sliding or folding doors on the steps to prevent the dangerous overcrowding of the rear platform; the operating of every available car; single truck cars should be operated in pairs or connected together by an enclosed centre platform; delays should be minimized; there is no convincing evidence that more streets are needed to make a satisfactory service possible; the double tracking of St. James and Notre Dame Sts. is feasible, and would relieve congestion on Craig St.; a reserve of cars should be provided for rush hours; a new type of double truck car is badly needed, the present type can seat except for local improvements. The M.C.R. only 40 passengers.

Duncan McDonald, formerly General Manager, Montreal Tramways Co., is also preparing a report, at the request of the Montreal Herald.

The company is doing what it can to come to an agreement with the city council as to the making of such improvements as will provide for a better service. A new proposition was submitted to the Board of Control, Mar. 12, providing for double track work on various lines, and the construction of subways under the G.T.R. and the Lachine Canal, and the extension of a number of lines. The carrying out of the plans would require the expenditure of between \$8,000,000 and \$10,000,000. There are 200 new cars on order, and the plans would necessitate the ordering of an additional 200. It would require three years to carry out the work suggested. The proposition is still under discussion.

Proposal to Build Electric Railways in Toronto as Local Improvements.

The Transportation Committee of the Toronto City Council took up the consideration, Mar. 19, of a project for the construction of electric railways upon the local improvement plan. The suggestion is that owners of land in any outlying district of the city who desire street railway accommodation may obtain it by paying for it on the frontage tax system. The estimated cost of street railway construction is \$50,000 a mile, including rolling stock; and such lines would be built from outlying parts of the city to the points served by the proposed civic tube railways. To be successful the suggestion must be worked out on comprehensive lines, and would have to lead to the building of lines equally all over the city area, so as not to create more or less of a land monopoly. The report was considered by the City Council Mar. 25.

A plan something upon these lines is being developed in Alberta, where at Calgary, and some other cities, the financial interests developing real estate, have built short pieces of line to open up these properties, and have presented the lines to the city to be operated as part of the municipal railway.

Compensation for Carrying Postmen on Electric Railways.

The Postmaster General introduced the following bill in the House of Commons, Feb. 21, and secured its first reading:

"1. Letter carriers in the service of the Post Office Department shall be conveyed on every electric railway in Canada on such terms and conditions and under such regulations as are made by the Postmaster General.

"2. If any company operating such electric railway refuses to carry any such letter carrier at the amount so fixed by the Postmaster General, the company shall refund an amount equal to the difference between the amount so fixed and the amount actually expended for such carriage.

"3. This Act shall be deemed to have come into force on the first day of March, one thousand nine hundred and thirteen."

No notice of the introduction of the bill had been given to the interests affected and the first intimation of it was the announcement in the daily press of its first reading. The Secretary-Treasurer of the Canadian Street Railway Association, Acton Burrows, immediately communicated with the Postmaster General, requesting that the second reading be delayed until a deputation from the Association could be heard, which was granted, and a conference with the Minister was held in Ottawa, Feb. 28, the Association being represented by its President, Patrick Dubee, and the Secretary-Treasurer, who were accompanied by some representatives of member companies who were in Ottawa, including H. H. McLean, K.C., M.P., Vice President, St. John Ry.; Jas. D. Fraser, director and Secretary-Treasurer, Ottawa Electric Ry.; A. A. Dion, President, Moose Jaw Electric Ry., and G. Gordon Gale, General Superintendent, Hull Electric Ry.

Mr. Burrows, in addressing the Minister, stated that the electric railway companies had been taken completely by surprise, having received no intimation that such a measure was to be introduced. The Minister, in writing to him answering his request for a conference, had stated that the introduction of the bill had been rendered necessary by the fact that certain electric railways had asked for largely increased compensation, amounting in one case to an advance of over 100%. Mr. Burrows contended that the fact of higher rates being asked did not necessarily mean that they were excessive. There was no desire on the part of the electric railway companies to hold up the government in any way, but investigation had shown that postmen were being carried by many companies at ridiculously low rates and that in some cases they were transported at less than actual cost. He submitted that there was no reason why postmen should be carried less than any other ordinary citizen, for as a matter of fact with their mail bags they took up more room and weighed more. If a lump sum per year was to be paid to the companies it should be based on the value of the tickets the postmen would have to buy if they travelled in the ordinary way. He submitted that it was not fair to the companies to give the Postmaster General the power to decide what should be paid, a power which might under some circumstances be used arbitrarily and unjustly, and he urged that the rate should be settled by conference between the department's officials and the companies and that in case an agreement could not be arrived at the matter should be referred to the Board of Railway Commissioners, an independent body, created by the govern-

ment, but to which the companies would be perfectly willing to submit. He pointed out that the method of dealing with the steam railways in regard to the transmission of mails could not be taken as a precedent, as of course nearly all of those lines had been subsidized, while only one electric railway had been, all the others having been built entirely by private capital. He urged that the bill be withdrawn, or failing that, that a conference be held between the companies and the department's officials to endeavor to arrive at an arrangement based on the actual cost and value of the service.

Messrs. Dubee, McLean and others supported Mr. Burrows' arguments, and the Postmaster General, in reply, dwelt on the increased rates asked and said that he was not prepared to refer the matter to the Board of Railway Commissioners, giving the extraordinary reason that they would doubtless decide it on the value of the service. In the conversation which ensued it developed that the Montreal Tramways Co., the contract with which had expired and which was carrying the postmen under a temporary arrangement, had notified the Minister that unless its new terms were agreed to it would abrogate the arrangement on Feb. 28, and he admitted that the bill was introduced for the primary purpose of enabling him to meet that situation. He, however, undertook, if the Montreal Tramways Co. would extend its arrangement for another month, to postpone the second reading of the bill, in order that some general arrangement might be discussed. On the following day, E. A. Robert, President, Montreal Tramways Co., agreed to this, and at the date of writing (March 22) no further action had been taken on the bill.

Extensions to Regina Municipal Railway.

Service on the Regina (Sask.) Municipal Ry. was started in 1911. During the spring of that year 10½ miles of street railway track were laid, and in July cars were in operation. The first order for cars was placed in England. Since that time all orders have been placed with Canadian firms, and 16 cars are now on order. During 1912 three and a half miles of additional lines were laid, and during this year it is proposed to extend the railway lines considerably, as they are much in demand. The programme of extensions provides for an additional 14 miles of trackage, which when completed will make 28 miles of lines in service. Despite this big programme of work, the residents in the outlying districts are anxious to secure service at the earliest possible time, and in many cases petitions have been presented to the city council in this regard. The railway during the latter half of 1912 paid almost \$2,000 a month above all charges, including debenture interest. Among other things, it is proposed to materially extend the car barns, so as to provide for the additional 16 cars ordered. A total expenditure of \$825,000 is provided for this year.

Regina has what is known as a "warehouse area" or "spur track area," where only warehouses or factories may locate. This area, which comprises about 400 acres, is served in certain sections by the C.P.R., in others by the Canadian Northern Ry., and in still others by the Grand Trunk Pacific Ry. The interswitching arrangements have, it is claimed, not always been satisfactory to the manufacturers, and the city council has discussed the question of electrifying the spur track area, and shunting cars by city owned electric locomotives. It is estimated that a good revenue would be derived by this means.

Personal Paragraphs.

W. K. JEFFREY, heretofore acting Manager, Ottawa Car Co., has been appointed Manager.

MRS. J. F. DEADEY, wife of the Superintendent, Mimico Division, Toronto and York Radial Ry., died in Toronto Feb. 26.

P. J. MITTEN, Master Mechanic, International Ry., Buffalo, N.Y., has resigned to enter the Philadelphia Rapid Transit Co.'s service.

H. G. MATTHEWS, General Manager, Quebec Railway Light, Heat and Power Co., has been taking a complete rest necessitated by overwork.

W. O. ROBINSON, has been re-engaged as Manager of the Port Arthur and Fort William Electric Ry., for another year at a salary of \$2,800.

H. G. MATTHEWS, General Manager, Quebec Railway, Light, Heat and Power Co., has been absent from his office for some weeks owing to illness.

W. G. ASTLE, heretofore Chief Clerk, car shops, Dominion Power and Transmission Co., Hamilton, Ont., has been appointed Storekeeper, Toronto Electric Light Co., Toronto, Ont.

The Saskatoon, Sask., City Council cancelled the engagement of E. L. WHITE as Manager of the municipally owned street railway, Mar. 31, and placed the line under the charge of Electrical Engineer HANSON.

W. KERLELEY, who recently acted as plaintiff in the litigation against the London and Lake Erie Ry. and Transportation Co., for operating its cars on Sundays, died at St. Thomas, Ont., Mar. 14.

PATRIK DUBEE, Secretary-Treasurer, Montreal Tramways Co., and President, Canadian Street Railway Association, left Montreal Mar. 16 and sailed from New York for England on the company's business, expecting to return during April.

ALLAN PURVIS, Manager Interurban Lines, and W. H. Elson, Superintendent British Columbia Electric Ry., returned to New Westminster, B.C., Mar. 5, after an extended trip in the United States to inspect the electric railway systems of a large number of larger cities.

T. AHEARN, President, and J. D. FRASER, Secretary-Treasurer, Ottawa Electric Railway, sailed from New York Mar. 27 on the s.s. Groesser Kurfuerst for Havana, Colon, Panama and Kingston, Jamaica, expecting to return to Ottawa about the middle of April.

Proposed Hydro Electric Power Lines and Railways in Ontario.

A meeting representative of a number of municipalities in Western Ontario, was held at St. Thomas, Mar. 20, for the purpose of discussing the extension of the Hydro Electric Power Commission's power lines through to Windsor and various points in that district, and the construction of electric railways along the power lines, and centering in the larger cities.

Deputations have visited nearly every town between St. Thomas and Windsor, and have secured the passing of resolutions endorsing in general terms, the proposal to erect the power line, and favoring the building of one continuous electric railway from Ottawa to Windsor by the municipalities.

The Mesaba Electric Railway has been completed and placed in operation between Hibbing and Gilbert, Minn.

Marine Department.

Canadian Lake Protective Association's Annual Meeting.

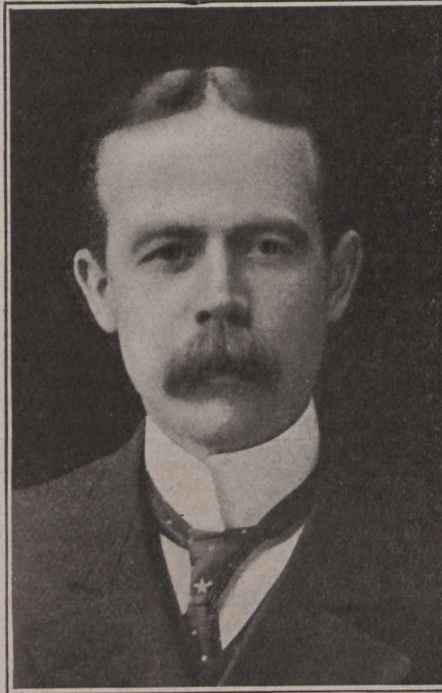
The Association's second annual meeting was held in Ottawa, Feb. 6, James Playfair, of Midland, Ont., occupying the chair. Following are extracts from the report for year 1912:—

It would be improper to attempt to base upon the record of the past season any conclusion whether the Association's work has already shown a decided effect upon the number and extent of the casualties suffered by the Canadian vessels enrolled, because a variety of circumstances may contribute in any one season to raise or lower the total amount of damages incurred. Yet a review of the cases and an examination of the character of the casualties might be expected to afford some indication of the restraining and correcting effect of the committee's supervision if any such effect has resulted, and the facts noted hereafter in this respect will probably be accepted as some evidence.

Before dealing with the actual casualties considered by the committee during 1912, reference must be made to the relations between this Association and the underwriting companies. In 1911 a feeling was expressed by New York underwriters that the Association had not established a valid claim for immediate recognition and would require to put its avowed intentions in practice, and prove its ability to enforce its regulations and rulings, before it could expect to enjoy the advantages given to the Great Lakes Protective Association in the United States; and that because of this feeling, and possibly for other reasons which need not be discussed, a preference of $\frac{1}{2}\%$ from the premium rate was given to members of the Great Lakes Protective Association. On the other hand, underwriters in London gave the Canadian organization full recognition in 1911, and extended identical treatment to the members of both associations. A new basis rate of $5\frac{3}{4}\%$ was fixed, but in New York a member of the Great Lakes Protective Association could procure cover, by reason of the above preference, at $5\frac{1}{2}\%$.

Your Committee at the outset of 1912 renewed the claim for complete recognition and for full enjoyment of the best rate, both in New York and London, for all its members. Efforts were made by correspondence to place the leading New York underwriting firms in possession of the true facts regarding the Canadian Association and to show that its work was of a character that demanded full recognition. Able assistance was also given by leading firms of brokers, and finally interviews were arranged with Percy Chubb and Sons and F. Hermann and Co. of New York, at which by direct personal representation of the facts it was possible to establish the Association's claims. It was these interviews which cleared away difficulties and settled the matter satisfactorily. There was at first a contention that it would be necessary for members of this Association to become personally interested in the underwriting risk, even to the small amount of say 5% , but it was readily admitted that the interest of each member in avoiding casualties was already very much more than this small share of the policy risk, and that this question might be very fairly waived. It was also claimed by underwriters that the Canadian Association ought to take some direct part in

the exclusion of improper charges from adjustments, and that this could be done even without participating in the insurance losses. It was suggested that in the event of its being found necessary the Canadian Association might in time require the submission of all adjustments to its officers for revision under the direction of skilled assistants, but no definite arrangements were made regarding this. Underwriters also expressed much satisfaction with the statements submitted regarding the Association's plans and its actually achieved results. Only one difference remained and that was the proposal that a preferred list of a few fleets, deemed entitled to a lower premium rate on account of their good record, would be made by underwriters, and that it might not be possible to include any Canadian fleet in this list. The question was discussed at length but remained unsettled, the matter being one entirely



L. L. Henderson,
General Manager, Montreal Transportation Co.,
and President, Dominion Marine Association.

within the underwriters' discretion and to be settled by the exercise of an arbitrary judgment.

Shortly after this, the desired recognition was given to the Canadian Association, the announcement as to rates for 1912 being as follows:—1. Values reduced from £11 or \$53.50 a ton to £10 $\frac{1}{2}$ or \$51. 2. A rate of $5\frac{3}{4}\%$ pro rata agreed to. 3. A list of preferred fleets to be entitled to a rate of $5\frac{1}{4}\%$ pro rata. 4. All vessels attaching on and after Aug. 1, $\frac{1}{2}\%$ additional. All vessels attaching on and after Oct. 1, 1% additional. 5. An additional rate of $\frac{1}{2}\%$ to be charged on all boats not entered in the Great Lakes Protective Association or Canadian Lake Protective Association. 6. An agreed policy to be used as in previous years. 7. Protection and indemnity clause:—To consult and agree with London underwriters as to form for clause in view of recent workmen's compensation acts.

This was a distinct step in advance and was especially satisfactory, in that it estimated membership in this Association as sufficiently important from an underwriting point of view to justify at the outset the maintenance of the same preference as had prevailed in the case of the Great Lakes Protective Association. It is true that the preferred list referred to above did not include any Canadian fleets. It is also understood that no examination of the records of individual Canadian fleets was made with a view to classifying them. Nevertheless, it was stated that this question could be taken up in 1913, and while the Association as a body cannot single out any fleet for preferential treatment, it will doubtless be proper for any individual member to advance any claims he may have for special consideration. It is possible that losses experienced this year by fleets in the preferred list of U.S. tonnage may have some bearing on the consideration of proposals for an extension of this plan.

Towards the close of the season suggestions were made by the Dominion Government for the extension of the period of navigation to Dec. 31, and after some correspondence, in which it was pointed out to the authorities that the extension was dependent upon underwriters, representatives of the Government attended a joint meeting of the Committees of the Dominion Marine Association and of your Association in Toronto during November, when it was agreed that vessel owners would make use of any assistance given by the Government in maintaining aids and breaking ice provided insurance cover could be obtained. It was not possible to do anything with certainty until Nov. 14, when the following extensions were announced by underwriters:—

"Warranted by the assured that loading of cargo is completed prior to midnight, Dec. 4, 1912. Chicago time.

"Warranted vessel sails prior to midnight, Dec. 5, 1912. Chicago time; also warranted not to abandon except in case of actual total loss.

"We reserve the right to withdraw this offer on written notice to you but without prejudice to any actual charters which have been made and have been reported to us in writing prior to our sending such notice.

"Rate, 1% not below Lake Erie.

"Lay up trips on one lake only to $\frac{1}{4}$ of 1% sailing prior to midnight, Dec. 5, 1912, Chicago time."

On Nov. 22 the extension privileges were extended as far as Ogdensburg at an extra rate of $\frac{3}{8}\%$, and early in December the loading and sailing dates were extended to Dec. 7 and 8 respectively, at a rate of $\frac{1}{2}\%$ additional to the 1% above mentioned. It is noteworthy that no casualties of any moment occurred under the extended insurance.

Your committee has held regular monthly meetings, and early in the season resolved that a complete record of the casualty reports dealt with at each meeting should be published in a bulletin which should circulate among all members of the Association and all masters of enrolled vessels. These bulletins have been regularly issued each month, and if preserved by members will provide a complete record of the casualties which are reported. One master has filed a protest against the bulletin, but

your committee, after due consideration, has resolved to continue the publication of this record, believing that it will assist materially in advancing the Association's policy. An indexed record is kept by the Association in a book, which shows under the name of each master the names of vessels on which he has been employed, the casualties in which he has been involved, and the action taken by the committee in each case. This book is open for inspection at any time, and members can be provided with an extract regarding any master on application therefor. A similar record is kept regarding engineers, and it has recently been resolved that complaints of owners regarding the use of intoxicants by masters or engineers should be noted so that the information will always be available. This decision was made after the submission to the Department of Marine of a complaint regarding an engineer dismissed for drunkenness. The Association was informed that an official investigation would be held if desired with a view to dealing with the man's certificate, but the suggestion was made that possibly the Association's records would serve the desired purpose if members would report complaints freely, and also enquire carefully before engaging men.

The load draught has been watched throughout the season and your committee has been constantly in touch with canal superintendents, although on account of the higher water which has prevailed complaints of overloading have been much less frequent than in 1911. The recommended draught at Sault Ste. Marie Canadian Canal has been fairly observed and no resort to penalties has been necessary. On the St. Lawrence, early in the season, the imposition of fines was threatened, and the Superintendent's action was commended and endorsed by circular letter from your committee to all owners and masters, with good results.

Circulars have been issued regarding the method of mooring in canals, the obligation to keep the reversing engines at all times in commission, and various other matters which have been brought directly to your committee's notice by casualties which proved the necessity for better observance of precautions against accident.

A number of accidents due to the breaking of canal gates in the Welland, the Cornwall and the Lachine canals, have convinced your committee of the urgent need of installation of some device to assist lock gates to withstand water pressure when forced slightly out of mitre. The Gowan safety device was demonstrated to your committee, and the Department of Railways and Canals was asked by your committee to make provision as promptly as possible for the installation of some such simple affair on all lock gates. Experiments are now being made, and it is expected that an approved device will be adopted in the near future. Your committee believe that the recommendation should be urgently pressed, and that serious accidents of this nature, which are not always entirely attributable to faults in navigation, will be avoided by the adoption of the protection asked for.

Your committee has also dealt with the question of inattention on the part of bridge tenders on canal bridges, by reason of which a number of avoidable accidents have occurred, and at the instance of the Association, after a number of cases had been reported fully to the Department of Railways and Canals, instructions were given by the Department to all bridge tenders requiring them to respond promptly to whistle signals. At present the Department does not contemplate any change in the canal rule requiring the vessel to stop if a bridge is not open, and the prima facie responsibility for accident therefore remains

upon the vessel.

Throughout the year your committee has followed closely the adopted plan of dealing with all casualties. Reports have been regularly considered, and masters known to be in default in reporting have been re-



James Carruthers,
President, Richelieu and Ontario Navigation
Company.

quired to furnish the necessary detailed information. The records of the committee's work, therefore, furnish an accurate review of the season's casualties. The records show one total loss, this time in the St. Lawrence River, the Keystorm striking in sud-



James Playfair,
Vice President and Managing Director, Richelieu
and Ontario Navigation Co.

den fog and rapidly sinking in deep water near the Sister Islands light. The master was censured by your committee, an official wreck investigation was held, and the master's certificate was suspended for 12

months from Nov. 1, 1912. The certificate of the mate, during whose watch the accident occurred, was also suspended for 24 months from the same date. In addition to this there were three strandings of varying importance. In one case the Leafield was run up on Beausoliel Island by her master, under exceptional circumstances which induced the committee to exonerate him from blame. The other two cases were the Empress of Midland, near Cabot Head in Georgian Bay, and the Rosedale at Detour Point. In both of these instances the committee censured the masters and asked for official wreck investigations, which the Wreck Commissioner proposes to hold while navigation is closed this winter.

Lock gates were broken in three or four instances, but in at least three cases the accidents were due to vessels not enrolled in this Association. In the case of the steamboat Nevada, of this Association, the committee realized that the current at the foot of the lock in question was a contributing cause, but nevertheless censured the master for permitting his ship to approach the gates at excessive speed. The other casualties were on the whole of minor importance. Although there were 19 groundings, many of them had no appreciable results, and very few contributed materially to the season's losses. The same may be said of the collision, the number of these being entirely disproportionate to the small extent of damages occasioned. Twelve of the 27 were casual contacts of vessels in crowded harbors, and 10 of the collisions were in the canals, where heavy damage was not possible. None of the other casualties reported were serious. On the whole, claims upon underwriters will undoubtedly compare very favorably in amount with the records of previous years and probably show a substantial decrease. But for the one regrettable total loss, the total of claims would be comparatively light.

Seven masters have been censured by the committee during the year; one of these on three separate occasions. With respect to that one, an official wreck investigation is also arranged for and will be held shortly. One engineer has been censured for causes contributing to a collision, and another for intoxication. One pilot on the Upper St. Lawrence and one Bay of Quinte pilot have had votes of censure recorded against them, and an official investigation is pending regarding two groundings of the Mapleton in Montreal Harbor when in charge of a branch pilot.

The recognition and the preferential rates given to this Association by underwriters place the organization on a secure footing and bring into membership practically all the tonnage intended. Apparently only one Canadian vessel still relies exclusively upon the Great Lakes Protective Association for the benefits enjoyed.

Reference must be made to the sympathetic attitude of the Dominion Government towards a proposal for the establishment of a Canadian Lloyds. The proposition originated with reference to the lower St. Lawrence, but has been extended to include shipping on the Great Lakes, and an official of one of the departments has been deputed to give it special attention. Statistics are being compiled and various plans for working out underwriting assistance are under consideration. It is quite possible that during 1913 this Association may have an opportunity to consider plans for some new insurance undertaking calculated to give relief from present conditions.

ANALYSIS OF ACCIDENTS, 1912.

Strandings	4
Groundings	19
Collisions	27
Striking locks or gates	7
Striking bridges, docks, piers, harbors and channel banks	11

Propeller wheel broken	5
Rudder broken	1
Damaged machinery	2
Stress of weather, unnecessarily reported	3
Damaged by breaking of lock gates by another vessel	1
Broke anchor flukes attempting to stop vessel when making landing	1
Lightning	1
Fire	1
Total	83

The foregoing report was fully considered and unanimously adopted.

The following committee of management was elected for the current year:—L. Henderson, C. A. Jaques, Montreal; S. Crangle, J. T. Mathews, J. W. Norcross, F. Plummer, Toronto; Jas. Playfair, Midland, Ont.; H. H. Gildersleeve, Sarnia, Ont.

The meeting was addressed by R. J. Dale, of Montreal, who outlined a proposal that members should agree to carry a definite percentage of their insurance risks by some form of mutual undertaking which Dale & Co. would be ready to arrange and supervise. Alternative methods of working out the proposal were discussed. Messrs. Prime and Sexton, representing United States underwriters, also addressed the meeting, and after a short discussion regarding the practicability and advisability of any of the arrangements mentioned and a brief argument by A. A. Wright, based on the experience of his own company, the question dropped without any action by the meeting.

The Loss of the s.s. Oscar.

Following is a summary of the judgment delivered at Victoria, B.C., by Capt. G. E. L. Robertson, and assented to by A. H. Reed, H. Carmichael and C. A. Wardill, as assessors, in the investigation of the destruction of the s.s. Oscar, owned by the Steamship Oscar, Ltd., Victoria, by the detonation of its cargo of explosives in Nanaimo harbor, Jan. 15.

The explosion occurring on the southeast side of Protection Island, was outside Nanaimo harbor, and in the waters of British Columbia. None of the existing regulations in the Canada Shipping Act, or in the rules and regulations for the government of Pacific Coast harbors in Canada, were broken, and the court advises the Minister of Marine to give the fullest consideration to the question of handling, stowing and transporting explosives in vessels sailing from or arriving at any port in the Dominion, and to make such regulations as would lessen the risk of explosions. The court has no evidence as to the origin of the fire, and no negligence is attributed to the master or any member of the crew, and it expresses its appreciation of the bravery of the master under the trying circumstances.

The Oscar was built at Victoria in 1897, her dimensions being, length 81 ft., breadth 21 ft., depth 7 ft., tonnage 95 gross, 61 register, and she was screw driven with engine of 8 n.h.p. Since this enquiry was held, the regulations governing the management of public harbors, have been amended, giving the harbor master power to control vessels loaded with explosive materials, and providing penalties for disobedience. Details of these regulations are given elsewhere in this issue.

The Ocean Freight Line, Ltd., has been incorporated under the Dominion Companies Act, with \$100,000 capital, and office at Toronto, to carry on a general navigation business. The company owns the s.s. Moldgaard. The President of the company is T. K. Seward, New York, the local provisional directors being R. H. Parmenter, A. J. Thomson, W. S. Morlock and N. B. Wormwith, Toronto.

Regulations for Operating Swing Span of Railway Bridge Over Fraser River.

The regulations governing the operation of the swing span of the railway bridge across the Fraser River at New Westmin-



H. H. Gildersleeve,
Manager, Western Lines, Richelieu and Ontario
Navigation Co.

ster, were recently authorized by the Board of Railway Commissioners, on the application of the Minister of Railways for British Columbia. Following is a summary of the chief points of the order:

The operation of the pivotal or swing span shall be under the direct control of the



T. Henry,
Manager, Eastern Lines, Richelieu and Ontario
Navigation Co.

Bridge Superintendent, and it shall be opened only for the passage, up and down, of such vessels as cannot, by the adoption of a hinge, or similar device, lower their smokestacks, flagstaves, or other similar erections and pass under the bridge. The span shall be opened with the least possible delay after receiving three long blasts

from the vessel's whistle, excepting when there is a train actually within the home signals of the interlocking system, or in motion toward the bridge between the distant and home signals, and then not till after the train is clear of the home signals at the opposite end of the bridge, provided, however, that when two trains are approaching the bridge within the distant signals, when the vessel's signal is given, a train of the superior class shall have preference, and shall be permitted to cross the bridge, the inferior train being held until the vessel giving the approach signal shall have passed, and the bridge is again closed. A double arm semaphore signal shall be provided on the top of the swing span, with lamp for signalling by night, the signal for the bridge being closed will show the semaphore arms at right angles to the pole, and at night, a red light, and the signal for the bridge being open will show the semaphore arms in the upper quadrant, that is, in a vertical position, during the day, and a green light at night. During foggy weather on receipt of a vessel's signal on the bridge, a fog horn will be sounded, two long blasts and repeated at intervals of 10 seconds, when the bridge is closed, and three long blasts, repeated at similar intervals, until the vessel has cleared the bridge, when the span is open. Any failure to comply with the regulations will be sufficient cause for the refusal to open the span, but the master of any vessel may make a protest in writing to the Bridge Superintendent, who will refer it to the harbor master, who together shall consider the matter and give a decision within one week, but in the meantime, the bridge shall be opened to allow the vessel to pass. Notwithstanding any of these regulations, the bridge tender may, in his discretion, direct traffic, either across the bridge, or on the water, through the bridge, and no vessel shall attempt to pass the bridge until the bridge tender shall give the necessary clear signal. An automatic gauge shall be maintained at each end of the swing span, so that it may be seen from any vessel approaching the bridge, indicating at all stages of the tide, the clearance between the level of the water and the underside of the lowest member of the structure. During foggy weather, a fog signal shall be sounded continuously, from the bridge, the sound being distinct from the other signals indicating the position of the swing span, before mentioned.

A system has been worked out in Germany, which it is hoped will, at any rate, minimize erosion in canals caused by the wash from vessels passing through. The canals are built with the bottoms sloping toward the centre, and the vessels are built with twin propellers and two rudders. The effect on erosion has been demonstrated to be considerable, and in addition it has also been shown that the minimum wearing effect of the propellers is reached when they are revolved in opposite directions to each other, the number of revolutions for the same speed being about 15% less, than when revolved in the same direction as each other.

The Montreal Warehousing Co. is reported to be considering the question of replacing its elevator at the foot of Colborne St., Montreal, with an up-to-date structure of greater capacity, in order to cope with the increased grain requirements of the port.

Two fatal, and 14 non fatal accidents were reported during January in connection with the navigation of Canadian waters. Of the fatalities, one employe was drowned in the sinking of a vessel, and another was killed by being struck by a swinging sling of hoisted goods.

The Richelieu and Ontario Navigation Co.'s Reorganization.

Following on the changes in the directorate made at the recent annual meeting, as announced in Canadian Railway and Marine World, for March, the company's vessels have been separated into divisions, as follows:—

EASTERN DIVISION, covering the operation of the steamboats Beaupre, Belleville, Berthier, Boucherville, Longueuil, Montreal, Murray Bay, Pandora (tug), Quebec, Rapids King, Rapids Prince, Rapids Queen, St. Irene, Saguenay, Tadousac and Three Rivers, all formerly owned by the R. & O.N. Co.

THOUSAND ISLAND AND ST. LAWRENCE DIVISION, covering the operation of the steamboats America, Jessie Bain and Pierrepont, formerly owned by the St. Lawrence River Steamboat Co., and the steamships New Island Wanderer, Newsboy, Ramona, St. Lawrence and Thousand Islander, formerly owned by the Thousand Island Steamboat Co.

WESTERN DIVISION, covering the operation of the steamboats Kingston, Rochester and Toronto, formerly owned by the R. & O.N. Co.

NIAGARA-TORONTO DIVISION, covering the operation of the steamboats Cayuga, Chicora, Chippewa, Corona and Ongiara, formerly owned by the Niagara Navigation Co.

HAMILTON DIVISION, covering the operation of the steamships Macassa and Modjeska, formerly owned by the Hamilton Steamboat Co., and the steamship Turbinia, formerly owned by the Turbine Steamship Co., both of which companies were absorbed into the Niagara Navigation Co.

The vessels owned and operated by the Inland Lines, Ltd., and the Northern Navigation Co., will be operated as heretofore, each company maintaining its own organization under the central management. The following appointments have been made:—

JAMES PLAYFAIR, Vice President, has also been appointed Managing Director. Office, Montreal.

J. R. BINNING, one of the directors, has been elected Chairman of the Executive.

C. J. SMITH, General Manager, having resigned, that position has been abolished.

J. I. HOBSON, heretofore Treasurer, Inland Lines, Ltd., Hamilton, Ont., has been appointed Comptroller and Treasurer R. & O.N. Co., vice J. A. Villeneuve. Office, Montreal.

F. P. SMITH has been reappointed Secretary. Office, Montreal.

H. H. GILDERSLEEVE, heretofore Manager, Northern Navigation Co., Sarnia, Ont., has been appointed Manager, Western Lines, R. & O.N. Co. Office, Toronto.

T. HENRY, heretofore Traffic Manager, has been appointed Manager, Eastern Lines. Office, Montreal.

GILBERT JOHNSTON has been reappointed Mechanical Superintendent. Office, Montreal.

L. A. W. DOHERTY, heretofore Traffic Manager, Inland Lines, Ltd., Hamilton, Ont., has been appointed Freight Traffic Manager, R. & N.O. Co. Office, Toronto.

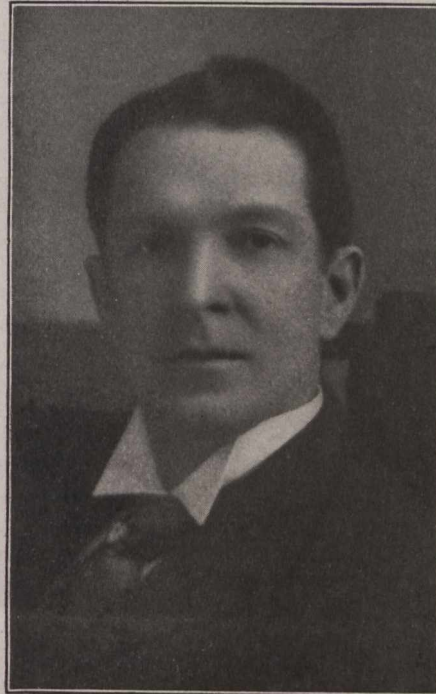
H. FOSTER CHAFFEE, heretofore General Passenger Agent, Western Lines, Toronto, has been appointed Passenger Traffic Manager. Office, Montreal.

J. F. PIERCE, heretofore Travelling Passenger Agent, Boston, Mass., has been appointed Assistant General Passenger Agent and General Baggage Agent. Office, Montreal.

G. PUJOS has been reappointed Excursion

Agent in charge of Ticket Department. Office, Montreal.

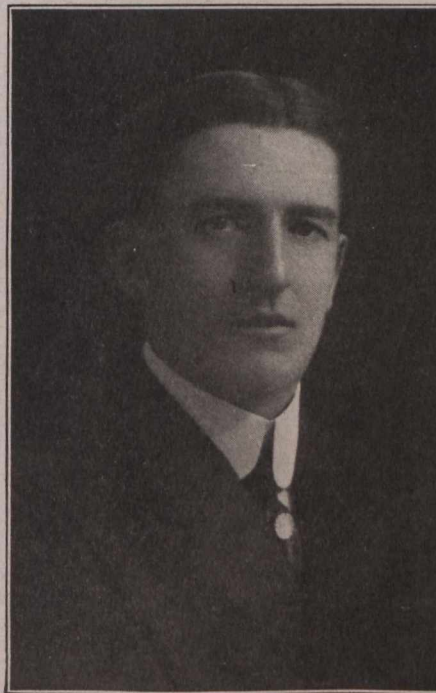
J. V. FOY has been reappointed District Passenger Agent, Territory, Kingston and west in Canada, Michigan, Illinois and the Northwestern States. Office, Toronto.



H. Foster Chaffee,
Passenger Traffic Manager, Richelieu and Ontario
Navigation Co.

H. D. PATERSON, heretofore Travelling Passenger Agent, Toronto, has been appointed General Agent, Passenger Department. Office, Toronto.

S. J. MURPHY, heretofore Excursion Agent, Niagara Navigation Co., Toronto,



L. A. W. Doherty,
Freight Traffic Manager, Richelieu and Ontario
Navigation Co.

has been appointed Travelling Passenger Agent and Excursion Agent, with jurisdiction over all excursion business for Niagara Navigation Co. Office, Toronto.

J. F. DOLAN, heretofore City Passenger

Agent, Montreal, has been appointed District Passenger Agent, Boston, Mass., vice H. D. Paterson, promoted. Territory, Montreal and east in Canada, and the New England States.

J. W. CANVIN has been reappointed District Passenger Agent, Alexandria Bay, N.Y. Territory, Montreal to Kingston in Canada, New York State east to Rochester, Eastern Pennsylvania and the Atlantic seaboard.

W. F. CLONEY, heretofore District Passenger Agent, Rochester, N.Y., has been appointed District Passenger Agent, Buffalo, N.Y. Territory, Rochester and west in New York State, Western Pennsylvania, Central and Southern United States.

J. V. O'DONAHOE, heretofore Manager's Assistant; **A. ANGSTROM**, Naval Architect, and **J. E. COOKSON**, Baggage and Claims Agent, are reported to have resigned.

NORTHERN NAVIGATION CO.—**PETER PATON**, heretofore Assistant to the President, has been appointed Manager, vice H. H. Gildersleeve, transferred to R. & N. Co. service. Office, Sarnia, Ont.

C. A. MACDONALD continues as Assistant Manager and Treasurer. Office, Collingwood, Ont.

E. W. HOLTON, heretofore Eastern Passenger Agent, has been appointed General Passenger Agent. Office, Sarnia, Ont.

R. V. ROBINSON, heretofore Eastern Freight Agent, has been appointed General Freight Agent, in charge of Freight Traffic and Claims. Office, Sarnia, Ont.

W. J. McCORMACK, heretofore Agent at Sarnia, Ont., has been appointed Superintendent, with jurisdiction over Sarnia terminals and operation of Lake Superior vessels. Office, Sarnia, Ont.

The President, **Jas. Carruthers**, has issued a circular recalling all annual passes for 1913 issued by the former management, stating that on their return new passes bearing authorized signature will be issued in lieu of them, and that only annual passes bearing the written signature of the President, or the Vice President and Managing Director, will be honored. Another circular by the President says: "The officer authorized to issue or request annual or trip transportation on account of this company is **Jas. Carruthers**, President. The officer authorized to countersign annual transportation, or requests for same, is **Jas. Playfair**, Vice President and Managing Director. The officers authorized to countersign trip transportation, or requests for same, are **Jas. Playfair**, Vice President and Managing Director; **H. H. Gildersleeve**, Manager Western Lines; **T. Henry**, Manager Eastern Lines, and **F. P. Smith**, Secretary. All annual and trip transportation will be requested by and issued from this office."

The Nova Scotia Steel and Coal Co. has the following vessels under charter for the present season; half of these vessels will be used in the coal trade, and the remainder in the foreign ore trade:—August, 9,300 tons; Beatrice, 940 tons; Gladstone, 7,950 tons; Jethou, 7,080 tons; Othello, 6,360 tons; Tellus, 13,000 tons; Themis, 13,000 tons; Victoria, 1,300 tons; Wacousta, 5,650 tons; Wagama, 8,000 tons; Wascana, 8,000 tons; Wasis, 580 tons.

The Superior Sand and Towing Co., recently incorporated at Fort William, has acquired the steam tug Bennett, which will be operated during the season with the scow Derry. The equipment will be increased as the business demands.

The Department of Naval Service is considering the erection of wireless telegraph stations at Pas, Man., and the proposed terminus of the Dominion Government railway on Hudson Bay.

Proposed Dyke in Livingstone Channel, Detroit River.

The report of the Dominion Marine Association's executive committee, presented at the annual meeting recently, contained the following reference to the Livingstone channel: "This great work which has been in process of building for many years was completed for navigation during the past season. It has been arranged that only downbound vessels shall use this channel, upbound boats continuing to use the old channel along the Amherstburg shore. The engineers of both governments have for some time had under consideration the building of a dyke across the section of the river between the head of Bois Blanc Island and the eastern foot of the cofferdam used in the construction of the Livingstone cut, their purpose being to remove in this way the cross current now flowing through this section of the river into the lower part of the new channel. Objection is made that the current in the Amherstburg channel will be much increased and that other unknown effects will follow. The Department of Public Works, as well as the Chief of the Hydrographic Survey, have through this Association asked for the opinions of Canadian masters of vessels on this question and efforts have been made to procure information. It appears that the current in question does not materially affect the smaller boats but that it is a serious matter to the larger vessels. On the other hand, the effect of the dyke in the old channel is much feared and no Canadian master has definitely advocated the proposal as yet. In view of the doubt, the International Joint Commission, after examining the site, has agreed to hold a public session at Detroit in February, and it is proposed that this Association be represented and produce expert evidence on that occasion.

"The enquiry has so far developed a general expression of opinion from masters of vessels of both countries strongly opposed to the present method of lighting the new channel, on the ground that it is not possible to maintain a straight course with certainty on the 'blinking' or occulting lights now in use.

"Early in the season a request was made by the American Association of Passenger Steamboat Lines that special privileges as to the choice of these channels should be extended to passenger steamers, and the Dominion Marine Association was asked to endorse this request. Your committee declined to accede to the request believing that a general rule should be strictly enforced regarding upbound and downbound vessels."

The matter came before the International Joint Commission, at Detroit, Mich., Feb. 14, when evidence was presented for and against the proposal. Counsel for the United States Government put in the evidence of Col. Patrick and other members of the corps of engineers in charge of the district who made the plans of the proposed dyke. He also put in the evidence of masters for some of the largest U. S. steamboats and the evidence of the chairman of the committee on aids to navigation of the Lake Carriers Association. W. Livingstone, President of that Association, also gave his views. All of these persons advocated the building of the dyke, and expressed fear of the cross current now flowing in the Livingstone channel. On the other hand, F. King, Counsel, Dominion Marine Association, put in the box the masters of three of the largest Canadian lake vessels, the Emperor, the E. B. Osler,

and the W. D. Matthews, all of whom stated that the dyke was not a necessity, that they did not fear the cross current now flowing in the Livingstone channel, but that they did fear to some extent the possible consequences of new currents to be developed by the dyke. Experts for the Dominion Government gave evidence closely agreeing with that of the experts for the United States Government Corps, but differing as to the advisability of building the dam until the Chicago Drainage Canal question is settled, and contending that it is inadvisable to interfere with levels or build compensating works until the withdrawal of water at Chicago is confined to proper limits now authorized by Federal authority.

Mr. King, in addressing the commission, made it clear that the opposition of the Dominion Marine Association was not based on any local considerations; neither was it its desire to show the slightest lack of appreciation of the good work being done by the U. S. government in the improvement of navigation on the Detroit River. The association felt, however, that it would be a fatal mistake to follow a piecemeal policy



Peter Paton,
Manager, Northern Navigation Co.

in the development of international waters. Mr. King showed that the masters of vessels navigating the river were largely of the opinion that the cross currents did not create such a dangerous condition as to make the construction of a dyke necessary. As to the necessity of the dyke to compensate for the lowering of the water by the Livingstone channel, he represented very strongly that this question could not properly be considered without taking into account other factors affecting the levels of the Great Lakes, and connecting waterways, notably the unauthorized diversion of water for the sanitary canal at Chicago, the effect of which was to more than counteract any advantage that might be derived from the proposed dam.

The Commission reserved its decision.

The Union Steamship Co.'s s.s. Cheslakee, which is being overhauled and repaired at Esquimalt, after her recent accident at Texada Island, is being converted into an oil burner. She is also being lengthened by 19.3 ft.

A Ship Captain's Responsibility When a Pilot is on Board.

In Canadian Railway and Marine World for February, some comment was made in connection with various criticisms of recent judgments by the Dominion Wreck Commissioner, on the question of the responsibility of a steamship's captain during the period when a pilot was on board, and the Wreck Commissioner's opinion, and the section of the Pilotage Act, governing this point, were quoted.

This matter was dealt with during the course of the enquiry into the St. Lawrence pilotage system, at Montreal, early in March, and C. Anger, one of the pilots, in response to a question, stated that he considered himself, when on board, in full charge of the navigation of the vessel, though he made no claim to interfere with the master in any other department, and gave an instance, which occurred in the St. Lawrence some years ago when he was piloting a vessel, when he gave orders to anchor the vessel during the night, the captain insisting that he should proceed to Quebec, and ordering that the anchor be raised. This order the pilot countermanded, absolutely declining to take the vessel further that night. For this, he stated, he was commended by the head of the line, and requested in future to report any captain who attempted to interfere with his navigation between Montreal and Quebec.

T. Robb, one of the commissioners, stated that the commissioners' understanding of the law is that pilotage is voluntary, so the pilot is only on board in an advisory capacity, and the captain is the person responsible, the pilot merely giving him the benefit of his local experience.

In response to other questions, Pilot Anger, said that if he were drunk or otherwise incapable, the captain would have the right to order him off the bridge and take charge himself, but if a captain refused to allow his orders to be carried out, he would leave the bridge of his own accord and leave the responsibility with the captain.

From the point of view of those officially connected with navigation interests, it is contended that pilotage is voluntary on the captain's part, that he is in full charge at all times, and that for all practical purposes, this matter is settled by secs. 473 and 474 of the Canada Shipping Act, which read as follows:—

"473. No owner or master of any ship shall, in any case, be compelled to employ or to give his ship into the charge of a pilot, either on the ground of his being compelled to pay pilotage duties to any person, or otherwise."

"474. Nothing in this part shall exempt any owner or master of any ship from liability for any loss or damage occasioned by his ship to any person or property, on the ground of either such ship being in the charge of a licensed pilot, or of such loss or damage being occasioned by the act or default of a licensed pilot, or on any other grounds."

So far as lake navigation is concerned, captains are definitely instructed on this point, that they are at all times in charge of the vessel, and responsible for anything that may occur in the course of navigation, and that they should be on the bridge when navigating in difficult waters, and making lock passages. When such vessels enter Montreal harbor, they come under the pilotage authority, and must pay pilotage dues, whether they take a pilot or not, a provision that the Dominion Marine Association is strongly opposed to.

We are informed that it is not known that the question of a captain's responsibility with a pilot on board has ever been considered in a Canadian court.

Winter Storage of Grain in U. S. Vessels at Port Arthur and Fort William.

F. King, Counsel, Dominion Marine Association, Kingston, Ont., went to Winnipeg in the middle of February to meet the Dominion Grain Commission with reference to the coasting laws and the winter storage of grain in United States vessels at Port Arthur and Fort William, Ont. The Commission has now definitely stated that the construction to be placed upon the concessions granted in favor of U. S. vessels at the close of Nov., 1912, should apply only to vessels loaded after Dec. 10, and as to which no original charter had been made prior to Nov. 29. The intention of the concessions was to bring in more tonnage for storage, so that there is no logical reason for construing the concessions in favor of vessels which were already under charter on Nov. 29. It is said that no cancellation of such charters and making of new charters will suffice to bring such vessels under the terms of the privileges granted.

Incidentally the Lake Shippers Clearance Association came under review by the Commission, and a brief statement was made of the difficulties between that Association and the Dominion Marine Association. The Commission agreed to hold a session in the East on its return from Vancouver to hear from individual vessel owners just what they have to say.

Coal vs. Oil as Fuel on Steamships.

The following report by G. W. Dickie, and published in the Vancouver Province, on the comparative costs of coal and oil as fuel on two of the C.P.R. British Columbia Coast Service steamships, is of interest, in view of the number of vessels which have recently been built to consume liquid fuel, or have been changed so that either of the two fuels may be used. The costs of coal and oil for the s.s. Princess Victoria are given as follows:—

Coal.		Per day.
100 tons at \$4.50		\$450.00
9 firemen at \$55 a month each		16.50
9 trimmers at \$45 a month each		13.50
Food for 18 men		7.56
Total		\$487.56
Oil.		
344.17 barrels, at 90c		\$314.25
6 firemen		11.10
Food for 6 men		2.52
Total		\$327.87

The costs for the s.s. Princess Charlotte, a larger vessel and of greater horse power, are as follows:—

Coal.		Per day.
100 tons at \$4.50		\$450.00
13 firemen at \$55 a month each		23.80
10 trimmers at \$45 a month each		15.00
Food for 23 men		9.56
Total		\$498.36
Oil.		
344.17 barrels at 90c		\$314.25
6 firemen		11.10
Food for 6 men		2.52
Total		\$327.87

Canadian Marine Casualties in 1912.—In response to question in the House of Commons recently respecting casualties to Canadian shipping at sea and on the inland waters, the Minister of Marine stated that during 1912, there were 104 casualties at sea, and 4 on inland waters, to sailing vessels, connected with which 12 lives were lost at sea and none inland; and there were 52 casualties at sea and 30 inland, to steam vessels, in connection with which 2 lives were lost at sea, and 14 inland.

The St. Lawrence Pilotage Investigation.

The investigation into matters concerning the pilotage of the St. Lawrence, for which the Government recently appointed Commander H. St. G. Lindsay, Dominion Wreck Commissioner; T. Robb, Manager and Secretary, Shipping Federation of Canada, and A. Lachance, Chairman, Quebec Pilotage Commission, as a commission, was concluded at Quebec, Mar. 11. Sittings had been held at Montreal and Quebec, and considerable evidence from those connected with various shipping interests, as well as from pilots, was taken.

The chief point of discussion towards the end of the enquiry, appeared to be whether the Corporation of Pilots should be abolished, and as to the control of pilots generally, it being contended that the authority presumed to be invested in the Minister of Marine, was largely offset by the powers granted to the Corporation of Pilots by charter. This, it was suggested, might be overcome to some extent by placing the pilots under a salaried officer of the Department of Marine. It was also pointed out that the Corporation was, apparently, governed by two sets of bylaws and rules, and there was considerable conflict under what was in reality a dual control. Other matters taken up were, the apprentice system, the double language qualification, sight tests, and age limit for service.

On the question of dual control, it was contended on behalf of the pilots, that there was no such dual control, as the Canada Shipping Act made it plain that the control lay with the Department of Marine. This was, however, controverted.

Prior to 1903, the pilotage authority for the pilotage district of Montreal, was the Montreal Harbor Commission, but in that year it ceased to be the authority, all the powers with which it was vested under either the Pilotage Act, or the Montreal Harbor Commissioners Act, being transferred to the Minister of Marine. In 1905, the powers vested in the Quebec Harbor Commissioners, as the pilotage authority for the pilotage district of Quebec, were transferred to the Minister of Marine, with

the exception that the Minister was not authorized to sit as a tribunal for the trial of offences of which pilots may be accused before the pilotage authority, except in any cases not provided for in the Shipping Casualties Act of 1901.

Dominion Government Lighthouse and Buoy Steamship Estevan.

The steamship Estevan, which was recently built at Collingwood, Ont., for the Dominion Government lighthouse and buoy service on the British Columbia coast, arrived at Victoria, B.C., Mar. 4. The voyage of about 17,000 miles was commenced Nov. 4, 1912, and was completed without accident of any kind.

The vessel is built of steel, to be equal to class 100 A1 at Lloyd's, with double bottom from peak to peak, with water ballast, and divided into seven water tight bulkheads, and the general construction has been arranged to make the vessel suitable for navigation through 12 in. ice, if necessary. There are four decks, and the general equipment includes electric light, with 25,000 c.p. searchlight, 2 surf boats, captain's dinghy, one steam launch, boat hoisting winch, a five barrelled 20 ton, and 2 two ton, double barrelled steam winches and wireless telegraph equipment.

The propelling machinery consists of two sets of inverted, vertical, direct acting, triple expansion, surface condensing engines, capable of developing sufficient horse power to make a speed of 12 knots an hour, running at 130 revs. a minute, supplied with steam by two cylindrical single ended boilers, at 180 lbs., and fitted with forced draught. The propellers are of the three bladed, built up type, and are arranged to turn outward when the vessel is going ahead. The approximate general dimensions are:—Length between perpendiculars, 200 ft.; moulded breadth, 38 ft.; depth, moulded to main deck, 10 ft.; depth to lower deck, 10 ft.; main to bridge deck, 7 ft. 11½ inches; mean loaded draught, 11½ ft., with deadweight capacity of 375 tons, and coal capacity of 269 tons.

LAKE GRAIN SHIPMENTS IN 1912.

The following statement, prepared by F. Symes, acting Grain Inspector at Fort William, Ont., shows the bushels of grain shipped from Fort William and Port Arthur, during the navigation season of 1912, from Apr. 23 to Dec. 17. The figures in each column after the period denote lbs.

	Wheat.	Oats.	Barley.	Flax.
Canadian Ports:—				
Collingwood	172,308.00	137,260.10		
Depot Harbor	2,644,658.00	783,647.03	142,601.00	62,539.36
Goderich	5,870,657.30	3,150,557.28	247,129.41	476,810.25
Kingston	6,065,185.30	4,156,755.14	508,452.18	243,502.12
Meaford	600,731.20	223,804.22		
Midland	882,689.40	879,551.09	82,621.18	
Montreal	9,542,565.50	4,682,230.07	330,366.03	384,346.06
Point Edward	1,651,837.00	598,864.24	81,951.24	61,429.12
Port Colborne	11,068,310.00	1,139,810.15	47,350.06	
Port McNicoll	5,957,731.10	2,830,276.19	403,512.33	132,285.13
Port Stanley	144,765.50	56,534.24		
Quebec		256,991.00		
Seaforth	5,000.00			
Silver Island	180.50			
Thorold	91,225.40			
Tiffin	8,787,155.30	2,421,025.05	1,034,019.46	17,335.40
	53,485,001.50	21,317,309.10	2,878,004.45	1,369,248.32
Foreign Ports:—				
Buffalo	35,584,307.10	2,297,188.01	1,473,871.24	5,271,762.07
Chicago	85,233.20			204,179.01
Duluth	85,529.20			433,703.50
Erie	3,090,020.50		84,867.27	611,868.16
Fairport	2,958,586.10			213,853.52
Port Huron	2,715,505.40	115,890.30	580,117.15	62,488.12
Toledo				156,516.47
	44,519,182.30	2,413,078.31	2,138,856.18	6,954,372.17
Totals	98,004,184.20	23,730,388.07	5,016,861.15	8,323,620.49
1911	56,756,440.40	16,344,401.25	1,600,331.46	3,090,718.04

Regulations Governing Canadian Public Harbors.

The regulations governing the management of public harbors have been amended by additional clauses, providing that the harbor master shall have power to direct where any vessel, loaded, or partially loaded with explosives, or inflammable or dangerous goods, shall anchor, or be moored, and to order the removal of any such vessel from any part of the harbor, to any other part, and subject to certain conditions, shall have power to direct where vessels may load or unload such goods, and precautions to be observed in handling. He shall also have power to decide whether any particular goods are dangerous, subject to appeal to the Minister of Marine, by any interested party who may be dissatisfied with the harbor master's decision. Penalties are provided for any disobedience of the harbor master's lawful orders issued under this regulation, being a fine not exceeding \$100, and for a continued disobedience, a further fine not exceeding \$10 for each 12 hours that such disobedience may continue.

Dominion Legislation Respecting Wireless Telegraphy on Vessels.

Canadian Railway and Marine World for March contained particulars of representations made by the Dominion Marine Association in connection with the bill, "An Act respecting Radiotelegraphy," which was introduced into the House of Commons by the Minister of Marine. As a result of the representations several changes were made. The most important clause is no. 4, which was amended and reported by the special committee as follows:—

From and after July 1, 1913, no passenger steamer, whether registered in Canada or not,—

(a) licensed to carry 50 or more persons, including passengers and crew, and going on any voyage which is or which includes a voyage of more than 200 nautical miles from one port or place to another port or place; or,

(b) licensed to carry 250 or more persons, including passengers and crew, and going on any voyage which is or which includes a voyage of more than 90 nautical miles from one port or place to another port or place; or,

(c) licensed to carry 500 or more persons, including passengers and crew, and going on any voyage which is or which includes a voyage of more than 20 nautical miles from one port or place to another port or place, shall leave or attempt to leave any Canadian port unless such steamer is equipped with an efficient radiotelegraph apparatus, in good working order, capable of transmitting and receiving messages over a distance of at least 100 nautical miles by night and by day, and in charge of a person fully qualified to take charge of and operate such apparatus.

2. The owner, master or other person in charge of any passenger steamer which leaves or attempts to leave any Canadian port contrary to the provisions of this section shall, on summary conviction, be liable to a fine not exceeding \$1,000 and costs, and such fine and costs shall constitute a lien upon such passenger steamer.

3. This section shall not apply to passenger steamers plying on the rivers of Canada, including the River St. Lawrence as far seaward as a line drawn from Father Point to Point Orient, or on the Northumberland Strait, or on the Georgian Bay, or on the lakes of Canada other than lakes

Ontario, Erie, Huron and Superior, and the provisions of paragraph (c) of subsection 1 of this section shall not apply to steamers making voyages on lakes Ontario, Erie, Huron and Superior, the regular route for which is not at any point more than seven miles from the shore.

4. This section shall not apply to steamers calling at Canadian ports solely for the purpose of obtaining bunker coal or provisions for the use of such steamer, or through stress of weather, or for repairs.

Canadian Notices to Mariners.

The Department of Marine has issued the following:—

37. Feb. 20. Quebec-Ontario, Ottawa River, Lake Timiskaming, lowering of water level during winter, caution.

38. Feb. 20. Ontario, River St. Lawrence, Lake St. Francis, Lancaster Bar light station, hand fog horn discontinued.

39. Feb. 20. Ontario, River St. Lawrence, Lake St. Francis, Lancaster light station, hand fog horn re-established.

40. Feb. 20. Ontario, Lake Ontario, east end, Little Cataraqui Bay, bearing of Portsmouth range lights.

41. Feb. 20. Ontario, St. Clair River, Corunna, change in position of front range lighthouse.

42. Feb. 20. Ontario, Lake Huron, north channel, Little Current, Spider Island, light improved.

43. Feb. 26. New Brunswick, south coast, Bay of Fundy, L'Etang harbor entrance, Pea Point lighthouse, change in color of light.

44. Feb. 26. New Brunswick, east coast, Northumberland Strait, Shediac Bay, Pointe du Chene, change in color of Shediac north channel range lights, change in color of Shediac harbor range lights.

45. Feb. 26. New Brunswick, east coast, Miramichi Bay, outer bar, can buoy replaced by bell buoy.

46. Feb. 26. Nova Scotia, southwest coast, position of Blonde Rock gas and whistling buoy, correction.

47. Feb. 26. Quebec, River St. Lawrence, Portneuf-en-bas, change in position of front range lighthouse.

48. Feb. 26. Quebec, River St. Lawrence, westward of St. Roch shoals, amended position of gas buoy 61B.

49. Mar. 10.—Ontario, Lake Superior, Thunder Bay, Port Arthur harbor, rearrangement and numbering of buoys.

50. Mar. 11.—Quebec, Ottawa River, chart of the eastern portion of the Lake of Two Mountains issued.

51. Mar. 11.—Ontario, Georgian Bay, chart Cape Hurd to Gull Island issued.

52. Mar. 11.—Revised supplement to Sailing Directions for the Great Lakes, Etc., published by the U.S. Hydrographic Office.

53. Mar. 14.—New Brunswick, Bay of Fundy, Grand Manan Island, entrance to Grand Harbor, Ox Head ledges, bell buoy to be established.

54. Mar. 14.—Nova Scotia, south coast, Beaver Harbor, Harbor Rock, buoy to be established.

55. Mar. 14.—Nova Scotia, Cape Breton Island, Gut of Canso, Point Tupper, light improved.

56. Mar. 14.—Nova Scotia, Cape Breton Island, Cape North light station, fog alarm building rebuilt.

57. Mar. 14.—Quebec, Saguenay River, rock eastward of Pointe Agonie, caution.

58. Mar. 14.—Ireland, west coast, Galway Bay, Inisheer Island light, alteration in character.

59. Mar. 14.—England, west coast, Trevoise Head, fog signal established.

Proposed Compulsory Radiotelegraphy for Coast Steamships.

At a recent meeting of the Victoria, B.C., Board of Trade, discussion took place on a proposal that vessels carrying more than 50 passengers, plying the northern waters of the B. C. coast, be compelled to instal a radiotelegraph system, and as a result, the matter was placed before the Minister of Marine in the form of a recommendation that it be incorporated in the bill respecting radiotelegraphy then being dealt with. The Minister has replied to the recommendation, to the effect that while acknowledging its merits, it was decided in view of existing legislation respecting compulsory equipment enacted by other countries and the undoubted hardship such provisions would impose on certain Canadian vessels financially unable to comply with same, it would not be advisable to include such an amendment at present, but the matter would be borne in mind when further legislation on this point became necessary.

Atlantic and Pacific Ocean Marine.

Furness, Withy and Co. announce that during the forthcoming St. Lawrence season they will augment their Canadian service.

R. B. Stoker, Managing Director, Manchester Liners, Ltd., Manchester, Eng., has also been elected Chairman of the Board, vice Lord Furness, deceased.

It is announced that the Cunard Thomson Line s.s. Andania will make her maiden voyage from Southampton to Quebec, sailing from the first named port June 12.

The British s.s. Evelyn, which was recently wrecked at the entrance to Louisburg harbor, N.S., has been sold to Brister and Sons, Halifax, for breaking up.

The Japanese s.s. Fukoko Maru recently loaded 6,600 tons of sacked Canadian wheat at Vancouver, B.C., for Yokohama. This is reported to be the first of a number of similar shipments to be made during this year from that port.

The hearing at Osaka, Japan, recently, of the causes leading to the collision of the C.P.R. s.s. Montegale, with the Japanese s.s. Jingu Maru, in Moji harbor, last July, resulted in the pilot of the Montegale being held responsible for the accident, and being severely reprimanded.

The Montreal Board of Trade has recommended the Dominion Government to establish a steamship service between Canada and the Argentine, making Montreal, Quebec, Halifax, and possibly Sydney the Canadian ports, and calling at Bahia, Santos, Rio de Janeiro and Buenos Ayres.

The C.P.R. s.s. Empress of Russia, which is scheduled to sail from Liverpool, Eng., on her maiden trip, will arrive at Vancouver, about June 7, and will take up her transpacific service, June 18, sailing direct for the Orient. The s.s. Empress of Asia will probably sail from Liverpool, about June 14, and arrive at Vancouver about Aug. 30. Both vessels will convey special parties of passengers who are making a trip round the world, entirely by the C.P.R.

The Austro-Americana Line, which is being inaugurated to operate a steamship line between Austrian and Canadian ports, is reported to have applied to the Austrian Government to be granted the same terms as those granted to the C.P.R. Press reports state that the profits or losses of the line will be divided among the members of the North Atlantic Conference, and that the emigrants carried on the Line's vessels will not be counted in its 4% pool quota.

Daily papers, early in March, gave currency to what purported to be a dispatch from London, Eng., concerning the reconstruction of the White Star s.s. Olympic with an inner shell, and stated "the nature of the work has thus far been kept secret." As a matter of fact, there has been really no secrecy about the matter, as official descriptions of the work appeared in Canadian Railway and Marine World some months ago.

The Montreal Chamber of Commerce has recorded its opposition to the proposed scheme for a fast short route between Great Britain and Canada, from the west coast of Ireland to a port in Labrador, chiefly on the ground of the transport difficulties involved. It was claimed that, if a new route were required, the shortest and most convenient route would be between Liverpool and Halifax, but the members themselves prefer that Montreal should be the port.

J. Thom, Passenger Traffic Manager, White Star-Dominion Line, Montreal, has also been appointed local agent of the Austro-Americana Line, which is to be run this season between Trieste, Austria and Canadian ports. It is stated that all vessels will call at Naples each way. The first sailing from Trieste was the Arabiana, which left Mar. 15 for Portland, Me., subsequent sailings being to Quebec and Montreal. The Arabiana has been secured on time charter from Furness, Withy and Co.

The Ulster Steamship Co., operating the Head Line, in its annual report, shows net earnings of £74,462 for the year ended Jan. 31. The net balance to the credit of profit and loss after paying interest, etc., is £69,594, from which £26,167 has been deducted for depreciation. Dividends for the year were 5% free of income tax, with a bonus of £1 a share, leaving £3,551 to be carried forward to the current year. A call of £1 a share was also made, this amount being payable with the bonus declared.

The Elder Dempster Co. will, it is reported, discontinue its service between Canada and Mexico on the expiry of the Mexican mail contract in April. The company has used its steamships Bornu and Sokoto in this service for some time, and it is probable that they will return to England at an early date. D. W. Campbell is reported to have stated that an increasing number of tramp vessels would be assigned to the company during the forthcoming season, and these would take care of the imports of asphalt, etc., from Mexico.

The Central Vermont Transportation Co.'s s.s. Narragansett was launched at Wilmington, Del., recently, and will shortly be followed by a sister vessel, named Manhattan. They are 336 ft. long and 63 ft. wide at the guards, with six decks, and accommodation for 700 first class passengers and 500 tons of express freight. They are of steel, with twin screws, and will be equipped with engines of 480 h.p., supplied with steam by three boilers, and have a gross tonnage of about 5,000. These vessels will ply between Providence, R.I., and New York.

It is announced that the C.P.R. trans-pacific steamship service, which will be put in operation on the arrival of the two new vessels, the Empress of Asia and the Empress of Russia, will be a fortnightly one, each of the vessels named making the round trip in two months, while the Empress of Japan, Empress of India and Montea-gle, will run in the intervals. Capt. Robinson, of the Empress of Japan, has been appointed to the command of the Empress of Asia, and W. D. Hopercroft, chief officer, has been promoted to the command of the Em-

press of Japan. Capt. Beetham, of the Empress of India, will command the Empress of Russia.

The sailing vessel Scotia is being equipped for patrolling the waters off the northeast coast of the continent, as the result of a recommendation of the Merchant Shipping Advisory Committee, with a view to observing the movements of ice during its southward flow. The vessel will have a wireless telegraph installation capable of communicating with the stations at Labrador and Newfoundland. It is anticipated that the stationing of this vessel in the ice region will contribute greatly to the safety of vessels using the North Atlantic routes, and prevent the possibility of such an accident as occurred to the s.s. Titanic last year, if the warnings of the proximity of ice are heeded by captains.

Maritime Provinces and Newfoundland.

T. Gilbert, at one time one of the leading shipowners of St. John, N.B., died there, Mar. 11, aged 92.

Dredging in Courtenay Bay, St. John, N.B., is to be resumed about Apr. 1, in connection with the large improvement works there, for which Norton Griffiths and Co. have the contract.

The Nova Scotia Steel and Coal Co. has secured the steamships Wagoma and Was-cama, under charter for 10 years, with the option of purchase. They have coal carrying capacity of 8,000 tons each.

Press reports from Fredericton, N.B., Mar. 18, stated that the Provincial Government had adopted the principle of granting financial aid to Norton Griffiths and Co., in connection with the development work at Courtenay Bay, St. John, for the establishment of a shipbuilding plant there.

Tenders for the construction of terminals at Carelton Point, P.E.I., are to be received by the Department of Railways and Canals, Apr. 1, and tenders for the construction of the terminals at Cape Tormentine, N.B., will be received to Apr. 15 in connection with the projected car ferry service to connect the Intercolonial Ry. with the Prince Edward Island Ry.

Province of Quebec Marine.

Capt. J. D. Weir has been appointed Superintendent of Construction and Lights, Department of Marine, Montreal.

Work has been commenced on the foundation of the Harbor Commission's elevator in Quebec harbor. The contractors are the Canadian Stewart Co.

Jas. Carruthers, President, and J. R. Binning, director, Richelieu and Ontario Navigation Co., inspected the company's workshops, plant, and vessels at Sorel, Mar. 7.

The Sincennes-McNaughton Line's steam tug Aurelie G., which was to have been delivered by the British builders last year, but which was delayed owing to labor troubles in Great Britain, is expected to arrive in Montreal towards the end of May. She will cross the Atlantic under her own steam.

Rapid progress is being made on the various works on the Louise docks and river front near the Customs House in Quebec. The concrete foundations of the freight station at the foot of St. Paul St., and the Commission's offices were expected to be completed ready for the erection of the steel frame work at the end of March.

The Minister of Public Works stated in the House of Commons, recently, in reply

to a question, that no tenders had been received relating to the construction of a dry dock at Quebec or Levis; tenders had been received for the lockage of the St. Charles River, but names of tenderers could not be given until the contract had been awarded.

The Montreal Harbor Commission has had under consideration plans for the provision of a new entrance to the Lachine Canal, but it is stated that the work, which would be undertaken in conjunction with the Department of Railways and Canals, may not be gone on with this year. Plans for this year's work cover the completion of the addition to elevator no. 1, and alterations to the Victoria pier, with general repairs and developments.

The Quebec and Levis Ferry Co. will operate two car ferry steamboats between Quebec and Levis during this year. The vessel John R. Langford, recently purchased in Ogdensburg, N.Y., is being equipped at Quebec with hydraulic and other machinery suitable for the work, and when complete she will, with the company's other vessel, John S. Thorn, be placed in operation conveying cars across the river for transshipment to the south shore lines.

At a recent meeting of the Quebec Board of Trade, a letter was read from St. G. Boswell, Chief Engineer of the Harbor Commission, stating that the harbor improvement work to be undertaken immediately consisted essentially of the building of a quay wall 2,900 ft. long parallel to the southern wall of the Louise Embankment. This wall, with the 40 ft. already built, will give a continuous water front of 3,300 ft., which is to be dredged to give 35 ft. of water at low tide for about 1,200 ft. out.

Ontario and the Great Lakes.

Forwarders, Ltd., operating vessels in the grain trade, etc., into Kingston, has changed its head office from Kingston to Ottawa.

The s.s. Turret Crown has been thoroughly overhauled during the winter, and a new Scotch marine boiler installed, at Port Arthur.

The act granting an extension of time for the construction of the proposed Montreal, Ottawa and Georgian Bay Canal, has been assented to.

Press reports state that the Algoma Central and Hudson Bay Ry. will spend \$400,000 on the provision of dock and terminal facilities for its railway lines and steamships at Sault Ste. Marie during this year.

The contract for the improvement of Hamilton harbor, for about \$178,000, has been awarded to Taylor, Poupore, Hennessey and Dwyer, Ottawa. It is stated that work will be commenced immediately.

The Dominion Transportation Co.'s steamboat Manitou, which was damaged by fire at Owen Sound recently, and afterwards sank, has been raised. Tenders for repairs will shortly be asked for.

J. L. Weller, Chief Engineer, Welland Canal, is visiting Panama to study the method of dealing with quicksand, etc., as adopted there, as it is reported that in the borings on the route of the Welland quicksand has been encountered at several points.

Capt. F. Traunche, a lake captain of the early days of navigation, who died recently at Detroit, Mich., aged 80, was buried at Goderich, Mar. 4. He was connected with navigation on Lake Huron and Georgian Bay, all his life, and commanded a schooner at the age of 16.

The claims of the Dominion Transportation Co. having been adjusted in connection with the fire damage to its steamboat Mani-

tou, the vessel is being repaired by R. Morel, Collingwood, and it is said that it will be ready for operation by the opening of navigation.

The Superior Sand and Towing Co., Ltd., has been incorporated under the Ontario Companies Act, with \$100,000 capital, and office at Fort William, to carry on a general towing, dredging and wrecking business. W. McCall, G. A. McLaurin, A. I. Perry, H. L. Palmer, Fort William, and G. Fineout, Port Arthur, are the incorporators.

A. V. Collins, heretofore chief clerk to Traffic Manager, Canadian Lake Line, Toronto, has been appointed General Freight Agent, in charge of all matters pertaining to traffic, rates and claims, with office at Toronto. The position of Traffic Manager, heretofore occupied by H. A. Young, has been abolished.

The Gilchrist Transportation Co.'s fleet of lake steamships, consisting of about 48 vessels, has been sold by auction by the Receivers, and it is reported that the amount received approximated \$3,500,000. Several of the vessels owned by this company have, at various times, been acquired by Canadian companies operating on the Great Lakes.

The Keystone Transportation Co.'s s.s. Keystorm, which sank about 12 miles west of Brockville in Oct., 1912, has been finally abandoned. A diver was recently sent down, and his report was to the effect that the vessel was lying on her starboard side in deep water, with her bow ripped for about 60 ft., and he considered it would not be possible to raise her.

J. S. Robertson, of Owen Sound, is reported to be forming a company for the establishment of a steamship service between Owen Sound and Fort William. On his recent return from Cleveland, Ohio, he is reported to have stated that he had secured options on two vessels from Hutchinson and Co., there, and that he hoped to take up the options and to have the line in operation early in the spring.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above tidewater, for February, as follows:—Superior, 601.61; Michigan and Huron, 579.96; Erie, 572.39; Ontario, 246.75. As compared with the average February levels for the past 10 years, Superior was 0.23 ft. below; Michigan and Huron, 0.10 ft. below; Erie, 0.81 ft. above, and Ontario, 1.23 ft. above. It was anticipated that during March, Superior, Michigan and Huron would fall 0.1 ft., Erie 0.2 ft., and Ontario 0.3 ft.

The Temiskaming Navigation Co. held its annual meeting in Haileybury, Mar. 12. The report showed a profit of about \$5,000 for the year, as against a deficit of about \$1,500 for the previous year. The following are the directors for the current year:—President, J. Lumsden, Ottawa; Vice President, A. Ferland, Haileybury; Secretary-Treasurer, pro tem, J. A. Laroche, Haileybury; other directors, G. H. Rochester, Haileybury; S. McChesney, Liskeard, and J. I. McCracken, Ottawa. The Haileybury Navigation Co.'s annual meeting was held subsequently, and the same officers and directors were also elected.

The Algoma Central Steamship Line has acquired from the receivers of the Gilchrist Transportation Co., Cleveland, Ohio, the two freight steamships, Saturn and Uranus, both of which will be transferred to the Canadian register. They were built at Wyandotte, Mich., and Lorain, Ohio, respectively. Following are the chief dimensions, etc.:—Length, 346 ft.; breadth, 48 ft.; depth, 28 ft.; hatches, ten, each 8 ft., spaced 24 ft. centres; engines, triple expansion, with cylinders 22, 35 and 58 ins. diam., by 42 ins. stroke; boilers, two

Scotch type, 13 ft. 2 ins. by 11½ ft., 170 lbs. working pressure; cargo capacity, 5,500 tons; tonnage, Saturn, 3,717 gross, 2,772 register; Uranus, 3,748 gross, 2,943 register.

The Canadian Towing and Wrecking Co. is having built at Port Arthur an ice breaking steam tug, to be named J. T. Horne, which will be ready for operation early in the summer. The dimensions will be:—Length over all, 125 ft.; length between perpendiculars, 114 ft.; moulded beam, 28 ft.; moulded depth, 16 ft. The frames are spaced very closely forward in that part of the shell which will come in contact with ice, and she is strongly plated throughout this part. The propelling machinery consists of triple expansion engines, with cylinders 18, 30 and 48 ins. diam., by 39 ins. stroke, supplied with steam by one Scotch boiler 15 ft. 4½ ins. diam. by 11½ ft. long, with three furnaces equipped for natural draught, with a working pressure of 185 lbs. In addition to the ordinary pumps, the vessel will be fitted with a large fire pump, with one turret nozzle forward and connections for hose lines on both sides of the cabin. She will also be equipped with electric light throughout and a large searchlight.

British Columbia and Pacific Coast Marine

The C.P.R. s.s. Princess Ena has been drawn out on the ways at Esquimalt for a general overhauling.

The C.P.R. s.s. Princess Royal, which has been laid up for overhauling during the winter, has been replaced in service.

Press reports from Port Mann state that work on the lengthening of the present dock, making it a mile long, will be resumed at an early date.

M. J. Wright, heretofore Contracting Freight Agent, Pacific Coast Steamship Co., Seattle, Wash., has been appointed General Agent of the company, at Vancouver, B.C.

The Dominion Public Works Department's dredge Mastodon is at work dredging the Parthia Shoal in Burrard Inlet. For navigation purposes, a stake light is being maintained until the completion of the work, on the north side of the channel south of the shoal.

The Fort George Lake and River Transportation Co., Ltd., has been incorporated under the British Columbia Companies Act, with \$50,000 capital, and office at Fort George, to own and operate steam and other vessels and carry on a general navigation business.

It is reported that the C.P.R. has decided to lengthen its s.s. Princess Mary, but no details are available, and it is improbable that anything will be done in the matter until the return of J. W. Troup, Manager of the B. C. Coast Service, from Great Britain.

There is under construction at Port Arthur, a new and powerful ice breaker for the Great Lakes Dredging Co. The vessel will be of steel throughout, 120 ft. long, and will have approximately 700 h.p. more than the ice breaker James Whalen, which is at present the most powerful one on the Great Lakes.

C. Gardiner Johnson, who has been appointed agent for the Hamburg-American and Eastern Asiatic Steamship Co., at Vancouver and Victoria, was reported recently to be negotiating for the acquirement of waterfront sites for the erection of office and warehouse buildings in Vancouver.

The Coquitlam Shipbuilding and Marine Railway Co. recently announced that to-

wards the end of March, it would build its first steamboat on the Fraser River. The vessel, which will have capacity for about 2,000,000 ft. of lumber, will be 236 ft. long over all, 187 ft. keel, and 43 ft. beam, and oil will be used as fuel.

The White Pass and Yukon Route is reported to be building two steamboats at White Horse for the Alaska trade. The vessels will, it is said, be equipped with the machinery from the steamboats Tyrell and Victoria. The question as to whether these vessels will be placed on the Canadian or U. S. register is said to be undetermined, this depending on the U. S. decision as to whether Fairbanks is to be made an open port or not.

The Minister of Marine is considering the question of the appointment of assessors in cases of enquiry into marine accidents. The composition of recent courts, especially in British Columbia, has been the subject of considerable comment, culminating in the recent refusal of the master of the Union Steamship Co.'s Chelohsin, to give evidence in the enquiry into the stranding of that vessel in the Skeena River, on the ground that the assessors appointed were not competent to deal with the matter, being deep sea men, and not acquainted with coast navigation conditions. The courts in some later cases have been composed of men more in touch with local conditions, and it is presumed that any new rules which may be promulgated by the Department will follow on the lines indicated in these later appointments.

Terms for Installation of Wireless Telegraphy on Vessels.

When the bill "An Act respecting Radiotelegraphy" was before the House of Commons Committee on Marine and Fisheries recently, there was considerable discussion as to the cost of installing and maintaining wireless telegraph apparatus on vessels. J. H. Lauer, Manager of the Marconi Wireless Telegraph Co. of Canada, submitted a copy of the standard agreement, some of the principal provisions of which are as follows:—The company installs the apparatus at its own cost and pays the operator. The vessel owner provides cabin accommodation and board for the operator, also masts, spreaders, halyards, aerials, insulators, accumulators, electrical current, mains and controlling gear. Vessel owners are to pay on the following scale:—\$1,000 a year for steamships in service during navigation season only; \$1,250 a year for steamships in service the whole year. If more than one operator has to be provided, an additional \$500 is payable for steamships in service during navigation season only and \$600 for steamships in service during the whole year. Monies received by the company for transmission of messages are to be divided between the company and the vessel owner, after \$250 ship's tax has been retained by the company. The company is to be entitled to a share of any salvage money which the ship may earn, according to the extent to which the wireless apparatus and operator may have contributed to the rendering of such service. The ship owner is to provide the operator with board, etc. Contracts are made for five years, with privilege of renewal.

The Western Elevator Co. has awarded a contract to the Burrell Construction Co., Chicago, Ill., for an annex to its grain house on the Kaministikwia River, at Fort William. The additional capacity will be for 1,100,000 bush., and it is understood that the work will be completed for the accommodation of the forthcoming season's crop.

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.

LUMEN BEARING CO.—Kester Barr, who has been appointed Manager of this company at West Toronto, succeeding F. Ganderton, resigned, was heretofore with Manning, Maxwell and Moore, Inc., of New York.

AMERICAN LOCOMOTIVE CO.—Leigh Best, Vice President, in addition to his other duties, has been given full charge of the automobile department, which, so far as is practicable, is to be segregated from the company's locomotive department.

BUTTERFIELD & CO., manufacturers of stocks and dies, die and screw plates, tap dies, reamers, etc., Rock Island, Que. and Derby Line, Vt., have sold their business to the Union Twist Drill Co. of Athol Mass. The business will be continued under the same name, and there will be no change in the management or policy.

THE UNITED STATES GOVERNMENT has recently purchased from The Safety Car Heating and Lighting Co., 43 Pintsch beacons for use on the St. Marys River. These beacons will use high pressure Pintsch gas and 6 ft. high pressure Pintsch gas flasks. They will also use 300 mm. Pintsch mantle lanterns. The U.S. Government has also purchased from the same company 5 range lights for use on the Detroit River.

Transportation Conventions in 1913.

- May.—Association of Railway Claim Agents, Baltimore, Md.
- May 6-9.—Air Brake Association, St. Louis, Mo.
- May 19-21.—Railway Storekeepers' Association, Chicago, Ill.
- May 20.—Association of Railway Telegraph Superintendents, St. Louis, Mo.
- May 21.—American Railway Association, New York.
- May 21-24.—International Railway Fuel Association, Chicago, Ill.
- May 26-29.—Master Boiler Makers' Association, Chicago, Ill.
- May 28.—Association of American Railway Accounting Officers, Atlantic City, N.J.
- June.—American Society for Testing Materials, Philadelphia, Pa.
- June.—Association of Railway Electrical Engineers, Atlantic City, N.J.
- June 11-13.—American Railway Master Mechanics' Association, Atlantic City, N.J.
- June 16-18.—Master Car Builders' Association, Atlantic City, N.J.
- June 17.—Train Despatchers' Association of America, Los Angeles, Cal.
- June 17-19.—International Association of Railway Special Agents and Police, Salt Lake City, Utah.
- June 17-20.—American Association of Freight Agents, Buffalo, N.Y.
- June 18.—Freight Claim Association, Bluff Point, N.Y.

- June 24-25.—Association of Transportation and Car Accounting Officers, Charlevoix, Mich.
- July 22-25.—International Railway General Foremen's Association, Chicago, Ill.
- Aug.—Travelling Engineers' Association, Chicago, Ill.
- Aug. 12-15.—Railway Gardening Association, Nashville, Tenn.
- Aug. 18.—International Railroad Master Blacksmiths' Association, Richmond, Va.
- Sept. 8-12.—Roadmasters' and Maintenance of Way Association, Chicago, Ill.
- Sept. 9-12.—Master Car and Locomotive Painters' Association of U.S. and Canada, Ottawa, Ont.
- Oct. 14.—Railway Signal Association, Nashville, Tenn.
- Oct. 21-23.—American Railway Bridge and Building Association, Montreal.

Transportation Associations, Clubs, Etc.

- The names of persons given below are those of the secretaries.
- Canadian Car Service Bureau, J. E. Duval, 401 St. Nicholas Building, Montreal.
 - Canadian Freight Association (Eastern Lines), G. C. Ransom, Canadian Express Building, Montreal.
 - Canadian Freight Association (Western Lines), W. E. Campbell, 502 Canada Building, Winnipeg.
 - Canadian Railway Club, J. Powell, St. Lambert, Que. Meetings at Montreal, 2nd Tuesday each month, 8.30 p.m., except June, July and August.
 - Canadian Society of Civil Engineers, C. H. McLeod, 413 Dorchester St. West, Montreal.
 - Canadian Street Railway Association, Acton Burrows, 70 Bond Street, Toronto.
 - Canadian Ticket Agents' Association, E. de la Hooke, London, Ont.
 - Central Railway and Engineering Club of Canada, C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto 3rd Tuesday each month, except June, July and August.
 - Dominion Marine Association, Counsel, F. King, Kingston, Ont.
 - Eastern Canadian Passenger Association, G. H. Webster, 54 Beaver Hall Hill, Montreal.
 - Engineers' Club of Montreal, R. W. H. Smith, 9 Beaver Hall Square, Montreal.
 - Engineers' Club of Toronto, R. B. Wolsey, 94 King St. West, Toronto.
 - Great Lakes and St. Lawrence River Rate Committee, Jas. Morrison, Montreal.
 - International Water Lines Passenger Association, M. R. Nelson, New York.
 - Niagara Frontier Summer Rate Committee, Jas. Morrison, Montreal.
 - Nova Scotia Society of Engineers, A. R. McCleave, Halifax, N.S.
 - Quebec Transportation Club, J. S. Blanchet, Quebec.
 - Ship Masters' Association of Canada, H. O. Jackson, 376 Huron street, Toronto.
 - Shipping Federation of Canada, T. Robb, 526 Board of Trade, Montreal.
 - Western Canada Railway Club, W. H. Rosevear, 25½ Princess St., Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.

High Speed Trains in Germany.—The 1912 summer time table of the German Railway Systems provides an interesting study, for it reveals that a new era of rapid transit has dawned in that country. In 1911 a non stop run from Berlin to Hamburg in 3 hours and 20 minutes was inaugurated, and in 1912 the run was further accelerated. The train left Berlin at 8.55 p.m., reaching Hamburg, 178¼ miles distant, at 12.09 a.m., the speed being 55.1 miles an hour. The return journey was made at 54.5 miles an hour. The train was a light one, consisting of four four-axle carriages and a six-axle dining car.

The Gas Electric Motor Car.—Railway officials have been watching with interest the development of the self-propelled car for use on steam roads. Under steam operation, short branch lines, carrying a limited traffic, are notoriously unprofitable. Single units running at sufficiently frequent intervals give a more satisfactory service than the once a day trains; and the managers have turned to the self propelled car as offering a solution of the problem. Today over 20 railways in the United States and one in Canada have self propelled units of the gas electric type running on regular local schedule. The consumption of gasoline, while varying with the local conditions, is found to be low, the economy being due to the electric transmission, which lends itself admirably to the particular requirements of local service.

Children Who Ride Free Not to Occupy Seats.—The Twin City Rapid Transit Company, Minneapolis, Minn., is enforcing the rule against children occupying seats while older persons stand. Heretofore an adult has been allowed to take three children of six years and under on cars without paying fare. The rule which is now being enforced is as follows: "Children under six years of age, when accompanied by parent or guardian, provided not more than three such children are in the care of one person, will be allowed to ride free. Should more than three children be in charge of one guardian, a full fare will be collected for each child in excess of that number. Should conductor see free riding children occupying seats while other passengers are standing, he will ask the parent or guardian either to take the child on his or her lap, have the child stand, or else pay full fare on account of each occupied seat."



TENDERS.

TENDERS addressed to the undersigned at Ottawa and endorsed on the envelope "Tender for Fisheries Patrol Steamer" will be received up to noon of the

TWENTY FIFTH DAY OF APRIL, 1913, for the construction of a steel wood sheathed twin screw patrol steamer to be delivered at Selkirk, Manitoba, of the following dimensions, viz.:

Length B.P.	140 ft.
Breadth moulded	25 ft. 6 inch.
Breadth extreme	27 ft. ¾ inch.
Depth moulded	13 ft. 6 inch.
Indicated horse power	900.

Plans and specifications and tender forms can be seen at the Department of Marine and Fisheries, Ottawa, at the offices of the Collectors of Customs at Toronto, Collingwood, Midland and Kingston, Ont., at the offices of the Harbour Masters at Port Arthur and Fort William, and also at the offices of this Department at Montreal, Quebec, St. John, N.B., Halifax, N.S., and Victoria, B.C.

Plans and specifications and tender forms can be procured upon application from the Department of Marine and Fisheries, Ottawa, and from the Agent of this Department at Victoria, B.C.

Each tender must be accompanied by an accepted cheque on a chartered bank in favour of the Deputy Minister of Marine and Fisheries, equal to ten per cent. of the whole amount of the tender, which cheque will be forfeited if the successful tenderer declines to sign the contract prepared by the Department or fails to complete the steamer.

Cheques accompanying unsuccessful tenders will be returned.

The Department does not bind itself to accept the lowest or any tender.

Newspapers copying this advertisement without authority from the Department will not be paid.

ALEX. JOHNSTON,
Deputy Minister of Marine and Fisheries.
Department of Marine and Fisheries,

—38375. Ottawa, March 11th, 1913.



HEADLIGHTS - We Make Them

for OIL for Pyle ELECTRIC equipment or SPECIAL to Blue Print. and carry a large stock of standard headlight reflectors, burners, burner parts, felt wicks and chimneys.

The HIRAM L. PIPER CO., Limited

75-77-79 and 81 St. Remi Street, Montreal.
Railway Catalogue No. 30, Marine Catalogue No. 21.
Mailed on Request.

Winnipeg Electric Railway Company

Annual Report for Fiscal Year ended December 31, 1912

Report of the President and Directors

To the Shareholders:—

Your directors beg to submit a statement of the past year's business, showing gross earnings of \$3,765,384.06, as compared with \$3,829,749.67 last year.

After providing for the percentage on earnings accrued to the city and interest on bonds, your directors declared four quarterly dividends, amounting to \$720,000, leaving a surplus of \$474,463.12, which has been transferred to the credit of profit and loss account, making a total credit to this account to Dec. 31, 1912, of \$2,091,236.37.

All the properties of the company have been efficiently maintained.

In accordance with the plan of extensions adopted at the last annual meeting, the following improvements and additions to the company's equipment and system have been made in the various departments.

TRACK AND ROAD BED.—9.235 miles of track was laid as follows: 6.92 miles with 80-lb. rails with concrete foundation and asphalt pavement; 2.157 miles with gravel ballast; 0.158 mile with creosote block pavement.

ROLLING STOCK.—33 large double truck closed motor cars with wide vestibules equipped with air brakes and all other modern appliances to insure the comfort and safety of passengers and trainmen, were constructed in the company's Winnipeg shops and put in service. Two new snow sweepers and one 5,000-gallon pneumatic street sprinkler were purchased and put in service.

ELECTRIC LIGHTING AND POWER Distribution System.—1,852 new poles were erected and 409,066 lbs. of wire with 114 transformers put up in extension of the company's light and power distribution system.

Transmission line 4½ miles long with necessary transformers to serve the plant of the Canada Cement Company and the new industrial town site in the Municipality of Assiniboia was constructed.

Three new motor generator sets were installed, one in the St. James sub station, one in the new sub station on Logan Avenue and one in the Assiniboine Avenue power house.

GAS DISTRIBUTION SYSTEM.—79,890 feet of new gas mains were laid, and 1,478 new gas services were installed in extension of the company's gas distribution system. In addition to the extensions to the exhauster house and the purifying house at the gas works, the necessary equipment to increase the capacity of this portion of the gas works by 2,000,000 cubic feet per day was installed.

CONSTRUCTED.—Gas Works—Extension to exhauster house, extension to purifying house.

Stores and offices at South Main Street car barns, of steel and brickwork with concrete foundations.

Sub station on Logan Avenue of steel and brick with concrete foundation.

Six track addition to North Main Street car barns to house 22 additional cars. Construction is of brick and steel with concrete foundation. 5 tracks are constructed with pits for convenience when repairing or adjusting cars.

Offices and employes' waiting room constructed at North car barns.

Twenty horse Stable on Kylemore Avenue, Ft. Rouge, two stories in height. Upper story used for hay loft and grain and for storage of wagons. Construction is of re-inforced concrete with brick veneer exterior.

Four story warehouse on Assiniboine Avenue in course of construction, of re-inforced concrete and brick veneer exterior.

Addition to the St. James sub station.

NEW OFFICE BUILDING.—Owing to the increase in the company's business, the directors thought it advisable for the company to secure its own office premises and therefore purchased a lot on the corner of Notre Dame Avenue and Albert Street, in

the heart of the city of Winnipeg, and on June 13 commenced the construction of a fully modern 10 story fireproof office building. The company will use the basement and two first floors for its own offices, the balance will be rented, and on account of the great demand for office space it is estimated that the rentals received from the building will make itself sustaining. The company expect their portion of the building to be ready for occupation by April 1, and the portion to be rented by May 1, 1913.

WM. MACKENZIE, President.

Directors:

Sir Wm. Mackenzie, President; Sir Wm. Whyte, Vice President; F. Morton Morse, Secretary-Treasurer; Sir W. C. Van Horne, Sir D. D. Mann, D. B. Hanna, A. M. Nanton, Hugh Sutherland, R. J. Mackenzie; Manager, Willford Phillips.

Auditors' Report.

To the President and Shareholders, Winnipeg Electric Railway Company.

Gentlemen:—

We beg to report that we have made a monthly audit of the accounts of your company and also of its subsidiary companies, viz.:—Winnipeg, Selkirk and Lake Winnipeg Railway, and the Suburban Rapid Transit Company, for year ending 31st Dec., 1912, and that our requirements as auditors have been complied with.

STATEMENTS.—The accompanying statements, viz.:—

WINNIPEG ELECTRIC RAILWAY Company.—Assets and Liabilities, Receipts and Expenditures, Profit and Loss, Capital Account.

STATISTICAL STATEMENT YEARS 1908-1912.

	1912	1911	1910	1909	1908
Gross Receipts	\$3,765,384 06	\$3,829,749 67	\$3,284,341 83	\$2,623,731 41	\$2,206,094 88
Decrease 1912 over 1911—1.68%	64,365 61				
Operating Expenses	2,004,147 92	1,900,967 67	1,654,833 60	1,320,665 09	1,088,872 50
Increase 1912 over 1911—5.43%	103,180 25				
Operating Expenses					
Per cent. of earnings	53 23	49 64	50 39	50 34	49 35
Net Earnings	1,761,236 14	1,928,782 00	1,629,508 23	1,303,066 32	1,117,222 38
Decrease 1912 over 1911—9.13%	167,545 86				
Net Income per cent. of Capital	16 75	18 51	15 58	14 39	13 14
1912, 7,131,047 average					
1911, 6,000,000					
1910, 6,000,000					
1909, 6,000,000					
1908, 5,669,541 average					
Passengers Carried	51,106,017	40,281,245	31,369,421	26,382,773	22,019,507
Increase 1912 over 1911	10,824,772				
Transfers	11,858,213	10,012,084	8,003,038	8,925,849	7,777,315
Railway Earnings per capita	13 58	10 46	10 02	10 03	9 80

Correct, F. MORTON MORSE, Secretary-Treasurer.

WINNIPEG, SELKIRK AND LAKE Winnipeg Railway Company.—Assets and Liabilities, Receipts and Expenditures, Profit and Loss, Capital Account.

SUBURBAN RAPID TRANSIT COMPANY.—Assets and Liabilities, Receipts and Expenditures, Profit and Loss, Capital Account have been examined by us, and we are of opinion that the said statements are properly drawn up so as to exhibit a true and correct state of the company's affairs according to the best of our information and as shown by the books of the company.

RECEIPTS.—The cash in the hands of the cashiers was counted on the afternoon of the 31st of December last and found to agree with the day's receipts as entered in the cash books. The working funds held by the cashiers were checked and duly accounted for.

The bank accounts of the three companies have been examined, and it has been found that all sums received were deposited daily and that the balances in the bank pass books, after deducting the outstanding cheques, agree with those shown in the cash books.

The supplementary cash books have been checked daily with the cashier's ticket. The incandescent power and gas bills have also been checked and only authorized discounts have been allowed.

The postings in the customers' ledgers have been verified, as also have the entries in the general cash book.

EXPENDITURE.—Vouchers duly approved by the General Manager have been produced for all disbursements of the companies and the entries in the ledgers agree with those in the books of original entry. Each month's pay rolls have been checked and it has been found that all amounts unpaid were deposited to the credit of unpaid wages account, with the exception of November and December, which have been deposited since the first of the year.

TICKETS.—On the 1st of January last the stock of tickets on hand was examined by us and found to agree with the stock as shown in the stock books.

CAPITAL STOCK.—The returns of the transfer agents were examined quarterly and the number of shares stated therein agreed with the amount of paid up capital.

DIVIDENDS.—The dividend sheets for the four quarterly dividends paid during the year have been audited and found correct. All of which is respectfully submitted.

W. A. HENDERSON & CO.,
Chartered Accountants.

Winnipeg, Feb. 7, 1913.

FINANCIAL STATEMENT FOR YEAR ENDING DEC. 31, 1912.

Assets.

Cost of Property:—

Street Railway, Buildings, Plant and Equipment	244,602 54
Electric Lighting, Plant and Equipment	218,745 64
Electric Power, Plant and Equipment	13,807 26
Gas, Buildings, Plant and Equipment	10,642 85
Stores	638,270 16
Accounts Receivable	
Cash on hand in office	
Conductors' Working Fund	
Subsidiary Companies	

\$19,343,757 68

(Continued on next page.)

Winnipeg Electric Railway Company (continued)

Liabilities.			
Capital Stock	...	\$9,000,000 00	
Less Unpaid	..	631,225 00	\$8,368,775 00
Bonds 5% payable 1st Jan., 1927	.....	\$1,000,000 00	
Bonds 5% payable 1st Jan., 1935	.....	4,000,000 00	5,000,000 00
Debtenture Stock 4 1/2% Perpetual	.....	£ 500,000	2,434,602 62
Accounts payable	.....	\$ 388,830 23	
Dividend paid 2nd Jan., 1913	.....	180,000 00	
Wages for December	.....	58,932 70	627,762 93
Interest on Bonds paid 2nd Jan., 1913	.....	\$ 125,000 00	
Accrued interest on Debtenture Stock	.....	27,450 00	
Interest on New Stock issue paid 2nd Jan., 1913	.....	52,025 25	204,475 25
Car License due 1st Feb., 1913	.....	\$ 5,700 00	
City Percentage Feb., 1913	.....	105,748 74	111,448 74
Unredeemed tickets	.....	9,282 63	
Suspense	.....	297,980 76	
Bank of Montreal	.....	198,193 38	
		\$17,252,521 31	
Surplus as per Profit and Loss Account	.....	2,091,236 37	
		\$19,343,757 68	

CONTINGENT LIABILITY.

Suburban Rapid Transit Co.'s Bonds	.....	\$500,000 00	
Winnipeg, Selkirk & Lake Winnipeg Railway Co.'s Bonds	.....	400,000 00	
		\$900,000 00	
Interest and principal guaranteed.			

REVENUE AND EXPENDITURE.

Gross Earnings	...	\$3,765,384 06	
Gross Expenses	..	2,004,147 92	
Net Earnings	.....	\$1,761,236 14	
Fixed Charges	...	\$566,773 02	
Dividends	.....	720,000 00	1,286,773 02
Surplus	.....	\$ 474,463 12	

PROFIT AND LOSS ACCOUNT.

Balance at Credit Dec. 31, 1911	..	\$1,616,773 25	
Net Earnings as per Revenue Account	.....	474,463 12	
Balance at Credit Dec. 31, 1912	..	\$2,091,236 37	

CAPITAL STOCK.		
Authorized Capital Stock	....	\$10,000,000 00
Subscribed and Paid in	.....	8,368,775 00
Subscribed and in course of Payment	.....	631,225 00
		\$ 9,000,000 00
Correct, F. MORTON MORSE, Secretary-Treasurer.		
Certified Correct, W. A. HENDERSON & CO., Chartered Accountants.		

Winnipeg, Selkirk and Lake Winnipeg Railway

Directors:—F. Morton Morse, President; D. H. Laird, Vice President; Sir Wm. Whyte, A. M. Nanton, J. H. Munson, L. J. Loader, Hugh Sutherland; Manager, Wilford Phillips; Secretary, G. A. Henson.

FINANCIAL STATEMENT FOR YEAR ENDING DEC. 31, 1912.

Assets.			
Cost of Property	.....	\$1,118,966 10	
Stores	.....	3,557 68	
Cash—Bank of Montreal	.....	\$2,761 98	
Cash on hand	.....	1,003 57	3,765 55
Agents' Balances:			
Winnipeg	.....	\$ 73 35	
Selkirk	.....	43 10	116 45
Accounts Receivable	.....	1,204 06	
		\$1,127,609 84	
Liabilities.			
Capital Stock	.....	\$ 111,500 05	
Bonds	.....	400,000 00	
Accounts Payable	.....	543,655 00	
Suspense	.....	35,545 83	
		\$1,090,700 88	
Surplus as per Profit and Loss Account	.....	36,908 96	
		\$1,127,609 84	

Interest and Bonds guaranteed by Winnipeg Electric Railway Company.

Correct, G. A. HENSON, Secretary-Treasurer.
Certified Correct, W. A. HENDERSON & CO., Chartered Accountants.

REVENUE AND EXPENDITURE.

Gross Earnings	.....	\$106,181 24	
Gross Expenses	.....	52,648 22	
Net Earnings	.....	\$53,533 02	
Fixed Charges:—			
Interest on Bonds	..	\$ 20,000 00	
Taxes, etc.	.....	24,033 48	44,033 48
Surplus	.....	\$ 9,499 54	

PROFIT AND LOSS ACCOUNT.

Balance at Credit Dec. 31, 1911	..	\$27,409 42	
Net Earnings as per Revenue Account	.....	9,499 54	
Balance at Credit Dec. 31, 1912	..	\$36,908 96	

Suburban Rapid Transit Company.

Directors:—A. M. Nanton, President; F. Morton Morse, Secretary; Sir Wm. Whyte, D. B. Hanna, Hugh Sutherland. Manager, Wilford Phillips.

FINANCIAL STATEMENT FOR YEAR ENDING DEC. 31, 1912.

Assets.			
Cost of Property	.....	\$468,477 77	
Cash—Bank of Montreal	.....	\$4,413 43	
On Hand	.....	160 83	4,574 26
Winnipeg Electric Railway Company Loan	.....	123,887 64	
Accounts Receivable	.....	3,717 78	
		\$600,657 45	
Balance as per Profit and Loss Account	.....	43,369 30	
		\$644,026 75	
Liabilities.			
Capital Stock	.....	\$100,000 00	
Bonds	.....	500,000 00	
Accounts Payable	.....	41,233 43	
Ticket Account	.....	190 48	
Suspense	.....	2,602 84	
		\$644,026 75	

Bonds and interest guaranteed by Winnipeg Electric Railway Company.
Certified Correct, W. A. HENDERSON & CO., Chartered Accountants.
Correct, F. MORTON MORSE, Secretary-Treasurer.

REVENUE AND EXPENDITURE.

Gross Earnings	.....	\$59,060 23	
Gross Expenses	.....	57,419 84	
Net Earnings	.....	\$ 1,640 93	
Fixed Charges:—			
Interest on Bonds	..	\$25,000 00	
Taxes, etc.	.....	1,606 99	26,606 99
Deficit	.....	\$24,966 60	

PROFIT AND LOSS ACCOUNT.

Balance at Debit Dec. 31, 1911	..	\$18,402 70	
Deficit for Year	.....	24,966 60	
Balance at Debit Dec. 31, 1912	..	\$43,369 30	



Department of Railways and Canals.

Car Ferry Terminal, Cape Tormentine, New Brunswick.

EXTENSION OF TIME.

THE time for receiving tenders for "Car Ferry Terminal" at Cape Tormentine, New Brunswick, has been extended from 16 o'clock on Tuesday, the 8th April, 1913, to Tuesday, 15th April, 1913.

By order,

L. K. JONES,

Asst. Deputy Minister and Secretary.

Department of Railways and Canals, Ottawa, 20th March, 1913.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.—38634.

FOR TICKET CASES AND COMMERCIAL FURNITURE
of all descriptions to stock or special design, apply to
The Canadian Office and School Furniture Co., Limited
Preston Ontario

NOTICE.

The General Railway Signal Company, the owner of the exclusive rights to Canadian patents No. 92323, No. 93127, No. 96256, and No. 97758, issued to Young and Townsend, and covering methods of signalling electrified railways, wishes to call the attention of all possible users of the devices and systems covered by such patents, to the fact that it is prepared to sell and furnish, at short notice, all such devices and to install such systems upon any railway in the Dominion of Canada.

All inquiries regarding the above should be addressed to the office of the company, Room 506, Eastern Townships Bank, 263 St. James St., Montreal, Que.



Department of Railways and Canals.

Car Ferry Terminal, Carleton Point, Prince Edward Island.

EXTENSION OF TIME.

THE time for receiving tenders for "Car Ferry Terminal" at Carleton Point, Prince Edward Island, has been extended from 16 o'clock Tuesday, March 25th, 1913, to 16 o'clock Tuesday, the 1st April, 1913.

By order,

L. K. JONES,

Asst. Deputy Minister and Secretary.

Department of Railways and Canals, Ottawa, 20th March, 1913.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.—38635.

Keystone Car Destination Signs

offer marked advantages in installation, operation and appearance.

The mechanism wastes practically no space, occupying less than one inch at the end.

The rollers are driven directly by chains and sprockets, and are under constant, uniform, adjustable tension.

Curtains and rollers can be readily removed by loosening one thumb-screw. This makes it easy to clean the glass front or change the curtain.

Curtains are printed on one piece of cloth. As there are no seams, the edges do not need to be bound with copper. This avoids the extra thickness at the ends, which makes other signs sag and wrinkle.

The Keystone patented printing method, which permits the use of a varnish paint, gives a deeper, more lasting background than the printer's ink commonly used.

Keystone signs are made in three styles:

Steel Frame Signs

for use in boxes or other receptacles.

Steel Box Signs

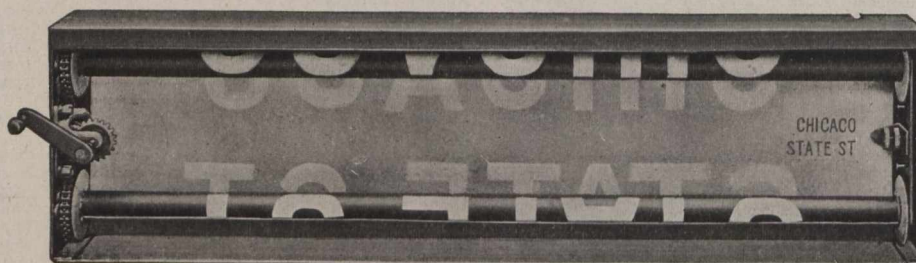
with glass fronts set in rubber gaskets, and with glass backs or steel backs with lamp sockets. Provided with lugs if desired.

Hood Signs

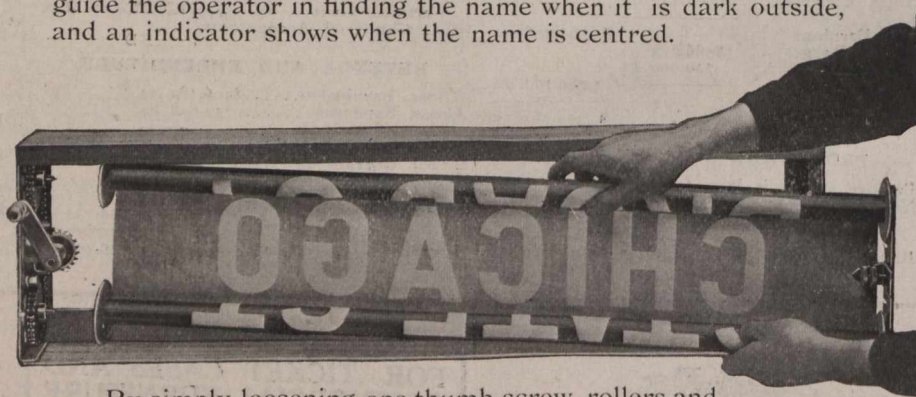
in substantial steel boxes, weatherproof, with lamp sockets, reflection and ventilation provided for.



Seen from the street, Keystone Signs excel in sharp contrast between the solid black background and the pure white letters, and in the smooth tautness of the fabric. The guides at the back, explained below, enable the operator to centre the names exactly.



This back view shows the small space occupied by the turning mechanism. The adjustable tension is provided by a brake bearing on the right ends of the roller. The names shown in small print guide the operator in finding the name when it is dark outside, and an indicator shows when the name is centred.



By simply loosening one thumb-screw, rollers and curtain can be removed as illustrated.

Manufactured by

ELECTRIC SERVICE SUPPLIES COMPANY

Philadelphia

New York

Chicago

Canadian Distributors

JOHN MILLEN & SON, LIMITED

Montreal

Toronto

Winnipeg

Vancouver

Address all correspondence to 321 St. James St., Montreal