

The Railway and Marine World

June, 1912.

The Construction of the Algoma Central and Hudson Bay Railway.

By R. S. McCormick, M. Am. Soc. C.E., Chief Engineer.

The construction of the Algoma Central and Hudson Bay Railway was originally begun in the spring of 1900 by the old Lake Superior Corporation, under the management of F. H. Clergue, and a land grant and subsidy was granted at that time by the Dominion Parliament.

Construction was carried on until the spring of 1903, at which time there was graded a continuous line from Sault Ste. Marie, Ont., to a connection at Josephine Jct., 170½ miles north, with a line extending down to Lake Superior, at Michipicoten Harbor. This section, 20 miles long, was built in 1899-1900 to gain access to valuable iron mines in this territory, owned by the corporation. The grading on the main line was not completely finished, however, as financial misfortunes overtook the corporation and track was only laid to about 55 miles north of Sault Ste. Marie. A large number of bridges and trestles between this point and Josephine Jct. were also not built but otherwise the line was completed to sub-grade. Between 1903 and 1908 additional track was laid to carry the end of steel to mile 68, but no other work was done north of this point.

In 1909 active measures were begun to complete the A.C. and H.B.R. by an English syndicate, which had, in the meantime, secured control of the Lake Superior Corporation, including the Algoma Steel Co., the railways and other transportation and industrial interests, at Sault Ste. Marie. Before undertaking the completion and proposed extension of the railway, a report was made for the management on the whole project by F. H. McGuigan, of Toronto, formerly of the G.T.R. He reported favorably on the completion of the line and on its extension to connect with the National Transcontinental Ry.

The necessary financial arrangements being successfully completed, the first work undertaken was the locating of a line to connect the old grade near Hawk Lake with the C.P.R. This was accomplished by the location and construction of 30 miles of line from Hawk Lake Jct. to Hobon on the C.P.R. S. Keemle, Toronto, was in charge of the locating party on this work. A 0.6% compensated 6° maximum curve line was secured at a cost of about \$38,000 a mile complete, including track and structures. In May, 1910, a contract was let to the O'Boyle Bros. Construction Co., of Sault Ste. Marie, Ont., for this section, and on July 1, 1910, another contract was let to the same contractors for the completion of the main line from mile 68 to Josephine Jct., mile 170½, including re-grading at points where cuttings had slid in, bringing up settled embankments, all the bridging (excepting Montreal River), track laying and ballasting.

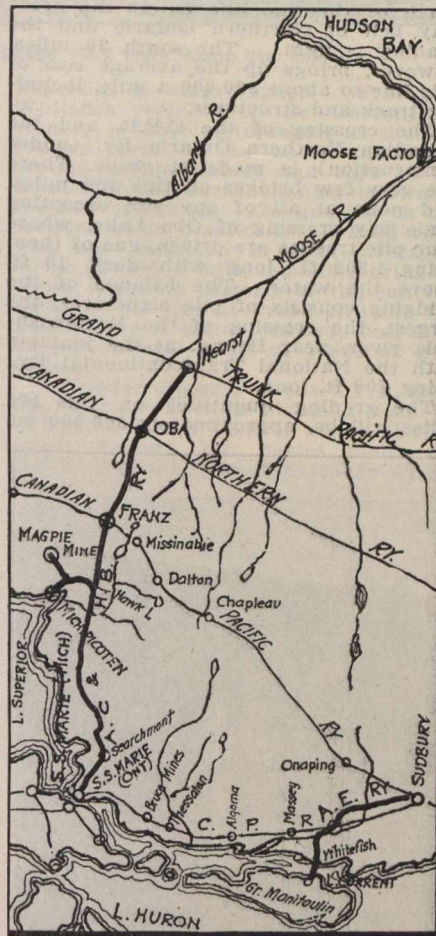
In the meantime a spur line of 9½ miles was located from a point 17 miles from Michipicoten Harbor on the line extending from the lake to the mines, northerly, to a new Magpie iron mine. This construction, including track laying, and the ballasting, was also let to the O'Boyle Bros. Construction Co., and in May, 1910 active work was started on this section.

The railway company also started work to repair and re-tie that section of the 20 miles extending from Michipicoten Harbor to Josephine Jct. known as the Josephine branch, being the upper 10 miles of the line which had been wholly unused for over eight years, and which was in wretched shape, as the ties were rotten, and very little ballast having originally been put on when first constructed it was necessary to re-ballast the whole section. The railway company did this work with its own forces with some help from the O'Boyle Bros. From May, 1910, to Aug., 1911, the work on the main line, north from mile 68 and south from Josephine Jct., the grading of the Hawk Lake-Hobon sec-

and 2.5% flat, with the traffic. The first 4½ miles to the crossing of the Magpie River was light work, except for some heavy side cutting descending the slope to cross the river, at which point the adverse grade of 1.5% compensated was located. From the river crossing, however, to the mine the line is heavy, and at mile 7½ there is a timber trestle 900 ft. long, 80 ft. high, on a 12° curve and a 1.75% grade. Up to this point the grade is 2% maximum, from here to the mine site it is 2½%, 12° being the maximum curve. Very large expenditures are being made by the company in opening the mine, and in addition to a plan for treating the siderite ore, a model mining town is being built. This branch is laid with 80 lbs. A.S.C.E. rail with Seller's shoulder tie plates on all curves and is most substantially built in all respects, excepting that timber and piles were used in bridging.

On July 15, 1911, the sub-contractors on the Hawk Lake-Hobon section finished the grading. Murdoch Bros. had the lower 19 miles, and Cavicchi and Pegano the upper 11 miles. The work was quite heavy, the grading quantities being 732,933 cu. yds.; classified 261,269 cu. yds. solid rock; 94,378 cu. yds. loose rock, and 377,286 cu. yds. common excavation. In addition there was 20,178 cu. yds. over break in rock cuttings. About 3,000,000 ft. b.m. of bridge timber and 40,000 lin. ft. of piling was also used on this work. Other items of grading, etc., included 1,500,000 cu. yds. overhaul, 170,000 ft. b.m. culvert timber, 220,000 lbs. bridge iron, 291 cu. yds. dry stone masonry, 423 cu. yds. cement masonry and other small items. The rock work was exceptionally well done, as the specifications only allowed common excavation for over break and all the time the work was in progress this was enforced. On final estimate, however, a fair amount of over break was given as solid rock. Track laying and some ballasting was done this year and the bridge work was completed. On Jan. 10, 1912, track was connected up, giving railway connection from the C.P.R. into the mines of the Michipicoten district. Some ballasting was also done this year.

Work on the main line completion progressed slowly from June, 1910, to May, 1911, at which time track had reached the Montreal River, mile 91½ north of Sault Ste. Marie. Here a steel viaduct 1,550 ft. long and 130 ft. high, situated at the head of a falls 150 ft. high, had to be built. This viaduct was designed in 1902 by Boller and Hodge, of New York city, and a contract was arranged at that time with the Canadian Bridge Co. for its erection. Due to the suspension of this work the contract was never carried out, and upon taking up the work to complete same the writer awarded another contract to the Canadian Bridge Co. There is 1,745 tons of steel in this viaduct, and the alignment being on a curve at each end it was a very interesting job of erection. The viaduct consists of tower girders supported on steel legs, with concrete pedestal piers with end abutments. There are thirteen 30-ft. tower girders and one 40 ft. situated on an island in the middle

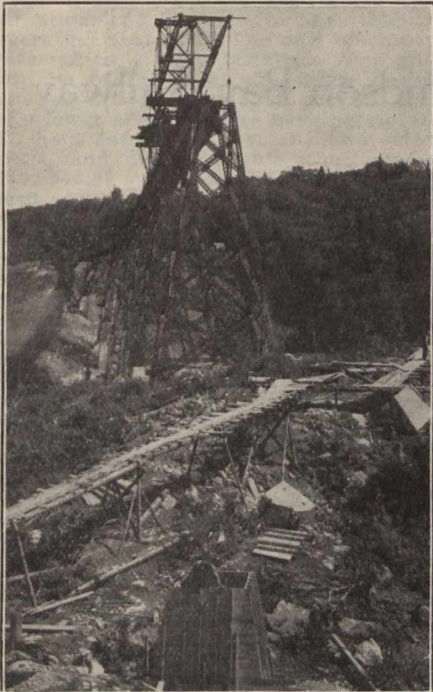


Algoma Central and Hudson Bay Railway and Algoma Eastern Railway.

tion, the building of the Magpie branch and the rebuilding of the ten miles of the Josephine branch, proceeded with the usual ups and downs peculiar to railway construction work in such a country. Poor labor, generally a lack of same, bush fires, whiskey and all the troubles incident thereto, known only to the experienced, were faced and fought.

By Aug. 1, 1911, the Magpie branch was completed, at a cost of practically \$275,000. The line was built on a 1.5% compensated grade against the traffic

of the river. The intermediate girders consist of one 85 ft., five 75 ft., ten 60 ft., and two 30 ft. spans. The structure is designed under the Dominion Government specifications, class 1 loading, and is a splendid piece of work. Due to



A.C. and H.B. Ry. Erection of Viaduct at Montreal River.

some poor work in concreting the piers and having to re-build some, the erection was slow. However, track was laid over this viaduct and track laying proceeded north of it in Oct., 1911.

At the date of writing track is at mile 104½. At the north end track laying has progressed to mile 117 to date, leaving a gap of 12½ miles, which, it is expected, will be finished by the middle of June. The principal reason for the slow progress made in track laying is on ac-

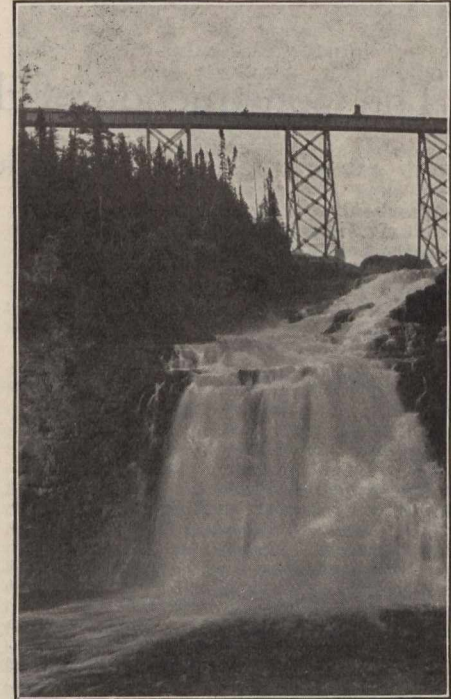
ish Columbia fir, it is necessary to build these bridges from end of steel. The old line from Sault Ste. Marie to Hawk Lake Jct. is through a most difficult country to build in, and the location secured, while good work on the whole, shows it. The line to Hawk Lake Jct., with the new extension, and on to Michipicoten is badly handicapped with heavy grades and sharp curvature, 1½% uncompensated grades and 12° maximum curves. To improve this, grade and alignment would require extensive re-locating, hence, for the present, this is not contemplated. The route is very picturesque and travellers have a treat in rugged scenery awaiting them on the opening up of the Algoma Central for traffic, north of Sault Ste. Marie.

While the above work was progressing south of the C.P.R. main transcontinental line a location was made north to the National Transcontinental Ry. at the new town of Hearst (or Grant) the first division point west of Cochrane and 101 miles north of the C.P.R. This location is on the same grades and curvature as the Hawk Lake-Hobon section, viz., 6.6% compensated grade and 6° maximum curves. Louis Whitman, locating engineer, had charge of the location, with Sanford Hazelwood and W. H. Wilkie in charge of the parties. The route traversed by this line is through rough country for 30 miles north of the C.P.R., north of this the line enters the great clay belt of Northern Ontario and the grading is light. The south 30 miles, however, brings up the average cost of this line to about \$30,000 a mile, including track and structures.

The crossing of the C.P.R. and the Canadian Northern Ontario Ry. (under construction) is made at grade. There are very few bridges on this 100 miles, and none at all of any size excepting some bay crossing of Oba Lake, where four pile trestles are driven, one of them being 1,302 ft. long with deck 10 ft. above the water. The balance of the bridging consists of pile structures, the largest, the crossing of the Mattawishiquia river, near Hearst, at the junction with the National Transcontinental Ry., being 700 ft. long.

The grading quantities on this 100 miles will be, approximately 360,000 cu.

perior Construction Co. for the construction of the section complete, including grading, bridging, track laying and ballasting. To date 60% of the grading is completed, and it is expected track laying will be started about June 15 at



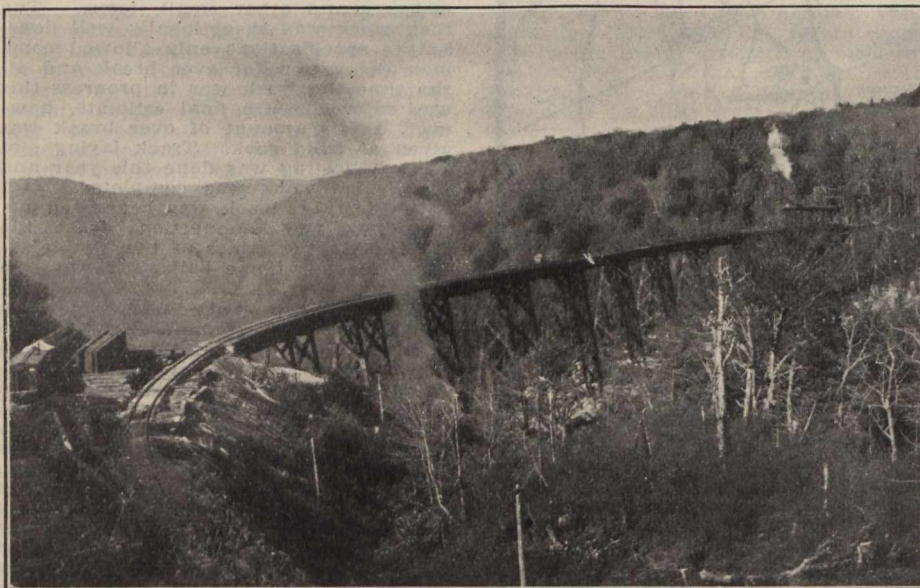
A.C. and H.B. Ry. Viaduct and Falls of Montreal River.

Hobon and reach the C.N.O.R. crossing in October, thus placing the A.C. and H.B. Ry. in a position to deliver construction material and supplies to the contractors for this line at Oba.

Explorations for further extensions of the A.C. and H.B. Ry. to the north of the National Transcontinental Ry. have been made. A copper metallic circuit telephone line has been constructed from Sault Ste. Marie, through to Michipicoten Harbor and extensions to the mines and north to Hobon and Hearst (Grant) will be made this summer.

At Sault Ste. Marie, new terminals, consisting of a modern locomotive house, machine shops, stores and office building and a new terminal station and office building are all contracted for and the work started. This work involves the expenditure of about \$500,000, and includes an extension of the main line to reach nearer the centre of the city of Sault Ste. Marie, and a new yard at Tagoma, the industrial centre, where extensive alterations and additions to the terminal facilities are being made. The company will also build a large coal and ore dock at Michipicoten Harbor, in the near future.

The above work has all been in charge of the writer, as Chief Engineer, since the beginning, with a staff of division and resident engineers. G. F. Horsey and C. Le B. Miles have charge of the work at the north end, and L. C. Maxwell and J. A. Hedgecock at the south end as division engineers. W. C. Franz is General Manager and G. A. Montgomery, Superintendent of the A.C. and H.B. Ry., as also of the Algoma Eastern Ry.



A.C. and H.B. Ry. Montreal River Viaduct and Yard.

count of the excessive amount of bridging and trestling on this line.

Between Sault Ste. Marie and Josephine Jct. there are about 16,000,000 ft. b.m. of bridge timber in 140 structures, besides 100,000 lin. ft. piling. Some of these bridges are very large, and as all the bridge timber used, excepting a few thousand feet cut in the country, is Brit-

yds. solid rock; 250,000 cu. yds. loose rock; 1,500,000 common excavation, and 3,500,000 cu. yds. overhaul. There will be about 80,000 lin. ft. piling and 1,500,000 ft. b.m. bridge timber, besides other lesser items. Corrugated ingot iron pipe is used in culverts, no concrete at all, and a few native timber culverts. In Aug., 1911, a contract was let the Su-

Driving Wheel Speeds.—A simple method of determining driving wheel speeds is given by the Baldwin Locomotive Works, as follows: To obtain revolutions per mile, divide 1,680 by the diameter of the driving wheel in feet; to obtain revolutions per minute, multiply the speed in miles per hour by 28, and divide the product by the diameter of the driver in feet.

The Constuction of the Algoma Eastern Railway.

By R. S. McCormick, M. Am. Soc.C.E., Chief Engineer

The original charter for this railway, of 85 1/2 miles, now being completed from Sudbury to Little Current on Manitoulin Island, Ont., was obtained by F. H. Clergue at about the same time as the Algoma Central and Hudson Bay Ry. project was launched, a land grant

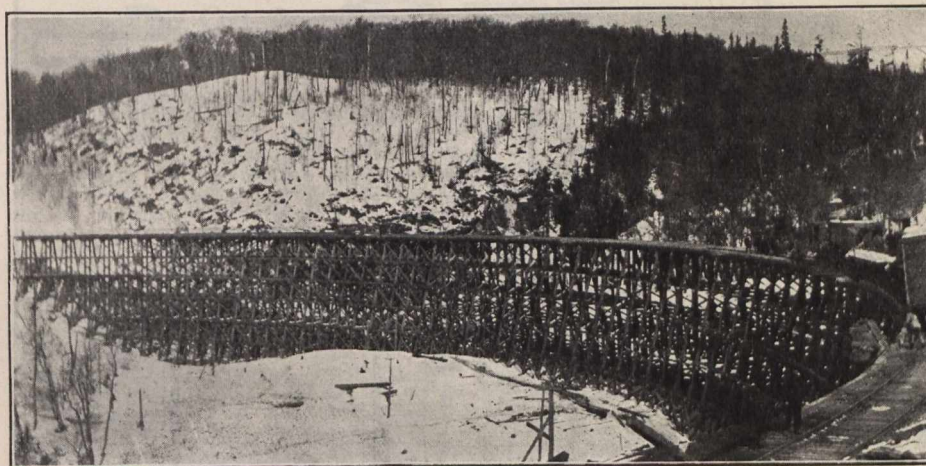
the 20 mile section from Little Current to the main shore at Whitefish, and in March, 1911, another contract was let to the Superior Construction Co. for the balance of the work from Whitefish to Crean Hill, 42 miles. The grading work on this 62 miles is practically complete and track laying was recently started at Espanola. The 62 miles of track will be laid and ballasted about Oct. 30 next.

The country traversed by this railway is almost wholly unsettled and south of

one 176 through rivetted truss at the second crossing of the Spanish river at Espanola (built in 1901) and two 100 ft. girder spans at two other points, together with a 36 ft. deck girder span on concrete at an overhead crossing of the Government trunk road near Espanola. These major structures are supplemented by a number of timber trestles and pile bridges. At Little Current, in order to cross the channel in front of the town, through which there is considerable vessel traffic, a bridge, some 600 ft. long, is required with a draw span. This will be erected this year.

The traffic expected for this railway consists of ore, pulp and paper, coal and the products of Manitoulin Island, which, previous to the construction of this line, was entirely dependent on water communication with the mainland. This island is 90 miles long, averaging 8 to 12 miles wide and is capable of great development. The population at present is about 20,000 and at least one-half the island is fine agricultural land, particularly adapted to hay and stock raising. The construction of the Algoma Eastern Ry., formerly known as the Manitoulin and North Shore Ry., has been most eagerly looked forward to for years by the Manitoulin Islanders.

The writer has been in charge of the completion of this line as Chief Engineer since the work started, with B. E. Barnhill as Division Engineer, and headquarters at Sudbury.



A.C. and H.B. Ry. Trestle at Mileage 104.9 from Sault Ste. Marie.

and subsidy accompanied the granting of the charter.

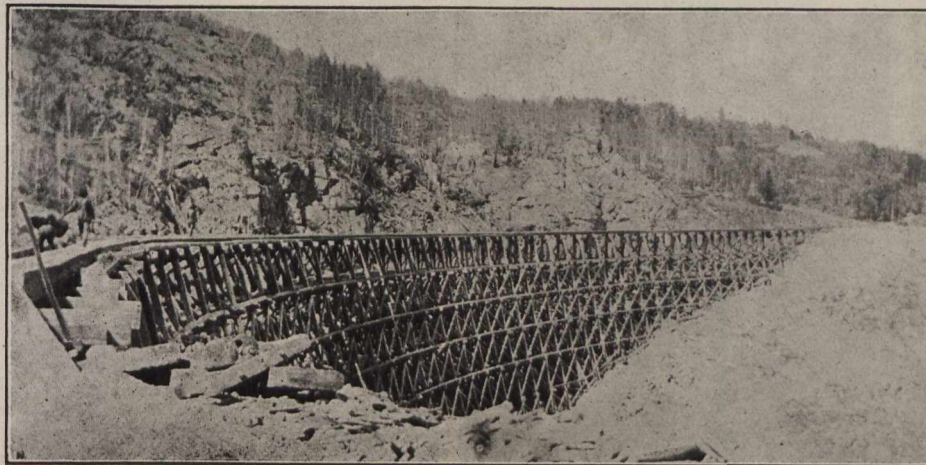
Actual construction of this line was delayed from year to year, after the first section of 13 miles, extending from Sudbury to Gertrude Mine, was constructed in 1900-1901. An extension of ten miles from Gertrude Mine to Crean Hill was built in 1909, carrying the end of steel 23 miles west of Sudbury, where connection was made with a spur track connecting with the C.P.R. at Victoria Mine station. This spur, three miles long, is owned by the Canadian Copper Co. and connects the Crean Hill mine with the C.P.R. This 23 miles of line passes through the richest nickel district in the world, the famous Sudbury district and practically the entire revenue derived from its operation is for handling the ore from the Creighton and Crean Hill mines to the Canadian Copper Co.'s roasting yards at Copper Cliff.

In 1909-1910 surveys were undertaken to locate a line extending this railway to Little Current, on Manitoulin Island. A party, in charge of Louis Whitman, locating engineer, was started at Little Current on a route over which the writer had run a line for the old Sault Company in 1900. This line traversed the islands, and along the shore of the north channel to the mainland at the mouth of the Whitefish river, where it cut through a range of high rock hills facing the lake, thence to a connection with the C.P.R. at Espanola, on the Spanish River. A short section of 1 1/2 miles of this original surveyed line was built in 1901, connecting the Spanish River Pulp and Paper Co.'s plant on the Spanish River with the C.P.R. Sault Ste. Marie branch. This little section or spur was built by the Sault Company and turned over to the C.P.R. to operate, under an agreement contemplating the ultimate completion of the whole project.

When the writer took charge of the work, a location was pushed through to connect with the Sudbury end at Crean Hill, 62 miles from Little Current. A maximum 1.25% compensated grade and a maximum 11° curve (with a 12° curve near Whitefish) was secured at a cost of about \$32,000 a mile complete, including track ballast and buildings. In July, 1910, a contract was let to the O'Boyle Bros. Construction Co., of Sault Ste. Marie, Ont., for the construction of

Espanola is very rugged. From the Whitefish river to Little Current the scenery is most picturesque, as the line follows close to the water and winds around the headlands and bays of the section of the north channel known as the Bay of Islands. The grading on this section, while practically all solid rock, was not excessive in cost, averaging about \$20,000 a mile, including bridging. From Espanola easterly to the junction with the old line at Crean Hill the line passes over a better country, but, from an agricultural point of view, of little value.

An under crossing of the C.P.R. Sault Ste. Marie branch is obtained near the village of Nairn Centre, where the Algoma Eastern Ry. passes under the C.P.R. embankment, the tracks of the



A.C. and H.B. Ry. Alice Lake Trestle, Magpie Branch.

latter company being carried over on a 27 ft. 7 ins. skewed deck plate girder span on concrete wing abutments.

The bridging on the entire line from Sudbury to Little Current is light for such a country. The steel structures consist of one 105 ft. and one 60 ft. deck plate girder spans on stone abutments and centre pier at the Vermillion river crossing, 17 miles west of Sudbury; one 180 ft. through rivetted truss span at the Spanish river crossing, mile 42;

Dominion Government Railway to Hudson Bay.

Tenders were received, May 16, for 40 sets of switches and frogs at present required for the line.

Specifications and plans are reported to have been completed for the second section of this line, and Ottawa press reports state that tenders for its construction are to be invited at an early date. The section will be 120 miles long, and will carry the line to the point at which the route is common, whether the terminal on the bay is at Port Nelson or Fort Churchill. With a view of determining this, it has been decided to send out a further exploratory expedition, by the Dominion Government s.s. Minto.

In addition to the work on the bay at the two ports, the expedition will report as to lighthouses and other aids to navigation necessary in Hudson Strait. (May, pg. 240.)

The 24-Hour Time System in which the hours of the day and night are numbered from 0 to 24, beginning at midnight, is to be adopted on the French Government railways, beginning with next summer's schedule.

these diaphragm cabs are equipped, is out of order, which is sometimes the case from their freezing up.

The old entrance through the rear of the cab is replaced by a door opening in the side of the cab near the rear end, as shown in fig. 2. Inset steps, built into the sides of the cab walls, which are continued down below the cab floor an amount sufficient to embody the steps,

lead into the cab through this side entrance, replacing the former offset steps at the rear end of the cab.

A number of passenger locomotives have so far been equipped with this new diaphragm cab, most of those now in service being on the three runs of the Montreal-Toronto line. Their introduction has met with great favor from all concerned with their operation.

The Oxy-Acetylene Process in the Railway Shop.

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

The technical press has been devoting considerable space during the last few years to the uses of the oxy-acetylene process in the railway shop, more particularly on locomotive repair work where work must be produced expeditiously so that the earning power of a locomotive on the road might not be lost during the period that would be required to make the customary repairs. Most of these articles describing the advance of the subject, and its all round usefulness, have dealt with the practice followed in the United States, the instances cited coming from the most part from the same place. While the practice on both sides of the line is identically the same, the progress made in Canada concurrently with that in the United States, ought to be described in order to emphasize the fact that equally extensive repair and general work is being undertaken on this side of the line, and that the process where installed has been developed to an equal degree.

Modern conditions of keen competi-

fractured place, heat alone entering into the operating mediums, with no pressure involved.

A fusion of the metals subjected to the oxy-acetylene flame causes the molten portions of the parts to commingle to form the union. This flame is said to have a temperature in excess of 6,000 degs. Fahr., formed by the mixing in the proper proportions of oxygen and acetylene gas at the tip of a torch. This very high temperature is the result of the fact that acetylene gas has more weight per given volume than any other combustible gas, and is the closest approach to gaseous carbon known to chemistry. In consequence, the temperature of combustion is very high and intense heat is generated.

Two systems of operation are employed on this continent—the high and the low pressure. It is the former of these two that is in most general use, the acetylene gas being led to the nozzle of the torch under an appreciable pressure instead of the oxygen, which is

groove thus formed is filled with the same metal under the torch.

The general consensus of opinion among the users of the oxy-acetylene process seems to be that a long period of trials and tribulations is almost invariably experienced before satisfactory results can be obtained. The earlier experiences often lead to a desire to reject the process in favor of the older methods of repair, so discouraging are the results obtained in the earlier stages. In most instances, where the operator perseveres, very satisfactory results are the outcome, and the oldest users are for the most part the most enthusiastic advocates.

A few examples of the use of the process and the results obtained, as they have come under the notice of the writer, will undoubtedly prove of interest. In the C.P.R. shops at West Toronto, the process has been carried to as fine a stage of development as is generally to be found in the railway repair shop. Here, the locomotive shop has been piped throughout with acetylene, with connections at convenient points, these connections being painted red for identification purposes to prevent confusion with the air piping.

In these shops, a great variety of work is handled, though the principal work is that of patching up boilers, for which the oxy-acetylene process is peculiarly adapted. The accompanying illustrations show two instances where heavy repairs were made unnecessary. In fig. 1, the front end of the inside sheet at the bottom of the water leg near the mud ring had been so reduced in thickness, from the attacks of acid water accumulating in the interior at that point, that the plate was considered

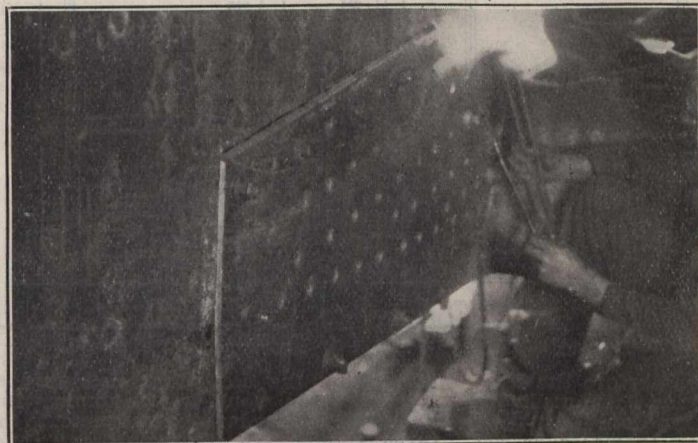


Fig. 1—Patching the Inside Sheet of the Firebox by the Oxy-Acetylene Process.

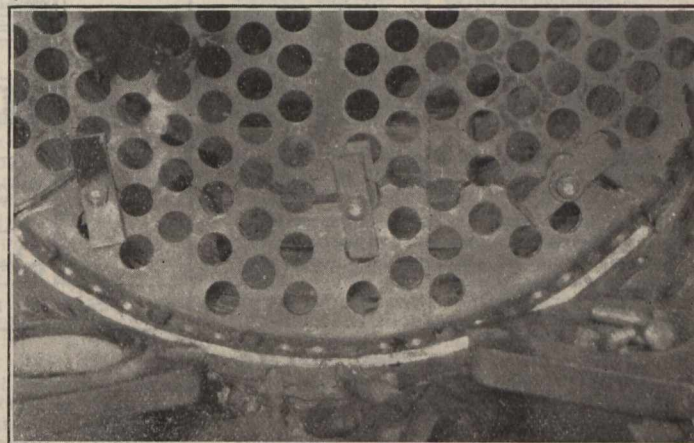


Fig. 2—Repairing the Front Tube Sheet by the Oxy-Acetylene Process.

tion involving the introduction of more efficient, and in some cases scientific, management, require that the methods of doing work must be constantly being improved in order that the quality of the work may be raised, and at the same time have the cost of production decreased—improvements in both directions. Oxy-acetylene would seem to be doing all this, with a saving of time, less waste, increased output and greater efficiency. This is emphasized by the speed with which a crippled locomotive may be taken into the repair shop and be completely repaired in a remarkably short time as compared to former methods. In addition, there is the factor of making many complicated repairs that would not be considered possible by the older methods, or, if considered possible, would not be deemed worth while from the poor quality of job that would result.

The term "welding," as applied to the oxy-acetylene process, is somewhat a misnomer, as dictionaries define it as "to press or beat into intimate and permanent union," neither of these actions entering into the process, it being purely autogenous, more metal building up the

under pressure in both systems, drawing the very low pressure acetylene along with it to the point where it ignites. The Academy of Science in France determined that the proper proportions for the two gases to give the best results was one of acetylene to a little more than one and a quarter of oxygen.

Impurities in either of the gases tend to produce inferior work, and the intensity of the flame is decreased so out of proportion to the amount of the impurities that the cost of the work increases very rapidly. This makes good gas a prime requisite. Impurities in the acetylene are largely due to the heat evolved in the acetylene generator after it has been in operation for some time. This internal heat produces other hydrocarbons in the gas, giving the resulting flame a carbonizing effect that will harden the weld and make it brittle.

There are two classes of welds. The first, for very thin plate, requires the addition of no extra material at the weld, the edges being brought into intimate contact and fused together. The second class, for heavier plates, requires that the contact edges be chamfered, and the

dangerous. Under former conditions, this would have required a patch to cover this part of the firebox, a construction that in itself is objectionable from the fact that it makes a double thickness wall through which the heat has more difficulty in penetrating, and, in consequence, that part of the inside sheet is particularly liable to further damage from burning. The oxy-acetylene process solved the difficulty. The original piece that had been corroded was first of all cut out by the oxy-acetylene flame, removing the whole area that was affected. The oxy-acetylene flame in removing the injured piece cuts it out perfectly clean, the flame penetrating a small incision made at one end, cutting along at a rapid rate with a narrow cut. The holding staybolts are drilled out and the damaged portion removed. Another piece of good plate is then cut to the shape of the removed portion, and the staybolt holes laid out and drilled or punched to make it in every way a counterpart of the removed piece. The joining edge of this plate, as well as the good edge of the side sheet, are chamfered, and the new piece bolted in place

as indicated. With the torch and a piece of filling wire, the joining crack is filled up, making a perfect joint with nearly unit strength. The staybolt holes are then tapped from the outside sheet, and the bottom rivet holes reamed through the mud ring, when, with the insertion of the staybolts and rivets, the firebox is again ready for service.

The front tube sheet in fig. 2 is similarly treated. The lower part, containing 19 tube holes, became eaten away, and would have required a whole new tube sheet had it not been amenable to the oxy-acetylene process. The latter method was used. Twelve bridges were cut across with the flame, and the rivets at the bottom driven out, removing the section. A new piece, similar in every particular, was then bolted in position, and the chamfered edges of the flanges and bridges were filled in by the torch, making a perfect weld. The rivet holes and tube holes then required reaming out.

The fire-door opening, from the repeated working action due to alternately heating and cooling, frequently breaks across, or checks at the rivet holes. Such injuries are repaired in the same manner as above, by the cutting out of the injured piece and welding in a new piece.

Numerous other parts of the boiler are amenable to the oxy-acetylene torch. Patches may be made in almost any part of the boiler, interior or exterior, as the foregoing examples indicate. A novel use of the torch for repair work on the boiler came to notice recently at the West Toronto shops. After nearly every trip on the heavy Muskoka run in the summer, it was found that the large superheater flues leaked at the front tube sheet, and required to be caulked before further service could be had out of them. The idea of welding them to the sheet suggested itself, and on trial was found to be so successful that all the flues are now welded into place, and no trouble is experienced with leaky superheater flues.

Cast iron parts of the locomotive can likewise be welded. At West Toronto recently, a steam pipe crack some 2 or 3 ft. in length was satisfactorily welded. From Montreal comes a report of the broken flange of the cast iron cylinder being mended. One of the cover studs, on being screwed into the cylinder head, broke inwards a piece from the cylinder bore, the broken fragment measuring about 2 ins. along each edge. This was satisfactorily welded into place. Greater welds than this on cylinders have been reported.

The steel underripping of the locomotive may also be repaired. At the West Toronto shops, links, spring hangers, motion work parts, etc., are being repaired.

Frames are rarely welded by this process of autogenous welding, these for the most part being fixed with thermit. An instance of the use of the oxy-acetylene process on frames occurred recently on a G.T.R. locomotive that broke down near Orillia and was repaired at that point. It was an old 8-wheeler with the driving wheel jaws integral with the top rail, and bolted to the lower rail by flanges from the jaws. Front and rear of one of the driving wheel journals and on each side of the locomotive, these jaws had broken, making four breaks in all. These were put in good order by welding with oxy-acetylene.

In car repair work, an instance occurred recently that demonstrated the value of this new process. Heating coils have a marked tendency to break along the original weld of the pipe, which, if even for a short distance, destroys the coil. These coils cost \$65 to replace, but can be repaired in a very short time at small expense by the oxy-acetylene flame.

Around the shop itself, among the tools, there are numerous places where

it can be used. One particularly useful purpose to which it is applied is that of welding high-speed steel ends on to soft-steel bodies, effecting a material saving over solid tools, and at the same time presenting a means of utilizing the used up old tool end stubs.

In electric railway work, another field is presented, but this end does not seem to have been developed to the same extent as in steam railway practice. One instance in Canadian electric railway practice came to notice recently, in which a considerable saving was effected, as the part repaired was one that involves a very important item of expense in electric railway rolling stock maintenance. The article referred to is the motor shell. These shells frequently have one of the pinion shaft lugs broken off, causing the discarding of the shell. By the oxy-acetylene process, these broken off lugs can be welded on to give a cast-

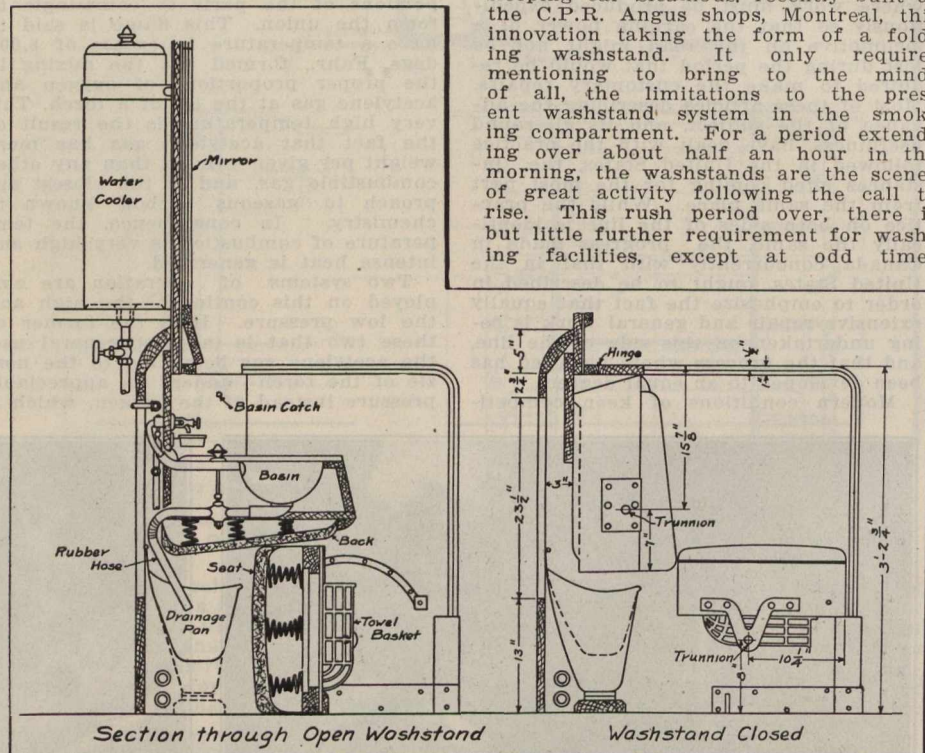


Fig. 1—Folding Washstand for C.P.R. Sleeping Cars.

ing as strong as it was before the fracture. Such repairs have been made for the Montreal Tramways Co.

While the foregoing examples do not cover a great many different parts, they are varied sufficiently to show the possibilities of the system; and, what is even more important from the standpoint the writer had in mind when planning this article, it shows the extent to which the process has been introduced in Canada, and that Canada is doing work that is equal to any that is being done abroad or to the south.

Largest Non-articulated Locomotives.

—What is said to be the largest non-articulated locomotive ever constructed has recently been delivered to the Chicago, Burlington and Quincy Rd. by the Baldwin Locomotive Works, on an order of five. These locomotives, of the 2-10-2 type, are replacing 2-6-6-2 type ones of the same power on that road, which is significant of a return to solid wheel base locomotives. The total weight of this locomotive is 378,700 lbs., of which 301,800 lbs. is on the drivers. The average weight per driving axle is in excess of 60,000 lbs. The locomotive wheel base is 39 ft. 8 ins., with a solid driving wheel base of 21 ft. 7 ins.

The Intercolonial Ry. has substituted the a la carte system for the table d'hote system on its dining cars.

Folding Washstand for Canadian Pacific Railway Sleeping Cars.

For a great many years there has been practically no change of importance in the interior arrangement of sleeping car washrooms other than the constantly improving refinement in interior finish of the room and parts, with the addition of a few added comforts. But in so far as any change from conventional lines is concerned, there has been but little development, the changes for the most part being those of refinement alone, with nothing radically new involved.

A departure from this state of affairs that has great bearing on comfort to the travelling public has been embodied in the washroom construction of the sleeping car Sicamous, recently built at the C.P.R. Angus shops, Montreal, this innovation taking the form of a folding washstand. It only requires mentioning to bring to the minds of all, the limitations to the present washstand system in the smoking compartment. For a period extending over about half an hour in the morning, the washstands are the scenes of great activity following the call to rise. This rush period over, there is but little further requirement for washing facilities, except at odd times

throughout the day, for which purpose a single basin would prove ample. But under the standard arrangement the three stands are there all day, and, what is more important, occupying valuable space in the smoking room, which is always in great demand during the daytime and evening.

The idea was conceived of utilizing the greater part of this space to advantage as seating room by making two of the three washstands convertible into seats, the third stand made stationary, providing sufficient washstand capacity for the light hours. The construction and arrangement of the folding or convertible stand as installed in the Sicamous is shown in the accompanying illustrations. The construction and operation of the parts is shown in fig. 1; the folding washstand open in fig. 2; the same stand converted into an upholstered seat in fig. 3, and the permanent washstand in fig. 4. Referring first to fig. 1, the construction will be examined. Swinging on trunnions at their ends, there is a seat and a seat back, both so arranged that they may be swung around through a right-angle turn, catches in these two positions of each, locating the seat and back in their open or closed positions as desired. The seat contains no features of peculiar interest other than the soiled towel basket attached to the seat bottom, and which is

thrown into position by the act of opening the stand. When used as a seat, this basket is underneath and out of sight.

The seat back, containing the two basins, is unique in design. Its front is leather upholstered like the seat, but the rear face of the back contains the basins with the necessary pipe connections ingeniously arranged. In the wall out of which the basins swing, there are

hose connection draws the water off into a sloping drainage pan beneath, passing out of the car from this point in the usual channels. As fig. 2 indicates, the basin, table, and all the fittings are nickeline, and in almost every particular resemble the permanent basins of the C.P.R. standard practice.

At the top of the seat back there is a hinged flap under the mirror which, when lowered on the seat top when the

Delaware and Hudson Co.'s Annual Report.

The annual report of the Delaware and Hudson Co., which owns the Québec, Montreal and Southern Ry., and the Napierville Jct. Ry. in Canada, for the year 1911, shows a net revenue of

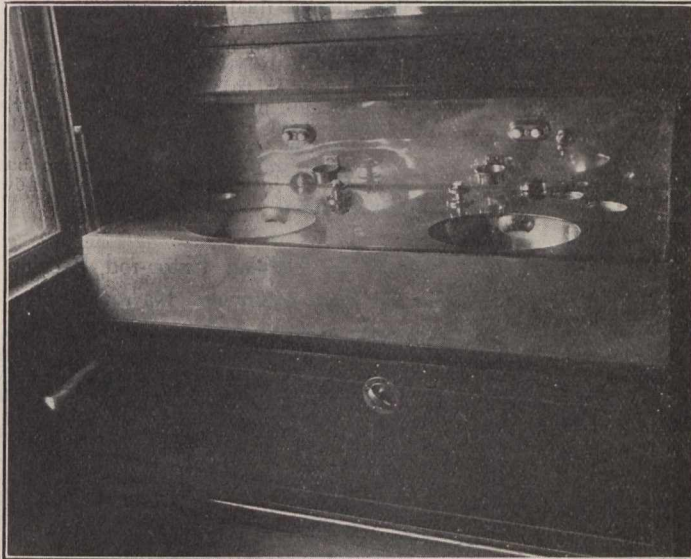


Fig. 2—Folding Washstand Open for Use.

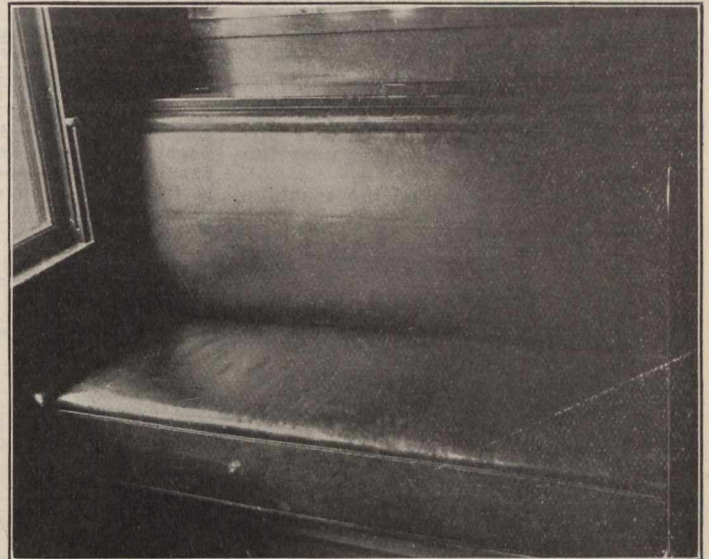


Fig. 3—Folding Washstand as a Seat.

the usual faucets (see also fig. 2), but from the fact that the basins are not permanently located, there cannot be a solid pipe connection from the faucets to the basins. This is taken care of very simply by having a small diameter pipe so located that when the basins are swung into their operative position, this pipe will slip into another pipe of somewhat larger diameter connecting with

latter is up, finishes off the seat in such a manner as to give it a permanent appearance as fig. 3 shows.

The impression might be gathered that in the construction of the basin in the seat back in this manner the water might leak over into the interior of the leather upholstery and destroy or damage it. However, the construction is such that the water will have difficulty in working through, and any that does manage to find its way through the crevices will quickly be dried up by the heat of the steam in the coils under these convertible seats.

The one permanent wash basin is shown in fig. 4, this basin being the one nearest the smoking compartment entrance, so that the convertible seats are in the desirable location beside the window. An intervening wall between this basin and the seats protects the occupants from splattering water.

The one car equipped has been so successful that others with this installation are planned, and cars being remodelled are having the smoking compartment changed to meet this new arrangement. The seating capacity is nearly doubled, making the arrangement particularly desirable on such runs as that taken by the Sicamous, which operates on the Montreal-Chicago run, the sleeping car running through partly in the daytime for the convenience of through travellers.



Fig. 4—Permanent Washstand Adjoining the Folding Ones.

the basin. The fit between the two pipes is of necessity very loose, but splashing is prevented by having the smaller pipe enter the larger as far as the swinging construction will permit. Both hot and cold water connections are handled in this manner—the faucets stationary with intermediate loose joint. The waste stopper is in the swinging basin table, the waste pipe leading back from the centre of the basin to the rear of the swinging part, where a rubber

Leaky Roofs of Box Cars.—To determine the facts of a common complaint that considerable damage is caused from leaky box car roofs, two Atchison, Topeka and Santa Fe Ry. officials at Springfield, Mo., made an inspection of a number of such cars recently during a severe rainstorm. Of 52 cars examined, 38 were found to be leaking through the roof and 7 through the sides. In all there were 152 leaks, an average of 4%. The cars examined were representative of most of the leading roads, indicating that this trouble is quite general. It is estimated that not much more than 10% of the box cars in service are proof against leaks.

\$116,710.26 from its coal mining department, and a net revenue from the operation of its railway department of \$8,663,647.35. After providing for bond interest, etc., the net income carried to profit and loss is \$5,237,680.87, equal to 12.32 per cent. on capital account. Dividends at the rate of 9 per cent. are provided for the current year out of profit and loss.

The report contains the following information relative to the Canadian lines:—

The Québec, Montreal and Southern Ry. shows an increase in operating revenues for 1911 of \$73,435.58 as compared with 1910. The operating expenses show an increase of \$108,632.73, making a decrease in net operating revenues of \$35,197.15. The net income, independent of interest charges due the D. and H. Co. was \$136,819.80, a decrease of \$41,736.94. The decrease in net operating revenues is due largely to the extraordinary charges for maintenance during the year, there being an increase of \$14,878.81 in ties and \$22,198.54 in bridges, trestles and culverts. The Frappier bridge burned twice in Aug., making necessary heavy temporary repairs. Maintenance of equipment shows an increase of \$14,519.35 due to repairs and renewals of steam locomotives and freight train cars. The Napierville Junction Railway shows an increase in operating revenues for 1911 of \$1,386.28 as compared with 1910. The operating expenses show an increase of \$5,821.45, making a decrease in net operating revenues of \$4,435.17. The net income was \$21,910.09, or 3.65 per cent. on the capital stock outstanding. The decrease in net operating revenues is due largely to an increase in amount paid for injuries to persons.

The total assets of the company are \$17,198,620.23, the Canadian lines being valued at \$6,308,139.79. The stocks owned by the company include \$1,000,000 common stock of the Québec, Montreal and Southern Ry., \$600,000 common stock of the Napierville Jct. Ry.

No separate statistical figures are given for the Canadian lines.

Railway Mechanical Methods and Devices.

Multiple Drilling Machine at the Central Vermont Railway Shops.

The accompanying illustrations show a multiple drilling machine of rather unique construction, which is in regular service in the C.V.R. car shops at St. Albans, Vt., and is giving excellent satisfaction for strap work and such commonly occurring members. The interesting feature lies in the fact that the feed is hydraulic, the table feeding upward by hydraulic pressure against the drill heads.

Rear and side views of the machine

tween the centre bearings, and two on each side between the outer bearings, making seven in all. The drive is through a pulley from the main drive shaft overhead. The cross rail is braced in position by two wrought iron straps, E, from the rear, attached to the outer edge of the base casting, which is imbedded in the floor level with its upper face.

The drill table F is vertically guided on the supporting rods A by bearings G, on a face casting to which the table is bolted as indicated. These guiding bearings are of such ample proportions as to insure a rigid support to the table, which is free to be moved vertically through

is provided to shift the slotted link from side to side to give the required pump plunger stroke, which, by this means may be regulated at will. It is by means of this that the rapidity of the feed is regulated.

The pump itself is contained in a small tank which acts as a reservoir for the water forced by the pump under the drill table plunger. On releasing the pressure under this plunger by shutting off the pump, accomplished by throwing the lever into its uppermost position, which moves the link C into line with the pump plunger, the water runs back into the reservoir to be used again indefinitely.

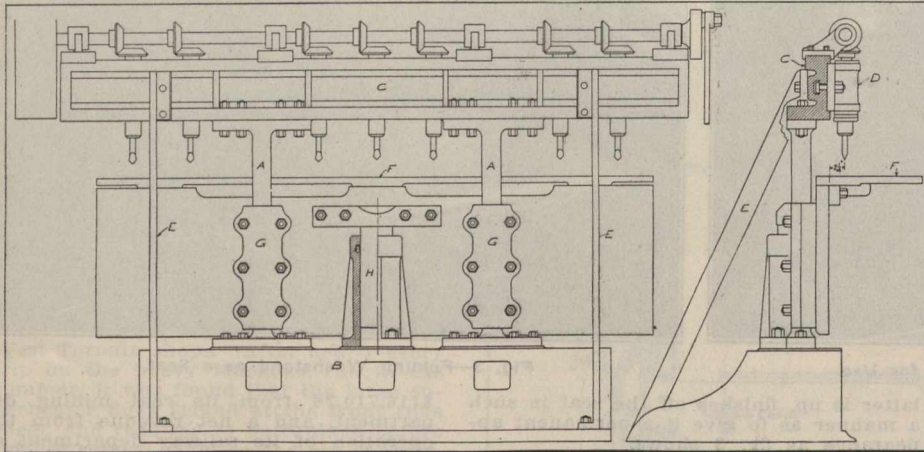


Fig. 1—Multiple Drilling Machine with Hydraulic Feed.

are given in fig. 1, and in fig. 2 the press is shown as installed. The construction can be seen to better advantage by an analysis of fig. 2. Two 2½-in. forged rods, A, bolted to faced spots on a cast-iron base, B, carry on their upper ends a cross-arm, C, which is machined on its front face, and on the top and bottom edges. The supports, B, are bolted to the lower edge. The front face has a bolt head groove in the centre of a wide

the limitations of the supports A. The table is fed upward against the drills by means of the hydraulic plunger H, bolted to a faced spot on the top of the base casting, and secured at the top of the back of the table support. Introducing hydraulic pressure under the plunger at the desired rate of entry, raises the table, feeding the work against the drill instead of the reverse, as ordinarily.

In order to be self-contained, the ma-

Mould for Forming Piston-rod Packing at the Pere Marquette Railroad Shops.

The Pere Marquette Rd., in its St. Thomas, Ont., shops, has a novel method of casting metallic piston-rod packing rings which is peculiarly its own. It is essentially a die-casting process, and the methods involved are almost identical with those used in that industry.

A couple of the packing rings, freshly cast, as they come from the moulds, are shown on the stand at A in fig. 1. This illustration shows the assembled machine ready for use, while in fig. 2 the details of the device are emphasized.

Referring to fig. 2, it will be noticed that the body casting A contains a plunger rod B, with a mandrel end C. Fitting over this mandrel end are two die rings, D and E, forming with the mandrel an annular cavity, F, the shape of the completed packing ring. These two rings, D and E, are held together against the shoulder of B by a taper key fitting through the diametral slot G.

To provide for pouring, there are small channels on the inner faces of D and E. When ready for pouring, the plunger B is forced to the right by the lever H (B in fig. 1), bringing D and E into the opening I, thereby aligning

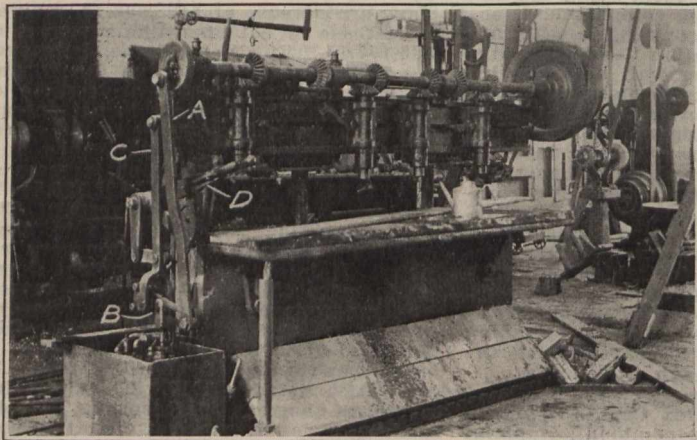


Fig. 2—Installation of Multiple Drilling Machine.

channel running the full length of the face. Fitting into this recessed face, there are drill heads, D, held in place by bolts in the before-mentioned bolt groove. These drill heads are adjustable within the ranges on the cross head face, so that any hole spacing may be provided for. A drive shaft mounted in bearings on the top of this cross arm, carries adjustable bevel gears mating with the bevel gears on the upper ends of the drill spindles. The bearings mounted at intervals along the top form the limits of movement of the different drill heads; there are three heads be-

chine is provided with a pump, the arrangement of which is shown in fig. 2. A pump rod, A, connects to one end of a link, B, the other end of this link B being suspended by another link, C, from the end of the top cross bar of the drill. The suspended link B is in form like the link of the Stephenson motion, from the fact that it is slotted and has a sliding block in that slot, this block being attached to the upper end of the pump piston rod, the latter receiving its motion therefrom. The lever D, with its attached bell crank and short link from the bell crank to the suspending link C,

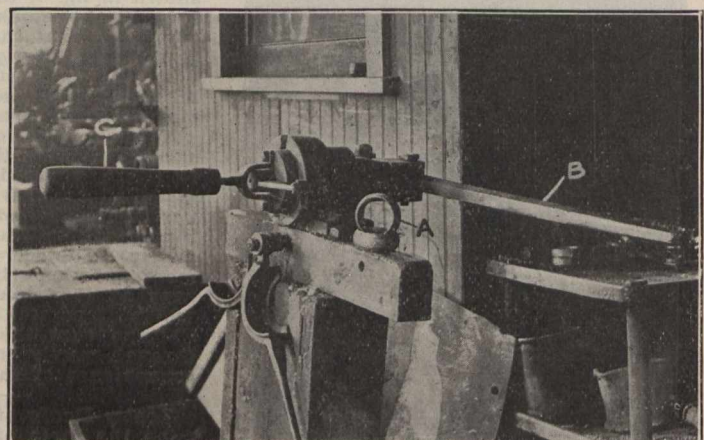


Fig. 1—Mould for Piston Rod Packing with Samples of Work.

them perfectly. A V-shaped cut-out, J, in the face of A, registers with the pouring holes in D and E. To facilitate the handling of the outer section E of the mould, it is attached to a long handle K (C of fig. 1). Removing key G and forcing to the right, releases the cast ring.

The packing rings thus formed are quite clean, and ready for service, the finished faces of the mould making it unnecessary to further finish the rings. Two smaller rings of half the width, and with an outside diameter equal to the inside diameter of this bevelled one, are

cast in a similar manner. These, when slit with a saw, are placed inside this bevelled ring, and over the piston ring. The three being made of bearing metal, are soft, and readily form into a steam-tight joint when compressed by the gland.

The drilled hole for guiding is usually put through with a 1½-in. drill. This is followed by a coreremoving process with the tool indicated in fig. 2. This tool is shown on the drill table at B in fig. 1. Referring to fig. 2, it will be noticed that the tool body is a cut-away

the reamer at C, fig. 1. This completes the machining of the pin holes in the end of the side rod.

Superheater Flue Roller at the Michigan Central Railroad Shops.

The accompanying illustration shows a simple construction of superheater flue roller as made by J. Sumner, toolmaker at the Michigan Central Rd., St. Thomas, Ont., shops. The device consists simply of two steel rings, A and B, held parallel at a definite distance apart by five shoulder bolts C. Intermediate to these shoulder bolts are five radial slots in which hardened carbon steel rollers are free to slide radially. A long driving pin, with a taper of 1 in 24, introduced

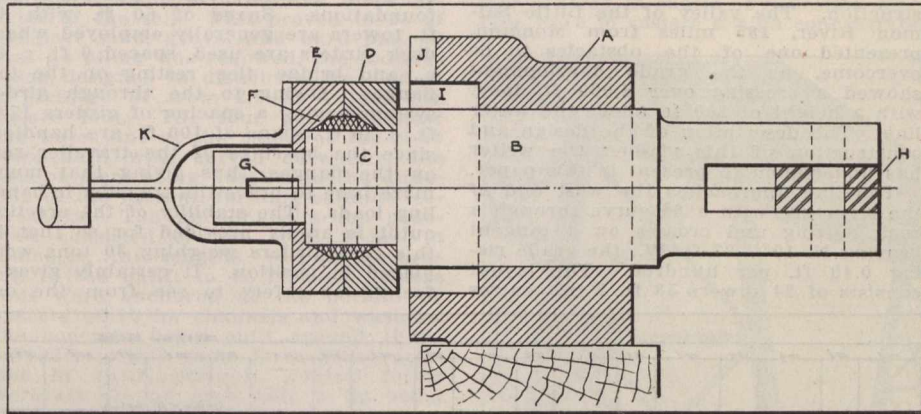
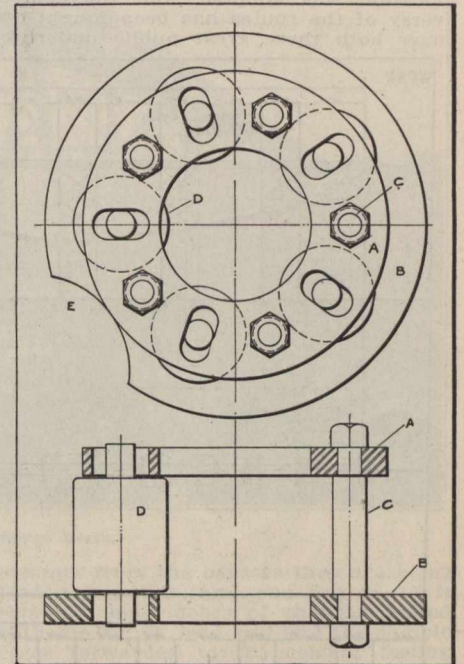


Fig. 2—Details of Piston Rod Packing Mould.

Tools for Boring Side and Connecting Rods at the G.T.R. Point St. Charles Shops.

The method of boring side and connecting rods, and the tools employed, as practised at the Grand Trunk Ry. Point St. Charles shops, Montreal, are shown in the accompanying three illustrations. A side rod as mounted for machining is shown in fig. 1. This rod, mounted as indicated, is first drilled at both ends

shell, A, with two vertical faces, to which are bolted by bolts in slots, tools B, projecting a short distance below the lower edge of the shell wall. Through the centre of this shell there is an elongated guide tit, C, of a diameter cor-



Superheater Flue Roller.

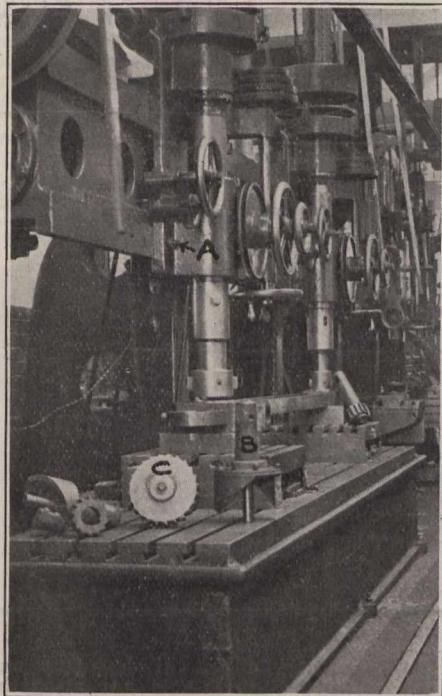


Fig. 1—Boring the Ends of a Side Rod.

to give the central guiding holes for the tools to follow. The two drilling heads are rapidly adjusted for the standard lengths of rods to be machined, by having gauge plugs, as at A, fig. 1, tapered and fitting into corresponding tapered holes through the drill head carriage and supporting cross arm. These holes have been carefully located, drilled and reamed for locating the two heads in drilling the ends of practically all the standard lengths of side and connecting rods. In consequence, the setting up of the job requires no special attention, the standard length being absolutely determined.

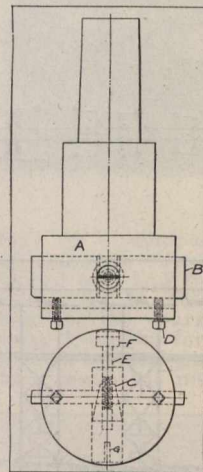


Fig. 2—Tool for Coring Rod End.

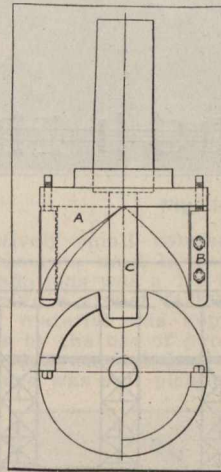


Fig. 3—Tool for Boring Rod End.

responding to the diameter of the drilled hole in the end of the rod to be machined. The upper end of this guide bar, above the shell, has a taper shank fitting the spindle of the drill head. The tool, held in the drill spindle by this taper shank, and guided in the rod being drilled by the lower tit end, cuts down into the metal of the rod end, a core of the metal being thus removed without chipping the metal into cuttings. This cutting tool forces its way through the metal quite rapidly, saving considerable time, and leaving a block of metal that is useful in the blacksmith shop for making up small forgings.

The next operation is that of boring out the cored holes to a slightly larger size, that being the operation shown in process in the drill in fig. 1. The tool employed is shown in fig. 3. A taper-shank body, A, carries in a cross slot two cutters, B, each of these cutters bearing at the inner end on a taper pin, C. The two cutters are held up against their seats by the two set screws, D. The taper pin C is tapped to receive a threaded screw, E, the latter seating in the recess F in one side of the tool body. The taper pin C also has a squared hole, G, in its outer end, by means of which it is drawn into the body, forcing out the cutters into the correct location. This tool finishes the hole to the approximate size, only requiring to be reamed out with

in the central opening, forces the rollers out on the tube walls, in the usual manner. The ring B has a cut-out on one side as at E, in order that the tool may clear the adjacent flue. The ring A has a diameter 1-32 in. less than that of the flue, thereby acting as a guide for the whole device in entering.

The National Association of Station Agents will assemble at Chicago on Sept. 7 and travel by special train over the Minneapolis, St. Paul and Sault Ste. Marie Ry. to Duluth, spending Sept. 8 there, then going via M.S.P. and S.S.M.R. to Winnipeg, staying there a day, and then via C.P.R. to Vancouver, where the convention, etc., will occupy three days. From Vancouver a steamboat will be taken to Seattle, the train being sent on via C.P.R. and Northern Pacific. From Seattle the party will return to Chicago via Chicago, Milwaukee and St. Paul Ry., making some stops en route. The trip will occupy about three weeks.

Canada Northwest Land Co.—Follow are the officers and directors for the current year, who were re-elected at the annual meeting recently:—President, Sir Edmund B. Osler; Vice President, W. D. Matthews; other directors, F. S. Meighen, J. M. McIntyre, Sir Thos. G. Shaughnessy, Sir Thos. Skinner, Lord Strathcona, Sir Wm. C. Van Horne.

The Abolition of the Common Drinking cup on all trains and at all railway stations in Idaho, Washington, Montana, Minnesota and North Dakota was agreed upon at a recent conference of representatives of the boards of health of those states.

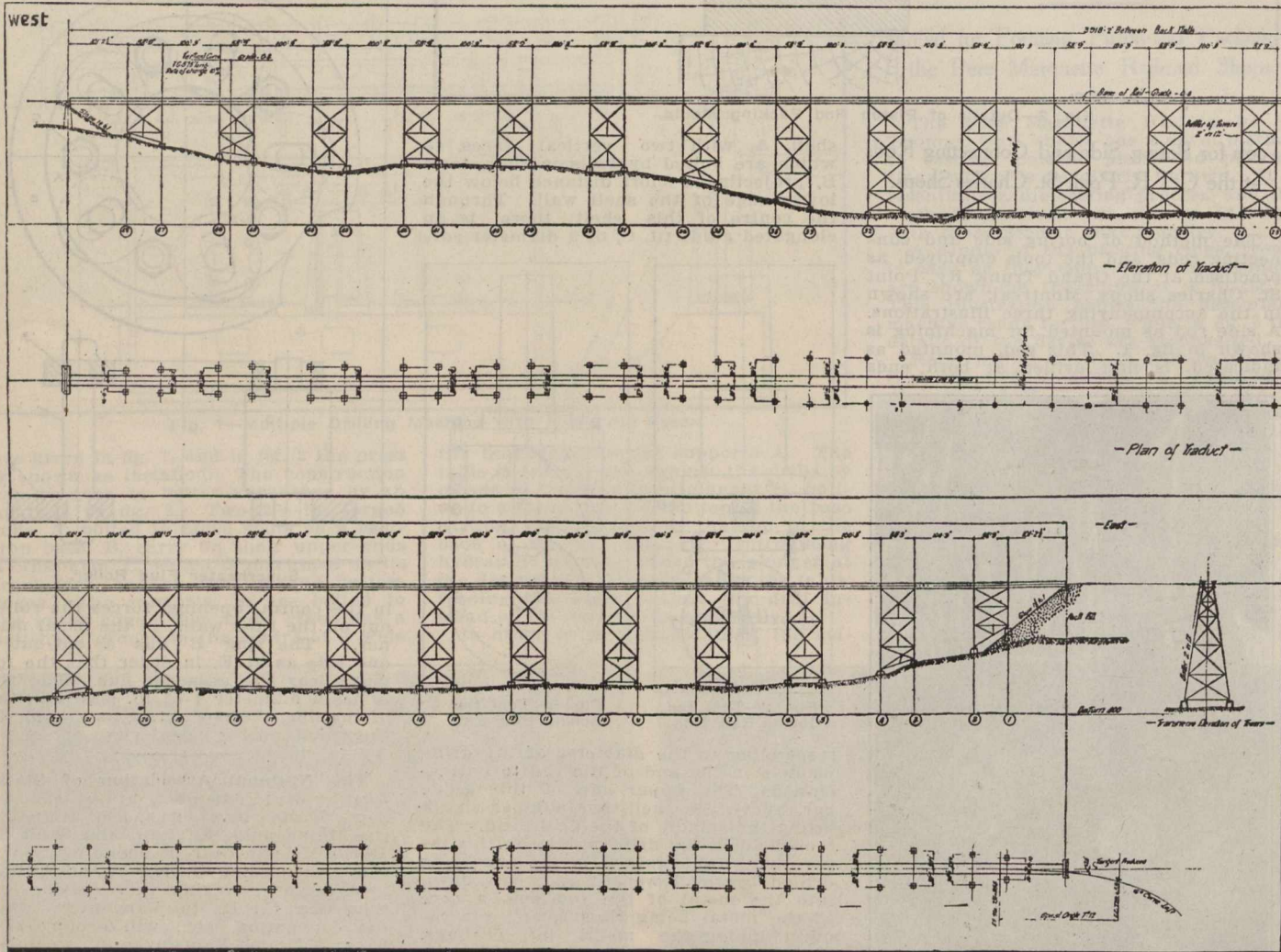
The Little Salmon River Viaduct, National Transcontinental Railway.

By R. F. Uniacke, M. Can. Soc. C.E., Bridge Engineer, N.T.R. Commission.

The act of Parliament authorizing the construction by commission, of the Eastern Division of the National Transcontinental Ry., provides for a location from its eastern terminus, Moncton, through the central part of the Province of New Brunswick, and through the Province of Quebec by the shortest available route to the city of Quebec. At the time of the inception of the Intercolonial Ry., New Brunswick had been thoroughly explored before the final location was adopted, and the controversy of the routes has been fought out over both these great public undertak-

struction. The valley of the Little Salmon River, 185 miles from Moncton, presented one of the obstacles to be overcome, as the grade development showed a crossing over 4,000 ft. long, with a height of 200 ft. above the water line. The description of the design and construction of this viaduct the writer has undertaken to present in this paper. The line approaches the west end of the structure with a 6° curve through a rock cutting and crosses on a tangent bearing N. 10°—27 ft. W., the grade rising 0.40 ft. per hundred. The layout consists of 24 towers 58 ft. 9 in. centres

through girder system. In high trestle construction, where the use of false work is out of the question, the most economical layout is that of an intermediate span as long as can be handled with a well designed traveller working from grade, so as to reduce the number of high towers, their pedestals and foundations. Spans of 60 ft. with 40 ft. towers are generally employed where deck girders are used, spaced 9 ft. c. to c., and bridge ties resting on the top flanges. Owing to the through girder system having a spacing of girders 17½ ft. c. to c., spans of 100 ft. are handled, since the bearings of the traveller rest on the flanges, thus giving that much more base to brace the traveller in handling loads. The stability of the erection outfit is amply provided for so that in this case girders weighing 30 tons were placed in position. It certainly gives a feeling of safety to see from the car



Little Salmon River Viaduct, National Transcontinental Railway.

ings. Three routes were located for the Intercolonial, known at that time as the frontier, the central, and the Baie des Chaleurs routes, and of these, on the recommendation of the Chief Engineer, and owing to Imperial considerations, the latter was adopted, since a subsidy aid had been granted by the Home Government, the Baie des Chaleurs route was adopted. The engineers of the Transcontinental had located two lines, one known as the river route, following the St. John River, north from Fredericton, and the other the central route; the latter was adopted as fulfilling more closely the provisions of the act. That a railway has now been constructed along this route having a ruling 0.4 compensated grade, with a maximum curvature of 6°, is owing in a large measure to the advance in modern bridge and high viaduct con-

and 25 intermediate spans 100 ft. 3 ins. c. to c., the end spans being 100 ft. 10½ ins. centre of bent to outer end of steel; all the tower spans are alike and also the intermediate spans, except that the masonry ends are extended to give the required bearing. The towers and bracing are made alike as much as possible, necessitating one set of templates only for the spans and parts of towers which duplicate each other. A through girder system of construction was adopted, the girders being spaced 17½ ft. c. to c., while the floor beams with gussets were spaced 14 ft. c. to c., along the plate girders. The east end span is on a spiral to a 6° curve and in consequence the girders are deflected at this abutment 1 ft. 3 ins. off the tangent to the structure produced. There were several reasons which led to the adoption of a

window the flanges of a heavy steel girder, and that this is not altogether sentiment is shown by the fact that instances of derailment are recorded, in which the car held to the roadway by the lateral resisting power of these girders. **SUBSTRUCTURE.**—The approach at the east end being through a rock cutting, in order to avoid building the steel work on a curve, and also to utilize the material in the cutting without waste, an abutment of reinforced concrete placed on top of the rock fill was decided on. A buried pier built from the original surface at this point would have been over 100 ft. high, difficult to design and build, and very costly. This was avoided by the use of a bank abutment. The concrete was reinforced to prevent danger of cracks from settlement in the

bank, and in order to give time for the bank to settle the ends of the girders were temporarily supported by a crib work of square timber, before building the permanent abutment.

In the design of the pedestals and west abutment, borings and test pits were first made to determine the character of the soil. This proved to be of compact sand, gravel and hard pan, so that no piling was required, the footings being designed to distribute the load at a pressure of from 2.5 to 4 tons per square foot. The four pedestals near the water line at the banks of the river were built with curved cutwaters, the axis of piers being parallel to the direction of the current, forming suitable ice-breakers. The anchor bolts for pedestals consisted of two rods, 2 ins. in diameter, the lengths varying according to the uplift to be resisted. These rods were anchored at the bottom by spacers of 10 in. channels and washers, the concrete being built around them. In order to give room for a little variation in their position, conical forms were set around each bolt, a lip being left at the top extending beyond the base plate of column through which these voids were filled with grout after the steel was erected. The west abutment or buried pier was about 40 ft. in height above the footing course, and in order to reduce the pressure on the soil and allow the embankment to run through and surround it, an arched void was left in a longitudinal direction. No difficulty was experienced in building to this design.

In laying out the work no triangulation was required and an ordinary steel tape was used, the writer's experience being that, as provision is made in the girders for expansion, a slight variation in the position of the anchor bolts is permissible, providing the expansion slots are made longer than the theoretical length requires. The chief difficulty consists in maintaining the anchors in a vertical position and protecting them from rough usage from swinging buckets of concrete and other causes.

CONCRETE.—The materials used in the concrete were Portland cement, sand and gravel, the two latter being obtained on the bank of the river near the

found to contain 6% of soluble matter, which was eliminated by thorough washing, and a mixture of one part cement, two parts sand, and four parts gravel, varying from the size of a pea to 3 ins., was obtained. As the sand was not of the best quality, the use of 1-2-4 mixture was ordered in shafts of pedestals, since they have to sustain a high concentrated

and must have acquired its final set within 10 hours, the briquettes being kept in a damp closet for 24 hours and afterwards immersed in water until time of breaking.

It is the writer's practice on receiving notice that a consignment of cement is to be shipped to a contractor to send an inspector to the mills to draw

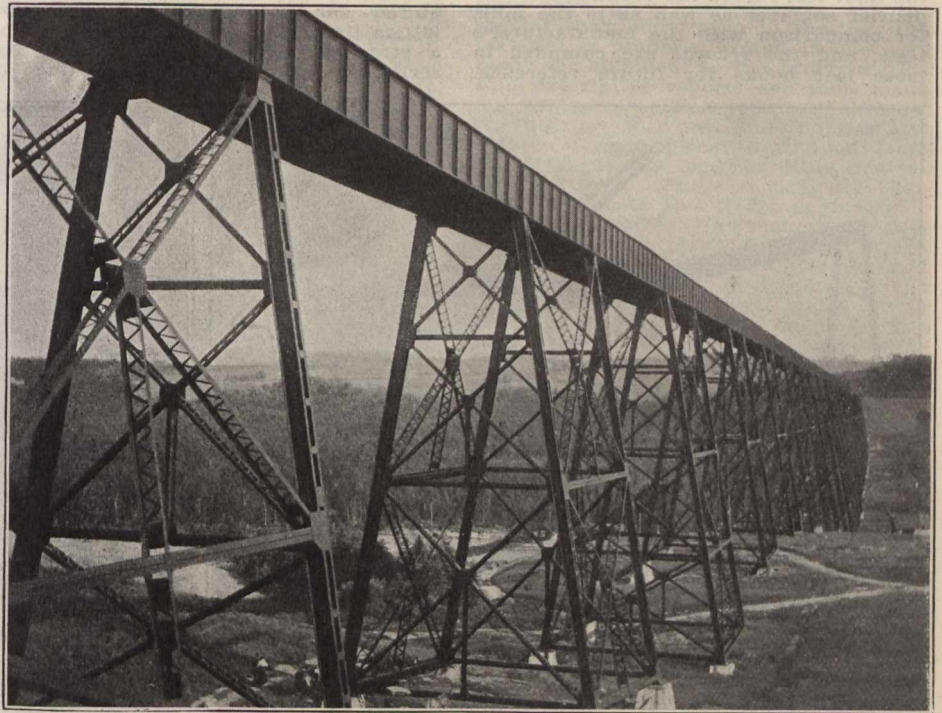


Fig. 1—General View.

load on a comparatively small volume of concrete. The concrete used in the buried pier and foundations was a 1-3-5 mixture. In obtaining a proper facing mixture the coarser material was kept away from the forms by the use of perforated spades, pushed down and drawn back while the mixture was still plastic.

samples from the bags as they are being loaded into the cars; one bag in 40 is sampled, both doors of the car sealed with the N.T.R. lead seal and the sample cases forwarded to the cement testing laboratory in Ottawa, in charge of a chief cement inspector attached to the Bridge Engineer's office. The seal being

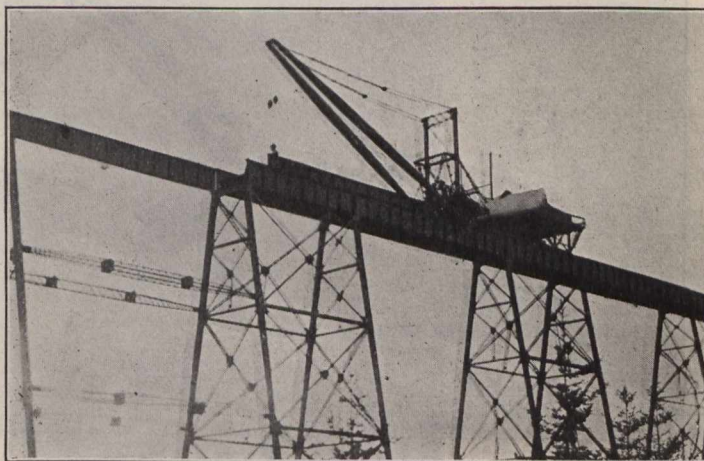


Fig. 2—100 ft. Girder Raised.

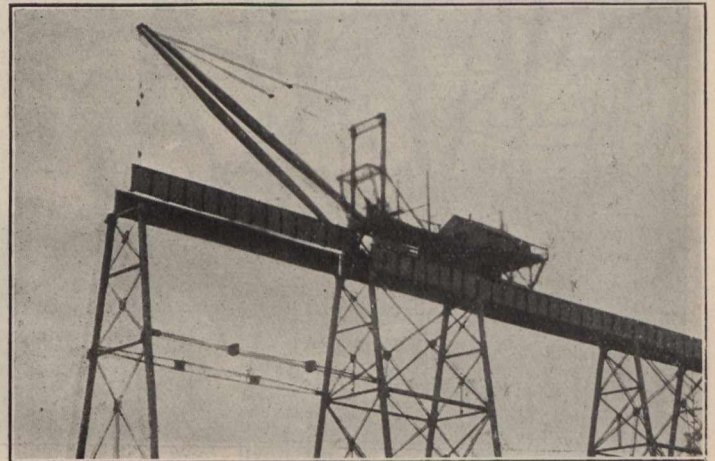


Fig. 3—100 ft. Girder Ready to Place, Erection Struts in Position.

bridge site. In this locality good sand is very difficult to obtain and, after a test of sand from several pits, the local material was selected, the sieve test showing after the gravel was screened out:

Retained on 20 mesh sieve	64%
Retained on 30 mesh sieve	17%
Retained on 50 mesh sieve	15%
Retained on 74 mesh sieve	2%
Retained on 100 mesh sieve	2%
	100%

After treating the finer residue with a 20% solution of sulphuric acid, it was

This method was found more satisfactory than that of attempting to bond a facing mixture into the body as required in some specifications.

CEMENT.—The following description of the method adopted for sampling and testing the cement used on all structures under construction on the N.T.R. may be of interest. The cement specifications are standard, and the governing tests are for fineness, specific gravity, soundness, time of setting, and tensile strength. The cement shall not acquire its initial set in less than 45 minutes

intact on arriving at the bridge site is a notice to the field inspector that the car has been sampled by the Bridge Department. The preliminary tests for soundness are made at once, the mills are notified to hold the cars if these results appear doubtful, and the final record covering the full 28 days tests is generally completed and the contractor advised of the acceptance soon after the cars are on the work. In mills where the records have been continuously good, the contractor has been permitted to use the cement on completion of

seven days test, in some cases where work would be held up for want of cars, but always at the contractor's risk and subject to the 28 days tests; in no case where this has been allowed has the result proved a mistake in judgment. A cement sampling record slip is enclosed in the sealed sample case giving all information as to shipment. Copies of the final test record are furnished to the district engineer as well as to the mills for comparison with the manufacturer's tests, and the records are compiled in loose leaf books for future reference.

up channel section; but the saving in weight of details and simplicity in shop work fully compensates for the extra main material. In the light of column tests it is reasonable to expect that the reduction in unit stresses for the increase of radii length would not be justified by practical tests. The metal is used mostly in directly resisting the primary stresses, as very little is required for secondary purposes (viz., lattice tie plates, etc.), and in this way a stronger column is obtained. The section used has also the advantage of

timber erected in place, and to carry out the amounts on the estimated quantities furnished, viz., steel 14,000,000 lbs., timber 520,300 ft. b.m. After the tender is awarded the bridge company submits stress sheets and details for approval before ordering the material from the mills.

FLOOR.—The rails were directly supported by 8 in. x 12 in. x 14 ft. bridge ties resting on the steel stringers, every fourth tie being 16 ft. long to support the plank footway placed outside the guard timber for the convenience and

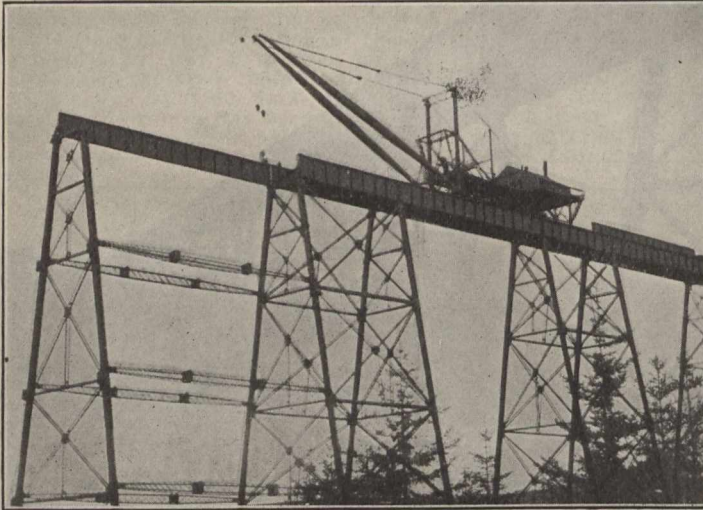


Fig. 4—100 ft. Girder in Place.

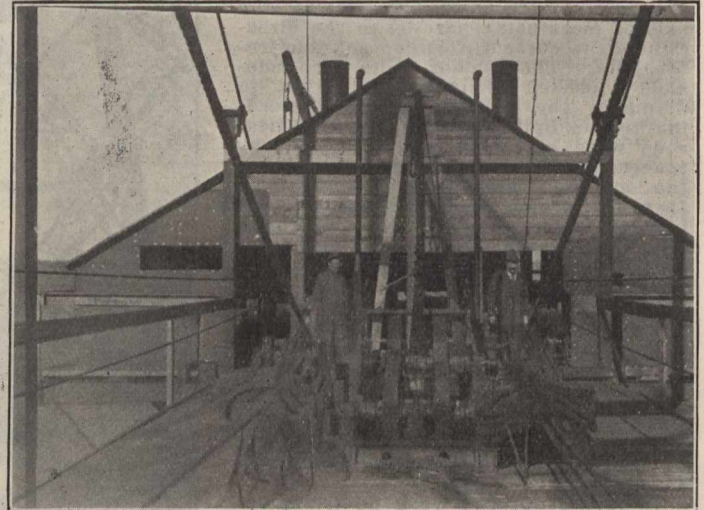


Fig. 5—Working Platform of Traveller.

By means of these records and a system of reports from the field inspectors of the arrival of cars, it is an easy matter to trace any car and identify its contents after being piled in the cement storage house at the bridge site.

DESIGN.—The Dominion Government specifications were strictly adhered to in the proportioning of the members. The compression members were figured for the pin ended formula of these

continuous webs in each direction, which are greatly superior to the easily bent lattice bars, and moreover the interior of the column is much more accessible to the paint brush for shop and field coats. The section is symmetrical on both axes, having therefore its centre of gravity in the centre of the section, and no eccentric loading is induced from the girders. The small amount of redundant metal means uni-

safety of the section men. An outside guard timber 8 in. x 9 in. dapped 1 in. over the ties, which were spaced four inches apart in the clear, the ties were secured to the stringers by $\frac{3}{4}$ in. hook bolts, and the guard timbers bolted through the tie with one $\frac{3}{4}$ in. bolt in every fourth tie. A steel guard rail 60 lbs. to the yard will be placed inside the gauge line, and 8 ins. therefrom in the clear, these guard rails coming together

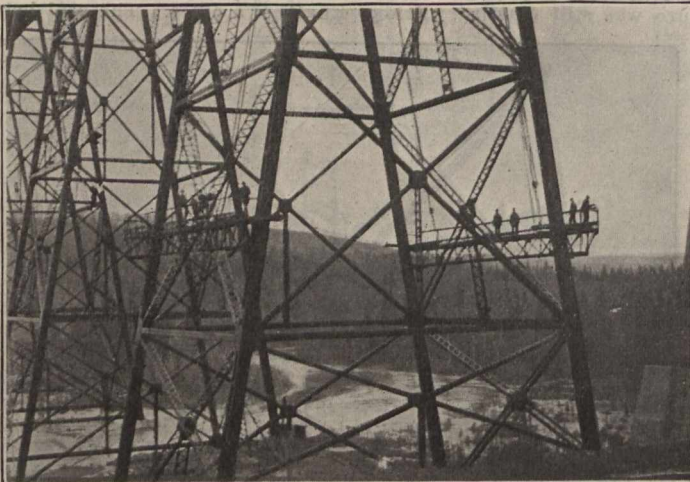


Fig. 6—Rivetting Galleries.

specifications. In the tension members of the towers a limiting length of 200 l/r was used to avoid sagging of members, to make them capable of resisting compression and to give initial stiffness. The use of bulb angles in the sway bracing of towers makes a very stiff and economical section and avoids breakages in shipment, the great fault in box laced section of light angles. Traction and wind were figures as called for in the specifications.

The posts viewed from the stress sheets do not appear to be economical, because of their relatively small radius of gyration when compared with a built

formity of stress in the columns, and simplicity in the make up will decrease the cost of maintenance.

TENDERS.—In calling for tenders for the steel work our usual practice was followed of furnishing bridge companies with a general design and details of girders and towers, together with a printed form of tender in which was filled in the estimated weights of steel, and number of feet b.m. of timber in the floor. With this system all bridge companies bid on the same basis, and are not required to make a single drawing to submit with tenders, but merely to fill in the unit prices for steel and

at the centre of the track one rail length beyond the end of the bridge and being protected by a cast steel point fitting the rail section and spiked to the road bed ties.

ERECTION.—Actual erection began July 27, 1910; the steel was all assembled and last span swung Feb. 8, 1911, and all riveting and painting fully completed by Aug. 19, 1911. Material was unloaded at a siding at the west end and handled by a two boom derrick car in the storing yard. A light standard gauge locomotive with lorry cars handled the material from the storage yard to end of steel. The main feature of the

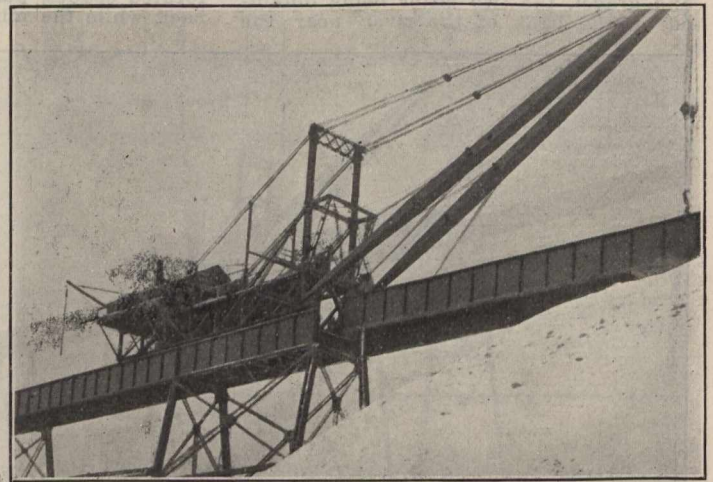


Fig. 10—Placing Last Girder Span.

erection outfit was the 30 ton two boom erection derrick, travelling on the top flanges of the girders, the trucks of the traveller running on 115 lb. crane rail, the base of which rested on timber temporarily secured to the girder flanges. This derrick was self-propelling by means of a chain and sprocket connecting the trucks with the erecting engine, which consisted of two 10 x 12 in. cylinders—2 drum—4 spool hoist. The 115 ft. booms were box section composed of 4 36 in. x 1/4 in. web plates at centre section and tapering at the end, connected with four 3 1/2 x 3 1/2 x 3/8 angles. This section was found to weigh actually less than a latticed section and the combined unit stresses from compression and bending were very much reduced. The writer was told that the men working on the traveller, and assembling, were very enthusiastic over the ease with which the big machine handled its work. The wind at the deck of the trestle was very strong, and was generally blowing at right angles to the bridge, but the work was practically never held up on account of too much wind. The use of the erection struts is shown in fig. 2; after a tower and its girders were assembled the erection struts were removed and used again to stiffen the first bent of the next tower until it too was connected and self sustaining. The hook bolts temporarily connecting the ends of three struts with the columns proved very efficient.

Another important feature was the use of riveting bridges for convenience and safety of the men in assembling, riveting, and painting. By reference to figs. 6, 7 and 8, the method of handling them will be plainly seen. They were carried along the top of the trestle by the two boom yard derrick car, and after being secured to the top flanges of girders by hooks, the cages were



Fig. 8—Rivetting Gallery in Position at Top Tower.

lowered or raised by hand, as required, the free end of the tackles being on the platform, so that the riveters could slack away themselves.

The erection staff varied from 60 to 80 men, of which but 6 were employed on the big traveller, 1 subforeman and 14 men were used to assemble the steel work, and the rest formed from 2 to 6 gangs of riveters, also crew for derrick car used for unloading material in yard,

and delivering same to traveller, and driver for light locomotive. The riveting gangs averaged 302 rivets a day of 10 hours per gang, a rate which would probably have been reduced by 50% if ordinary staging had been used, instead of the riveting cages.

The accompanying table showing progress of erection indicates rather remarkable time, considering the force employed. A pair of 100 ft. girders



Fig. 7—Method of Raising and Moving Rivetting Galleries.

were swung and bolted in their final position in 37 minutes, and floor beams and stringers assembled in half a day.

PAINTING.—One coat of black metalastic paint was used in the shop, with a coat on each contact surface before assembling. Two field coats were applied, the first metalastic brown, and the final coat acheson graphite. Rivet heads and shop marks were touched up before applying the field coats. The use of a different shade for the first field coat was a great help to the inspector, to enable him to see that the several coverings were properly applied.

THE INSPECTION of this work covers mill, shop, and erection inspection, all in accordance with the Dominion Government specifications of 1908. The bridge company, on being advised of the name of the inspection company, which is to do the inspection, is required to furnish it in triplicate with copies of all mill orders; one copy is furnished the bridge engineer, and one copy is sent to the inspection company's representative at the mills where the material is to be rolled.

The inspector then makes arrangements to be present at the rolling of the material which is being furnished on these orders, making complete surface inspection of every piece, measuring it for width and for length, and gauging the thickness. Specimens are then selected from the material so inspected by the representative of the inspection company, taken from each heat of steel which has been rolled into the material furnished on his particular order. These test pieces so selected are then forwarded to the machine shop to be properly prepared, that is to say, machined on both edges and straightened true. The test pieces so prepared are then sent to the testing laboratory at the mills, where the same are measured and broken in the testing machine, in the presence of the inspector. The results of this test piece have to conform with the requirements of the specifications, that is to say, the tensile strength has to be within the limits, also the elongation and reduction of area of the steel. The inspection company, in addition to witnessing the pulling of these test pieces previously selected by their representative, also secures from the rolling mills a certificate of the chemical

analysis which may be found in the steel so tested. Frequently the inspector requires drillings to be taken from the test pieces at the mills, so as to check up the accuracy of the reports presented to him by the rolling mill company. Test pieces and material which they represent are identified by melt numbers.

As soon as the surface inspection of the material has been made, and the tests have proved satisfactory, the inspector then undertakes to see that the material is properly loaded in the cars ready for shipment to the bridge works. Full descriptive reports are then made out by the inspection company, showing the number of pieces and the size and length of each piece so shipped from the steel works, together with the results of tests. These reports are then sent forward to the bridge engineer.

SHOP INSPECTION.—As soon as the material has been received at the bridge works, the same is then unloaded, and when work is ready to commence, the various pieces of material which go to make up a full sized member are brought into the shop. The representative of the inspection company is present to see the laying off of the material, the first step in the preparation for punching. The punching is then witnessed by the inspector to see that punches and dies of the correct size are used, as required by the Dominion Government specifications. The inspector then further sees that the material, as soon as it is punched, is properly assembled, and that a sufficient number of bolts are used, so as to insure perfect fit and matching of all holes, prior to the same being riveted. The process of riveting is also supervised; and, lastly, the finished member is checked over to see that the measurements and clearances are correct, and that construction is in full accordance with the shop drawings submitted by the bridge com-

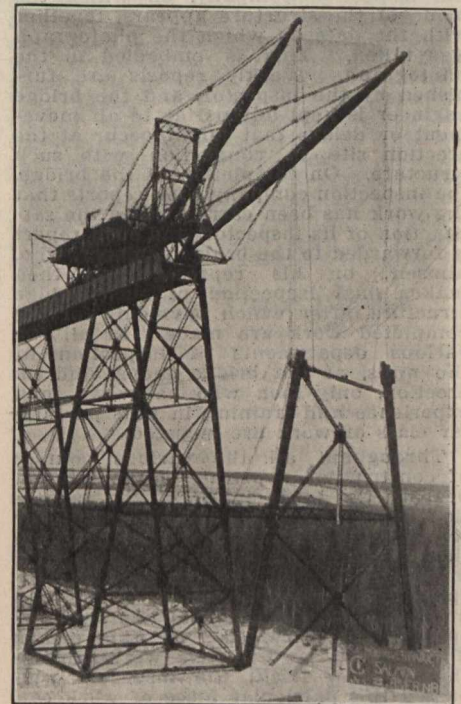


Fig. 9—Method of Erection.

pany and approved by the bridge engineer.

The painting, which is also a very important part of the work, is then closely supervised, to see that the temperature in which the material is painted is suitable for such painting, also that the material so painted is stored under cover until such paint has become thoroughly dry.

After all these several stages of con-

struction have been witnessed, and also the final checking up of material, full detail reports are made out showing what material has been constructed during the week, also what other material is under course of construction, and what material has been shipped, also commenting on any errors that may have been discovered and how the same have been remedied, with a report in addition as to what future progress would be expected.

Inasmuch as this material was purchased on a pound price, the inspection company had special representatives at each of the bridge plants, estimating the weights of all material entering into the various bridge members, so as to check up against the actual weights furnished by the bridge company. If the actual weights are in excess of 2%, as allowed by the Dominion Government specifications, such weight is cut down to the estimated weight, made up by the inspection company, based on an allowance of 2%.

INSPECTION OF ERECTION.—As soon as the bridge companies have made shipment of their first carload of material, and the erection gang of the bridge company has arrived at the bridge site, on the order of the bridge engineer, an inspector is immediately dispatched by the inspection company to such site. He supervises the erection of the entire structure from start to finish, seeing that the same is carried out in strict accordance with the requirements of the specifications. As the work progresses, the inspector takes at least three photographs each week, showing the progress that has been made, and also keeps an account of the labor expended in connection with the erection of the particular bridge on which he is engaged. To show that the photographs are taken weekly, a special sign is furnished by the inspection company, on which the name of the structure appears, together with the date on which the photograph was taken. This is embodied in the photograph. Weekly reports are furnished by the inspector, and the bridge engineer is kept advised as to all movement or delays that might occur at the erection site in connection with such structure. On completion of the bridge, the inspection company then reports that the work has been carried on to the satisfaction of its inspector, and such report is forwarded to the bridge engineer, who, himself, or his representative, then makes final inspection of such bridge structure, after which payments for the completed work are made. In all the various departments of inspection at the mills, at the bridge shops, and on erection, only men who have had long experience and training in that particular class of work are engaged.

Throughout all the various courses of construction a private stamp is used, bearing the trade mark of the inspection company, together with a number representing the inspector who has used this particular stamp. This serves as a means of identification, so that the inspector at the shop, and also at the field may see that the material has been inspected and accepted. By this means if any faulty or defective workmanship should show itself, the inspector who passed this particular piece of work can be easily located by the number which he carried affixed to his stamp.

COST AND ESTIMATES.—In the final estimates the actual amounts and cost under the several items are:

Substructure—	
1,757 cu. yds. 1-2-4 Concrete	at \$15.00
6,524 cu. yds. 1-3-5 Concrete	at 11.00
4,597 cu. yds. Excavation	at 1.00
10,534 cu. yds. Excavation	at 2.50
Superstructure—	
Steel 13,991,310 lbs.	at 4.68 cts.=\$654,793.31
Timber 518,041 ft. B.M.	at 4.60 cts.== 23,829.89
	\$678,623.20

Progress estimates were paid monthly on the superstructure according to the following basis:

Steel	Unit.	Rate.
Timber in floor	100 lbs.	\$ 4.68
	M.B.M.	46.00
SCHEDULE FOR MONTHLY ESTIMATES.		
Steel provided	100 lbs.	\$2.00
Steel manufactured	100 lbs.	1.00
Steel delivered at site	100 lbs.	.40
Steel assembled	100 lbs.	.98
Steel riveted	100 lbs.	.15
Steel painted and fully completed	100 lbs.	.15
		\$ 4.68
Timber delivered	M.B.M.	\$40.00
Timber framed and placed	M.B.M.	6.00
		\$46.00

This basis of payment was considered a fair and equitable distribution of cost throughout the different stages of manufacture. It is the result of experience on many bridges previously built by this and other bridge companies on the described method of working and specifications, and the writer believes may fairly be used in other similar cases, as proportionate cost data.

The work was carried out under the general direction of the writer from the Bridge Engineer's Office in Ottawa, W. A. Duff, A.M. Can. Soc. C.E., Assistant Bridge Engineer, having charge of the general design and details. The Dominion Bridge Co., Ltd., Montreal, were the contractors for the steel, which was efficiently carried out, F. P. Shearwood, M. Can. Soc. C.E., having charge of the design for the bridge company.

The design and layout for the erection and the traveller were made under the direction of Jas. Finley, superintendent of erection, who was responsible for the successful carrying out of the erection, also E. W. Nichols, foreman on erection.

The substructure was completed by Powers and Brewer, subcontractors under Willard Kitchen Co. The construction and laying out of this part of the work was performed under the direction of C. O. Foss, M. Can. Soc. C.E., District Engineer. Although the work was prosecuted in all seasons of the year there has been no accident or casualty of any kind.

PROGRESS OF ERECTION LITTLE SALMON RIVER VIADUCT.

1910.	No. of Erected to		Aver. per day
	Days.	Bent No. Tons.	
To July 30	48	112 1/4
July 30 to Aug. 6	6	47	87 1/4
Aug. 6 to Aug. 12	5	44	355
Aug. 12 to Aug. 18	5	43	60 1/2
Aug. 18 to Aug. 19	1	42	128 3/4
Aug. 19 to Aug. 23	3	41	101 3/4
Aug. 23 to Aug. 24	1	40	129 3/4
Aug. 24 to Aug. 26	2	39	102 1/4
Aug. 26 to Aug. 29	2	38	132 1/4
Aug. 29 to Sept. 16	5	35	436
Sept. 16 to Sept. 24	7	33	298 1/2
Sept. 24 to Oct. 4	8	30	441 3/4
Oct. 4 to Oct. 11	6	28	351 1/4
Oct. 11 to Oct. 17	5	27	172 3/4
Oct. 17 to Oct. 22	5	25	328
Oct. 22 to Oct. 28	5	23	324 1/4
Oct. 28 to Nov. 2	4	22	162
Nov. 2 to Nov. 5	3	21	152 1/2
Nov. 5 to Nov. 12	7	19	320 3/4
Nov. 12 to Nov. 16	3	18	308 3/4
Nov. 16 to Nov. 18	1	17	152
Nov. 18 to Nov. 20	2	16	159
Nov. 20 to Nov. 23	3	15	152
Nov. 23 to Nov. 28	4	14	156 3/4
Nov. 28 to Dec. 2	4	13	150
Dec. 2 to Dec. 7	4	12	155
Dec. 7 to Dec. 12	4	11	148
Dec. 12 to Dec. 16	4	9	311 1/2
Dec. 16 to Dec. 21	4	8	154
Jan. 5, 1911, to Jan. 11	6	7	147
Jan. 11 to Jan. 16	4	6	153
Jan. 16 to Jan. 22	5	5	146
Jan. 22 to Jan. 25	3	4	146
Jan. 25 to Jan. 28	3	3	118 1/2
Jan. 28 to Feb. 2	4	2	132 1/4
Feb. 2 to Feb. 7	5	1	98
Feb. 7 to Feb. 8	1	End	93 1/4
	144	7,042.5	48.9

*Held up 11 days by broken gear in traveller.
†Shut down for holidays.
The foregoing paper was read before the Canadian Society of Civil Engineers recently.

C. P. R. Observation Cars on the Austrian State Railways.

The Canadian Pacific Ry. has made a contract with the Austrian Government for the supply and operation of ten observation cars on the more picturesque sections of the Austrian State Railways, through the Austrian Alps. Switzerland is also interested in the new project, as arrangements have been made whereby the cars will run through to Zurich, on the main line to Vienna through that point. The service to be introduced would seem to be meeting with great popularity, for it has already been suggested in the Hungarian Parliament that pressure be brought to bear at Vienna so that this service may be extended to include Budapest, the capital of that part of the dual empire.

When it was decided that an observation car service would be a desirable adjunct to the service in the Tyrolean sections of the state railways, consideration was given to the designers that were considered the most capable of undertaking such an installation. The result was that the C.P.R., on account of its varied experience in the handling of observation traffic through the Rocky and Selkirk Mountains, was considered the best fitted to undertake such a task.

While the cars will be altered slightly to meet local conditions, they will follow very closely in design the standard platform observation cars that have met with such success on the C.P.R., the principal difference being that they are to have platforms at each end, as on these Austrian lines there are no ready means of turning cars of the length contemplated. In width and height the cars will be somewhat smaller than the standards on which they are being modelled, necessitated by the smaller clearance lines followed on the Continent. In length, they measure 22 1/2 metres (74 ft.), making what are said to be the longest 4-wheel truck cars in Europe. The seating capacity per car is to be 32, which may be used by either first or second class passengers for the additional fare of 5 kronen (\$1). This price will include the use of a stenographer and typewriter, and an interpreter capable of speaking in the principal languages of cosmopolitan intercourse, and in addition, the cars are to be equipped with medicine chests.

The cars are being built at the Nesselsof works in Austria, from designs worked out in the C.P.R. mechanical department at Montreal, under the supervision of H. H. Vaughan, Assistant to the Vice President, who was in Vienna last year making final arrangements for the construction of the cars to meet the local conditions under which they are to be operated.

The service to be given this summer will comprise three lines—Zurich to Innsbruck, Vienna to Innsbruck, and Salzburg to Trieste. These three lines, as well as any to be added in the future under the present arrangement, are to be operated from the new C.P.R. offices in Vienna, under the supervision of G. McL. Brown, European Manager, C.P.R., in London.

Grain Shipments by Rail.

The following shipments of grain from Fort William and Port Arthur, Ont., were made during the close of navigation from Dec. 1, 1911, to Apr. 30, 1912.

Wheat	Bush.	14,020,912
Oats		6,131,679
Barley		245,977
Flax		1,302,987
Rye		3,421
Total		21,704,976

The Grand Trunk Railway Co.'s Semi-Annual Meeting.

Following are extracts from the report for the half year ended Dec. 31, 1911, presented at the semi annual meeting in London, Eng., April 18:—

Following is a comparison of the half year's revenue account with that of the corresponding half year in 1910:—

1910.	1911.		
£3,699,899	Gross receipts	£4,135,755	2 3
	Deduct—		
2,790,686	Working expenses		
	75.21% compared		
	with 75.43% in 1910	3,110,870	14 2
£ 909,213	Net traffic receipts....	£1,024,904	8 1
38,426	Balance of income		
	from rentals, outside		
	operations, and car		
	mileage	11,675	19 3
£ 947,649	Total net revenue..	£1,036,580	7 4
	Add—		
16,013	Received from Inter-		
	national Bridge Co....	16,012	16 7
6,507	Interest Central Ver-		
	mont Ry. bonds.....	6,506	14 3
70,941	Interest on securities		
	controlled lines and St.		
	Clair Tunnel bonds ac-		
	quired by issue of G.T.		
	4% debenture stock...	72,780	0 3
40,146	Balance of general in-		
	terest account	53,175	10 4
£1,081,256	Net revenue receipts..	£1,185,055	8 9

Following are the net revenue charges for the half years of 1910 and 1911:—

1910.	1911.		
£ 77,603	Rents (leased		
	lines	£ 77,603	0 9
525,749	Interest on debenture		
	stocks and bonds	560,314	10 9
32,332	Interest on debenture		
	stock and bonds of lines		
	consolidated with		
	G.T.R.	32,419	6 1
40,080	Canada Atlantic		
	Ry. deficit	32,286	2 6
Cr. 3,863	Detroit, Grand		
	Haven, and Mil-		
	waukee Ry. deficit		
	Toledo Saginaw, and		
	Muskegon Ry. deficit		
	(1908-9-10)		
	(1911)	8,901	3 8
£ 695,291		£ 718,165	9 5
385,965	Leaving a surplus of	466,899	19 4
£1,081,256		£1,185,055	8 9

Adding the balance of £11,660 10s 9d at credit of net revenue account on June 30, 1911, to the above surplus of £466,899 19s 4d, the total amount available for dividend is £478,550 10s 1d, from which the directors recommend the payment of the following dividends for the half year:—

4% guaranteed stock	£215,619	5 5
First preference stock	85,420	15 0
Second preference stock	63,210	0 4
1½% on third preference stock....	107,469	10 9
	£471,719	11 6

Leaving £6,830 18s 7d to be carried forward.

Following is a comparison of receipts for the half years ended Dec. 31, 1911 and 1910:—

Description of receipts.	1911	1910	Increase
	£	£	£
Passengers	1,239,376	1,127,908	111,468
Mails and express ..	206,563	197,414	9,149
Freight and live stock..	2,541,350	2,254,619	286,731
Other receipts	148,486	119,958	28,528
	4,135,775	3,699,899	435,876

The working expenses, excluding taxes, were £3,021,115 or 73.04% of the gross receipts, as compared with £2,704,091 or 73.09%, in the corresponding half year, an increase of £317,024, but a decrease of 0.05% in proportion to gross receipts.

The gross receipts show an increase of £435,876, or 11.78%; the working expenses, including taxes, an increase of £320,185, or 11.47%; and the train mileage an increase of 825,372 or 8.55%.

The total charges to capital account were £1,007,041 4s 5d. Of this, £655,270 8s 5d was for the acquisition of

£400,000 Ottawa Terminal Ry. first mortgage bonds and £255,600 G.T. Pacific Terminal Elevator bonds; and £155,545 4s 10d for discount and commission on 4% debenture stock and 4% guaranteed stock sold during the half year.

The expenditure on capital account in respect of new works, double track and land purchased was:—

New works	£177,194	18 10
Double track	261	2 10
Land purchased	18,769	19 6
	£196,226	1 2

No additions to the rolling stock at expense of capital were made during the half year. Ten freight locomotives and 926 steel underframe box cars were purchased, and six first class, five baggage, and two cinder cars were built in the company's shops during the half year on revenue account.

TRAFFIC STATISTICS.	1911		1910		Increase.	Decrease.
	1911	1910	1911	1910		
Passengers carried	6,813,784	6,097,437	716,297	0.75d.		
Average fare per passenger ..	43.65d.	44.40d.				
Tons of freight and live stock ..	10,281,666	8,690,164	1,571,492	1.43d.		
Average rate per ton	69.44d.	60.87d.				
Tons carried one mile	1,778,513,307	1,638,861,407	240,151,900	2.74d.		
Earnings per train mile	94.71d.	91.97d.				
Following is a comparison of the revenue expenditure, including taxes, for the half year ended, Dec. 31, 1911 and 1910:—						
TRAFFIC STATISTICS.	1911		1910		Increase.	Decrease.
	1911	1910	1911	1910		
Maintenance of way, and structures	£61,729	£52,719	£8,990			
Maintenance of equipment ..	792,660	647,680	144,980			
Traffic expenses	137,329	116,768	14,561			
Conducting transportation ..	1,415,848	1,258,911	156,937			
General expenses	99,556	90,014	9,542			
Taxes	89,755	86,594	3,161			
Total	£3,110,871	£2,790,686	£320,185			
Percentage of gross receipts ..	75.91	75.43	0.22			
Expenditure per train-mile ..	71.24d.	69.87d.	1.87d.			

The average rate per ton per mile on the entire freight business was 0.70c, compared with 0.71c in the corresponding half year.

The train mileage compares with that for the half year ended Dec. 31, 1910, as follows:—

Description of mileage	1911	1910	Increase
Passenger	4,617,360	4,423,504	193,856
Freight	5,595,218	4,974,601	620,617
Mixed trains	267,353	256,454	10,899
Total	10,479,931	9,654,559	825,372

CANADA ATLANTIC RAILWAY.

Following are the results for the half year compared with the corresponding period of 1910:—

1910.	1911.	
£198,239	Gross receipts	£229,494
179,763	Working expenses	198,902
£ 18,476	Net traffic receipts	£ 30,592
4,474	Balance of income from rentals,	
	outside operations, and car	
	mileage	2,876
£ 22,950	Total net revenue.....	£ 33,468

The interest charges were £65,754, against £63,030. There was a net revenue deficiency of £32,286, compared with £40,080 in 1910. The number of passengers carried was 328,372, against 287,943, an increase of 14.04%; and the passenger receipts, including mails and express, were £54,818, against £48,808, an increase of 12.31%. The quantity of freight moved was 844,169 tons, against

720,415 in 1910, an increase of 17.18%; and the receipts from freight traffic were £157,036, against £130,875, an increase of 19.99%.

GRAND TRUNK WESTERN RAILWAY.

Following are the results for the half year compared with the corresponding period of 1910:—

1910.	1911.	
£640,798	Gross receipts	£708,057
502,464	Working expenses	526,537
£138,334	Net traffic receipts.....	£181,520
	Balance of income from	
	rentals, outside opera-	
	tions, and car mileage..	Dr. 45,351
£ 88,925	Total net revenue.....	£136,169

The net revenue charges were £92,187, against £92,150, so that there was a net revenue surplus of £43,982, and deducting therefrom the debit balance of £31,461 at June 30, 1911, there remains a net revenue credit of £12,521, which is carried forward. The number of passengers carried was 1,155,745, against 1,079,337, an increase of 7.08%; and the passenger train receipts, including mails and express, were £269,342, against £242,899, an increase of 10.89%. The quantity of freight moved was 1,830,855 tons, against 1,642,548, an increase of 11.46%, and the receipts from this traffic were £417,855, against £379,704, an increase of 10.05%.

DETROIT, GRAND HAVEN, AND MILWAUKEE RY.

Following are the results for the half year compared with the corresponding period of 1910:—

1910.	1911.	
£215,501	Gross receipts	£252,248
174,021	Working expenses	197,233
£ 41,480	Net traffic receipts	£ 55,015
	Balance of income from	
	rentals, outside opera-	
	tions, and car mileage..	Dr. 24,675
£ 40,844	Total net revenue ..	£ 30,340

The net revenue charges were £36,981, the same as in 1910. There was therefore a net revenue deficiency of £6,641, as compared with a surplus of £3,863 for the corresponding period of 1910. The number of passengers carried was 510,170, against 478,246, an increase of 6.67%; and the passenger receipts, including mails and express, were £34,328, against £74,673, an increase of 12.93%. The quantity of freight moved was 1,368,368 tons, against 1,079,293 in 1910, an increase of 26.78%; and the receipts from freight traffic were £144,124, against £120,432 in 1910, an increase of 19.67%.

GRAND TRUNK PACIFIC RAILWAY

The rail has now been laid over the summit of the Rocky Mountains through the Yellowhead Pass, 44 miles west of Fitzhugh, and nearly half way between that place and the next divisional point, Tete Jaune Cache, which it is expected will be reached in June, thus completing 1,100 miles west from Winnipeg. From Prince Rupert, on the Pacific coast, the difficulties with the tunnels, to which reference has been made in previous reports, have been overcome, and the line is now laid to the crossing of the Skeena River, 164 miles east from Prince Rupert. The bridge over the Skeena River is under construction, and when completed the way will be clear to lay the track to Aldermere, 245 miles east from Prince Rupert. It is expected the bridge will be completed by July. The grading of nearly all the branches has been completed, with the exception of about 50 miles on the Calgary branch. About 500 miles of branches already graded are waiting for the rail, which the Canadian steel companies have been unable to deliver.

REPORTS OF OFFICIALS.

THE CHIEF ENGINEER, H. R. SAFFORD, reports under date of Feb. 23: The length of the G.T.R. maintained and operated during 1911 has been increased to 3,545 miles, in comparison with 3,536

miles in 1910. This is accounted for by the construction of a new line, about nine miles, from Tay Jct. to Birch Jct., connecting the 9th and 14th districts.

The expenditure during 1911, for maintenance of way and structures, was \$4,756,887.45, compared with \$4,663,272.30 in 1910, an increase equal to 2%. Total average cost per mile, \$1,341.85 for 1911. The outlay on track and permanent way, including ballast and ballasting, clearing snow, renewal of rails and ties, and also including their proportion of superintendence, has been \$3,355,541.66, or at the rate of \$946.56 a mile. In 1910 the amount was \$3,244,751.98, or at the rate of \$917.63 a mile, an increase for 1911 of 3.15%. For the repair and renewal of bridges, trestles, and culverts, the expenditure was \$312,756.71, as against \$501,352.55 for 1910, a decrease of 37.62%. For the repair and renewal of buildings and fixtures, the cost was \$702,513.09, compared with \$672,999.72 in 1910, an increase of about 4.39%. For overhead, grade and under-grade crossings, fences and cattle guards, the expenditure shows an increase of \$88,658.47 compared with the previous year, the figures being:—1911, \$249,365.84; 1910, \$160,707.37.

The maintenance of docks and wharves throughout the year cost \$67,526.64, an increase of \$45,467.93 over 1910.

New stations have been built at Crystel, Richmond (temporary), Beloeil, Chaudiere Jct., St. John's (addition), Carrs, Beauharnois, Montreal (Information Bureau, Bonaventure station), Coubourg, Bowmanville (addition), Hawkesbury, Brule Lake, Bear Lake, Manilla Jct., Tioga, Guelph, Stratford, Dublin, Hepworth, Exeter, Thorndale.

The materials used for repairs and renewals of main tracks and sidings were:—New steel rails laid in track, 42,709 tons; partially-worn steel rails laid in branch lines and sidings, 39,250 tons; new ties placed in track, 1,947,363 ballast, 367,535 c. yds.

The work in connection with the terminal improvements at Ottawa is well advanced towards completion. The hotel Chateau Laurier is nearing completion, about 95% of the work being done. The remaining portions consist of the interior decoration and the concrete work incidental to the approach connecting Dufferin St. with the hotel building. The union station building is practically completed, and partially occupied. The steel-work for the train shed has been completed, and concrete work will be resumed within 30 days. The baggage room and power house are practically finished, the only work remaining to be done being the installation of the refrigerating plant.

The work in connection with part 1 of the Toronto grade separation is about 80% completed, the remaining work consisting of about 50,000 c. yds. of grading, the completion of several overhead bridges, including the Sunnyside crossing, and the two subways at Mimico. No work has yet been done upon part 2, as the order of the Board of Railway Commissioners has not yet been issued covering this work and the construction of the proposed new union station.

THE SUPERINTENDENT OF MOTIVE POWER, W. D. ROBB, reports the expenditure, mileage, etc., as follows:—

Half-year ended	Total expenditure	Train mileage	Rate of expense per mile		
			Train.	Engine.	Car.
Dec., 1911.	5,358,124	10,479,931	51.13	88.68	3.13
" 1910.	4,843,710	9,524,919	50.85	89.19	3.30

An increase in expenditure of \$514,414, or 10.62%, compared with an increase in train mileage of 955,012, or 10.03%

	Passenger.	Freight.	Mixed.
The average number of cars moved per train was	5.1	26.1	7.1
And for the corresponding period	5.0	25.3	7.1

During the half year, six engines were scrapped, leaving at the end of the half year five old light capacity engines set aside to be scrapped. Ten Richmond compound consolidation freight engines were purchased, delivered and put into service during the half year. The actual stock at Dec. 31 was 968, against the official figure of 803, being a surplus of 165.

The comparative cost of repairs per train, engine and car mile was:—

All repairing charges, including shop machinery, tools, and marine equipment, &c.	1911		1910	
	Cents.	Cents.	Cents.	Cents.
	Train	Engine	Train	Engine
Repairs and renewals of Locomotives.	14.32	15.77	12.16	10.88
Repairs and renewals of Locomotives.	0.88	1.02	0.88	1.01
Train Engine Car	18.07	12.45	13.98	1.17

J. COLEMAN, Superintendent, Car Department, reports expenditure, mileage, etc., as follows:—

Half-year ended	Total miles run by cars.		Cost per mile.	
	Freight.	Passenger.	Car.	Train.
Dec., 1911.	147,197,742	171,391,392	1.275	20.86
" 1910.	124,004,693	146,888,272	1.040	16.05

An increase in expenditure of \$657,754, or 43.04%, with an increase in car miles of 24,503,120 or 16.68%.

Six first class and five baggage cars were built, and two cinder cars rebuilt in the company's works at cost of revenue, and in addition, 926 steel under-frame box cars were purchased and charged to revenue.

RECEIPTS.	\$	s.	d.
Freight	2,048,184	2	5
Less—Cartage, &c.	63,819	7	6
International Bridge tolls.	15,003	12	7
St. Clair Tunnel tolls.	22,960	15	9
Passenger	101,788	15	10
Less—International Bridge tolls.	1,248,400	5	6
St. Clair Tunnel tolls.	9,024	6	2
Mail and Express	1,239,375	19	4
Other revenue from transportation	206,562	6	7
Revenue from operations, other than transportation.	98,186	5	4
	50,300	4	5
	4,135,775	2	3

EXPENDITURE.		
Maintenance of way and structures	14.07%	\$ 581,729 0 2
Maintenance of equipment	19.16%	792,660 8 11
Traffic expenses	3.17%	131,328 8 9
Conducting transportation	34.23%	1,415,842 10 5
General expenses	2.41%	99,555 1 0
Total operating expenses	73.04%	\$3,021,115 9 3
Taxes	2.17%	89,755 4 11
	75.21%	\$3,110,870 14 2
Net income from rentalCr.	66,808 5 1

Dining car service balance...Cr.	\$3,044,062	9	1
	2,538	3	11
Hire of equipment balance....Dr.	\$3,041,524	5	2
	57,670	9	9
Balance to net income account....	\$3,099,194	14	11
	1,036,580	7	4
	\$4,135,775	2	3

Before moving the adoption of the report, the chairman, A. W. Smithers, made feeling reference to the loss of the president, C. M. Hays, his remarks being quoted in our last issue.

The report was unanimously adopted, and dividends declared for the half year, as follows:—2% on the 4% guaranteed stock, 2½% on the first preference stock, 2½% on the second preference stock, and 1½% on the third preference stock.

The directors were also authorized to exercise the powers conferred by the Grand Trunk Act of 1912, which enables the company to assist its various subsidiary companies by issuing its debenture stock against the securities of the subsidiaries, and holding them as additional securities for the debenture stock. The powers will at present be chiefly used in financing the G. T. Western Ry.

The retiring directors, A. W. Smithers, G. von Chauvin, Col. F. Firebrace and Sir W. L. Young, were re-elected for the current year, as were also the retiring auditors, A. F. Whinney, in England, and C. Percy, in Canada.

C.P.R. Hotel Improvements.

Plans are reported to have been prepared for the carrying out of extensive improvements at the Chateau Frontenac, Quebec, this year. A new frontal is to be provided on St. Louis St. facing the Place d'Armes, in which will be located the office and rotunda, the present office space being converted into a tea room. A 14 story tower will be built near the main entrance for the elevator service. The addition will also contain a dining room 120 by 60 ft., with a ball-room over, as well as other rooms. Other additions proposed are a wing to contain the kitchens, pantries, storerooms, etc., the present quarters of these being remodelled. An outdoor cafe along the terrace is also proposed. With these additions, which are to conform in architectural features to the original building, the hotel will have 1,000 rooms, 800 of which will be bedrooms that can be converted into suites, and 350 of them will have private baths.

H. Reed, Manager in Chief, Hotel Department, has just completed a tour of inspection of the company's western hotels. In an interview he is reported to have said that the additions and improvements now under way at the Banff and Lake Louise hotels will give accommodation for 400 additional guests. At Vancouver, owing to the rush of business, it is not likely that the old office wing of the hotel will be torn down until late in the year, but it is possible that a start will be made in the erection of the rear portion of the new wing. The cost of the hotel improvements is estimated at \$1,250,000, in addition to \$250,000, the cost of the new building for the power plant, which is nearing completion.

Considerable progress had been made with the erection of the new wing at the Empress Hotel, Victoria, B.C.

A press report states that an additional eight guest rooms are to be added by next season to the Chalet at Cameron Lake, on the Esquimalt and Nanaimo Ry.

The Canadian Northern Prairie Lands Co. sold 960 acres during March, realizing \$14,400, an average of \$15 an acre. The land remaining unsold is 70,840 acres.

Orders by Board of Railway Commissioners.

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

16347. April 17.—Ordering G.T.R. within 30 days to build spur into Clifton Sand, Gravel and Construction Co., Stamford tp., Ont.
- 16348, 16349. April 20.—Authorizing C.P.R. to rebuild eight bridges on its Crownsnest, Lethbridge, Havelock, Red Deer, Mountain and Farnham subdivisions, and one at mileage 38.7, Kootenay Central subdivision.
16350. April 20.—Approving Kettle Valley Ry. location between mileage 53.92 and 65, west of Midway, B.C.
16351. April 20.—Approving location of James Bay and Eastern Ry. (C.N.R.) station at St. Felicien, Que.
16352. April 20.—Authorizing G.T.R. to rebuild five bridges on district 12, Northern Division, Ont.
16353. April 20.—Approving location of 11 G.T. Pacific Branch Lines Co. stations on its Toffield-Calgary branch.
16354. April 20.—Approving C.N. Ontario Ry. location through unsurveyed territory, Thunder Bay district, mileage 363 to 383 from Sudbury Jct.
16355. April 19.—Authorizing C.P.R. to build its Bassano to Irricana branch across 13 highways and diversions in Alberta.
16356. April 22.—Authorizing G.T. Pacific Branch Lines Co. to cross and divert highway in n.e. ¼ sec. 23, tp. 53, r. 8, w. 5 m., mileage 67.9, Alta.
16357. April 23.—Ordering Bell Telephone Co. to extend its lines into York tp., Ont., to provide certain services, within 30 days.
16358. April 23.—Dismissing application of city of Valleyfield, Que., re G.T.R. crossing at Edmond St.
16359. April 23.—Ordering city of Montreal to commence building subway under C.P.R. at Park Ave., authorized by order 10455, Apr. 28, 1910, not later than May 15, and to complete within six months.
16360. April 22.—Approving revised plan of Canadian Northern Ry. standard pile and frame trestle for eastern lines.
16361. April 22.—Approving location of Algoma Eastern Ry. station at Nairn Centre, Ont.
16362. April 23.—Authorizing G.T. Pacific Ry. to build spur for Fitzhugh Lime and Stone Co., near Edmonton, Alta.
16363. April 13.—Authorizing G.T. Pacific Branch Lines Co. to build 18 stations on its Regina-Boundary branch, Sask.
16364. April 23.—Authorizing C.P.R. to build its Kipp-Aldersyde branch across road allowance at mileage 83.66.
- 16365, 16366. April 22, 18.—Authorizing C.P.R. to build three spurs for Tyndall Quarry Co., near Winnipeg, and one for J. Wilson, near Como, Que.
16367. April 24.—Authorizing C.P.R. to use bridge 87.0, Swift Current subdivision, Sask.
16368. April 23.—Authorizing London and Lake Erie Ry. and Transportation Co. to build spur to gravel pit across London and Port Stanley Ry. at Lambton, Ont.
- 16369, 16370. April 26, 25.—Authorizing G.T.R. to build sidings for New Burford Canning Co., Burford tp., and Ford Motor Co., Sandwich East tp., Ont.
16371. April 24.—Amending order 16150, Mar. 20, re G.T.R. siding for J. T. Watson, York tp., Ont.
16372. April 24.—Authorizing G.T.R. to build seven bridges on its Holmedale branch, Brantford, Ont.
16373. April 24.—Authorizing Toronto, Hamilton and Buffalo Ry. to build spur for Fretz, Limited, Hamilton, Ont.
16374. April 25.—Approving locations of seven G.T. Pacific Branch Lines Co. stations on its Moose Jaw northwesterly branch, Sask.
16375. April 26.—Authorizing C.N. Quebec Ry. to build spur on Prince Albert St., Tetraultville (now Montreal), for delivery of carload freight.
16376. April 23.—Approving revised location of C.N. Ontario Ry. station at mileage 174.5, Storrington tp., Ont.
16377. April 24.—Authorizing C.N. Ontario Ry. to cross seven highways in Pontiac county, Que.
16378. April 24.—Authorizing C.N. Ontario Ry. to cross public road with its Montreal-Port Arthur line, between lots 3 and 4, Bristol tp., Que.
16379. April 22.—Authorizing C.N. Ontario Ry. to cross seven highways in March, Tarbolton and Fitzroy tps.
16380. April 24.—Authorizing Canadian Northern Ry. to build spur to proposed local freight terminals, Regina, Sask.
16381. April 24.—Authorizing C.N. Alberta Ry. to cross under G.T. Pacific Ry. in n.w. ¼ sec. 3, tp. 53, r. 18, w. 5 m.
16382. April 25.—Approving Pere Marquette Rd., bylaw 1, authorizing G. C. Conn, F.T.M., and W. E. Wolfenden, G.P.A., to issue tariffs.
16383. April 24.—Approving location of lumber conveyor over C.P.R. at Fairville, N.B.
16384. April 27.—Authorizing C.P.R. to rebuild five bridges on its Macleod and Cartier subdivisions.
- 16385 to 16391. April 22, 26.—Authorizing C.P.R. to build spurs at Redcliffe, Alta.; Pilot Butte, Sask.; near Angus Station, Que.; St. Jeanne de Neuville parish, Que.; St. Paul parish, Man.; St. John, Winnipeg, Man., and in Campbell tp., Que.
16392. April 29.—Authorizing C.P.R. to expropriate certain lands in Kildonan parish, and part of n.w. ¼ sec. 17, tp. 11, r. 4, e.p.m., to establish east yard, near Winnipeg.
16393. April 27.—Ordering C.N. Ontario Ry. to divert ballast pit track and clear shrubs and trees away at Rosslyn road crossing, Twin City Jct.
16394. April 25.—Dismissing application of Montreal Board of Trade Transportation Bureau re corn and commeal rates from Montreal to points in Maritime Provinces.
16395. April 23.—Dismissing application of Canadian Freight Association for rescission of order 6844, Apr. 6, 1909, re commodity rates on wire fencing and netting.
16396. April 23.—Authorizing C.P.R. to build second track across G.T. Pacific Ry. Melville-Regina branch at Regina, Sask., additional interlocking appliance to be installed.
- 16397, 16398. May 1.—Authorizing C.P.R. to rebuild bridges 7.3 and 17.0 on Ingersoll and Sudbury subdivisions.
16399. April 27.—Ordering express companies to prepare tariffs or supplement to Express Classification showing a scale of charges for the return of the proceeds of c.o.d.'s upon other than merchandise rate basis, and file the same within three months.
16400. April 23.—Defining express delivery and collection limits of Sydney, N.S.
16401. May 1.—Authorizing North Red Deer village, Alta., to build highway over C.P.R. at Cherry Ave.
16402. April 30.—Approving clearance of 18 ft. for C.P.R. dump cars only into Alberta Clay Products Co.'s clay shed, Medicine Hat, Alta.
16403. April 30.—Extending to Aug. 31, time for completion by Dominion Atlantic Ry. of bridge across Shubencadie River at South Maitland, N.S.
16404. April 29.—Authorizing Algoma Central and Hudson Bay Ry. to build bridge over Michipicoten River, Ont.
16405. April 20.—Authorizing C.P.R. to build siding for Seaman, Kent Co., Outremont, Que.
16406. April 29.—Authorizing C.P.R. to rebuild bridges 19.4 and 46.9, Havelock and Megantic subdivisions.
16407. April 29.—Authorizing C.P.R. to build extra track across South Bay Road, Lancaster parish, N.B.
16408. April 30.—Authorizing C.P.R. to operate trains over Pacific Ave. and electric railway, Fort William, Ont., on remodelling of interlocking plant being completed.
- 16409, 16410. April 29, 25.—Authorizing C.P.R. to build spurs for Calgary and Western Lumber Co., Bengal, Alta., and Canadian Sardine Co. at mileage 23.31, St. Andrews branch, N.B.
16411. April 19.—Ordering protection at crossing of Toronto Suburban Ry. and G.T.R. stock yards branch at Keele St. and St. Clair Ave., Toronto.
- 16412, 16413. April 29.—Authorizing G.T.R. to build track to connect with C.P.R. spur to Standard Sanitary Mfg. Co., Toronto, and to build spur for Steel and Radiation, Ltd., con. 6, Grantham tp., Ont.
16414. April 29.—Authorizing G.T.R. to rebuild bridge 346, mileage 198.03, district 6, Northern Division, Ont.
16415. April 30.—Approving location of G.T.R. station at Rockwood, Ont.
16416. April 29.—Authorizing C.N. Ontario Ry. to build across public road between cons. A and 1, Ottawa Front, Nepean tp.
16417. April 29.—Authorizing C.P.R. to build spur 1.01 miles, from its Swift Current extension to Moose Jaw Clay Products Co.
16418. April 29.—Authorizing C.N. Ontario Ry. to build over North American Smelting Co.'s lead vein in Loughborough tp.
16419. April 29.—Authorizing C.N. Ontario Ry. to build spur for W. J. Lawrence, Richmond Hill.
16420. April 30.—Authorizing Canadian Northern Ry. to build spur for Newcastle Coal Co. at mileage 171.73, Alta.
16421. April 30.—Approving revised location of C.N. Ontario Ry. Montreal-Port Ar-

thur line in Ross tp., mileage 62.09 to 66.19 from Ottawa.

16422. April 29.—Approving C.N. Ontario Ry. location through unsurveyed territory in Thunder Bay District, mileage 383 to 398 from Sudbury Jct.

16423. April 29.—Approving Canadian Northern Ry. location through tps. 26-28, r. 8-15, w. 3 m., Sask., mileage 0 to 49.59.

16424. April 30.—Authorizing C.N. Ontario Ry. to cross roads in Nepean tp.

16425. May 2.—Approving location of C.P.R. station at Weyburn, Sask.

16426. April 12.—Approving location of Algoma Eastern Ry. station at Espanola, Ont.

16427. April 30.—Approving Essex Terminal Ry. standard tariff of maximum freight tolls between Walkerville and Windsor, Walkerville and Sandwich, and Windsor and Sandwich, Ont.

16428, 16429. May 3.—Ordering C.P.R. to install electric bells at Hutton Hill highway crossing, Bentinck tp., and at Locust Hill, Ont., within 90 days; 20% to be paid from railway grade crossing fund.

16430, 16431. May 2.—Authorizing C.P.R. to build two spurs for T. S. Sims and Co. at Fairville, and one for G. W. Upham, Southampton parish, N.B.

16432, 16433. May 2.—Authorizing C.N. Ontario Ry. to cross Symes Road, Toronto, and to rebuild bridges 24A and 24B over Kaministikwia River at mileage 24.2 and 24.3 from Port Arthur.

16434. April 30.—Authorizing Canadian Northern Ry. to expropriate certain lands for road diversion at Kindersley, Sask., and ordering plans to be filed for overhead crossing; diversion or bridge to be completed before Sept. 1, 1912.

16435. May 3.—Approving location of G.T. Pacific Ry. station at Fraser Lake, B.C., mileage 359 from Prince Rupert.

16436. April 23.—Authorizing G.T. Pacific Branch Lines Co. to cross highway and divert road on its Cutknife branch Sask.

16437. May 2.—Dismissing complaint of J. O. Hall, of Toronto, re G.T.R. train connection at Belleville for Madoc, Ont.

16438. May 2.—Dismissing C.P.R. application to vary terms of order 15777, Jan. 8, re interchange track with G.T.R. at Goderich, Ont.

16439. May 2.—Dismissing application of Ontario Malleable Iron Co., Oshawa, re C.N. Ontario Ry. spur for manufacturers.

16440, 16441. Apr. 26.—Approving Kootenay and Alberta Ry. by-law, authorizing S. T. Maines, Traffic Manager, to prepare and issue tariffs of tolls, and approving its standard freight tariff C.R.C. 1.

16442. May 3.—Extending for six months time for filing Esquimalt and Nanaimo Ry. revised standard tariffs of freight tolls.

16443. May 3.—Authorizing Algoma Central and Hudson Bay Ry. to build branch line on its Michipicoten branch.

16444. May 2.—Ordering that C.P.R. protect Lansdowne Ave. crossing, Toronto, with gates within 30 days, 30% to be paid by the city, 30% by C.P.R., 20% by Canada Foundry Co., and 20% from railway grade crossing fund.

16445. May 3.—Authorizing C.P.R. to build spur for Skinner and Miquelon, Calgary, Alta.

16446. May 4.—Approving location of C.P.R. station at Craven, Sask.

16447. May 6.—Authorizing C.N. Ontario Ry. to connect with C.P.R. temporarily, during construction, near Dalziel station.

16448. May 4.—Approving plan A of G.T.R. crossing of Burford and Mount Pleasant Roads, near Brantford, Ont.

16449. May 1.—Authorizing Canadian Northern Ry. to cross with its Swift Current extension, 14 highways in Saskatchewan.

16450. May 6.—Authorizing town of Welland, Ont., to build Major St. across G.T.R.

16451. May 3.—Ordering that Canadian Northern Ry. pay cost of changes in interlocking plant near Ottawa, cost of operating and maintaining to be divided equally between Ottawa and New York Ry., C.P.R., G.T.R., and Canadian Northern Ry.

16452. May 6.—Rescinding order 15944, Feb. 17, and revising express delivery and collection limits for Kamloops, B.C.

16453. May 6.—Ordering railway companies to charge certain rates on coke in carloads of 30,000 lbs. minimum, tariffs to become effective not later than June 1.

16454. May 6.—Approving revised location of Campbellford, Lake Ontario and Western Ry. (C.P.R.), mileage 134.68 to 155.66.

16455. May 7.—Approving location of Niagara, Welland and Lake Erie Ry., for 1½ miles, between G.T.R. on East Main St. and M.C.R. on South Main St., Welland, Ont.

16456. Nov. 7.—Authorizing C.N. Ontario Ry. to cross C.P.R. spur to Mimico, interlocker to be installed at C. N. Ontario Ry.'s cost.

16457, 16458. May 7, 6.—Authorizing G.T. Pacific Branch Lines Co. to cross two highways in Alberta with its Calgary branch, and approving location of eight stations on same.

16459. May 6.—Authorizing C.P.R. to rebuild bridges 83.2 and 79.1, London and Windsor subdivisions, Ont.

16460. May 7.—Authorizing C.P.R. to build spur for Inland Coal and Coke Co., Merritt, B.C.

16461. May 7.—Authorizing C.P.R. to use bridges 2.6 and 10.6, Crow's Nest division.

16462. May 7.—Approving location of Central Ry. of Canada from St. Eustache to Oka, mileage 16 to 31, Two Mountains county, Que.

16463. May 7.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.), to cross C.N. Ontario Ry. spur line in Trenton, Ont.

16464. May 7.—Authorizing C.P.R. to build across highway at mileage 5, Mission subdivision, B.C.

16465. May 7.—Authorizing C.P.R. to build spur for G. Minger, Titian, Alta.

16466. May 7.—Authorizing Central Vermont Ry. to connect with C.P.R. spur into military camp, Farnham, Que.

16467. May 7.—Authorizing C.N. Ontario Ry. to cross under Weston plank road, Toronto.

16468. May 6.—Naming express delivery and collection limits for Toronto.

16469. May 6.—Authorizing T. Davies, Toronto, to build overhead crossing over C.P.R. in lot 6, Nipigon tp., Ont.

16470. May 9.—Approving Canadian Northern Ry. location through tps. 16-17, r. 26, w. 2 m., and part of Moose Jaw, Sask., mileage 84.25 to 87.13.

16471. May 4.—Approving Campbellford, Lake Ontario and Western Ry. (C.P.R.) location from mileage 124.83 to 125.5, and revised location from mileage 127 to 134.68, Hope tp., Ont.

16472. May 9.—Authorizing C.P.R. to cross 19 highways in Manitoba, with its Pheasant Hill branch.

16473, 16476. May 8, 9.—Approving revised location of C.N. Ontario Ry., Montreal-Port Arthur line, through Davis tp.; revised location at Callendar; through Pedley tp.; and Sudbury-Port Arthur line through unsurveyed territory, Thunder Bay district, mileage 149.85 to 161.03 from Port Arthur.

16477. May 9.—Ordering G.T.R. within 90 days to install improved type of electric bell at crossings of Ontario and Erie Sts., Stratford, Ont., 20% to be paid from railway grade crossing fund.

16478. May 9.—Approving location of Algoma Eastern Ry. station at Espanola, and rescinding order 16426, April 12.

16479. May 10.—Ordering that in Canadian Freight Classification, gramophones, graphophones, phonographs and records, be transferred to the Musical Instruments List, and that they also be included in the second-class rating applicable to Musical Instruments, all kinds, not otherwise specified, carloads, minimum 12,000 lbs.

16480. May 7.—Approving location of G.T. Pacific Ry. station at mileage 119 east of Prince Rupert, B.C.

16481, 16482. May 8, 10.—Correcting errors in right of way plans of G.T. Pacific Branch Lines Co.'s Biggar-Calgary branch.

16483. May 8.—Approving location of Algoma Central and Hudson Bay Ry. terminal station at Sault Ste. Marie, Ont.

16484. May 9.—Authorizing C.N. Ontario Ry. to cross two highways in Clarendon and Litchfield tps., Que.

16485. May 9.—Authorizing C.N.R. to cross and divert highways in Moose Jaw, Sask.

16486. May 8.—Approving location of James Bay and Eastern Ry. (C.N.R.) stations grounds at St. Prime, Que.

16487. May 10.—Approving Kettle Valley Ry. location from mileage 65 to 76, northwest of Midway, B.C.

16488. May 6.—Authorizing C.P.R. to take lands for diverting Scarlett Rd. and St. Clair Ave., Toronto.

16489. May 8.—Extending to Oct. 16, 1912, time for completion by C.P.R. of siding for city of Moose Jaw, Sask., authorized by order 15115, Oct. 16, 1911.

16490, 16491. May 9, 7.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build its Glen Tay to Cobourg line at mileage 24.8 from Glen Tay, across Kingston and Pembroke Ry., interlocking plant to be installed; and at mileage 88.09 across Central Ontario Ry. in Trenton, by overhead structure.

16492. May 6.—Approving location of G.T. Pacific Branch Lines Co. station at mileage 25, Cutknife branch, Sask.

16493. May 7.—Relieving C.P.R. from further protecting crossing third west of Kemptville Jct., Ont.

16494. May 2.—Appointing Judge Barrett, of Bruce county, referee to fix amount of damages sustained by claimants re overflow of Saugeen River, caused by bridge of Walkerton and Lucknow Ry. Co. (C.P.R.) at Walkerton, Ont.

16495. May 10.—Relieving Vancouver, Victoria and Eastern Ry. from erecting fences from Laurier to Danville, B.C.

16496. May 11.—Authorizing C.P.R. to

build spur for Cockshutt Plow Co., at Regina, Sask.

16497. May 10.—Ordering that no cars be allowed to stand on any siding within 50 ft. of C.P.R. crossing at Neepawa, Man.

16498. May 10.—Approving revised location of G.T. Pacific Branch Lines Co. station grounds at Bashaw, Alta.

16499. Apr. 13.—Authorizing G.T. Pacific Ry. to build Y in sec. 6, tp. 42, r. 24, w. 3 m., at mileage 600, Sask.

16500. May 11.—Authorizing Midland Ry. of Manitoba (G.N.R.) to connect spur with C.P.R. spur to Canada Malting Co., Winnipeg.

16501. May 10.—Ordering Brandon, Saskatoon and Hudson Bay Ry. (G.N.R.) to build transfer track to connect with Canadian Northern Ry. at Minto, Man.

16502. May 11.—Authorizing C.P.R. to build five spurs for Dryden Timber and Power Co., Dryden, Ont.

16503. May 13.—Ordering that G. T. Pacific Ry. be subject to penalty of \$100 a day, from this date, that work required by order 15735, Jan. 2, re rock fill obstruction to navigation in Cameron Bay, Prince Rupert, B.C., remains uncompleted.

16504. May 13.—Extending to June 15 time for commencement of subway by city of Montreal, over C.P.R. at Park Ave., as authorized by order 16359, Apr. 23.

16505. May 13.—Approving revised location of G. T. Pacific Branch Lines Co., Regina-Moose Jaw branch, mileage 0 to 2.1, Sask.

16506. May 13.—Extending for 30 days time for completion of G.T.R. spur for National Land, Fruit and Packing Co., Mimico, Ont., authorized by order 15317, Nov. 10, 1911.

16507. May 13.—Approving Victoria and Sidney Ry. (G.N. Ry.) standard freight tariff of maximum tolls in B.C.

16508. May 13.—Authorizing Canadian Northern Ry. to build bridge across Bow River on its Calgary-Vegreville extension.

16509, 16510. May 13.—Approving revised location of C.N. Ontario Ry., Ottawa-Capreol line, through Field tp., Nipissing district, mileage 254.53 to 256.2 from Ottawa; and Sudbury-Port Arthur line through unsurveyed territory, Thunder Bay district, mileage 399.21 to 404.46 from Sudbury Jct.

16511. May 11.—Authorizing C.N. Ontario Ry. to cross six public roads in Foley and McDougall tps.

16512. May 13.—Authorizing C.P.R. to build spur for W. T. Rawleigh Medicine Co., Winnipeg.

16513. May 10.—Restraining Canadian Northern Ry. from interfering with road allowance, secs. 10 and 15, tp. 65, r. 22, w. 4 m., Alta., authorized by order 14440, July 28, 1911, and ordering it to drain borrow pits on D. Hay's farm, Kinnoul, Alta., within 30 days under penalty of \$10 a day.

16514. May 14.—Naming express delivery limits for Kelowna, B.C.

16515. May 11.—Authorizing G.T. Pacific Branch Lines Co. to build its Tofield-Calgary branch across highway at mileage 39.

16516. Apr. 10.—Approving location of Campbellford, Lake Ontario and Western Ry. (C.P.R.) Glen Tay to Cobourg line, from mileage 58.5 to 68.

16517. May 11.—Authorizing C.P.R. to build spur for Eddy Bros. & Co., at Blind River, Ont.

16518. May 13.—Ordering that no car or locomotive be allowed to stand on C.P.R. siding crossing at King St., or at Nipissing St., Sturgeon Falls, Ont., within 50 ft. each way.

16519. May 13.—Ordering C.P.R. within 90 days to install electric bell at Wilson St., about a mile north of Perth station, Ont. 20% to be paid from railway grade crossing fund.

16520. May 15.—Restraining Canadian Northern Ry. and Midland Ry. of Manitoba (G.N.R.) under penalty of \$100 a day after May 20, from carrying out any provisions of agreement re operating for M.R. of M. and G.N.R. trains from international boundary to Winnipeg, over C.N.R., prior to its sanction by the Governor-in-Council upon recommendation of the board.

16521. May 13.—Authorizing municipality of Cap de la Magdeleine, Que., to build highway over C.P.R. at Boulevard Forget.

16522. May 14.—Authorizing C.N. Ontario Ry. to cross public road overhead between lots 10 and 11, con. 2, Ottawa Front, Nepean tp.

16523. May 13.—Approving location of C.P.R. station at Springside, Sask.

16524. May 13.—Relieving C.P.R. from further protection of crossing at North Gleno, Windsor subdivision, Ont.

16525. May 14.—Dismissing application of Kingston and Pembroke Ry. for approval of plans, etc., of Godfrey station, Ont.

16526. May 14.—Ordering that C.P.R. construct farm crossing pending completion of public crossing for J. Brill, Boulder; and H. Sawyer, Revelstoke, B.C.

16527. May 15.—Approving St. John and Quebec Ry. standard plan for 20 ft. arch.

16528. May 15.—Approving G.T. Pacific Ry. standard freight mileage tariff C.R.C. 9 to apply from Prince Rupert east 170 miles to Carnaby, B.C.

16529. May 15.—Extending to Sept. 1 time for installation by Canadian Northern Ontario Ry. of interlocking plant near Chaudiere Jct., near Ottawa.

16530, 16531. May 15, 14.—Authorizing C.N. Ontario Ry. to build bridge over Duchesney creek, Commanda tp., and across Little Sturgeon river, Beauceage tp., Nipissing district, mileage 243.5 from Ottawa.

16532. May 13.—Approving location of Campbellford, Lake Ontario and Western Ry. (C.P.R.) at mileage 79.5 from Glen Tay to westerly boundary of Trenton, Ont.

16533. May 14.—Approving location of C.P.R. station at Jaffray, B.C.

16534, 16535. May 15, 14.—Authorizing C.P.R. to rebuild Red River bridge, Winnipeg terminals and bridge 57.1, Cascade subdivision, B.C.

16536. May 14.—Ordering C.P.R. within 90 days to install electric bell at crossing 1¼ miles west of Claremont, Ont., 20% to be paid from railway grade crossing fund.

16537. May 17.—Approving C.P.R. changes in vicinity of Dufferin bridge, Ottawa.

16538. May 17.—Authorizing G.T.R. to build spur for British Canadian Cannery, Ltd., Bowmanville, Ont.

16539. May 15.—Authorizing C.P.R. to build two spurs for Western Canada Flour Mills Co., Goderich, Ont.

16540. May 17.—Authorizing Guelph Padiar Ry. to cross C.P.R. on York Road, Guelph.

16541. May 17.—Ordering G.T.R. within 90 days to install electric bell, in Lynden, Ont., 20% to be paid from railway grade crossing fund.

16542, 16543. May 18.—Authorizing C.P.R. to rebuild bridge 5.7, Kipawa subdivision, Lake Superior subdivision, and to use bridges 10.4 and 16.5, Farnham subdivision.

International Association of Ticket Agents.

This association, which is composed almost entirely of ticket agents located in the United States, and which met in Toronto some years ago, will hold its annual meeting in Muskoka Sept. 9 and 10. The members will assemble in Niagara Falls, N.Y., on Sept. 6, and will go over the Gorge Route and visit Goat Island, leaving in the evening by the International Ry. for Queenston, and thence by the Niagara Navigation Co. for Toronto. Sept. 7 will be spent in Toronto. In the morning there will be an automobile trip around the city, and in the afternoon the Canadian National Exhibition will be visited. On Sept. 8 Toronto will be left by the G.T.R. at 1 a.m., arriving at the Royal Muskoka Hotel at 9.45 a.m. Sept. 9 and a part of Sept. 10 will be spent at the Royal Muskoka, where the business meeting will be held, after which the party will return to Toronto, and leave at 8.30 p.m. for Kingston. On Sept. 11 a trip will be taken by the Thousand Islands Steamboat Co. through the Thousand Islands, stopping at Alexandria Bay for luncheon, and in the evening there will be a 50 mile searchlight ramble. On Sept. 12 Alexandria Bay will be left at 7.30 a.m. by the Richelieu and Ontario Navigation Co., the party going right through to Quebec, which will be reached on Sept. 13 at 6.30 a.m., where a day will be spent visiting Montmorency Falls and St. Anne de Beaupre. Quebec will be left again the same evening, and Sept. 14 will be spent in Montreal, which city will be left on Sept. 15, by the G.T.R. for Rouse's Point, N.Y., thence by the Delaware and Hudson Rd. to Rouse's Point and Port Kent, and by the K.A.S. and L.C. Ry. to Ausable Chasm. On Sept. 16 the party will return from Ausable Chasm to Port Kent and go by the Champlain Transportation Co. to Montcalm Landing, by the Delaware and Hudson Rd. to Baldwin, by the Champlain Transportation Co. to Lake George and by the Delaware and Hudson Rd. to Saratoga, N.Y. Sept. 17 will be spent at Saratoga, the party leaving there in the afternoon and dispersing at Albany, N.Y.

Recent Provincial Legislation.

The following acts affecting transportation interests were passed by the legislatures of the provinces named at the sessions recently closed:—

Manitoba.

BRANDON ELECTRIC RY.—Amending powers.
 CANADIAN NORTHERN RY.—Authorizing guaranteeing of securities for extension of branches.
 ELKHORN NORTHERN RY.—Incorporation.
 MANITOBA NELSON RY.—Act of incorporation, and a second act repealing the first one.
 PUBLIC MARKETS Co.—Incorporation, etc.
 PUBLIC UTILITIES.—Creating public utilities commission.
 RAILWAY TAXATION ACT.—Amending act.
 RURAL RY. OF MANITOBA.—Extending time for construction, etc.
 TELEGRAPHS AND TELEPHONES.—Amending act respecting government telephone and telegraph system.
 WINNIPEG ELECTRIC RY.—Respecting company's powers.
 WINNIPEG NORTH EASTERN RY.—Extending time for construction, etc.
 WINNIPEG RIVER RY.—Extending time for construction.
 WINNIPEG, SELKIRK AND LAKE WINNIPEG RY.—Confirming agreements between company and the municipalities of Selkirk, Stonewall, and Rockwood.
 WINNIPEGOSIS AND NORTHERN RY.—Act of incorporation, and a second act amending the first.

New Brunswick.

BUCTOUCHE AND REXTON RY.—Extending time for construction.
 CANADIAN PACIFIC RY.—Confirming agreement between the Dominion Government, the city of St. John and the C.P.R., as to exchange of properties and construction of wharves, etc.
 CANADIAN TERMINAL RY.—Extending time for construction.
 CENTRAL AND NORTH EASTERN RY.—Incorporation.
 FREDERICTON AND GRAND LAKE COAL AND RY. Co.—Amending act of incorporation.
 MIRAMICHI BAY SHORE RY.—Incorporation.
 MAINE CENTRAL RD.—Conferring certain privileges and franchises.
 NEREPEIS AND LONG ISLAND RY.—Incorporation.
 NEW BRUNSWICK RY.—Authorizing Government to purchase lands from the company and to sell them to settlers.
 NORTH SHORE RY. AND NAVIGATION Co.—Incorporation.
 ST. JOHN AND QUEBEC RY.—Act of incorporation; act confirming agreement between the company and Dominion Government, and amending certain statutes, granting aid toward the building of a railway along the St. John Valley, and authorizing the town of Woodstock to aid the company in building its shops there.
 ST. JOHN DRY DOCK.—Amending acts relating to proposed Imperial Dry Dock in St. John.
 ST. JOHN RY.—Authorizing extension of railway into Kings County.
 SAINT CROIX DOCKS AND RY. Co.—Incorporation.
 SIMONDS PARISH.—Authorizing the parish to grant permission for building of lines on highways.
 SUSSEX STUDHOLME AND HAVELOCK RY.—Incorporation.

Nova Scotia.

COMMERCIAL CABLE Co.—Ratifying agreement between the company and the town of Guysboro.
 INTERCOLONIAL RY.—Respecting aid granted by Sydney for extension of I.R.C. into the town.

MARITIME TELEGRAPH AND TELEPHONE Co.—Amending powers.

NORTH MOUNTAIN RY.—Extending time for constructing the Dominion Atlantic RY.'s North Mountain branch.

Ontario.

BERLIN AND BRIDGEPORT ELECTRIC RY.—Authorizing extension of line.
 BRUCE MINES AND ALGOMA RY.—Extending time for construction and authorizing extension of line.
 DUNNVILLE, WELLANDPORT AND BEAMSVILLE ELECTRIC RY.—Extending time for construction.
 GLENGARRY AND STORMONT RY.—Incorporation.
 HUMBER VALLEY ELECTRIC RY.—Incorporation.
 IRON RANGE RY.—Extending time for construction.
 KAWARtha TRANSPORTATION Co.—Incorporation.
 LAE SEUL RAT PORTAGE AND KEEWATIN RY.—Extending time for construction.
 LAND GRANTS TO RAILWAYS.—With respect to land grants made to railways, and terminating unavailed grants.
 LINDSAY AND MINDEN RY.—Incorporation.
 MIDLAND TERMINAL RY.—Authorizing an extension.
 MONARCH RY.—Extending time for construction.
 MORRISBURG AND OTTAWA RY.—Extending time for construction.
 MOUNT MCKAY AND KAKABELEA FALLS RY.—Extending time for construction.
 NIAGARA FALLS, WELLAND AND DUNNVILLE ELECTRIC RY.—Extending powers.
 NORTH MIDLAND RY.—Extending time for construction.
 OTTAWA, SMITHS FALLS AND KINGSTON RY.—Extending time for construction and changing name.
 PORCUPINE RAND BILL ELECTRIC RY.—Incorporation.
 PORT ARTHUR.—Approving bylaw re electric railway extensions.
 RAILWAY ACT.—Amending Ontario Railway Act.
 RAILWAY AND MUNICIPAL BOARD ACT.—Amending Ontario Railway and Municipal Board Act.
 SIMCOE RY. AND POWER Co.—Extending time for construction.
 SUBBURY-COPPER CLIFF SUBURBAN ELECTRIC RY.—Incorporation.
 TEMISKAMING AND NORTHERN ONTARIO RY.—Amending powers as to construction, etc.
 TORONTO.—Granting certain powers with respect to electric railways.
 TORONTO SUBURBAN RY.—Extending time for construction, and authorizing extension of lines.
 WHARVES AND HARBORS.—Respecting companies for construction of wharves and harbors.

Quebec.

ARGENTEUIL RY.—Incorporation.
 BAGOTVILLE AND ST. LAWRENCE RY.—Incorporation.
 GUELPH PATENT CASK Co.—Authorizing company to build and operate railway and branches.
 MONTREAL AND NORTHERN COLONIZATION RY.—Extending time for construction.
 MONTREAL TRAMWAYS Co.—Amending charter powers. A second act, among other things, confirmed agreement between town of Montreal West, the Montreal Tramways Co., and the Montreal Park and Island RY.
 NORTH EASTERN RY.—Extending time for construction, and changing name to the North RY.
 OTTAWA, ABITIBI AND HUDSON BAY RY.—Incorporation.
 QUEBEC AND LAKE ST. JOHN RY.—Providing for rearrangement of finances.
 QUEBEC AND SAGUENAY RY.—Extending time for construction.
 QUEBEC CENTRAL RY.—Amending charter, and a second act confirming agreement with C.P.R.
 RAILWAY SUBSIDIES.—Authorizing

grants of land in aid of building of certain lines.

THREE RIVERS TRAMWAY Co.—Incorporation.

Saskatchewan.

CANADIAN NORTHERN RY.—Two acts authorizing guarantee of certain securities, and amending a previous act guaranteeing securities.
 CANADIAN NORTHERN SASKATCHEWAN RY.—Act incorporating company, and an act to authorize guaranteeing certain securities.
 CANADIAN PACIFIC RY.—Confirming agreement with the Saskatoon city council.
 GRAND TRUNK PACIFIC SASKATCHEWAN RY.—Act of incorporation and an act authorizing guaranteeing bonds.
 GRAND TRUNK PACIFIC BRANCH LINES.—Amending act guaranteeing bonds.
 SASKATOON ELECTRIC RY. AND POWER Co.—Incorporation.
 SASKATOON STREET RY.—Incorporation.
 SASKATOON TRANSFER RY.—Incorporation.
 WATROUS RADIAL RY.—Incorporation.

Railway Route Plans Approved.

The following route plans have been approved by the Minister of Railways since those published in the Railway and Marine World for May, pg. 237:—

ALBERTA INTERURBAN RY.—April 26. From Calgary to Carbon, about 69 miles.
 CAMPBELLFORD, LAKE ONTARIO AND WESTERN RY. (C.P.R.).—April 26. Revision of line between Belleville and Agincourt, Ont.
 CANADIAN NORTHERN MONTREAL TUNNEL AND TERMINAL Co.—April 30. Line and tunnel in Montreal approved to Lagauchetierre St.
 CANADIAN NORTHERN ONTARIO RY.—April 26. St. Eustache to St. Jerome, Que., about 16 miles.
 April 26. In the vicinity of Pembroke, Ont., about 10 miles.
 CANADIAN PACIFIC RY.—April 26. Revision of Gleichen to Shephard branch, Alberta, mile 0 to 16.
 April 26. Swift Current to Camrose branch from mile 154 to 190.
 April 30. From mile 115, Cascades sub-division along the north shore of Burrard Inlet to a point in North Vancouver district, about 21 miles.
 CENTRAL RY. OF CANADA.—April 26. Between Hawkesbury and South Indian, Ont., 36 miles.
 KETTLE VALLEY RY.—April 26. Penetion to Osprey Lake, 39 miles.
 NIAGARA, WELLAND AND LAKE ERIE RY.—April 26. In town of Welland, Ont., and vicinity.
 PACIFIC AND HUDSON BAY RY.—April 26. Kimsquit to Natakus Lake, about 110 miles.

Canadian Railway Club.

The following officers were elected at the annual meeting in Montreal recently:—

PRESIDENT, J. Coleman, Supt. Car Dept., G.T.R.; FIRST VICE PRESIDENT, R. W. Burnett, General Master Car Builder, C.P.R.; SECOND VICE PRESIDENT, W. McNab, Principal Asst. Engineer, G.T.R.
 EXECUTIVE COMMITTEE, D. Crombie, Assistant to General Transportation Manager, G.T.R.; C. Murphy, General Superintendent of Transportation, C.P.R.; R. M. Hannaford, Assistant Chief Engineer, Montreal Tramways Co.; G. I. Evans, Mechanical Engineer, C.P.R.; J. A. Isherwood, Prof. Keay, McGill University.
 AUDIT COMMITTEE, E. B. Tilt, Engineer of Tests, C.P.R.; J. A. Duffie, Chief Clerk, Master Mechanic, G.T.R.; W. Robb, Canuck Supply Company.
 SECRETARY, J. Powell, Chief Draughtsman, G.T.R.; TREASURER, W. H. Stewart, Chief Clerk to Assistant to Vice President, C.P.R.

Recent Dominion Legislation.

The following acts affecting transportation interests, in addition to those given on pg. — of our — issue, were passed at the Dominion Parliament's recent session:—

ALABAMA TRACTION, LIGHT AND POWER Co.—Incorporation.

ALBERTA, PEACE RIVER AND EASTERN RY.—Extension of time for construction.

BRITISH COLUMBIA AND DAWSON RY.—Extension of line for construction.

CANADA SHIPPING ACT.—Amending act.

CANADIAN NORTHERN RY.—Extending time for construction of certain lines.

and authorizing building of additional branches.

CANADIAN NORTHERN ALBERTA RY.—An act to aid construction of the line, and a second act with respect to aid granted.

CANADIAN NORTHERN MONTREAL TUNNEL AND TERMINAL Co.—Respecting company's powers.

CANADIAN NORTHERN PACIFIC RY.—Granting subsidy in aid of construction.

CANADIAN PACIFIC RY.—Granting extension of time for construction of certain lines, etc.

DRY DOCKS.—Amending act granting subsidies in aid of building dry docks.

ESQUIMALT AND NANAIMO RY.—Extending time for building certain lines, and authorizing building of additional lines.

GATINEAU AND UNGAVA RY.—Extending time for construction and changing company's title to Ottawa and Ungava RY.

GRAND TRUNK RY.—Respecting company's finances.

HAMILTON, ONT.—Providing for appointment of harbor commissioners.

KOOTENAY CENTRAL RY.—Extending time for construction.

KETTLE VALLEY RY.—Extending time for construction and authorizing building of additional lines.

MANITOBA AND NORTH WESTERN RY.—Extending time for construction, etc.

MEXICAN INTERURBAN ELECTRIC TRACTION Co.—Changing name to Mexican Interurban Electric Ry., etc.

MEXICO NORTH WESTERN TRANSPORTATION Co.—Changing name to Mexican North Western Pacific Ry.

MONTREAL HARBOR.—Authorizing additional advances to Montreal Harbor Commission.

MONTREAL AND LAKE VICTORIA RY.—Incorporation.

MONTREAL CENTRAL TERMINAL Co.—Two acts amending powers.

MONTREAL, OTTAWA AND GEORGIAN BAY CANAL Co.—Extending time for construction.

ONTARIO AND OTTAWA RY.—Amending powers.

OTTAWA AND LAKE MCGREGOR RY.—Act of incorporation, and a second act amending powers.

OTTAWA, BROCKVILLE AND ST. LAWRENCE RY.—Extending time for construction.

OTTAWA, MONTREAL AND EASTERN RY.—Two acts amending powers.

PACIFIC, TRANS-CANADA AND HUDSON BAY RY.—Incorporation.

PRINCE EDWARD AND HASTINGS RY.—Incorporation.

QUINZE RIVER AND OTTAWA RY.—Incorporation.

RAILWAYS AND BRIDGES.—Granting subsidies in aid of construction.

RAINY RIVER RADIAL RY.—Extending time for construction.

REVLILLON FRIERS TRADING Co.—Amending powers.

ST. CLAIR AND ERIE SHIP CANAL Co.—Extending time for construction.

ST. JOHN AND QUEBEC RY.—Granting aid towards construction of bridges, and confirming agreement with the Province of New Brunswick regarding construction and operation of railway.

SASKATCHEWAN CENTRAL RY.—Extending time for construction.

SASKATCHEWAN POWER Co.—Confirming charter.

TEMISKAMING AND NORTHERN ONTARIO RY.—Confirming agreement with G.T.R. for running rights.

UNITED GOLD FIELDS OF B.C.—Extending time for building authorized railway, etc.

VANCOUVER, FRASER VALLEY AND SOUTHERN RY.—Extending time for construction, etc.

WESTERN DOMINION RY.—Incorporation.

WINDSOR, CHATHAM AND LONDON RY.—Amending powers.

WINNIPEG AND ST. BONIFACE, MAN.—Incorporating harbor commissioners for district.

Joliette and Lake Manuan Colonization Railway.

In reference to the article on this line published in our last issue we are officially advised that A. M. Laredo purchased his three fourths interest in the charter, July 26, 1911.

We are also officially advised that the company has 30 miles of line located northerly from Joliette passing through the villages of St. Felix de Valois, St. Jean de Matha, and Ste. Emelie de L'Energie, and four miles north of the latter place into the Laurentian Mountains. From Ste. Emelie de L'Energie to St. Zenon, 12 miles, this being the mountain section and chiefly rock. From St. Zenon to St. Michel des Saints the line passes through a good farming section. St. Michel des Saints is a flourishing village established 52 years ago and situate 60 miles north of Joliette. From St. Michel des Saints to Waymontachene on the National Transcontinental Railway, 90 miles, the line follows contiguous to fine water stretches, and large lakes passing through the virgin forest with a wealth of lumber, magnificent scenery and ideal summer resorts, with excellent hunting, shooting and fishing. There is an abundance of lumber and pulp wood, with good agricultural land. The line when completed will also serve the following villages contiguous to it on each side, namely:—St. Ambrose, de Kildare, Radstock, St. Melanie, Ste. Beatrix, St. Alphonse, St. Come, St. Damien, and St. Ignace. With the advent of the railway, other parishes will be opened up between St. Michel des Saints and Waymontachene. There are at present several saw mills and creameries in operation along the line, besides a large pulp and paper mill up north. Contiguous to the line are deposits of white marble, asbestos, mica and iron, with large quantities of sand and gravel.

The general route map for the whole distance to the N.T. Ry. has been approved by the Minister of Railways; plans and profiles for the first 30 miles have been sent to Ottawa and the remainder of the line is being surveyed as rapidly as possible. The contractors for the first 60 miles are the Enterprise Construction Co. of New York and Ottawa, with headquarters at St. Felix de Valois, P.Q. The contractors intend covering the first 30 miles shortly with men, teams and other plant between Joliette and Ste. Emelie de L'Energie, in order to reach the latter place as expeditiously as possible with the track.

The track will be laid with 80 lb. rails instead of 65 lb. as originally intended. Considerable ties were taken out during the past winter. The line is expected to be completed before the National Transcontinental Ry. is connected up. The ruling gradient on the first 30 miles is 1 ft. per 100 ft. for 1½ miles; otherwise the gradient does not exceed 0.65 per 100 ft. From miles 30 to 42, mountain section, the ruling gradient is 1.50 per 100 ft. for short distances, with easy gradients at intervals between the 1.50 per 100 ft. grade. North it is not expected to exceed 0.50 per 100 ft. The

maximum curvature is 8°. At mile 20.5 the Black River is spanned with 2 half deck plate girders of 55 ft. each, with concrete abutments and one pier.

J. N. Patton, M. Can. Soc. C.E., is Chief Engineer, and H. S. Dickson, Division Engineer, both with headquarters at St. Felix de Valois, Que.

Canadian Northern Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases, compared with those for 1910-11, from July 1, 1911:—

Earnings.	Expenses.	Net Earnings.	Net Increase
July \$1,475,900	\$1,114,300	\$361,600	\$13,400
Aug. 1,420,600	1,105,900	314,700	51,700
Sept. 1,576,400	1,157,000	419,400	33,200
Oct. 2,028,900	1,348,500	680,400	99,900
Nov. 2,001,500	1,336,300	665,200	106,800
Dec. 1,831,400	1,327,600	503,800	144,600
Jan. 1,223,100	1,004,400	223,700	122,000
Feb. 1,203,400	965,800	237,600	101,800
Mar. 1,572,700	1,145,900	426,800	72,000
\$14,333,900	\$10,505,700	\$3,833,200	\$749,900
Inc. \$ 3,396,000	\$2,646,100	\$ 749,900

Approximate gross earnings for April, \$1,608,100, against \$1,345,400 for April, 1911.

The mileage in operation during April, was 3,981 against 3,386 in April, 1911.

Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases, compared with those for 1910-11, from July 1, 1911:

Earnings.	Expenses.	Net Profits.	Increases.
July \$ 9,661,818.14	\$5,958,789.81	\$3,703,028.33	\$218,408.74
Aug. 10,421,904.42	6,346,333.41	4,075,571.01	383,898.68
Sept. 10,049,084.97	6,131,638.17	3,917,446.80	5,847.16
Oct. 11,207,991.99	6,526,887.24	4,681,104.75	175,944.23
Nov. 10,570,694.80	6,583,328.31	3,987,366.46	250,244.23
Dec. 10,654,871.67	6,549,141.41	4,105,730.26	819,196.37
Jan. 7,328,781.81	6,245,924.11	1,082,857.70	426,739.83
Feb. 8,931,907.20	6,548,040.53	2,388,866.67	239,159.16
Mar. 10,519,328.76	6,800,317.65	2,718,401.11	561,834.57
\$89,346,373.76	\$57,691,000.64	\$31,655,373.12	\$4,081,272.97
Inc. 12,642,297.62	\$8,561,024.65	\$ 4,081,272.97

Approximate gross earnings for April, \$11,028,000, against \$8,458,000 for April, 1911.

The mileage operated during April was increased to 10,981.

Grand Trunk Railway Earnings, Expenses, Etc.

Following are the earnings of the G.T.R., C.A.R., G.T. Western Ry., and D.G.H. and M. Ry., for March, as compared with those for March, 1911:—

GRAND TRUNK RAILWAY.			
	1912.	1911.	
Earnings	\$3,206,700	\$3,077,353	
Expenses	2,403,200	2,181,760	
Net earnings	\$ 803,500	\$ 895,593	
CANADA ATLANTIC RAILWAY.			
	1912.	1911.	
Earnings	\$168,500	\$173,859	
Expenses	152,200	143,665	
Net earnings	\$ 16,300	\$ 30,194	
GRAND TRUNK WESTERN RAILWAY.			
	1912.	1911.	
Earnings	\$540,700	\$529,856	
Expenses	509,900	451,449	
Net earnings	\$ 30,800	\$ 78,407	
DETROIT, GRAND HAVEN AND MILWAUKEE RY.			
	1912.	1911.	
Earnings	\$164,300	\$147,074	
Expenses	174,100	160,223	
Deficit	\$ 9,800	\$ 13,149	

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from Jan. 1 to Apr. 30:—

G.T.R.	\$11,500,189	\$10,727,821	\$772,368
C.A.R.	639,027	611,643	27,384
G.T.W.R.	2,118,952	2,161,647	*42,695
D.G.H. & M.R.	650,598	650,106	492
Totals	\$14,908,766	\$14,151,217	\$757,549

* Decrease.

St. John and Quebec Railway Construction.

The entire plans for the projected railway provide for a line from St. John, N.B., to Quebec, passing through Maine, and giving, it is claimed, the shortest and most direct connection. The plan is divided up into three sections, and includes the line known as the St. John Valley Ry., the Aroostook Valley Electric Ry. in Maine, and the old Quebec and New Brunswick Ry. in Quebec.

The first section of the line is in New Brunswick and extends from St. John along the St. John River Valley to Grand Falls. The contract for its construction has been arranged between the New Brunswick and Dominion Government, and has been let to the St. J. and Q. Ry. Co., which will sublet it to construction companies. The plans for the line from St. John to Grand Falls show that the starting point of construction will be from a junction with the Intercolonial Ry. at Rothesay, thence across the Kennebecasis River, and the St. John River to Hampstead tp. Thence the route follows the windings of the river, keeping on the south bank to Northampton, where it bends away towards the International boundary, returning close to the bank in Andover tp., and on to Andover.

The New Brunswick Government aids the construction by a guarantee of bonds of \$25,000 a mile, and the Dominion Parliament has voted a subsidy of \$3,200 a mile, but which may be increased to \$6,400 a mile, in proportion as the cost of construction exceeds \$15,000 a mile. The Dominion Parliament has also voted \$1,000,000 towards building three bridges on the line, viz.:—one across the Kennebecasis River at Perry Point, one across the St. John River at the Mistake, and the third across the St. John River near Andover. The Dominion Government has also arranged to lease the line, as soon as it is completed, for 99 years, to operate it as part of the Intercolonial Ry., and to pay 40% of the gross earnings. The agreement provides that the rental shall be used for the retirement of the bonds issued with the provincial guarantee, and that any surplus shall be paid to the company for 15 years, after which the money is to be used to meet the interest and principal of the bridge bonds, and any balance to be paid to the company.

The agreement with the Dominion Government provides that the bridges shall be built by a separate company, and the New Brunswick Legislature has under consideration a measure incorporating the St. John and Quebec Bridge Co., with A. R. Gould, President, St. J. and Q. Ry., as its principal promoter. Other legislation to carry out the agreement between the two Governments and the company is pending in New Brunswick.

The second section of the line is being proposed to be built under the charter the Aroostook Valley Electric Ry., incorporated in the State of Maine. This provides that the company may acquire the C.P.R. Aroostook branch, terminating at Presque Ile, Me., and connect it with the electric railway running from that town to Washburn, about nine miles. The company proposes to build branches from Washburn northerly to Caribou and into New Sweden tp. The line to the Quebec boundary leaves Washburn, follows the valley of the Little Salmon River, crosses the Fort Kent branch of the Aroostook Valley Ry. and proceeds westerly to the Allagash River, at the boundary between tps. 14, ranges 11 and 12, the St. John River in tp. 15, range 13, and reaches the International boundary between Maine and Quebec, in tp. 14, range 16.

The third section runs from the International boundary to the Intercolonial Ry., the plan showing that the surveyed route passes through Casgraine,

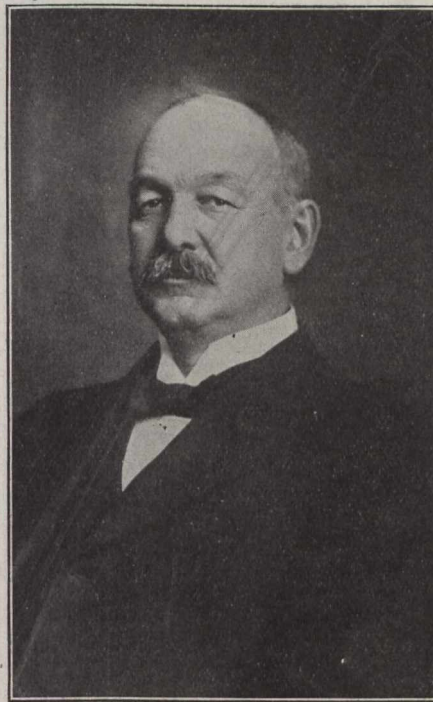
(in which the line crosses the National Transcontinental Ry.), Bourdages and St. Clair tps. to Montmagny station.

We are officially advised that contracts for grading, track laying and ballasting have been let as follows:—Fredericton to Woodstock, 62 miles, Quebec Construction Co., Montreal; Woodstock to Centreville, 23 miles, Kennedy and McDonald, Antigonish, N.S. It is reported that a further contract has been let to J. H. Corbett.

A prospectus was issued in London, Eng., May 10, by the St. J. and Q.R. Co., through the Bank of Montreal, offering 1873,285 1st mortgage 4% debenture stock, unconditionally guaranteed as to both principal and interest by the New Brunswick Government, the price of issue being 98½%.

The Death of James Osborne.

Just after The Railway and Marine World's last issue had gone to press came the unexpected news of the death of Jas. Osborne, General Superintendent, British Columbia Division,



The late James Osborne.

C.P.R., which occurred at his home in Vancouver on May 1.

When a change in the B.C. General Superintendency was decided on early in the year, Vice President and General Manager Bury selected Mr. Osborne for the position, personally visiting Toronto and offering him what is undoubtedly the blue ribbon of the company's general superintendencies, owing to the fact that a general superintendent at Vancouver has so many duties to perform in addition to mere operation and maintenance, and that additional responsibility is thrown on him by the remoteness of his location from headquarters. With the great development going on in British Columbia, and the important changes which will follow the opening of the Panama Canal, the position of General Superintendent at Vancouver is of more than usual importance, and it was given to Mr. Osborne, not because he was the senior general superintendent in the service, but more particularly on account of his peculiar fitness for it, his great capacity for work, and his indomitable devotion to the company's interests.

He only arrived at Vancouver on February 15, and had just got settled in

a beautiful home on Shaughnessy Heights, entering on his work with characteristic ardor and being most enthusiastic about it. In a personal letter to the Managing Director of The Railway and Marine World, written a few weeks before his death, he said:—"We have had delightful weather since our arrival here, and I like the country, its people, and the work very much. The development is marvellous."

Towards the end of April Mr. Osborne went all over the division on an inspection trip, during which he caught a severe cold. Returning to Vancouver on April 27, he at once went to bed, but no serious results were feared, until erysipelas set in and he failed rapidly, dying on May 1.

His body left Vancouver on the following day on his private car, which was attached to the Montreal express, accompanied by Mrs. Osborne, his younger son and three daughters, the older son being resident in Toronto. The funeral took place in Montreal May 6, a large number of the company's officials and others attending. The body was cremated at Mount Royal cemetery, in accordance with his expressed wish.

Mr. Osborne was born at Montreal, Sept. 19, 1861, and entered railway service Oct., 1874, since when he was, to Aug., 1877, junior clerk, Mechanical Superintendent's office, G.T.R.; Sept., 1877, to July, 1883, chief clerk, Works Manager's office, G.T.R.; July, 1883, to June, 1886, chief clerk, Mechanical Superintendent's office, C.P.R.; June, 1886, to Sept., 1887, chief clerk, Assistant General Manager's office, C.P.R.; Sept., 1887, to Apr., 1890, Car Accountant, C.P.R.; Apr., 1892, to Apr., 1896, Superintendent Car and Fuel Service, C.P.R.; Apr., 1896, to Mar., 1899, Assistant to Vice President, C.P.R.; Mar., 1899, to May, 1901, General Superintendent, Western Division, C.P.R., Winnipeg; May, 1901, to May, 1903, General Superintendent, Atlantic Division, C.P.R., St. John, N.B.; May, 1903, to Dec., 1906, General Superintendent, Eastern Division, C.P.R., Montreal; Dec., 1906, to Feb., 1912, General Superintendent, Ontario Division, C.P.R., Toronto. Feb. 1 to May, 1912, General Superintendent, British Columbia Division, C.P.R. He was President of the International Association of Car Service Officers for 1895-96.

C.P.R. Irrigation Work Contracts.

A. S. Dawson, M. Can. Soc. C.E., Chief Engineer, Department of Natural Resources, C.P.R., reports the awarding of three large contracts in connection with construction in the eastern section of the company's irrigation block.

Grant Smith and Co. and McDonnell, of Vancouver, have been given a contract running into over \$500,000, for the construction of a large reinforced concrete aqueduct, two miles long, near Brooks, Alta., which will take the next two summers to complete.

Janse Bros. and Boomer and Hughes, of Calgary, Alta., and Seattle, Wash., have been given a two year contract, amounting to about \$300,000, for the construction of a very large number of reinforced concrete structures on the canal system in the section of the irrigation block lying between Bassano and Brooks, Alta., and the Bow and Red Deer rivers.

The Canada Foundry Co. has been given a contract for supplying and erecting 30 steel bridges over the main canal system, containing about 1,500,000 lbs. of steel, which, with masonry abutments, will provide practically permanent structures.

Work on all of these contracts will be commenced in the immediate future, and several hundred men, large numbers of teams and an elaborate construction plant will be required for their completion.

Grade Separation in North Toronto.

The plans for the construction of the Canadian Northern Ry. line across North Toronto are bound up with the question of the separation of the grades, with which the C.P.R. is also concerned. The C.P.R. was originally across the north portion of Toronto, and access was finally obtained into the Union Station by a line from Leaside Jct., thence over the old Credit Valley Ry., or the old Toronto, Grey and Bruce Ry. to Toronto Jct, now West Toronto. The section of line from Leaside Jct. to Toronto Jct. has always been used for freight traffic, and recently it has also been used for certain passenger trains. The extension of traffic necessitated changes, and, in conjunction with the city council, plans were discussed for the elimination of level crossings.

The coming of the Canadian Northern Ry. altered the situation. The C.N.R. proposed to run a line from near Leaside across the Don Valley to Davenport road, and there connect up with the right of way which it had acquired from the Electric Development Co. After considerable negotiations and discussion between the several interests, and before the Board of Railway Commissioners, the two railways agreed upon a plan for the construction of joint tracks from Yonge St. to Avenue Road, with a joint station. This arrangement has been approved of by the Board of Railway Commissioners, with the understanding that the plans for the subways on Yonge St. and Avenue Road be submitted to the board. The C.P.R., it is said, will carry out the joint section of the work, and it is stated a start is to be made at once.

The question of what would be done west of Avenue road was discussed at great length, and finally a compromise plan was prepared by G. A. Mountain, Chief Engineer for the board. This plan, which has been accepted by the railways and the city, has been approved by the board. It provides for the elevation of the tracks from the end of the Avenue road section, westerly to Dovercourt road, whence they approach the level on a descent of 0.5%. Davenport road and Poplar Plains road are to be deflected into one subway, and Huron street is to be closed. Provision is made for approaches to 18 industrial spurs. Most of these spurs will be on a 2% gradient, while one will have a 3% gradient.

Toronto Viaduct and Union Station.

The Board of Railway Commissioners, sitting at Toronto May 24 approved of the G.T.R. plans for a viaduct along the Toronto water front and for a new union station on Front St., between York and Bay Streets, and rejected the plans submitted by the C.P.R. and by the Board of Trade. The Vice Chairman of the Board of Railway Commissioners stated that work must proceed at once, and Chief Engineer Safford of the G.T.R., said his company was willing to rush the work as much as possible, but he thought it would take three years to complete it.

The G.T.R. plans provide for a station with ten through tracks and no stub tracks. The station building will be 3½ or possibly four stories high and is expected to cost \$2,500,000, which is to be borne by the C.P.R., the G.T.R., and the Canadian Northern Ry. The cost of the viaduct is estimated at \$6,500,000, of which the city is to contribute a third.

H. A. Everett, President London, Ont., St. Ry., is reported to be in poor health, but it was denied, May 17, that as a consequence he had resigned the presidency.

The Death of Chief Commissioner Mabee.

Closely following the tragic death of C. M. Hays, and the short fatal illness of James Osborne, the public were further shocked early in May by the death of James Pitt Mabee, Chairman of the Board of Railway Commissioners.

Mr. Mabee was taken ill on April 30, while presiding at a sitting of the board in Toronto. That evening he went to St. Michael's Hospital, his own physician, and a surgeon who was called in, recommending an operation for appendicitis. At first he was rather opposed to having it done, but consented early the following morning, when it was performed, and it was found that gangrene had set in. Two days later a second operation became necessary to relieve paralysis of the bowel, due to the gangrene condition. This, however,



The late J. P. Mabee.

was also unavailing, and he died on May 6, following a collapse due to heart failure.

His death, the news of which was received with the greatest regret throughout the entire country, was followed by the most unanimous expression by public men and the press in regard to his ability, to the great services he had rendered Canada, and to his fairness to the various conflicting interests. He was buried May 8 at his birthplace, Port Rowan, Ont., the body being taken from Toronto on a special train, accompanied by a large number of prominent public men, railway officials, etc.

He was born at Port Rowan, Ont., Nov. 5, 1859, and was educated at the Port Rowan high school, and matriculated, Nov., 1877. He was called to the Ontario Bar, Nov., 1882, and from 1882 to 1887, practised at Listowel, Ont., and from 1887 to Jan. 1, 1905, at Stratford,

Ont. From Jan. to Nov., 1905, he practised at Toronto, as a member of the firm of Beatty, Blackstock and Co., during which time he was Chairman of the Canadian section of the International Waterways Commission. He retired from private practice, and resigned the chairmanship mentioned, Nov., 1905, on his appointment as a Justice of the High Court of Ontario. From Mar., 1906, to Mar., 1908, he was a member of the Statute Revision Committee, and on Mar. 21, 1908, was appointed Chairman of the Board of Railway Commissioners.

Mr. Mabee, who was a widower, left a young son and daughter.

C.P.R. Mechanical Conference.

A conference of officials of the C.P.R. Mechanical Department was held at Angus shops, Montreal, May 6 to 8, H. H. Vaughan, Assistant to the Vice President, presiding, the others present being C. H. Temple, Superintendent of Motive Power and Car Department, Western lines, Winnipeg; R. W. Burnett, General Master Car Builder, Montreal; C. Kyle, General Master Mechanic, Eastern lines, Montreal; H. Osborne, Superintendent Locomotive Shops, Montreal; G. I. Evans, Mechanical Engineer, Montreal; J. Burns, Master Mechanic, Montreal; C. C. Ord, Master Mechanic, McAdam Jct., N.B.; H. G. Reid, Master Mechanic, North Bay, Ont.; A. Dixon, General Foreman, Locomotive Shops, West Toronto; S. Phipps, Master Mechanic, Vancouver; R. Preston, Master Mechanic, Winnipeg; A. T. Shortt, Master Mechanic, Calgary, Alta.

A large number of questions were thoroughly discussed. A dining car was placed near the shops to serve luncheon for those attending the conference, and at its conclusion a dinner was held held at the Engineers' Club, Montreal, H. H. Vaughan, president of the club, occupying the chair. A visit was paid to the Montreal Locomotive Works.

Western Canada Railway Club.—At the recent annual meeting in Winnipeg, the following officers and committees were elected for the current year:—President, S. J. Hungerford, Superintendent of Rolling Stock, Canadian Northern Ry.; Vice President, T. Duff Smith, Fuel Agent, G.T. Pacific Ry.; Secretary, W. H. Rosevear; Treasurer, E. Humphrey; Executive Committee, R. R. Neild, J. G. Legrand, A. McCowan, L. O. Genest, A. H. Eager, L. Kon, W. Carter; Audit Committee, W. S. Fallis, E. O. Balleine and J. B. Parker.

Embargos Against Traffic.—The Board of Railway Commissioners has called on railway companies to show cause at the sittings at Ottawa, June 18, why an order should not be made prohibiting any railway company from issuing an embargo against any traffic for longer than four days without first giving the board at least 10 days previous notice of its intention to issue such embargo, and the reason why such embargo is to be issued.

A Winnipeg press report states that the G. T. Pacific Ry. is about to start operating a passenger train service between Winnipeg and Fort William, Ont.

The Railway Storekeepers' Association held its ninth annual convention at Buffalo, N.Y., May 20 to 22, when, among the subjects dealt with, was that of line inspection, by J. H. Callaghan, General Storekeeper, C.P.R., Montreal.

The Michigan Central Rd. was fined \$10,000, May 9, in the U.S. District Court at Chicago, for violation of the laws against rebating. The company pleaded guilty to the charge, which was stated to have been carried on under the guise of advertising theatrical companies. An indictment against W. H. Underwood, Assistant General Passenger Agent, M.C. Rd., Chicago, Ill., in the same connection, was quashed.

Appointment of President Grand Trunk Ry. and Grand Trunk Pacific Ry.

A. W. Smithers, chairman of the Board, G.T.R., arrived in New York, May 17, on the s.s. Mauretania, from England, and was met by W. Wainwright, Vice President, who has had chief charge of the company's affairs since C. M. Hays' death, and by D. E. Galloway, assistant to the president. After spending a day or two in New York, Mr. Smithers proceeded to Montreal and visited Ottawa, and on May 24 announced that E. J. Chamberlin, Vice President and General Manager G.T.P.R., had been appointed President of both the G.T.R. and G.T.P.R., to succeed Mr. Hays, and had also been elected a member of the G.T.R. board. At the same time it was announced that W. Wainwright, heretofore Second Vice President G.T.P.R., had been appointed First Vice President, and M. M. Reynolds, heretofore Third Vice President, had been appointed Second Vice President, and also a director.

Mr. Smithers also gave out the following statement:—"In making the announcement with regard to the late Mr. Hays' successor, the chairman wishes to take the opportunity of congratulating the Vice President, W. Wainwright, on the completion of his 50 years' connection with the company, during which time he has continuously rendered important and faithful service, and the chairman desires to especially recognize the readiness with which, at his request, Mr. Wainwright handled the company's affairs in the circumstances arising from the lamented death of Mr. Hays. The chairman is pleased to announce that the board has made certain arrangements with Mr. Wainwright in recognition of his valuable services which Mr. Wainwright informs the chairman have given him great pleasure and gratification."

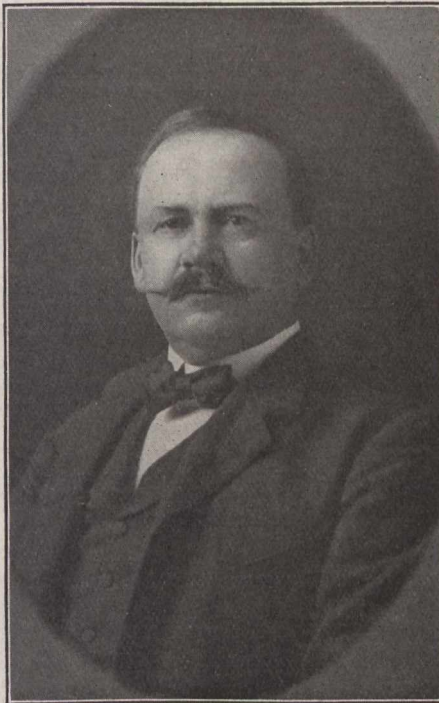
E. J. Chamberlin was born in 1852 at Lancaster, N.H., and entered railway service in 1871, since when he has been consecutively, to 1872, timekeeper in car shops, Central Vermont Rd.; 1872 to 1875, clerk in Paymaster and Superintendent of Transportation's office, same road; 1875 to 1876, corresponding secretary to General Superintendent, same road; 1877 to 1884, private secretary to General Manager, same road, St. Albans, Vt.; Apr., 1884, to Sept., 1886, Superintendent, Ogdensburg and Lake Champlain Rd., and Central Vermont Line steamships running between Chicago and Ogdensburg; Sept. 1, 1886, to Oct., 1905, General Manager, Canada Atlantic Ry. After the absorption of the C.A.R. by the G.T.R. he was connected with lumber, contracting and mining interests for some years, and on Jan. 25, 1909, was appointed Vice President and General Manager, Grand Trunk Pacific Ry., on the resignation of F. W. Morse.

The events of the past few weeks have shown the utter unreliability of much of the so called "news" published in the daily papers. On May 3 evening papers published a Canadian Press dispatch from London, Eng., stating that Sir Thos. Tait had that day been chosen to succeed the late C. M. Hays. Sir Thos. Tait was at the time in New Brunswick, in connection with the construction of the Fredericton and Grand Lake Ry., of which he is president, and on returning to Montreal stated that he knew nothing whatever about the matter. It would appear that there was no foundation for the dispatch quoted, and that it was probably manufactured.

On May 15 the Toronto Globe announced, under flaring head lines, that Hon. G. P. Graham, M.P., ex-Minister of Railways and Canals, had been offered the position, and added:—"Mr.

Smithers is now on his way to Canada to consult with Mr. Graham as to the vacancy."

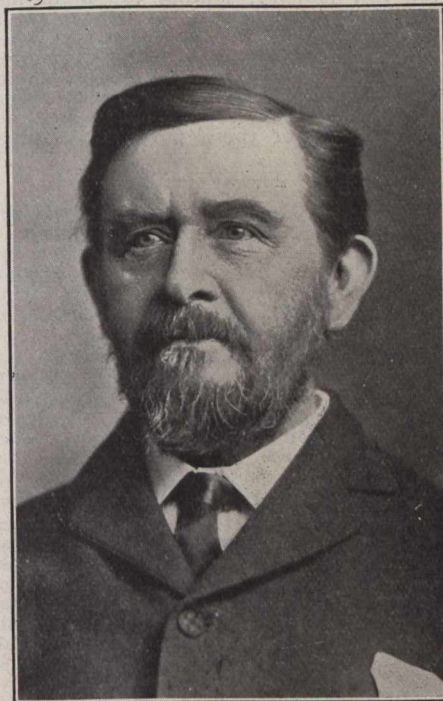
Mr. Graham, who was in Ottawa that day, is reported to have stated to a press



E. J. Chamberlin,
President, Grand Trunk Railway and Grand Trunk Pacific Railway.

representative that there was no truth in the report, and that the presidency had not been offered to him.

On arrival at New York Mr. Smithers is reported as saying:—"The use of cer-



W. Wainwright,
Vice President, Grand Trunk Railway, and First Vice President, Grand Trunk Pacific Railway.

tain names in connection with the presidency was absolutely unauthorized. By unauthorized I mean not only that no officer of the G.T.R. has given out any

statement tending to show that any person was likely to get the appointment, but I mean that even the facts did not authorize any announcement."

Such positive announcements in the daily papers as those above quoted, following so closely after the sheaf of bogus news and alleged dispatches published at the time of the Titanic disaster, naturally cause a feeling of distrust of any "news" published, and the publishers of reputable papers should take steps to prevent a repetition of such frauds on the public. The announcement that Sir Thos. Tait had been appointed was not given even as a report, or rumor, but on the authority of a Canadian Press dispatch. If the management of that association does not deal with the member of its staff who sent the bogus news, the daily paper publishers should take the matter up.

The announcement that Mr. Graham had been offered the position was made positively by the Toronto Globe on its own authority, and was followed by a lengthy eulogy of him. It would appear to have been a pure invention, and as apparently it was not subsequently corrected in any way, except by a press dispatch from Montreal saying that G.T.R. officials there did not credit it, the Globe must assume full responsibility for it. What was the object of publishing such a statement? Was it simply to create a sensation for the day, or was it a deliberate attempt to boom Mr. Graham for the position? The incident tends to throw a doubt on newspaper statements generally, and to justify the inference that some of them are edited without any regard for the truth of the matter they publish.

Operation of U.S. Trains in Manitoba by U.S. Crews.

Under an agreement between the Canadian Northern Ry. and the Midland Ry. of Manitoba, the latter a subsidiary of the Great Northern Ry. (U.S.A.), the Great Northern and the Northern Pacific Rys. started on May 1 operating their trains from the international boundary to Fort Garry union station, Winnipeg, with United States crews, having their headquarters at Crookston, Minn. Previously the trains had been brought in by C.N.R. crews. The alteration led to difficulties, the C.N.R. men protesting at being removed to other runs, and against the operation of trains in Canada by U.S. crews. The Department of Labor was advised and steps taken to appoint a conciliation board. It was reported May 12 that an arrangement had been reached between the two companies, but the C.N.R. men demanded to be reinstated in their old positions. On May 15, the Board of Railway Commissioners issued an order preventing the C.N. Ry. and the Midland Ry. of Manitoba, under a penalty of \$100 a day, carrying out any of the provisions between them after May 20, unless and until it received the sanction of the Governor-in-Council on the Board's recommendation. Sir W. Mackenzie, President C.N.R., arrived in Winnipeg, May 15, and discussed the matter with the various interests. As a result the situation as it existed prior to May 1 was restored, and the G.N. Ry. and N.P. Ry. trains between the boundary and Winnipeg are being operated by Canadian crews, though it is said the latter have become employes of the Midland Ry. of Manitoba.

The question of the future operation of the trains into Winnipeg will be discussed later on by the officials of the different lines, and will also come up again before the Board of Railway Commissioners.

Birthdays of Transportation Men in June.

Many happy returns of the day to—
Jas. Anderson, Manager, Sandwich, Windsor and Amherstburg Ry., Windsor, Ont., and President, Canadian Street Railway Association, born at Ayr, Ont., June 20, 1851.

W. C. Bowles, General Freight Agent, Western Lines, C.P.R., Winnipeg, born at Montreal, June 3, 1875.

J. H. Boyle, Assistant Superintendent, District 4, Eastern Division, C.P.R., Ottawa, born at Waterloo, Que., June 26, 1869.

F. P. Brady, Member, Government Railways Managing Board, and General Superintendent, Government Railways, Moncton, N.B., born at Haverhill, N.H., June 22, 1853.

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

A. H. N. Bruce, M. Can. Soc. C.E., Chief Engineer, Quebec and Saguenay Ry., Quebec Ry., Light, Heat and Power Co., etc., Quebec, Que., born at Ballyscullion, Ireland, June 18, 1854.

A. E. Doucet, M. Can. Soc. C.E., District Engineer, National Transcontinental Ry., Quebec, born at Montreal, June 9, 1860.

E. W. DuVal, Superintendent, District 4, Manitoba Division, C.P.R., Souris, born at Toledo, Ohio, June 5, 1885.

G. H. Eaton, Assistant Master Car Builder, Western Lines, C.P.R., Winnipeg, born in Staffordshire, Eng., June 9, 1860.

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

A. A. Goodchild, Auditor of Stores and Mechanical Accounts, C.P.R., Montreal, born at Peckham, London, Eng., June 3, 1866.

J. A. Heaman, Division Engineer, G.T. Pacific Ry., Fitzhugh, Alta., born at Memphis, Tenn., June 3, 1874.

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

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

L. R. Johnson, Assistant Superintendent Motive Power, C.P.R., Eastern Lines, Montreal, born at Abingdon, Berks, Eng., June 22, 1855.

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

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

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

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

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

J. V. McNab, Resident Engineer, C.P.R., Saskatoon, Sask., born at Ayr, Ont., June 11, 1884.

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

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

H. J. Maguire, District Baggage Agent, Pacific Division and B.C. and Pacific Coast Service, C.P.R., Vancouver, B.C., born at Toronto, June 16, 1881.

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

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

L. Mulkern, District Freight Agent, C.P.R., London, Ont., born there, June 18, 1871.

H. A. Pepler, District Master Mechanic, C.P.R., Montreal, born at Richmond, Que., June 25, 1873.

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

Allan Purvis, Manager of Interurban Lines, British Columbia Electric Ry., New Westminster, B.C., born at Batavia, Java, June 29, 1864.

D. I. Roberts, General Manager, Quebec, Montreal and Southern Ry., and Napierville Jct. Ry., Montreal, born at Waynesburg, Pa., June 27, 1853.

Jas. Stephenson, ex Chief Superintendent, G.T.R., now of Clevedon, Somerset, Eng., born at Weston Super Mare, Eng., June 2, 1837.

W. Webber, General Agent Passenger Department Atlantic Steamship Service, C.P.R., Montreal, born at Liverpool, Eng., June 10, 1872.

Around the World by C.P.R. and Trans-Siberian Ry.

The C.P.R. has made arrangements by which it can now sell around the world tickets over the Trans-Siberian Ry., connection being made by its Trans-Pacific steamships at Yokohama, Kobe, Nagasaki and Shanghai, with the various routes of the Trans-Siberian. At fares varying according to route, passengers may leave the C.P.R. steamships at Yokohama or Kobe, travel by Japanese railway to Tsuruga on the north coast of Japan, thence by steamer to Vladivostock, where the Trans-Siberian rails begin, or they can go by rail from Yokohama or Kobe to Shimonoseki, and take steamer to Dairen (Dalny), close to historic Port Arthur, and then begin the rail journey, joining the main line of the Trans-Siberian at Kharbin, or, leaving the C.P.R. at Nagasaki, they may take the Japanese railway to Moji, and then steamer to Dalny, or, again, they may use the C.P.R. ships to Nagasaki or Shanghai, and steamer direct from either of these ports to Vladivostock.

T. E. McNair, City Passenger Agent, C.P.R., Amherst, N.S., writes:—"Please find enclosed money order for \$1, for which continue my subscription to your valuable Railway and Marine World. It certainly is worth more for the information it contains."

The Lewis Construction Co., Ltd., has been incorporated under the Ontario Companies Act, with \$40,000 capital, and office at Toronto, to build railways, bridges, viaducts, docks, wharves, etc., and act as general contractors. The provisional directors are, E. C. Lewis, W. Middlemist and H. A. Hawley, Toronto.

Norton, Griffiths and Co., Ltd., contractors, etc., passed a bylaw at a special meeting of shareholders in Vancouver, B.C., May 10, increasing the number of directors from five to ten, of whom four must be residents of England, and six residents of Canada. Two directors shall form a quorum. F. Carter-Cotton, of Vancouver, is President, and F. Molyneux, Secretary.

The Union Contract Co., has been incorporated under the Dominion Companies Act, with a capital of \$250,000 and offices at Montreal, to carry on a general engineering and contracting business, particularly the building of wharves, docks, tunnels, bridges, etc. The provisional directors are: R. S. Stackhouse, R. Chenevert, G. H. Semple, W. G. Phillips; R. E. Allen, Montreal.

Canadian Freight Association.

T. Marshall, Chairman, has removed his office from the union station, Toronto, to the Canadian Express Building, Montreal, it being considered that Montreal is more suitable than Toronto, on account of the C.P.R. and G.T.R. headquarters being there. The Association's freight inspection department still has its offices in Toronto union station, in charge of P. K. Perry, Chief Inspector.

A press dispatch from Montreal, May 12, published in daily papers, stated that the Inland Navigation Co., Canadian Lake Line, Merchants Mutual Line and Jaques Line had withdrawn from the Canadian Freight Association, as they objected to freight rates forced by the Association and that a rate war was anticipated unless a compromise could be effected.

The facts are that the Inland Navigation Co. never was a member of the Association, but the management informs us that its relations with the Association have always been satisfactory. The Jaques Line has not withdrawn from membership. The Canadian Lake Line and the Merchants Mutual Line have withdrawn, contending that they get no benefit by being members. The question of rates has positively nothing to do with the matter and there is no prospect of any rate war.

Certain agreements are made every year with the lake and rail members of the Association, and the water lines which are not members, in regard to rates, and this agreement is carried out in a satisfactory manner. The withdrawal of the water lines above mentioned from the Association does not in any way disturb the agreement in regard to rates.

The water lines have a separate organization, the Lake Freight Association, of which H. A. Young, Traffic Manager, Canadian Lake Line, is Secretary with office at Toronto. The members of this Association are the Canadian Lake Line, Inland Navigation Co., Jaques Line and Merchants Mutual Line.

C.P.R. Colonization Plans.

Sir Thos. G. Shaughnessy is reported to have announced, May 5, that the company will select from its unsold lands farms of 160 acres each in Manitoba, Saskatchewan and Alberta, 25 farms in all; put up houses and buildings, with the necessary fencing; provide the necessary implements for working them, and suitable live stock. These farms will be offered to selected experienced men to be operated as mixed farms, on the condition that when a man has demonstrated his ability as a practical farmer, he will be permitted to purchase the property at cost, payable in six or eight instalments, with 6% interest. During the earlier part of the term, the company's representative will direct the general course of operations on the farms. The company has also arranged to put in operation a plan under which approved farmers, on making a purchase of lands from the company, will be granted a loan of \$2,000 towards erecting the buildings, fences, etc. This money is to be repaid along with the cost of the land with 6% interest, the payments being spread over a period of 10 years. \$500,000 has been appropriated, to be expended during this year. It is proposed to spend \$1,000,000 in 1913, and \$5,000,000 annually thereafter until the available lands are occupied.

H. Doughty, formerly Superintendent, Regina, Sask., Municipal Ry., is now engaged on Lethbridge, Alta., Municipal Ry. construction.

Railway Rolling Stock Notes.

The Intercolonial Ry. has received five consolidation locomotives from the Canadian Locomotive Co.

The Canadian Northern Ry. recently completed 35 cabooses out of an order of 50 at its Winnipeg shops.

The Grand Trunk Pacific Ry. has received seven first class cars from the Canadian Car and Foundry Co.

The Algoma Central and Hudson Bay Ry. has received one 10-wheel locomotive from the Canadian Locomotive Co.

The Dominion Bridge Co. recently ordered a Lidgerwood flat car, 30 tons capacity, from the Canadian Car and Foundry Co.

The Temiskaming and Northern Ontario Ry. has ordered four steel under-frame conductors' vans from the Canadian Car and Foundry Co.

The Esquimalt and Nanaimo Ry. is reported to have purchased 60 logging cars of modern construction, equipped with automatic unloading apparatus, for use on its Cowichan River line.

The G.T.R. has recently placed orders for the following rolling stock:—2,000 box cars and 250 refrigerator cars, with the Canadian Car and Foundry Co., Montreal, and 1,000 box cars, 500 automobile cars, 250 refrigerator cars, 1,000 steel hopper bottom coal cars, in the U.S.

The Canadian Northern Ry., between Apr. 15 and May 15, ordered 50 cabooses from its Winnipeg shops, 450 box cars from the Canadian Car and Foundry Co., 300 box cars from the Crossen Car Co., 25 consolidation locomotives from the Canada Foundry Co., and 100 box cars elsewhere.

A press report, towards the end of April, stated that the C.P.R. had placed an order for the building of ten sleeping cars in the U.S. We are officially advised that the order referred to was placed in Dec., 1911, and noted in our issue of Jan., 1912. The cars mentioned are of the C.P.R. standard type, 72 ft. long.

The 2,000 wooden box cars referred to in our May issue as having been ordered by the C.P.R. at the Angus shops are to be constructed with the new reinforced end designed by R. W. Burnett, General Master Car Builder. This construction uses rolled sections for end posts with 1% in lining and no sheathing outside of the ends. The cars are also to have the new C.P.R. metal ladders.

The C.P.R., between Apr. 17 and May 13, received the following additions to rolling stock:—128 box cars, 14 vans, 4 first class cars, 2 superintendents' business cars, 6 sleeping cars, one T3 locomotive, and 4 G2 locomotives, from its Angus shops. Montreal; 581 box cars, 30 flat cars, from the Canadian Car and Foundry Co.; 8 D4 and 2 D10 locomotives from the Montreal Locomotive Works, and 292 box cars and 90 tank cars from the American Car and Foundry Co.

The question of establishing a more frequent service on the Temiskaming and Ontario Ry., between Golden City and Timmins, on the Porcupine subdivision, is under consideration. S. B. Clement, Chief Engineer and Superintendent of Maintenance, has been looking into various types of motor cars in operation in the U.S., and also the gas electric car which has been put in operation on the Quebec and Lake St. John Ry., and it is probable that an order of one car will be placed in the near future.

The C.P.R., between Apr. 17 and May 13, ordered the following additions to rolling stock:—109 vans, 2 suburban

cars, 5 refrigerator cars, 9 stock cars, 5 flat cars, 10 sleeping cars, 5 dining cars, 20 first class cars, 10 tourist cars, 20 baggage and express cars, one G1 and 10 P1 locomotives, from its Angus shops, Montreal; 1 coal car and 85 box cars from the Canadian Car and Foundry Co.; 25 N3 locomotives, 25 D10 locomotives from the Montreal Locomotive Works, and two tank cars from the American Car and Foundry Co.

Following are the chief details of the two six wheel switching locomotives, type U3, which the C.P.R. is building at its Angus shops, Montreal, as mentioned in our last issue:—

Weight in working order	137,000 lbs.
Weight of tender loaded	90,000 lbs.
Weight of tender light	44,000 lbs.
Heating surface, firebox	138 sq. ft.
Heating surface, tubes	1,406 sq. ft.
Heating surface, total	1,544 sq. ft.
Grate area	29 sq. ft.
Tubes, no. and diar	232 2 ins.
Firebox	Radial stayed
Boiler, type	Straight top
Boiler, pressure	200 lbs.
Wheel base	11 ft. 6 ins.
Cylinders, diar. and stroke	18 by 26 ins.
Valves	Piston 11 ins.
Valve gear	Walschaert
Driving wheels, diar.	52 ins.
Axles, driving	8½ by 10 ins.
Axles, tender	5 by 9 ins.
Air brakes	Westinghouse E. T. 6
Lubricators	Canadian Detroit 22

Following are the chief details of the 25 consolidation superheater locomotives which the C.P.R. is having built by the Montreal Locomotive Works, as mentioned in our last issue:—

Weight on drivers, in working order	105,000 lbs.
Total weight of engine in working order	220,000 lbs.
Total weight of engine in working order	220,000 lbs.
Weight of tender, loaded	134,000 lbs.
Tender capacity, water	5,000 imp. gals.
Tender capacity, coal	12 tons
Heating surface, firebox	165 sq. ft.
Heating surface, tubes	2,620 sq. ft.
Heating surface, total	2,785 sq. ft.
Heating surface, superheater	437 sq. ft.
Grate area	40 sq. ft.
Tubes, no. and diar.	270 2 ins., 24 5 ins.
Driving wheel base	16 ft. 6 ins.
Total wheel base, engine	25 ft. 5 ins.
Total wheel base, engine and tender	55 ft. 9¾ ins.
Boiler, type	Extended wagon top
Superheater	Vaughan and Horsey, boiler tube
Stavings	Radial with cross stays
Cylinders, diar. and stroke	23½ by 32 ins.
Boiler pressure	180 lbs.
Driving wheel diar. outside	63 ins.

The Canadian Northern Ry. has ordered 25 consolidation locomotives, in addition to the 20 ordered at the end of 1910, now in course of delivery, from the Canada Foundry Co. Following are the chief details:—

Traction effort	45,000 lbs.
Weight in working order	215,000 lbs.
Weight on drivers	190,000 lbs.
Weight on leading truck	25,000 lbs.
Wheel base, driving	16 ft. 6 ins.
Wheel base, total	25 ft. 5 ins.
Cylinders, diar. and stroke	24 by 32 ins.
Boiler, type	Extended wagon top
Boiler, pressure	180 lbs.
Boiler, outside diar. of first ring	72 ins.
Firebox, length and width	110 by 64 ins.
Firebox, water space
..... front 5¼ ins., sides and back 4½ ins.
Tubes, no. and diar.	272 2 ins.
Valves	Piston, 12 ins.
Driving wheels, diar.	63 ins.
Driving wheels, thickness of tires	3¼ ins.
Driving journals	10 by 14 ins.
Truck wheels, diar.	30 ins.
Truck journals	6 by 12 ins.
Tender wheels, diar.	33 ins.
Tender journals	5¼ by 10 ins.
Capacity, water	6,000 imp. gals.
Capacity, coal	10 tons

Rutland Rd.—The application for the issue of receivers' certificates, for the purpose of paying taxes, pay rolls, etc., due the Rutland Rd. by purchase from the New York, New Haven and Hartford Rd., to acquire a controlling interest in New York Central and Hudson River Rd., came before the Public Service Commission at Albany, N.Y., May 2. The application was opposed by S. Untermyer, New York, on behalf of 17,000 shares of minority stock.

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:—

Freight Rates from Hinton West.

16242. April 2. The petitions of the residents of Resplendent and Moose Lake, B.C., and Fitzhugh, Prairie Creek, Edmonton, Edson, and Hinton, for an order directing the Grand Trunk Pacific Ry. to open for traffic its railway from Prairie Creek west; it is ordered that the G.T.P.R. cease discriminating in the carriage of freight traffic in favor of its contractors as against the general public over its railway from Hinton, Alta., west thereof; and that for every case of default in complying with the terms of this order and the continuation of the discrimination complained of, the company shall be subject to a fine of \$100.

Rates on Anthracite Coal from Niagara Frontier.

16276. April 11. Re consideration of protest of Canadian Retail Coal Dealers' Association and others against the proposed tariffs of railway companies advancing rates on anthracite coal from the Niagara frontier to Canadian points, to take effect May 1. It is ordered that the effective dates of the following tariffs, namely:—Michigan Central Rd. C.R.C. no. 1874. Grand Trunk Ry. C.R.C. no. E 2376, as amended by supplement 1; Wabash Rd. C.R.C. 566, as amended by supplement 1, be postponed from May 1, pending a decision by the board.

Rates on Rope from Montreal.

16314. April 12. Re application of the Consumers' Cordage Co., Ltd., of Montreal, for an order disallowing supplement 6 to G.T.R. special commodity tariff, C.R.C. no. E. 1432, and supplement 5 to C.P.R. special commodity tariff, C.R.C. no. F. 1286, advancing from Jan. 29, 1912, the rates on rope, in carloads, from Montreal, to the fifth class basis, and re order 15844, Jan. 27, 1912, postponing the operation of the said schedules until further order. It is ordered that the said supplement may become effective June 1.

Rates on Cornmeal from Montreal.

16394. April 25. Re application of Transportation Bureau of Montreal Board of Trade, under sec. 315 of the Railway Act, for an order directing the Canadian Pacific Railway Company to adjust its rates on corn brought into Montreal via Detroit or Georgian Bay elevator ports, and on cornmeal shipped from Montreal to St. John, N.B., and other stations in the Maritime Provinces, so that the combined tolls charged on the corn to Montreal and the cornmeal from Montreal to said destinations in the Maritime Provinces will not be on any higher basis than the combined tolls charged on the corn to and the cornmeal from Ontario points to the same destinations in the Maritime Provinces, and re the direction that the railway companies show cause why the wheat and oats rates should not apply on corn shipments from Detroit and Georgian Bay ports to Montreal, and, also, why the C.P.R. rate on cornmeal from Montreal to St. John should not be 15c. per 100 lbs. It is ordered that the application be dismissed.

Rates on Wire Fencing.

16395. April 23. Re application of Canadian Freight Association for an order rescinding order 6844, Apr. 6, 1909, in so far as it relates to commodity rates on wire fencing and netting, in carloads from Hamilton, Windsor and Walkerville to points east of Toronto as provided in said order. It is ordered that the application be refused.

Canadian Pacific Railway Construction, Betterments, Etc.

St. John Improvements.—The site chosen for the new elevator to be built at St. John, N.B., is at the northeast corner of the dividing line between the land leased to the company by the city and what is known as the 400 ft. strip. This is on the western side of the harbor, and not far from the present elevator. The work will probably be gone on with this year, but we have been advised that neither this nor the capacity of the elevator have been definitely decided.

Quebec.—While in Quebec, May 2, D. McNicoll, Vice President, made an inspection of the company's property there in connection with the plans for improvements which are under consideration. It is said that the works will include the provision of a yard for freight cars west of the station, the building of a roadway to connect with the Louise embankment, the enlargement of the yards and a new freight shed at the Palais. The question of building a new passenger station is held in abeyance.

Ottawa.—In connection with the project for a tunnel in Ottawa, a proposed change is under consideration. The suggestion is to carry the tunnel down Wellington street as far as Bank street, skirt round the cliff, and then run south-westerly to the union station. It is stated that this would give a shorter and less expensive route than the original one of running the tunnel right down under Wellington street to the union station.

Smiths Falls, Ont.—Arrangements are being made to do away with the foot bridge across the tracks at George St., Smiths Falls, Ont., and to replace it by a subway under the tracks, 110 ft. long, 10 ft. wide and 7 ft. 6 in. high.

Campbellford, Lake Ontario and Western Ry.—The Board of Railway Commissioners has approved location plans for the line from mileage 88.21 to 106.17, mileage 124.83 to 125.5; revised location plans from mileage 127 to 134.68, and from mileage 134.68 to 155.67, and has authorized the crossing of the Kingston and Pembroke Ry. at mileage 24.8, the Canadian Northern Ontario Ry. at mileage 87.86, and the Central Ontario Ry. at mileage 88.09, in all cases from Glen Tay. The latter is to be an overhead crossing.

The Montreal papers stated recently that a contract had been let to Larkin and Sangster, St. Catharines, Ont., for boring a 900 ft. tunnel on the new lake shore line, 15 miles out of Smith's Falls. We are officially advised that the reports are incorrect.

Construction on the line was started May 1, two camps having been opened, one at Trenton, and the other at Bayside, six miles from Belleville. The latter is McRae and Campagne, who have a sub-contract for three miles. The general contractors and the company's engineers are establishing their headquarters at Agincourt, about ten miles out of Toronto.

D. McNicoll, Vice President, and other C.P.R. officers, after inspecting the Kingston and Pembroke Ry. terminals in Kingston, Ont., May 17, went by automobile to Belleville. It is said that the object of the trip was to look into the question of the construction of a branch line from Belleville to Kingston, but it is not probable that this will be built until after the line from Glen Tay to Leaside is built.

Georgian Bay and Seaboard Ry.—The opening of the entire line for general traffic took place May 4. The company's fleet of vessels arrived at Port McNicoll from Owen Sound May 2, and the first one sailed May 4. Trains from Montreal branch of the Montreal-Toronto line at Bethany Jct., and those from Toronto, join the new line at Cold-

water Jct., proceeding to the new port, Port McNicoll, on Victoria Harbor.

A meeting of shareholders will be held at Montreal, June 30, to authorize the issue of additional bonds for the completion and equipment of the line.

It is proposed to add an additional storage capacity of 2,000,000 bush. to the capacity of the grain elevator at Port McNicoll.

Lake Superior Division Second Track.—We are officially advised that while some surveys have been made with a view to a revision of grades and the building of a second track, etc., along the Lake Superior division, nothing definite has yet been decided upon.

Fort William, Ont.—A portion of the double deck bascule bridge under construction over the Kaministikwia River at Fort William, fell during a gale, April 27. The three shore spans on the island side were completely demolished.

The erection of the new 1,000 ft. freight shed on the Kaministikwia River is being proceeded with.

It is proposed to erect a new breaking elevator at Fort William.

Freight Yards at Kildonan, Man.—The Board of Railway Commissioners has authorized the C.P.R. to expropriate lands in Kildonan parish, and part of n. w. ¼ sec 17, tp. 11, r 4 east of the principal meridian, for the purpose of establishing yards.

We are officially advised that the new clearing yard which is to be constructed will be about five miles east of Winnipeg. The original main line runs north from Winnipeg to East Selkirk, and from that point turns east. A few years ago a cut-off was built from Winnipeg to join the original main line at Molson, a distance of 38 miles. This cut-off is now used as the eastbound main track, and the old original main line via East Selkirk is used as the main westbound track between Molson and Winnipeg. The new yard will be between the two main lines mentioned. It will be approached from the east by tracks leaving the main line, just west of the crossing of the Canadian Northern Ry., and will connect with the C.P.R. Lac du Bonnet branch, by three tracks, at the west.

The yard will be of the gravity type, receiving tracks on one side of the hump, and classification and departure tracks on the other side. These facilities will be constructed for both east and westbound movements. The ground selected for the work is quite level, and consequently does not naturally lend itself to the grades required. Grading, for the yard, therefore, will be quite heavy, consisting of about 2,000,000 yards to take care of about 100 miles of track.

The ultimate layout will probably require two full circle roundhouses with the necessary tracks, ash pit, coal chutes, etc., to serve them. This year, however, only a 30-stall standard brick roundhouse will be built.

A grain elevator will be erected on the north side of the yard, with storage for 1,000,000 bush., and cleaning facilities for 100 cars a day.

Gimli Branch.—Vice President Bury is quoted as stating that the President had authorized the immediate starting of construction on the extension of the branch now ending at Gimli, Man., northerly to the Icelandic River.

Winnipeg Station.—In a recent interview, Vice President Bury is quoted as stating that the company's station at Winnipeg will be greatly enlarged. Plans had previously been prepared for additions, but these are being revised in order to provide ample accommodation for future requirements. As soon as the new plans are completed, the work will be put in hand and pushed to completion as fast as possible.

Saskatoon, Sask.—Press reports state that the company has purchased for \$90,000 a property on which to erect a large office building.

Weyburn-Lethbridge Line.—We are officially advised that a contract has been let to J. Timothy, Edmonton, for grading, etc., on the section from Stirling, easterly, for 25 miles. A large quantity of contractors' plant and equipment has been delivered, and work has been started.

Alberta Ry. and Irrigation Co.—Division Engineer Brooks, and other C.P.R. officials, arrived in Lethbridge, May 10, to make an inspection of the line with a view of bringing it up to the C.P.R. standard. It is proposed to cut out some of the gradients, to generally improve the roadbed, and to lay heavier steel. The fact that the C.P.R. line from Weyburn joins the A.R. and I. Co.'s line at Stirling, makes it important that the line be put in a position to carry the heavier traffic which it is proposed to run over it.

Alberta Central Ry.—A meeting of shareholders will be held in Montreal, June 4, to approve of the lease of the company's railway, in process of construction, to the C.P.R., to arrange for an issue of bonds for the purpose of constructing and equipping the line.

D. F. McArthur, the general contractor, is quoted as stating that the grading for the line from Red Deer west to Rocky Mountain House, will be completed early in June, and that by the end of June the steel bridge over the Red Deer River will be finished. It is expected to have track laid on this section of the line early in the fall.

Strathcona-Edmonton High Level Bridge.—Four spans of this bridge across the Saskatchewan River have been completed, and the fifth is well advanced. False work is being erected for the succeeding spans.

Kootenay Central Ry.—Grading is reported to have been completed to 42 miles from Golden, B.C., and track is being laid.

Three Forks - Bear Lake - Kaslo.—A press report states that the line between Three Forks and Kaslo, B.C., will be connected up this season, and that Anderson and Co. have been increasing the number of men employed. This work, one report adds, involves the completion of the Bear Lake spur, at present under construction from Three Forks, the standardization of the Kaslo and Slocan Ry., for which an agreement was approved by the British Columbia Legislature at the recent session, and the building of about eight miles of new track.

British Columbia Second Track Work.—F. F. Busted, who is in charge of this work, with headquarters at Kamloops, B.C., is quoted as stating that the location of the new grade has been practically completed between Ruby Creek and Spence's Bridge, and a lot of survey work has been done between that point and Kamloops. In many places the new location is several miles from the present route. There are two survey parties engaged east of Revelstoke, and another will be put in the field shortly. No work will be undertaken until the full data have been secured.

Coquitlam Shops, Etc.—Construction has been started on the first quarter of a 48 stall roundhouse at Coquitlam, Sanford, Gordon and Son being the contractors. The section will have a frontage of 165 ft., by 90 ft. depth, and will be 318 ft. from end to end at the rear. A boiler house 48 by 49 ft. will also be erected by the same contractors. (May, pg. 228.)

A. E. WILKINSON, Division Freight Agent, Intercolonial Ry., Halifax, N.S., writes:—"I have always been interested in The Railway and Marine World, finding its articles very interesting."

THE
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TORONTO, CANADA, JUNE, 1912.

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National Transcontinental Railway
Construction.

The commissioners received tenders to May 31 for the construction of 200 ton mechanical coaling plants, with sand-houses and track approaches at Moncton, N.B., Napadogan, N.B., Edmundston, N.B., Grant, Ont., Calvert, Ont., and Armstrong, Ont. Tenders were also received to May 31 for the construction of a 1,000 ton coaling station with inclined trestle approach at Cochrane, Ont.

Tenders were also received to May 31 for the erection of station and other buildings required on the following sections of the line:—Sec. 13, Moncton, N.B.; section 14, from Langelier to Chapais, Que.; sec. 15, from Monk to Parent, Que.; sec. 16, from Fowke to Clarke, Ont.; sec. 17, from Carling to Murphy, Ont.; sec. 18, from Collins to Gordon, Ont.

The question of the provision of terminal facilities for the N.T.R. at Quebec, which was taken under consideration by the present Government after its accession to office in Sept., 1911, and by R. W. Leonard, who now constitutes the commission, is apparently being settled on a new basis. The following statement was given out, May 3, at Quebec by the Minister of Railways and Mr. Leonard:—"At the last Cabinet Council meeting, before the Hon. Mr. Pelletier left Ottawa, the question of the terminals at Quebec was fully considered, and it was then officially declared that a decision would be taken here today. The visit which we have made has confirmed us in the opinion that the ideal place to enter the city, especially for passenger traffic, is to pierce a tunnel from Wolf's Cove to St. Malo, and to have a union passenger station at the Palais. The Champlain market site will be utilized for local freight. There is no room on the Champlain market site for big elevators, and the place is too narrow. The railways here must soon handle a great part of the through grain traffic, and an elevator of some 10,000,000 bush. capacity is necessary. It should be built in such a way that other units may be added, so as to handle from 20,000,000 to 30,000,000 bush. In order to do this, there must be space to move about. The Government has bought, in St. Malo, 200 acres of fine property, which will be used for a car yard. As to the work shops, the site already chosen at St. Foye, near the bridge, is a very good one, and has been finally decided upon. We will have car ferries, which will take care of the traffic, pending the completion of the Quebec bridge. The work will be begun as soon as the plans are completed, and will be brought to a satisfactory completion without delay."

The locomotive shops at Transcona, Man., have been completed, inspected by the Government engineers and taken over from the contractors, Haney, Quinlan and Robertson.

R. W. Leonard arrived in Montreal, May 16, after having completed an official inspection of the sections of the line under construction east and west of Quebec. There is a gap of 32 miles to be completed between Quebec and the New Brunswick boundary. West of Quebec the line is completed for 100 west of La Tuque. There are about 200 miles to be completed between the end of track and Cochrane, Ont., which it is expected to have done by the end of 1913. The line from Cochrane to the junction with the Lake Superior branch, G.T. Pacific Ry., is expected to be completed this year. Arrangements are reported to have been made by which the C.P.R. will connect with the line at Grand Falls, N.B., for hauling lumber and the operation of a mixed service between Quebec and La Tuque.

Grand Trunk Pacific Railway Construction.

At the Fort William terminals of the G.T.P. branch line from the National Transcontinental Ry., a large force is working on the 2,500,000 bush. addition to the elevator, which it is expected to have completed by the fall. All the piles have been driven, and the concrete is being placed. It is expected to make a start on the new coal docks, and to carry out other improvements during this year.

Work is being proceeded with on the Harte-Brandon branch in Manitoba. We are officially advised that nothing definite has been decided with reference to the extension of the line from Canora, Sask., in the direction of Hudson Bay.

In regard to work in Saskatchewan the Provincial Premier is reported to have stated, May 1, that he had been advised that the company will lay nearly 400 miles of steel in the province this year. The branches from Regina to the International boundary, from Regina to Moose Jaw; to Prince Albert, and from Biggar towards Calgary, will be completed, the latter probably beyond the boundary into Alberta. Reports from Regina state that one track laying outfit started work there, and by May 8 had laid 20 miles on the line towards the International boundary.

In Alberta a second track laying outfit started work at mileage 102 on the line from Tofield towards Calgary, and was reported to have laid 25 miles of track to May 8.

In connection with the plans for station and terminal facilities in Calgary, an agreement has been reached, and is awaiting final ratification between the company, the city and the Dominion Government. It provides for the sale of the N.W.P. barracks by the Government to the company for \$150,000. The company is to transfer a portion of the land so acquired for street purposes, pay for the moving of the barracks, and provide some buildings for other purposes, pave an avenue, and contribute \$25,000 towards the erection of an additional span on the traffic bridge over the Elbow River, connecting East Calgary with the city. On the site of the present barracks the company contracts to build a station facing Eighth Ave., at a cost of between \$275,000 and \$300,000; and suitable freight sheds on the south side facing Muth Ave. The plan of the lay out of the property shows that the line will cross the Elbow River at its confluence with the Bow River, and that tracks will extend to Sixth St. The station building will be 150 by 100 ft., and the freight shed will be 700 by 50 ft. There will be three passenger platforms, the central one 40 ft. wide, and one at each side 25 ft. wide.

Plans are before the Minister of Railways for a line from Calgary to Coutts, but owing to some objections a new survey is being made, and in connection with this an effort is being made in Great Falls, Mont., to have an arrangement made by which the line will be extended into that place.

It is expected that building operations will be started shortly on the hotel in Edmonton, Alta., for which plans have been prepared by Ross and McFarlane, Montreal.

A tracklaying outfit has started operations from the present end of track near the Alberta-British Columbia boundary, and it is expected that track will be laid to Tete Jaune Cache by July 1. Another tracklaying outfit has started working easterly from the present rail head 164 miles out of Prince Rupert. P. Welch is quoted as stating on his return from a trip east from Prince Rupert, that a train service would shortly be extended to the Skeena River crossing, and that grading was well advanced right along to Fraser Lake.

We are officially advised that a con-

tract has been let to the British North American Construction Co., Vancouver, for preliminary work on the construction of dry docks and wharves at Prince Rupert, B.C. The contract covers the supply of materials, the erection of platform and piers, and launching platform. These are to be built with creosoted piles and lumber. Mr. Dow, the President of the company, is in direct charge of the work, the engineers for the railway being Kirby and Donnelly. W. T. Donnelly arrived at Prince Rupert, May 1, to take charge of the work. The lumber is being delivered.

A. W. Smithers, Chairman of the Board, G.T.R., is reported to have stated at Montreal, May 25, that after consultation with officials he felt justified in stating that the whole of the track between Moncton, N.B., and Prince Rupert, B.C., would be laid by the autumn of 1914.

Railway Finance, Meetings, Etc.

Alberta Ry. and Irrigation Co.—A meeting of shareholders was held in Montreal, May 27, to issue bonds and authorizing the form of mortgage to be given to secure them.

Algoma Central and Hudson Bay Ry.—Algoma Eastern Ry.—There have been deposited with the Secretary of State at Ottawa agreements made between these two companies and the Superior Rolling Stock Co., dated May 15, covering the conditional sale of certain rolling stock.

Canada Southern Ry.—At the annual meeting to be held at St. Thomas, Ont., June 5, the shareholders will be asked to ratify the action of the directors in authorizing the execution of a mortgage to secure an issue of \$40,000,000 of bonds at not exceeding 5% interest, of which amount it is proposed to issue \$22,500,000 at once with the Michigan Central Rd.'s guarantee for the purpose of refunding the first and second mortgage bonds due Jan. 1 and Mar. 1, 1913, respectively, and to cover the cost of improvements already made or to be made to the company's property.

Canadian Northern Alberta Ry.—There has been deposited with the Secretary of State at Ottawa a supplemental trust mortgage dated April 20, between the C.N.A. Ry. Co., the British Trust Co., the National Trust Co., the Dominion of Canada, and the Canadian Northern Ry. Co., securing an issue of first mortgage debenture stock guaranteed by the Dominion. The original mortgage deed is dated Mar. 22, 1911.

Canadian Northern Pacific Ry.—An issue of \$1,375,000 of 4% bonds guaranteed by the province of British Columbia has been placed on the London, Eng., market.

Canadian Northern Ry.—A lease of railway rolling stock and equipment series C 1, 1912, from the Imperial Rolling Stock Co., to the C.N. Ry., dated Apr. 27, has been filed with the Secretary of State at Ottawa.

Canadian Pacific Ry.—Application has been made to the London, Eng., Stock Exchange for the listing of \$18,000,000 of ordinary stock, and £1,000,000 additional 4% perpetual consolidated debenture stock.

Dominion Atlantic Ry.—Estimated passenger earnings for Apr., \$42,320.94; freight earnings, \$50,839.04; total, \$93,159.98, against \$82,400 total earnings for April, 1911.

The Grand Trunk Ry. recently made an issue in London, Eng., of \$1,500,000 perpetual 4% consolidated debenture stock at 98½, the proceeds of which are to be applied to general purposes.

G.T.R. Car Trust Notes.—Blair and Co., New York City, have purchased from the G.T.R. \$4,000,000 4½% car

trust notes, maturing serially in from six months to ten years. The proceeds will be used by the railway company to pay for 3,000 steel underframe box cars, 1,000 50 ton steel coal cars, 500 automobile cars and 500 refrigerator cars which are under order. The banking firm will shortly offer these notes for public sale. A copy of the agreement made between the G.T.R. Co., Blair and Co., and the Bankers Trust Co. has been deposited with the Secretary of State at Ottawa.

Intercolonial Ry.—The earnings for April are reported as \$1,006,000, an increase of \$87,000 over those for Apr., 1911, and the highest yet reached in one month.

Pere Marquette Rd.—The receivers have been authorized to issue \$605,000 April 30.

Quebec Central Ry.—Gross earnings for March, \$92,320.81; expenses, \$63,729.33; net earnings, \$28,591.48, against \$100,818.63, gross earnings; \$65,999.03, expenses; \$34,819.60, net earnings for March, 1911. Aggregate gross earnings for nine months ended March 31, \$960,069.97; expenses, \$669,434.59; net earnings, \$290,635.38, against \$860,360.39, aggregate gross earnings; \$595,560.14, expenses; \$264,800.25, net earnings for same period, 1910-11.

Quebec Oriental Ry.—Owing to the fact that a quorum of bondholders was not present Apr. 16, the meeting of holders of first and second 5% first mortgage Matapedia section gold bonds was adjourned to May 14, at the company's offices, London, Eng.

River and Rail Coal Co.—The Grand Trunk Ry. is reported to have acquired control of the properties of this company in Belmont county, Ohio, through a syndicate. The company has outstanding \$17,971,942 of stock, and is placing on the British markets a further issue of \$7,500,000. The company will, it is said, continue to be operated as a separate undertaking, but its output will be taken almost entirely by the G.T.R., and allied companies. (May, pg. 246.)

Rutland Rd.—There has been filed with the Secretary of State at Ottawa an agreement between G. T. Jarvis and others, the vendors; the Guaranty Trust Co. of New York, trustees, and the R. Rd. Co., dated Apr. 1, respecting the title of the company's lines in Canada.

Teniscouata Ry.—Net profit for Mar., \$3,059.

White Pass and Yukon Route.—Total earnings for three months ended Mar. 31, \$48,569, against \$68,960 for same period 1911.

The Chicago, Milwaukee and St. Paul Ry. has removed its ticket office in Winnipeg from Douglas St. to Government St.

Port Arthur, Ont., citizens, on May 22, by an almost unanimous vote, carried the bylaw confirming the agreement with F. M. Brown and others, of Halifax, N.S., for the establishment of car works.

The Grand Trunk Pacific Ry. Co. ordered some little time since 40,000 tons of steel rails, 60 lbs., from the Algoma Steel Co., for G.T.P. branch lines, deliveries of which are now being made at Fort William.

Work was started, May 1, on laying out the site for the new union stock yards at St. Boniface, Man., by the Public Markets Co., in which the C.P.R., the Canadian Northern Ry. and the G.T. Pacific Ry. are jointly interested.

The Minister of Railways is reported to have announced at Moncton, N.B., May 10, that it was proposed to put a Sunday train on the Intercolonial Ry. between Halifax, N.S., and Montreal, but that nothing had been decided as to running one to and from St. John, N.B., also.

Grand Trunk Ry. Betterments, Construction, Etc.

Southern New England Ry.—The Railroads Committee of the Massachusetts Legislature decided, May 17, to report favorably on the company's bill asking for power to extend its lines into Boston.

Work was started May 10 on the construction of the line from Palmer, Mass., to Providence, R.I. The initial work consists of the building of a temporary bridge 2,800 ft. long across the New York, New Haven and Hartford Rd. freight yards at Woonsocket, R.I., near where the line enters the state from Blackstone, Mass. Ten car loads of machinery and six steam shovels have been delivered for the grading contractors, who are preparing to start operations.

Central Vermont Ry.—The Board of Railway Commissioners has approved of the proposed connection of the company's lines with the C.P.R. spur into the military camp at Farnham, Que.

Surveys are being made for second track work on the line in New Hampshire, and for a connecting link starting from White River Jct. passing through Manchester, Concord and the southern towns of the state. G. M. Thompson, formerly of the Boston and Maine Rd., is in charge of the work.

Back Cove Bridge, Portland, Me.—

The company is renewing the swing bridge at Back Cove one mile west of Portland on the main line between Portland and Montreal. The swing which is being replaced consisted of a 186 ft. pony lattice equal arm swing, supported at the centre on a granite pier, and the ends on piled bents. It was built in 1893. The new work comprises the construction of two end piers for new swing. These new piers will be located behind the existing piled bent supports, thus avoiding during construction the interference of the operation of old swing. This necessitates a longer new swing, but it will be less expensive than attempting to locate new piers on existing site of end supports. The new swing will be 225 ft. long. For economical design the track will be permanently raised 3 ft. It is also the intention to add a 22 ft. granite course to the pivot pier, as high tide now washes the present top of pier. The rest piers will be built by sinking a double wall timber caisson. There is an average of 30 ft. of water at the site of new piers, and about 45 ft. to rock. The rock is overlaid with a layer of soft blue clay and sand. The caisson timbers will be framed on a wharf close by. The cutting edges and lower wall timbers will be put together and floated to site, and the remainder of the caisson will be built up in place and sunk by filling in between double walls with concrete to rock. Excavation will be done inside the caisson by the orange peel bucket. Divers will be employed to level off bottom and underpin and seal cutting edges. The construction of piers has been let to the John S. Metcalf Co., Montreal. The contract for the fabrication and erection of the new swing has been let in the U.S. As before stated, it will be a single track swing span 225 ft. centre bearing type. The work is under the supervision of H. R. Safford, Chief Engineer.

Montreal Track Elevation.—The question of elevation of tracks in Montreal is still before the Board of Railway Commissioners. The city council representatives are not prepared to undertake to contribute more than \$2,000,000 towards the cost of the work, and the company's representatives state that it is not a sufficient proportion to pay for the benefits that would accrue to the city.

Bay City, Mich.—A contract is reported to have been let for the concrete work for the piers and abutments of the new bridge at Bay City, Mich., which has a total length of 1,300 ft.

Mainly About Transportation People.

SIR THOMAS G. SHAUGHNESSY sailed from New York for England, May 8.

SIR H. MONTAGU ALLAN left Montreal, for England, May 12, where he joined Lady Allan.

A. S. RAY, C.P.R. Agent, Bristol, England, arrived in Montreal, May 15, on a business trip.

A. A. ALLAN, of the Allan Steamship Line, with Mrs., and Miss H. Allan, arrived in England, May 5, on a visit.

SIR DONALD MANN returned to Toronto, via New York, May 19, from England, after an absence of about four weeks.

L. E. MORIN, paymaster on the Quebec canals for the Department of Railways and Canals, died in Montreal, May 17.

F. A. MCHUGH, who was engaged in railway contracting in the west since 1883, died at Calgary, Alta., May 6, aged 61.

L. W. PERRY, who resigned his position as Divisional Car Foreman, C.P.R., West Toronto, a short time ago, was 16 years in the service.

G. F. SNYDER, who had been for over 50 years in the G.T.R. service as station agent prior to retiring in 1908, died at Montreal, May 7.

A. SHAUGHNESSY, son of Sir Thos. G. Shaughnessy, President, C.P.R., was married to Miss S. P. Bradford at Woodstock, Tenn., April 30.

H. B. SPENCER, Superintendent, C.P.R., Ottawa, returned home recently after a six weeks vacation, very much improved in health, and resumed duty.

MR. FITZGERALD, a member of the C.P.R. office staff at Yokohama, left Montreal, May 15, to return to Japan, after a holiday trip to England.

F. W. PETERS, the newly appointed General Superintendent, Pacific Division, C.P.R. arrived in Vancouver, May 10, and took over the duties of the office.

JAS. FLYNN, a yard master employed on the Montreal Harbor Commissioners' lines, was killed by a shunting engine near the Donaldson Line pier, May 10.

E. H. KEATING, M. Can. Soc. C.E., formerly Manager, Toronto Ry., has been elected a member of the council of the Institute of Civil Engineers, England.

F. W. THOMPSON, Vice President, Ogilvie Flour Mills Co., Montreal, who died in London, Eng., May 7, was President of the Keystone Transportation Co.

W. A. COATES, Freight Traffic Manager of the Robert Reford Co., has resumed duty at the company's Montreal office, after spending the winter in Europe.

A. W. DEACON, town ticket agent, G.T.R., Stratford, Ont., and H. L. JACKSON, ticket agent, C.P.R., Brussels, Ont., have joined the Canadian Ticket Agents Association.

S. MCINTOSH, who died at Martintown, Ont., May 6, aged 86, was a member of the family from which sprang the McIntosh Bros., railway contractors, Milwaukee, Wis.

D. W. HAYES, agent, G.T.R., London, Ont., was presented with a gold chain and locket, May 13, by the staff at Guelph, Ont., from which point he was recently transferred.

THOS CROCKER, for many years foreman tinsmith, G.T.R. car shops, Point St. Charles, Montreal, died there May 6, aged 76. He had been on the pension list for about four years.

HON. J. D. HAZEN, Minister of Marine and Fisheries, was elected President of the North American Fish and Game Protective Association at the annual meeting at Boston, Mass., recently.

W. PERRY, Montreal, who celebrated his 75th birthday May 3, installed the water supply on the G.T.R. from Mont-

real to Levis, and the first water supply plant for the C.P.R. at Winnipeg.

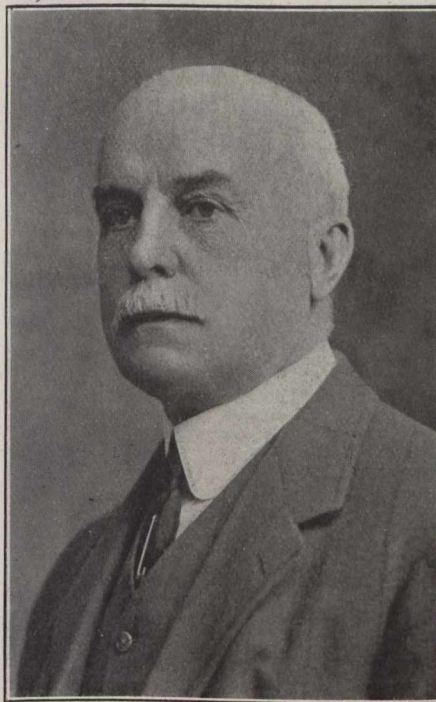
HUGH SUTHERLAND, General Executive Agent, Canadian Northern Ry., who, with Mrs. Sutherland, spent most of the winter in Europe and Egypt, returned to Winnipeg towards the end of April.

D. FINLAY, Canadian Northern Ry., construction foreman at Stettler, Alta., was killed in the yard there recently in a collision between the motorcycle, which he was driving, and a freight engine.

A. R. MCLENNAN, who died at Cornwall, Ont., recently, aged 72, was for many years engaged in railway contracting in the Maritime Provinces, Quebec, Ontario, Manitoba, Minnesota and Wisconsin.

A. B. MANSON, S. Can. Soc. C.E., who has been appointed City Engineer of Stratford, Ont., was until recently on the engineering staff of the Canadian Northern Ontario Ry.'s Montreal-Port Arthur line.

W. R. DAVIDSON, Trainmaster, G.T.R.,



Louis K. Jones, I.S.O.,

Assistant Deputy Minister and Secretary, Department of Railways and Canals.

London, Ont., met with a painful accident at Hamilton recently, when a heavy steel rail dropped on his foot. An examination showed that no permanent injury will result.

JAS. BRYCE was presented with a service of silver plate and an address by Canadian Express Co. employes in Montreal, May 14, on his retirement from the office of Vice President and Manager.

TRAFFORD JONES, of Canadian Brake Shoes, Ltd., Montreal, and formerly of the Canadian Northern Ry.'s mechanical department, Toronto, was married at Toronto recently to Madeline, youngest daughter of Alfred W. Smith.

A. R. G. HEWARD, formerly Assistant Secretary, C.P.R., Montreal, collapsed on McGill St., Montreal, May 16, and died, aged 52. He was in C.P.R. service for about 30 years, and retired at the end of 1911, on account of ill health.

E. C. HAWKINS, Chief Engineer Copper River and Northwestern Rd., of Cordova, Alaska, who died in New York April 10, aged 52, built the White Pass

and Yukon Ry. In our last issue he was erroneously referred to as A. Hawkins.

W. E. DUFEROW was presented with a Morris chair by the ticket agents of Victoria, B.C., on his leaving that city for Vancouver to take up duty as General Agent, G.T. Pacific Ry. Passenger Department.

C. R. BOUCHER, who died at Sault Ste. Marie, Ont., April 26, was engaged in supervising the building of bridges on the Algoma Central Ry. He was previously engaged on the construction of the Temiskaming and Northern Ontario Ry.

Miss A. I. Hendry, daughter of J. HENDRY, President Vancouver, Westminster and Northern Ry., Vancouver, B.C., was married in London, Eng., May 14, to E. Hamber, manager of the Dominion Bank in London, Eng., and formerly of Winnipeg.

L. CHIPMAN, engineer in charge of a locating party on the Edmonton, Dunvegan and British Columbia Ry., was drowned in the Athabasca River near Mirror Landing, early in April. The news was not reported in Edmonton until the end of the month.

JUSTICE A. A. DOBSON, of the Manitoba Court of King's Bench, has been appointed Public Utilities Commissioner for that Province, County Judge Cumberland, of Brandon, who was first appointed to the position, having decided to retain his seat on the bench.

H. R. NAYLOR, who was recently appointed shop foreman, C.P.R., West Toronto, was born in Hull, Eng., Aug. 30, 1885, and commenced railway service there with the North Eastern Ry. He entered C.P.R. service in Feb., 1909, and was, from Mar. 1911, to Apr., 1912, steam heat inspector.

J. LONSDALE DOUPE, whose resignation as General Townsite Agent, Department of Natural Resources, C.P.R., Calgary, Alta., was announced in our last issue, has entered the real estate and agency business, having incorporated the Western Land and Townsite Co., Winnipeg, of which he will be manager.

R. TINNING, Travelling Freight Agent, G.T.R., Toronto, who retired under the provisions of the pension rules, after 50 years' service, May 1, was entertained to dinner by his associates on the local staff, recently, and presented with a diamond and pearl pin and a purse of gold, and a silver purse for Mrs. Tinning.

D. F. MAXWELL, who has resigned as Chief Engineer, Fredericton and Grand Lake Coal and Ry. Co., Fredericton, N.B., is one of the incorporators of the St. Croix Ry. and Dock Co., which is promoting a bill in the New Brunswick Legislature for railway and dock development in the neighborhood of St. Croix, N.B.

F. E. TRAUTMAN, editor of the Times-Journal, Fort William, Ont., has resigned and, it is reported, has been appointed on the staff of Geo. Bury, Vice President and General Manager, C.P.R. Western Lines, Winnipeg. Press dispatches state that Mr. Trautman will have charge of an office which will supply news of the C.P.R. system to the newspapers.

H. L. MALTBY, formerly chief clerk in the C.P.R. engineering offices, Montreal, died there recently after a lengthened illness. Before entering the C.P.R. service he was associated with H. J. Beamer in his railway enterprises, and was appointed guardian of the Ottawa and Gatineau Ry. by the banks, prior to its becoming merged with the Ottawa Northern and Western Ry., and being transferred to the C.P.R.

The estate of the late SIR ROBERT G. REID, founder of the Reid Newfoundland Co., has been held liable for succession duties in the province of Quebec, for \$108,857. The estate in Quebec was

valued at \$1,789,926, on which the duties were \$136,000. The executors paid \$40,000, and disputed liability as to the balance, on the ground that certain bonds and securities were not legitimately chargeable with succession duty in the province. Judgment has been given in favor of the Crown.

A. J. WOLFE, whose appointment as Roadmaster, White River subdivision, Lake Superior Division, C.P.R., White River, Ont., was announced in our last issue, was born in Essex county, Ont., Jan. 18, 1885, and entered railway service in 1903, since when he has been, to Mar., 1905, laborer, M.C.R.; Mar., 1905, to Feb., 1909, section foreman, extra gang foreman and yard foreman, same road; Feb., 1909, to Mar. 27, 1912, yard foreman, snow plough foreman, extra gang foreman and general foreman, Sudbury subdivision, C.P.R.

HON. F. COCHRANE, Minister of Railways, started from Ottawa, May 1, on an inspection trip over the Canadian lines. He travelled to Quebec and thence he went over the lines in the continental Railway to Moncton, from thence he went over the lines in the Maritime Provinces. The programme for the rest of the trip includes a trip over the National Transcontinental Railway to the end of track, and then an inspection of the various lines right out to the Pacific coast, particularly where construction is in progress.

E. D. BRONNER, who has been appointed General Manager, Michigan Central Rd., Detroit, Mich., was born at Buffalo, N.Y., Feb. 19, 1859, and was educated at the public schools and the U.S. Naval Academy, Annapolis. He entered railway service in 1880 as draughtsman in the Car Department, Canada Southern Ry., and was appointed General Foreman, M.C.R. car shops, Detroit, Mich., Feb. 1, 1890, Master Car Builder, May 6, 1896, and Superintendent of Motive Power, Feb. 1, 1900, which position he held to May 15, the date of his present appointment.

ALEX SHIELDS, who resigned his position as General Master Mechanic, Canadian Northern Ry., a short time ago, and whose election of president of the Railroaders' Investment Co., has previously been mentioned in these columns, received a number of presentations on leaving the service, including a mahogany cabinet of solid silver from C.N.R. officers, a diamond ring from the locomotive engineers, a gold chain and locket from the machinists, and also gifts from the company's employes at Saskatoon and Edmonton. He has also been elected a director of the Consolidated Land Co.

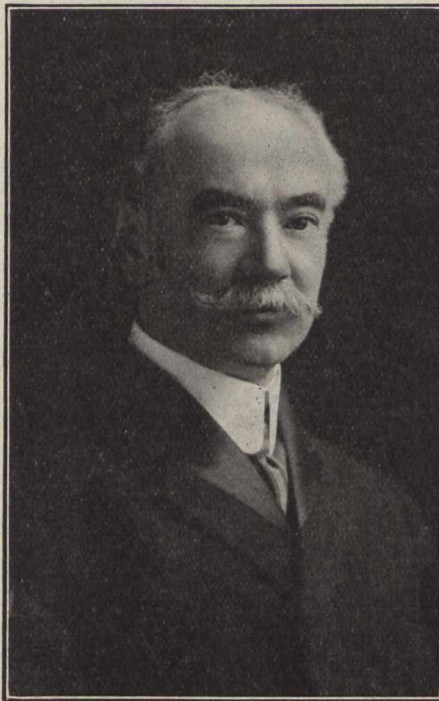
A. HATTON, who was recently appointed Superintendent of Car Service, C.P.R. Western Lines, Winnipeg, was born in London, Eng., Apr. 12, 1869, and was from 1888 to 1891 in Central Ontario Ry. service; 1891 to May, 1896, operator, C.P.R.; May, 1896, to Sept., 1901, dispatcher, C.P.R.; Sept., 1901, to Jan., 1907, Chief Dispatcher, C.P.R., Fort William, Ont., Kenora, Ont., and Cranbrook, B.C.; Jan., 1907, to Feb. 12, 1912, Inspector of Transportation, C.P.R. Western Lines. He was then appointed acting Superintendent of Car Service, Western Lines, and was subsequently confirmed in that position.

GEORGE BLACK, Road Foreman of Locomotives, G.T.R., Stratford, Ont., who had been suffering for some time from gall stones, but shrunk from the advised operation on account of his inherent dread of the operating table, having finally decided to undergo the operation towards the end of April, died from heart failure, Apr. 28. He was born in Lincolnshire, Eng., and entered railway service there, with the Great Northern Ry., as engine wiper, and was later a spare foreman. In Canada he has been employed as a wiper, foreman, locomotive

driver, and from Oct., 1902, to Apr. 28, 1912, as Road Foreman of Locomotives, G.T.R., at Stratford, Ont. He was 48 years of age.

J. C. HOLDEN, whose appointment as Division Engineer, Manitoba Division, C.P.R., Winnipeg, was announced in our last issue, was born at St. John, N.B., Feb., 1876, and educated at Bishop's College school, Lennoxville, Que., and Royal Military College, Kingston, Ont. His service covers reconnaissance work for the Militia Department in the summer of 1896; harbor improvements and survey at St. John, N.B., Sept., 1896, to Jan., 1897, and during the summer of 1897, preliminary surveys, Intercolonial Ry.; Jan., 1898, to Apr., 1903, reconnaissance, preliminary, location and construction work, C.P.R.; Apr., 1903, to 1907, Resident Engineer, Maintenance of Way, C.P.R.; 1907, to Apr., 1912, Assistant Engineer of Maintenance of Way, C.P.R.

F. W. HUNTINGTON, General Agent, Passenger Department, C.P.R., Minneapolis, St. Paul and Sault Ste. Marie Ry., and Duluth, South Shore and At-



A. S. Goodeve,
Member of the Board of Railway Commissioners.

lantic Ry., Philadelphia, Pa., died there, May 11, after having undergone an operation for gall stones. He was born in 1854, and entered railway service at 15 years of age, going through active ticket office experience with the Chicago, Milwaukee and St. Paul Ry., in Minneapolis, Minn., subsequently serving with the Great Northern Ry., the Pennsylvania Rd., and the C.P.R. He was in C.P.R. service for about 18 years as Travelling Passenger Agent, and latterly as General Agent, Passenger Department at Philadelphia, Pa.

R. COLCLOUGH, who has been appointed Assistant Superintendent, Halifax and St. John District, Intercolonial Ry., Moncton, N.B., was born at Bic, Que., Feb. 24, 1871, and educated at Rimouski college and Laval University, whence he graduated with the degree of B.A. in 1888. He entered the I.R.C. service, Dec. 9, 1889, since when he has been, to Nov., 1892, clerk in Chief Superintendent's office, Moncton, N.B.; Nov., 1892, to Nov., 1901, private secretary to Chief Superintendent, General Manager, General Superintendent and

Manager; Nov., 1901, to Oct., 1902, chief clerk, Manager's office; Oct., 1902, to June, 1911, clerk in General Manager's office, and office of Managing Board; June 1, 1911, to May 1, 1912, chief clerk in General Superintendent's office.

H. H. ADAMS, whose resignation as General Manager, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., to accept the presidency of the Kansas City Terminal Ry., Kansas City, Mo., was announced in our last issue, was born at Detroit, Mich., Aug. 13, 1876, and entered railway service July, 1899, as rodman and draughtsman, M.C.R. After serving in various capacities in the engineering department, he was appointed Assistant Chief Engineer, Mar., 1902; secretary to the General Superintendent, Nov., 1902; Assistant Superintendent, Canadian Division, M.C.R., Jan., 1904; General Superintendent, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., Oct., 1909, and General Manager, same road, Oct., 1910. He left Hamilton, May 6, to take up his new duties.

A. S. GOODEVE, whose appointment as a member of the Board of Railway Commissioners was announced in our last issue, and whose portrait appears in this issue, was born at Guelph, Ont., Dec. 15, 1860, and educated at the Guelph public and high schools. He is a graduate and medallist of the Ontario College of Pharmacy, and was in business as a druggist at Chesley, Bruce County, Ont., from 1884 to 1896. He went to Rossland, B. C., in 1896. In the same business, and was for three years a member of the city council, and mayor in 1899-1900. In 1902 he was Provincial Secretary of British Columbia; 1909-10, member of the B.C. Forestry Commission; elected to the Dominion Parliament for Kootenay, in 1908, and made Conservative Western whip, and assistant chief whip in 1911.

C. G. WASHBON, whose appointment as Resident Engineer, C.P.R., Winnipeg, was announced in our last issue, was born at Morris, N.Y., Nov. 27, 1887, and was educated at the Rensselaer Polytechnic Institute, Troy, N.Y., taking the four years' civil engineering course. He entered railway service in the summer of 1906, as rodman, C.P.R., Winnipeg, and also served with the C.P.R. in the summer of 1907. In the summer of 1908, he was engaged on location work with the Buffalo, Rochester and Pittsburgh Ry., at Dubois, Pa., and continued in the same service in 1909; 1909, to Apr., 1910, in charge of construction of Twin Tree Lumber Co.'s logging railway, Maplesville, Ala.; Apr., 1910, to Apr., 1912, transit man, C.P.R., Brandon, Man. He is a member of the Delta Tau Delta fraternity.

J. W. EBER, who has been appointed General Superintendent, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., entered railway service in 1890, since when he has been, to 1902, rodman, draughtsman, transitman and Supervisor of Track, West Shore Rd.; 1902 to 1904, in charge of the main line division, New York Central Lines, Albany, N.Y.; 1904 to 1905, Division Engineer, Rome, Watertown and Ogdensburg Division, New York Central Lines; 1905 to 1909, Assistant Engineer of Maintenance of Way and Engineer of Track, of the entire New York Central system, his territory covering nearly 4,000 miles of road; 1909 to 1910, Superintendent, New York Central Stockyards and Terminals, Buffalo, N.Y.; 1910 to May 14, 1912, Superintendent, Adirondack Division, New York Central Lines, Utica, N.Y.

R. H. L'HOMMEDIEU, who has resigned as General Manager, Michigan Central Rd., Detroit, Mich., was born at Cincinnati, Ohio, Dec. 29, 1850, and entered railway service in 1870, since when he has been, to 1872, apprentice in locomotive shops, Cincinnati, Hamilton and Dayton Ry.; 1872 to 1873, clerk, Division Superintendent's office, Chicago,

Burlington and Quincy Rd.; 1873 to 1879, Trainmaster, Michigan Central Rd.; 1879 to 1890, Superintendent, Western Division, M.C.R., Chicago, Ill.; Sept., 1890, to Apr., 1896, Assistant General Superintendent, same road; in Apr., 1896, he was appointed General Superintendent, and was subsequently appointed General Manager. He has been appointed Assistant to the Vice President, M.C. Rd., Detroit, Mich., and will take up his duties after a short vacation.

C. R. HEATH, whose appointment as Superintendent of Water Service, Grand Trunk Pacific Ry., Melville, Sask., was announced in our last issue, was born at La Salle, Ill., Oct. 3, 1873. He comes of a railroading family, though his present position is practically his first railway work. On leaving school he was engaged in irrigation construction work in Colorado, until 1902, when he was appointed engineer of construction, National Construction Co., South Bend, Ind., remaining there until 1907, when he engaged in private business as consulting engineer, making a specialty of water supply, especially in regard to the western plains section of the North American continent. Immediately prior to his present appointment he was engaged, from the latter part of 1911, in special water service work for the G.T. Pacific Ry.

JULES HONE, who has been appointed Dominion Government director, G.T. Pacific Ry., to succeed A. Brunet, was born at Montreal, Sept. 8, 1874, and entered C.P.R. service in the Car Accountant's office, Montreal, Mar. 14, 1889, where he continued until July, 1890, since when he has been, to Aug., 1891, secretary to Manager of Transportation, Montreal; Aug., 1891, to the summer of 1892, in city ticket office, Montreal. 1892, to July 4, 1893, chief clerk, city ticket office, Ottawa; July 4, 1893, to June 21, 1896, assistant to chief clerk, city ticket office, Montreal; June 21, 1896, to Nov. 1, 1903, ticket agent, Windsor Hotel, Montreal; Nov. 1, 1903, to 1906, City Passenger, Freight and Steamship Agent, Quebec; 1906, to Apr., 1911, City Passenger and Ticket Agent, Quebec, since which latter date he has conducted a general ticket agency in partnership, in Quebec and Montreal.

W. E. DUPEROW, who has been appointed General Agent, Passenger Department, G.T.R., G.T. Pacific Ry. and G.T. Pacific Coast Steamship Co., Vancouver, B.C., was born at Stratford, Ont., Sept. 4, 1872, and entered transportation service, Nov. 3, 1893, since when he has been, to Oct. 15, 1894, in G.T.R. service at Seaford, Ont.; Oct. 15, 1894, to June 1, 1896, ticket clerk, G.T.R., London, Ont.; June 1, 1896, to July 11, 1898, ticket clerk, G.T.R., Toronto. July 11, 1898, to Aug. 1, 1899, theatrical and excursion clerk, District Passenger Agent's office, G.T.R., Toronto; Aug. 1, 1899, to Apr. 19, 1902, chief clerk, same office; Apr. 19, 1902, to Feb. 15, 1907, General Manager, Secretary and Treasurer, Huntsville, Lake of Bays and Lake Simcoe Navigation Co., Huntsville, Ont.; Feb. 15, 1907, to June 1, 1910, Traveling Passenger Agent, G.T.R., Toronto; June 1, 1910, to Apr. 15, 1912, City Passenger and Ticket Agent, G.T.R. and G.T.P.R., Victoria, B.C.

The body of C. M. HAYS, President, G.T.R. and G.T.P.R., who was lost in the Titanic disaster, was recovered by the Mackay-Bennett cable steamship Minia, and landed at Halifax, N.S., on May 6, where it was received by D. H. Hays, a brother, H. G. Kelley and R. S. Logan, Vice Presidents, G.T.R.; Dr. J. A. Hutcheson, Chief Medical Officer, and other officials. It was immediately placed on a special G.T.R. train which had been waiting at Halifax for several days, and which reached Bonaventure station, Montreal, May 7, where it was met by a large number of the

company's chief officials. The funeral, which, at Mrs. Hays' request, was of as private a nature as possible, took place the next day to Mount Royal Cemetery. The G.T.R. offices were closed for a portion of the afternoon so that the heads of departments, etc., might attend, and there were a number of other prominent citizens present, including a representative of the Governor-General.

J. A. HEAMAN, whose appointment as Division Engineer, Grand Trunk Pacific Ry., Fitzhugh, Alta., was announced in our last issue, was born at Memphis, Tenn., June 3, 1874, and educated in the public schools and Collegiate Institute, London, Ont., and McGill University, Montreal. He entered railway service Apr., 1901, since when he has been, to Apr., 1902, instrument man, G.T.R. double track construction; Apr. to Nov., 1902, Resident Engineer on Construction, G.T.R.; Nov., 1902, to Nov., 1903, Resident Engineer on Maintenance, G.T.R.; Nov., 1903, to May, 1905, Assistant Engineer, G.T. Pacific Ry. location east of Winnipeg; May, 1905, to Nov., 1907, Assistant Engineer in charge of location and construction, National



G. S. Hodgins, M. Am. Soc. M.E., Consulting Engineer, National Transcontinental Railway.

Transcontinental Ry.; Nov., 1907, to Oct., 1908, Assistant District Engineer, National Transcontinental Ry.; Oct., 1908, to June, 1910, Assistant District Engineer, G.T. Pacific Ry., June, 1910, to Apr., 1911, District Engineer, G.T. Pacific Ry.; Apr., 1911, to Apr., 1912, Office Engineer, G.T. Pacific Ry.

G. A. KEEFER, M. Can. Soc., C.E., who died at Victoria, B.C., May 19, was born at Cornwall, Ont., Sept. 10, 1836, and educated at St. Catharines, Ont., and Upper Canada College. He entered railway service in 1853, and to 1857 was engaged on survey work between Montreal and Cornwall for the G.T.R.; 1857 to 1861, engaged in architecture and work on the Victoria Bridge; he was later engaged under his uncle, the late Samuel Keefer, on the Brockville and Ottawa Ry., and was subsequently, to 1875, with the Belleville Grand Jct. Ry. and the Belleville and North Hastings Ry., of which latter he became Chief Engineer. From 1875 to 1885 he was on survey work on the C.P.R. in the Rocky Mountains, on behalf of the Government; 1875 to 1885, Railway Inspector for the

Government, in British Columbia; 1887 to 1899, in private practice; 1899 to the date of his death, Resident Engineer, Dominion Public Works Department, New Westminster, B.C. He was a son of the late G. K. Keefer, a well known civil engineer of Thorold, Ont., and a nephew of T. C. Keefer, C.M.G., Hon. M. Can. Soc. C.E., of Ottawa.

G. O. SOMERS, General Freight Agent, Chicago Great Western Rd., Chicago, Ill., is reported to be about to resign, in order to enter business in Toronto. He was born at Barrie, Ont., July 10, 1860, and entered railway service in 1875, since when he has been, to 1879, telegraph operator, Northern Ry.; assistant agent, relief agent, station agent and clerk to Superintendent, same road; from 1880 to 1882, he was in other business in Chicago; 1883 to 1885, successively, clerk in General Freight Department, acting General Baggage Agent and chief clerk, General Passenger and Ticket Department, C.P.R., Winnipeg; 1886, chief clerk, general passenger and ticket office, Michigan Central Rd., Chicago, Ill.; 1887, Travelling Passenger Agent, Duluth, South Shore and Atlantic Ry., Marquette, Mich.; 1887 to Sept., 1894, successively, chief clerk, general passenger and ticket office, chief clerk, general traffic department, and Assistant General Freight Agent, Great Northern Ry.; in Sept., 1894, he was appointed General Freight Agent, Great Northern Ry., and later transferred to a similar position on the Chicago Great Western Rd.

A. J. ISBESTER, who has been appointed Assistant District Engineer, Port Arthur District, Canadian Northern Ontario Ry., Port Arthur, is a son of the late Jas. Isbester, one of the first contractors on the C.P.R. He was born at Ottawa Dec. 18, 1879, and educated at Ottawa Collegiate Institute and Toronto University, graduating in 1902. His railway service is from May 1 to Sept. 30, 1900, rodman, Algoma Central and Hudson Bay Ry.; May, 1902, to Jan., 1903, instrument man on construction of Ottawa Northern and Western branch, C.P.R., from Gracefield to Maniwaki; Jan. to Dec., 1903, transitman in the prairie provinces and British Columbia, and Resident Engineer, Yorkton extension, C.P.R.; Jan. to June, 1904, transitman, C.P.R. Toronto-Sudbury branch between Romford Jct. and Byng Inlet; July, 1904, to Mar., 1906, Resident Engineer on construction, same branch; Apr., 1906, to Mar., 1909, Assistant Engineer in charge of tracklaying, trestles, ballasting, etc., same branch; May, 1909, to June, 1911, engaged in contracting on the National Transcontinental Ry.; July, 1911, to Mar., 1912, Division Engineer, Port Arthur District, Canadian Northern Ontario Ry., Port Arthur.

W. PHILLIPS, who has been appointed European Traffic Manager, Canadian Northern Ry. and Canadian Northern Steamships, Ltd., London, Eng., was born at Toronto, Jan. 31, 1870. He entered transportation service Apr., 1886, since when he has been, to Mar. 31, 1896, in G.T.R. offices, Toronto; Apr. 1, 1896, to Feb. 28, 1902, North West Agent, North West Transportation Co., Winnipeg; on Jan. 1, 1907, he was also appointed General Agent, Chicago Great Western Ry.; and on Apr. 1, 1900, North West Agent, Northern Navigation Co., there, which positions he held to Feb. 28, 1902; Feb. to Apr., 1902, General Agent, Freight and Passenger Departments, Canadian Northern Ry., Toronto; Apr., 1902, to May, 1911, General Eastern Agent, Canadian Northern Ry., Toronto; Nov., 1906, he was also appointed General Freight and Passenger Agent, Canadian Northern Ontario Ry., and in Apr., 1910, also acting Traffic Manager, Canadian Northern Steamships, Ltd., and in Apr., 1911, this latter position was changed to General Freight and Passenger Agent, Canadian North-

ern Steamships, Ltd.; May, 1911, to May, 1912, he was General Freight Agent, Canadian Northern Ontario Ry., Central Ontario Ry., Bay of Quinte Ry., Irondale, Bancroft and Ottawa Ry., and Niagara, St. Catharines and Toronto Ry. and Navigation Cos., and General Freight and Passenger Agent, Canadian Northern Steamships, Ltd., Toronto.

F. W. PETERS, who has been appointed General Superintendent, British Columbia Division, C.P.R., Vancouver, was born at St. John, N.B., Mar. 25, 1860, and entered railway service in 1873, as telegraph operator with engineers on construction, Intercolonial Ry., and from 1873 to 1876 acted as agent at Jacquet River and other points, same road; 1876 to 1878, assistant agent at Newcastle, N.B., same road; 1878 to 1880, agent, Chatham Jct., N.B., same road; 1880 to Nov., 1881, relieving agent, Chicago and Grand Trunk Jct. Ry., Fort Gratiot, Mich.; Nov., 1881, to May, 1882, billing clerk, local freight office, C.P.R., Winnipeg; May, 1882, to Apr., 1889, agent, C.P.R., Brandon, Man., April to June, 1889, agent, C.P.R., Fort William, Ont.; June, 1889, to Nov., 1896, Local Freight Agent, C.P.R., Winnipeg; Nov., 1896, to 1899, District Freight Agent, West Kootenay District, C.P.R., Nelson, B.C.; 1899 to Dec., 1900, Assistant General Freight Agent, same territory, Nelson, B.C.; Dec., 1900, to July, 1901, Assistant General Freight Agent, Pacific Division, C.P.R., Vancouver, B.C.; July, 1901, to Dec. 31, 1902, General Freight Agent, same division, C.P.R., Vancouver, B.C.; Jan. 1, 1903, to Mar. 1, 1908, Assistant Freight Traffic Manager, Western Lines, C.P.R., Winnipeg; Mar. 1, 1908, to May, 1912, Assistant to Second Vice President, and on the abolition of the numerical designations of the Vice Presidents, Assistant to the Vice President, C.P.R., Winnipeg.

LOUIS K. JONES, I.S.O., Secretary Department Railways and Canals, who has also recently been appointed Assistant Deputy Minister, and whose portrait appears in this issue, was born at Cobourg, Ont., June 9, 1849, and educated at Trinity College School, Weston, Ont., and Trinity College University, Toronto. He entered government service as clerk to the secretary of the Canal Commission, in 1870, and joined the staff of the District Engineer on the construction of the Intercolonial Ry. in the Miramichi district, Newcastle, N.B., in 1871. In 1874 he was appointed secretary to Collingwood Schreiber, on the latter's appointment as Chief Engineer, Intercolonial Ry., with headquarters at Ottawa, and remained in that position until the completion of the road, continuing with Mr. Schreiber on the latter's appointment as Chief Engineer and General Manager of the government railways, and from 1880, on Mr. Schreiber's additional appointment as Chief Engineer on construction of the C.P.R., during the building of a portion of that road by the government, Mr. Jones was Assistant to the Chief Engineer and General Manager, government railways. From 1888 to 1891, in addition to performing his departmental duties, he was secretary to the arbitration board which dealt with the C.P.R. claim against the government in connection with the Ouderdonk section of the road, involving some six or seven million dollars. From 1893 to 1897 he was chief clerk, Department of Railways and Canals, and in 1897 was appointed Secretary of the Department. He was awarded the Imperial Service Order for long and faithful service.

W. WAINWRIGHT, Vice President, G.T.R., who has been promoted from Second Vice President to First Vice President, G.T. Pacific Ry., and whose portrait appears in this issue, was born at Manchester Eng., Apr. 30, 1840, and entered railway service, Jan., 1858, with the Manchester, Sheffield and Lincoln-

shire Ry., serving successively as junior clerk in the Chief Accountant's office, senior clerk in the same office, secretary to Assistant General Manager, and secretary to General Manager. In 1862 he joined the G.T.R. staff, serving one year as senior clerk in the Accountant's office, three years as secretary to the Managing Director, six years as senior clerk to the Managing Director, and in charge of the car mileage department, eight years and five months as General Passenger Agent; May, 1881, to May, 1890, Assistant Manager; May, 1890, to May, 1896, Assistant General Manager; from Apr., 1883, to Sept., 1895, also General Manager, North Shore Ry.; May, 1896, to July, 1907, General Assistant; Dec., 1900, to July, 1907, also Comptroller; July, 1907, to Jan. 7, 1910, Fourth Vice President; Jan. 7, 1910, to Oct. 2, 1911, Second Vice President, also Second Vice President, G.T.P.R.; Oct. 2, 1911, appointed Vice President G.T.R., on the abolition of numerical designations, which position he continues also to hold. On the death of C. M. Hays, recently, he was placed in chief charge of the G.T.R. affairs, pending the appointment of a president. He is a director of the Guarantee Co. of North America; director, Montreal Telegraph Co.; Vice President, Richelieu and Ontario Navigation Co.; Vice President, Grand Trunk Insurance and Provident Society; director, Canadian Express Co., and of various G.T.R. subsidiary lines. He was for eight years in command of a company of artillery in the old Grand Trunk Brigade, and retired with the rank of captain on its disbandment.

GEO. SHERWOOD HODGINS, who has recently been appointed Consulting Mechanical Engineer, National Transcontinental Ry., with headquarters at Ottawa, as mentioned in our last issue, is the third son of Dr. J. George Hodgins, of the Ontario Educational Department. He was born at Toronto and educated at Upper Canada College and at the School of Practical Science, Toronto. He began work in the Canadian Locomotive and Engine Co., of Kingston, Ont., in June, 1881. After working there for some years he became chief draughtsman. While in the service of this company he inspected and selected machinery and other equipment in England which the company contemplated buying. In 1884 he began railway work, entering the office of the Master Mechanic of the Ontario and Quebec Division, C.P.R., at Toronto. In 1886 he was transferred to the Pacific Division as Locomotive Foreman at Vancouver. In 1890 he returned to the Ontario and Quebec Division. From 1898 to 1900 he was Locomotive Inspector for the whole C.P.R. system and superintended the construction of locomotives and cars which were built in the U.S. He also tested locomotive performance on the road over the various divisions and did other mechanical engineering work for the company. In 1900 he returned to the locomotive works at Kingston as Mechanical Engineer, and when these works closed down for a time he went into technical journalism in New York City, being connected in an editorial capacity with The Railroad Digest, The Railroad Gazette, Railway Machinery, and Railway and Locomotive Engineering. Last year he gave up editorial work and went abroad for the summer, returning at the close of 1911. He is a member of the American Society of Mechanical Engineers, the Master Mechanics' Association, the Canadian Society of New York and the University of Toronto Club of New York. In 1890 he married the youngest daughter of the late Mr. Justice Patterson, of the Supreme Court of Canada. Although he lived for some time in the U.S., he has not given up his Canadian nationality.

Great Northern Railway Lines in Canada.

Midland Ry. of Manitoba—Midland Great Northern Ry.—The company began operating its trains over its own line into its own freight terminals and its passenger trains into the Fort Garry union station at Winnipeg, May 1. The line is being used by the G.N. Ry. and the Northern Pacific Ry., and the entry into the union station is obtained by an agreement with the Canadian Northern Ry.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Press reports state that the contractors on the line at Hope, B.C., were directed by the Chief Engineer, May 9, to proceed with the rock work at once. This refers to the building of the line through the Coquihalla River valley.

Vancouver Improvements—The pile driving for the dock on Burrard Inlet, Vancouver, has been completed by the Chase Co., which had the contract, and the contractors for the concrete work, Cummings and Keihl, of Seattle, Wash., have started work. The dock will be 350 ft. wide and 450 ft. long, and will consist of two slips each 75 ft. wide, the intervening space of 200 ft. being filled so as to permit the laying of tracks and the building of two sheds each running the full length of the dock.

The plans for the terminals on False Creek, Vancouver, for the joint use of the G.N. Ry. and the Northern Pacific Ry., which are being worked out, will mean a great change in the appearance of the locality. Measuring from Main St. to the extreme east end of the area embraced in the scheme, the distance is about a mile. In breadth, from Prior St. to Seventh Ave. the distance is about 3,500 ft. In the centre of this, there is a basin 4,300 by 1,600 ft. wide reserved by the city. This is to be bulkheaded with concrete and dredged so that it will be navigable at all times of day and at all seasons of the year. About this basin the yards, shops, freight sheds, repair tracks, store houses, passenger tracks and station are to be located. There is ample room for all of these which will be sufficient for transacting an enormous business. The passenger station is 250 by 160 ft. It will house all of the offices of the company. The plan provides for the construction of an express house 600 ft. long, one freight house 2,000 ft. long, another 1,950 ft. long, 10 tracks for the receiving of trains and the distribution of cars, team tracks, freight house tracks, repair tracks, a round house and turn table, passenger tracks, coal supply, water tanks, oil tanks, industrial tracks, coach tracks, and three overhead crossings

NOTICE TO CONTRACTORS.

TENDERS will be received by the undersigned for the substructures and superstructures of ten (10) bridges over the Fraser, Thompson and North Thompson Rivers on that section of the Canadian Northern Pacific Railway between Port Mann and the Yellowhead Pass, Province of British Columbia.

Tenders are to include any or all portions of the construction or the delivery of metalwork only.

Detailed drawings, specifications, and forms of contract may be obtained on or after June 5th, 1912, at the office of the Consulting Engineers, Waddell & Harrington, Winch Building, Vancouver, B.C., upon the payment thereof of fifty (50) dollars. This amount will be refunded to those who bid on the work, upon the return of the bidding papers in good condition. Total work to be completed before June 1st, 1913.

Tenders to be received at the offices of the undersigned, Metropolitan Building, Vancouver, B.C., not later than noon of July 8th, 1912, and to be enclosed in sealed envelopes marked "Tender for Bridge Construction."

The lowest or any tender not necessarily accepted.

MACKENZIE, MANN & COMPANY, LTD.

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.

Algoma Central and Hudson Bay Ry., Algoma Eastern Ry.—J. A. HEDGECOCK, Assistant Engineer in charge of terminal work, has also been appointed Bridge Engineer, vice C. R. Boucher, deceased. Office, Sault Ste. Marie, Ont.

British Columbia Electric Ry.—ALLAN PURVIS, formerly Local Manager, Fraser Valley Branch, has been appointed Manager of Interurban Lines. Office, New Westminster.

E. STEELING, heretofore Division Trainmaster, New Westminster, has been appointed Superintendent, District 2, covering Lulu Island and Eburne-New Westminster lines; District 3, covering Fraser Valley Branch. Office, New Westminster.

W. H. ELSON, heretofore Trainmaster, Interurban Lines, New Westminster, Lulu Island and Eburne, has been appointed Superintendent, District 1, covering Vancouver-New Westminster interurban line; District 4, covering Burnaby Lake line; New Westminster city lines and terminals at New Westminster and Carrall St., Vancouver. Office, Vancouver.

Canadian Northern Quebec Ry., Quebec and Lake St. John Ry.—G. SEAMAN, at one time General Roadmaster, Halifax and South Western Ry., Bridgewater N. S., has been appointed Bridge and Building Master, C.N.Q.R. and Q. and L. St. J. R., vice L. P. McGee, acting Bridge and Building Master, assigned to other duties. Office, Joliette, Que.

Canadian Northern Ry—H. J. COWIE, European Freight Agent, Canadian Northern Ry., and General Freight Agent, Canadian Northern Steamships, Ltd., Liverpool, Eng., has resigned.

W. PHILLIPS, heretofore General Freight Agent, Canadian Northern Ontario Ry., and subsidiary companies, and General Freight and Passenger Agent, Canadian Northern Steamships, Ltd., has been appointed European Traffic Manager, Canadian Northern Ry. and Canadian Northern Steamships, Ltd., in charge of freight and passenger traffic for Great Britain and the European continent. Office, London, Eng.

R. L. FAIRBAIRN, heretofore Assistant General Passenger Agent, lines east of Port Arthur, in Ontario and Quebec, has been appointed General Passenger Agent same territory, including affiliated lines. He has also been appointed General Passenger Agent, Canadian Northern Steamships, Ltd., vice W. Phillips, promoted. Office, Toronto.

F. A. YOUNG, heretofore Commercial Agent, Chicago, has been appointed Division Freight Agent, lines east of Port Arthur and west of Ottawa, including leased and affiliated lines, vice W. Phillips, General Freight Agent, promoted. Office, Toronto.

A. E. HODGINS, heretofore Travelling Freight Agent, Pittsburgh, Pa., has been appointed General Agent there, succeeding R. H. Bell, Commercial Agent, transferred.

R. H. BELL, heretofore Commercial Agent at Pittsburg, Pa., has been appointed General Agent at Chicago, Ill., vice F. A. Young, Commercial Agent, promoted.

C. DYER has been appointed Assistant Local Freight Agent, Winnipeg, vice C. H. Booth, resigned to enter Midland Ry. of Manitoba service, as announced in our last issue.

Canadian Pacific Ry.—The territory of the district master mechanics of the Eastern Division has been re-arranged into three districts, instead of four, as follows—District 1, covering Outremont, Farnham, Sartin, Sherbrooke,

Megantic, Newport and branches, in charge of H. A. PEPLER, heretofore District Master Mechanic, District 2 and Montreal Terminals, Montreal, vice J. D. Wells, who returns to his former position as locomotive driver. Office, Montreal. Districts 2 and 4, covering Ottawa, including Ottawa and New York Ry. junction, Smiths Falls, Glen Yard, Brockville and Prescott, in charge of J. M. BURKE, heretofore District Master Mechanic, District 4. Office, Ottawa. District 3, covering Quebec, Three Rivers, Hochelaga, Waltham, Manawaki and Laurentian subdivision, and Outremont, as far as locomotives on that run are concerned, in charge of W. BORBRIDGE, as heretofore. Office, Montreal.

W. TANSLEY, heretofore Chief Dispatcher, Havelock, Ont., has been appointed Assistant Superintendent, District 1, Ontario Division. Office, Havelock.

J. W. WANSBOROUGH has been appointed Chief Dispatcher, District 1, Ontario Division, vice W. Tansley, promoted. Office, Havelock.

A. E. STEWART, heretofore District Master Mechanic, District 2, Ontario Di-



F. W. Peters,
General Superintendent, British Columbia
Division, Canadian Pacific Railway.

vision, West Toronto, has been appointed, temporarily, Superintendent of Construction, with headquarters at Lindsay, Ont.

A. MAYNES, heretofore District Master Mechanic, District 1, Ontario Division, has been appointed District Master Mechanic, District 2, Ontario Division, vice A. E. Stewart, transferred to Construction Department, temporarily. Office, West Toronto.

W. PICKBELL, heretofore acting District Master Mechanic, District 3, has been appointed District Master Mechanic, District 1, vice A. Maynes, transferred. Office, West Toronto.

S. ILLINGSWORTH has been appointed locomotive foreman, West Toronto, Ont., vice W. C. Mayo, promoted.

R. McLAUGHLIN, heretofore fitter, has been appointed assistant night foreman, West Toronto shops.

W. C. MAYO, heretofore night locomotive foreman, West Toronto, has been appointed Locomotive Foreman at Port McNicoll, Ont.

P. WELLIGAN, heretofore clerk in General Baggage Department, Winnipeg, has been appointed General Travelling Baggage Agent, Winnipeg, vice W. E. Allison, promoted.

R. MCPHERSON, heretofore shop foreman at Kenora, Ont., has been appointed shop foreman at Brandon, Man.

W. J. RENIX, heretofore shop foreman at Brandon, Man., has been appointed shop foreman at Moose Jaw, Sask.

T. S. BERTRAM, heretofore night foreman at Kenora, Ont., has been appointed night foreman at Moose Jaw, Sask., vice A. Pentland, transferred.

A. PENTLAND, heretofore night foreman at Moose Jaw, Sask., has been appointed night foreman at Swift Current, Sask.

W. E. ALLISON, heretofore General Travelling Baggage Agent, Winnipeg, has been appointed District Baggage Agent, Alberta Division, vice E. V. Dangerfield, resigned. Office, Calgary.

J. F. SWEETING, heretofore Industrial Agent, attached to the Vice President's office, Winnipeg, has been appointed Industrial Agent for Western Lines, Department of Natural Resources. Office, Calgary, Alta.

JAS. DUFF, A.M. Can. Soc. C.E., has been appointed General Townsite Agent, Department of Natural Resources, vice J. L. Doupe, resigned. Office, Calgary, Alta.

A. CLARK has been appointed storekeeper at East Calgary, Alta., vice J. Paxton, resigned.

S. E. HOLLYMAN, heretofore chief clerk, Division Freight Agent's office, Regina, Sask., has been appointed Travelling Freight Agent, Lethbridge, Alta., vice C. S. Morse, promoted to District Freight Agent, Fort William, Ont., as announced in our last issue.

B. WILSON has been appointed storekeeper at Strathcona, Alta.

P. F. WEISBROD, Trainmaster at Cranbrook, B.C., was on Apr. 17 appointed Trainmaster at Macleod, Alta., vice A. C. Harshaw, transferred; and on May 9 he was appointed Superintendent, District 2, Saskatchewan Division, vice A. E. Stevens, promoted. Office, Moose Jaw.

J. P. KELLY has been appointed acting Locomotive Foreman at Field, B.C., vice W. B. Steeves, resigned.

C. HOOD, heretofore Terminal Trainmaster, Calgary, Alta., has been appointed Trainmaster at Cranbrook, B.C., vice P. F. Weisbrod, transferred.

F. W. PETERS, heretofore Assistant to the Vice President, Winnipeg, has been appointed General Superintendent, British Columbia Division, vice Jas. Osborne, deceased. Office, Vancouver.

A. E. STEVENS, heretofore Superintendent, District No. 1, Saskatchewan Division, Moose Jaw, has been appointed Assistant General Superintendent, British Columbia Division. Office, Vancouver.

Fredericton and Grand Lake Coal and Ry. Co.—H. W. D. ARMSTRONG, M. Can. Soc. C.E., has been appointed Chief Engineer, vice D. F. Maxwell, resigned. Office, Fredericton, N.B.

Delaware and Hudson Co.—W. H. WILLIAMS, Third Vice President, New York, has been elected a director, vice J. J. Astor, deceased.

Grand Trunk Pacific Ry.—E. J. CHAMBERLIN, heretofore Vice President and General Manager, has been appointed President, G.T.P. Ry., and also of the G.T.R., vice C. M. Hays, deceased.

W. WALNRIGHT, heretofore Second Vice President, has been appointed First Vice President.

M. M. REYNOLDS, heretofore Third Vice President, has been appointed Second Vice President.

JULES HONE, ticket agent, Quebec and Montreal, and formerly City Passenger and Ticket Agent, C.P.R., Quebec, has been appointed Dominion Government director, G.T. Pacific Ry., vice A. Brunet.

C. H. BROWN, heretofore Assistant Trainmaster, G.T.R., Hamilton, Ont., has been appointed a dispatcher, G.T.P.R., at Wainwright, Alta.

In announcing the appointments of W. E. DUPEROW and C. F. EARLE as General Agent, Passenger Department, Vancouver, and City Passenger and Ticket Agent, Victoria, respectively, in our last issue, the former's previous location should have been given as Victoria, as also that of the latter, who remains at Victoria.

The following agents have been appointed—Birmingham, Sask., G. A. Swan; Landis, Sask., F. W. Coulter; Chauvin, Alta., R. E. Patterson; Irma, Alta., R. B. Allen; Edson, Alta., J. S. Dobie.

Grand Trunk Ry.—E. J. CHAMBERLIN, heretofore Vice President and General Manager, G.T. Pacific Ry., has been appointed President, G.T.R., and G.T.P.R., vice C. M. Hays, deceased. He has also been elected a director of the G.T.R. Co.

J. MCWOOD, heretofore General Foreman, car shops at London, Ont., has been appointed General Foreman, Car Department, Ottawa Division, vice W. Gillespie, appointed Master Car Builder, Central Vermont Ry., St. Albans, Vt., as announced in our last issue.

H. A. CARSON, heretofore Soliciting Freight Agent, Toronto, has been appointed Travelling Freight Agent, Toronto, vice R. Tinning, retired after 50 years' service.

F. G. GOULD, heretofore rate clerk, District Freight Agent's office, Toronto, has been appointed Soliciting Freight Agent, Toronto, vice H. A. Carson, promoted.

W. KIRKWOOD has been appointed Road Foreman of Locomotives, Middle and Southern Divisions, vice G. Black, deceased. Headquarters, Stratford, Ont.

The following agents have been appointed:—Beauharnois, Que., J. E. Pare; Oshawa Jct., Ont., A. A. Grant; Holland Landing, Ont., F. C. Laver; Guelph, Ont., W. F. Briggs; Gobles, Ont., B. P. Force; London, Ont., freight, D. W. Hayes; Alma, Ont., L. E. Dotzenroth; Goldstone, Ont., H. V. Goodwin; Paisley, Ont., C. E. Brigham; Neustadt, Ont., J. M. Fairweather; Hanover, Ont., J. E. Riesberry; Warton, Ont., G. E. Smith; Atwood, Ont., F. Anguish; Stoney Point, Ont., H. A. Lampman; Belle River, Ont., F. W. Shearing; Tecumseh, Ont., F. Ouellette; Carlsbad Springs, Ont., F. A. Caillier; Ottawa, Ont., pass., A. G. Munroe; outside agencies, Amherstburg, Ont., A. W. Marsh; Sault Ste. Marie, Ont., E. C. Miller; Toronto, W. J. Hamilton.

Great Northern Ry.—C. R. GRAY, heretofore President, Oregon Trunk Ry., Oregon Electric Ry., and Spokane and Inland Empire Rd., Portland, Oregon, is reported to have been appointed President, G.N.R., vice L. W. Hill, resigned. Office, St. Paul, Minn.

Hudson Bay Ry.—A press dispatch from Le Pas, Man., says Chief Engineer Bruce, of the Dominion Hudson Bay Ry. has resigned. The dispatch is incorrect in regard to title, as J. Armstrong is Chief Engineer.

Intercolonial Ry.—W. A. FITCH, heretofore Chief Dispatcher at Sydney, N.S., has been appointed Assistant Superintendent, Sydney and Oxford District. Office, Sydney, N.S.

E. L. DESJARDINS, heretofore Chief Dispatcher, Levis, Que., has been appointed Assistant Superintendent, Montreal and Ste. Flavie District. Office, Riviere du Loup, Que.

A. E. WILKINSON, chief clerk, General Freight Agent's office, Moncton, N. B., has been appointed Division Freight Agent at Halifax, N.S., vice E. S. Smiley, assigned to other duties.

J. C. FULMORE, heretofore section foreman, Debort section, has been appointed Trackmaster from Oxford to Pictou, vice A. P. Giles, transferred. Office, Pictou, N.S.

J. HAMILTON has been appointed acting Trackmaster, Newcastle to Campbellton, N.B., during the absence through sickness of G. A. Fewcett.

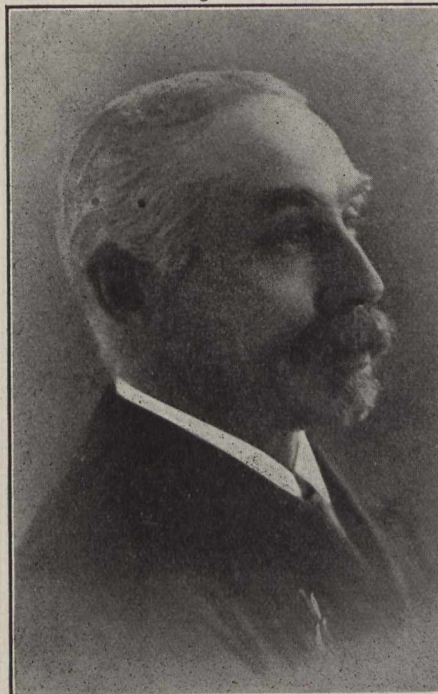
E. SAVAGE has been appointed acting Trackmaster, Canada Eastern Division, during the absence through sickness of A. Astle.

L. S. BROWN, heretofore Chief Dispatcher, New Glasgow, N.S., has been appointed Assistant Superintendent, Moncton and Ste. Flavie District. Office, Newcastle, N.B.

R. COLCLOUGH, heretofore chief clerk, General Superintendent's office, Moncton N.B., has been appointed Assistant Superintendent, Halifax and St. John District. Office, Moncton, N.B.

A. P. GILES, heretofore Roadmaster, Oxford Jct., to Stellarton, at Westwell, N.S., has been appointed Trackmaster from Moncton to Newcastle, vice T. McPherson, promoted. Office, Newcastle, N.B.

Intercolonial Ry. and Prince Edward Island Ry.—T. MCPHERSON, heretofore Trackmaster from Moncton to Newcastle, I.C.R., Newcastle, N.B., has been appointed General Roadmaster, I.C.R., and P.E.I.R. Office, Moncton, N.B.



H. W. D. Armstrong, M. Can. Soc. C.E., Chief Engineer, Fredericton and Grand Lake Railway.

Michigan Central Rd.—E. D. BRONNER, heretofore Superintendent of Motive Power, Detroit, Mich., has been appointed General Manager, vice R. H. L'Hommiedieu, resigned on account of ill health. Office, Detroit, Mich.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—C. N. KALK, Principal Assistant Engineer, is in full charge of the Engineering Department, consequent on the recent death of T. Greene, Chief Engineer. Office, Minneapolis, Minn.

New York Central Lines.—J. J. BERNET, heretofore Assistant to the Vice President, L.S. and M.S. Ry., L.E. and W. Rd., L.E.A. and W. Rd., C.C.C. and St. L. Ry., P. and E. Ry., C.N. Rd., M.C. Rd., T. and C. Ry., Z. and W. Ry., and C.I. and S. Rd., has been appointed Assistant Vice President, same companies. Office, La Salle Station, Chicago, Ill.

Northern Navigation Co.—E. C. MILLER, heretofore City Passenger and Ticket Agent, Sault Ste. Marie, Ont., has been appointed District Freight and Passenger Agent, with territory, North Bay to Sault Ste. Marie, Ont., including Sault Ste. Marie, Mich., the Georgian Bay,

Manitoulin Island and Mackinac Island. Office, Sault Ste. Marie, Ont.

F. MITCHELL, heretofore land steward, Collingwood, Ont., has been appointed Chief of Commissary, with full charge of the cabin departments on all the company's vessels, land stewards' offices at Collingwood and Sarnia, and the operation and linen at the company's laundry, Sault Ste. Marie, Ont. Office, Collingwood, Ont.

Northern Pacific Ry.—C. L. NICHOLS, heretofore General Superintendent, lines west of Paradise, Livingston, Mont., has been appointed General Superintendent, lines east of Paradise, St. Paul, Minn., vice E. C. Blanchard, promoted.

W. H. STRACHAN, heretofore Assistant Superintendent, Lake Superior Division, Duluth, Minn., has been appointed Superintendent at Jamestown, N.D., vice F. L. Birdsall, transferred.

F. L. BIRDSALL, heretofore Superintendent, Jamestown, N.D., has been appointed Superintendent at Missoula, Mont., vice A. M. Burt, transferred.

J. M. RAPELJE, heretofore Superintendent of the Idaho Division, Spokane, Wash., has been appointed General Superintendent, lines west of Paradise, Livingston, Mont., vice C. L. Nichols, promoted.

A. M. BURT, heretofore Superintendent, Missoula, Mont., has been appointed Superintendent, Idaho Division, Spokane, Wash., vice J. M. Rapelje, promoted.

Ottawa and New York Ry.—J. A. MCQUADE has been appointed Chief Dispatcher at Ottawa, Ont., vice E. J. Robertson, resigned.

Pacific Great Eastern Ry.—With reference to the appointments of D'ARCY TATE as Vice President and General Counsel, and JOHN CALLAGHAN as Chief Engineer, we are officially advised that the office of the former is at Victoria, and that of the latter at Vancouver, B.C.

Philadelphia, Baltimore and Washington Rd. (Pennsylvania Rd.)—H. A. HAINES, heretofore Canadian Freight Agent, Pennsylvania Rd., Toronto, has been appointed Division Freight Agent, Baltimore, Md.

Prince Edward Island Ry.—H. MC EWEN, heretofore Train Dispatcher, has been appointed Superintendent, vice G. A. Sharp, retired. Office, Charlottetown, P.E.I.

W. S. POOLE, Mechanical Superintendent, is reported to have resigned.

Southern New England Ry., Southern New England Rd.—G. C. JONES, General Manager, Central Vermont Ry., St. Albans, Vt., has also been appointed Vice President, S.N.E. Ry., and S.N.E. Rd., in charge of construction and operation. Offices, St. Albans, Vt., and Grosvenor Bldg., Providence, R.I.

Southern Ry.—G. W. CARTER, heretofore City Ticket Agent, Richmond, Va., has been appointed Travelling Passenger Agent, Montreal, with office at 130 St. James St.

Toronto, Hamilton and Buffalo Ry.—J. W. EBER, heretofore Superintendent, New York Central and Hudson River Rd., Utica, N.Y., has been appointed General Superintendent, T., H. and B. Ry. Office, Hamilton, Ont. The resignation of H. H. Adams, General Manager, who was formerly General Superintendent, on his acceptance of the position of President, Kansas City Terminal Ry., Kansas City, Mo., was announced in our last issue.

The Alberta Ry. and Irrigation Company's railway has been taken over by the C.P.R., and is being operated as the Raymond subdivision of district 1, Alberta Division.

The Algoma Steel Co. is arranging to largely extend its plant at Sault Ste. Marie, Ont., and to practically double the capacity of the steel rail mill.

RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Acadia Coal Co.—The Nova Scotia Legislature has amended the company's powers, and extended the time within which it may build certain railway lines authorized to connect its collieries with the Intercolonial Ry. (Sept. 1910, pg. 725.)

Alberta Interurban Ry.—The general location plan for the first section of this projected railway from Calgary, easterly and northerly to Carbon, Alta., have been approved by the Minister of Railways. The points served by the line on this section are:—Rocky View, Freshford (near), Irricana, Beiseker, and Carbon. This will carry the line to the Kneehills, where there are coal deposits, on which development work is being done.

We are officially advised that the line will be operated by individual power driven cars, no electricity being used at all for motive power purposes. The equivalent officials to station agents will be travelling backwards and forwards over the line in the cars. These officials will receive and deliver the freight out of the cars to each farmer who does business with the company. Each farmer will attend to his own business, giving a registerable lien for one month's freight charges to the company. It is said that this system has been found to work satisfactorily in the Southern States, and that it has been approved by the Dominion Railways Department.

At the shareholders' meeting held recently the various contracts and trust agreements to safeguard the unissued capital, and the contracts for construction were signed. The Land Traction Co., which financed the obtaining of the charters, has undertaken the construction of the line at cost plus 10% and a minor portion of the capital stock of the A.I. Ry. It is proposed by the L.T. Co. to sublet the work.

Following are the directors for the current year:—Vice President, C. S. Drummond, Calgary and London, Eng.; J. R. Sutherland, Winnipeg, Man.; W. F. W. Lent, and Major Duncan Stuart, Calgary, Alta. (May, pg. 251.)

Algoma Central and Hudson Bay Ry.—A contract is reported to have been let to Plant and Wright, for the building of a station at Sault Ste. Marie, Ont., at a cost of \$100,000.

The Board of Railway Commissioners has authorized the building of an additional branch line from the company's Michipicoten branch. (May, pg. 238.)

Argenteuil Ry.—The Quebec Legislature has incorporated a company with this title to build a railway from the boundary between Harrington and Grenville to the canal at Grenville, Que. The provisional directors were named in our April issue.

The Quebec Legislature has voted a grant of 2,000 acres of land a mile for a line of 10 miles from the Grenville canal, going towards Arundel, Que. (April, pg. 181.)

Bagotville and St. Lawrence Ry.—The Quebec Legislature has incorporated a company with this title to build a railway from St. Alphonse or Grand Bay to Murray Bay, Que., with the provisional directors named in our Mar. issue. (Mar., pg. 120.)

Brandon Transfer Ry.—Brandon, Man., ratepayers have passed a bylaw to issue \$12,000 of debentures to pay for right of way for the B.T. Ry., which has been built and is being operated in the interests of the three lines entering Brandon, viz., the C.P.R., Canadian Northern Ry., and Brandon, Saskatchewan and Hudson Bay Ry., a subsidiary

of the Great Northern Ry., U.S. (Nov., 1911, pg. 1035.)

Bruce Mines and Algoma Ry.—The Ontario Legislature has passed an act declaring that notwithstanding any act or default of the company, its charter is still in force; authorizing the issue of bonds for \$35,000 a mile of line constructed or projected, and granting an extension of time for the building of the line from the present northerly terminus at Rock Lake to the C.P.R. between Chapleau and Biscotasing stations, and thence northerly and easterly to Hannah Bay, or some other point on James Bay, Ont. (May, pg. 238.)

Buctouche and Rexton Ry.—The New Brunswick Legislature has extended the time for building the railway from Buctouche to Rexton and thence to Richibucto Head, authorized to be constructed by chap. 91 statutes of 1905. (May, 1905, pg. 181.)

Burrard Inlet Tunnel and Bridge Co.—The North Vancouver, B.C., district council has passed a resolution agreeing to provide a further \$25,000, making its contribution \$125,000, towards the building of the bridge across the Second Narrows of Vancouver Inlet. The West Vancouver municipal council, April 30, discussed the question of the proposed tunnel under the second narrows, which is a part of the plans, and it was stated that while the company had the proposition under consideration the building of the bridge had been given first place. Some of the members of the council urged that the municipality should take up the work if the company did not proceed at once.

Press reports state that it is expected to make arrangements at an early date for the letting of contracts for the building of a line from Eburne to Deepcove, about five miles. (May, pg. 238.)

Canadian Terminal Ry.—The New Brunswick Legislature has extended the time for the building of the railway from L'Etang harbor to the St. Croix River, authorized to be constructed by chap. 60 statutes of 1907. (See Canada Atlantic Terminal Co., May, 1907, pg. 323.)

Central and North Eastern Ry.—The New Brunswick Legislature, in 1890, incorporated a company to build a railway from near St. John through the centre of the province, to a point on Northumberland Strait. At the last session the company's powers were revived, by an act which changed the provisional directors to W. W. Wells, F. B. Black, W. C. Milner, T. E. Murray, W. B. Dickson, W. H. Harrison, F. P. Robinson and H. A. Powell. The last three are new names, and the name of F. B. Black is substituted for that of J. L. Black. The company is given two years from July 1 to make surveys, and construction is to be started in a year thereafter, and completed by July 1, 1917.

We are officially advised that the company is putting in a spur line at McAlpine, Ont., to connect with the C.P.R., in order to facilitate the delivery of construction material. All the construction on the line will be done by the general contractors, C. J. Willis and Sons, and the only work that will be sublet will perhaps be some clearing and grading.

The Board of Railway Commissioners has approved of location plans for the line from St. Eustache to Oka, Que., mileage 16 to 31.

Central Ry. of Canada.—The Minister of Railways has approved route maps from St. Eustache, Que., to South Indian, Ont., 70 miles. The Board of Railway Commissioners has approved plans and profiles of the company's line

from St. Eustache, Que., to Hawkesbury, Ont., and has under consideration the plans and profiles from Hawkesbury to South Indian.

Ties, poles and fence posts are being delivered at McAlpine, Ont., where the company has a spur and siding connecting with the C.P.R. The right of way has been practically obtained from McAlpine to South Indian, and construction has been commenced between McAlpine and South Indian.

There has been deposited in the office of the Secretary of State at Ottawa the deed of trust made between the company and the City Safe Deposit and Agency Co., to secure the company's bonds. A meeting of the holders of bonds under this deed has been called, to be held in London, Eng., July 17, for the purpose of passing resolutions releasing the land grant subsidy for the security thereof upon terms of the bonds being converted into bonds guaranteed by the Dominion, Quebec or Ontario Government, or other consideration, and modifying the conditions under which the proceeds of the bonds are to be applied. (May, pg. 238.)

Chicago, Milwaukee and Puget Sound Ry., Oregon-Washington Rd. and Navigation Co.—It is reported that officers of these two companies have been discussing the basis of an arrangement which will settle various matters in connection with the building of lines in the northwest section of the State of Washington, and the extension of the same to Vancouver and other points in British Columbia. (May, pg. 120, and pg. 121.)

Dominion Atlantic Ry.—In connection with the proposed building of the projected North Mountain branch, we are officially advised that plans and profiles have been approved by the Board of Railway Commissioners. The line will connect with the company's Cornwallis Valley branch at Centreville, N.S., and will run in a generally westerly direction to Weston, about 15 miles. The line will cross 14 public roads at grade, and a resolution authorizing this has been passed by the council of King's County. The maximum gradient will be 1.5%, and the maximum curvature four degrees. The work will be comparatively light, and there will not be any heavy bridge work. Stations will be established at Belltown, Lakeville, Woodville, Grafton, Somerset and Weston. It has not been decided when construction will be started. (May, pg. 253.)

Edmonton, Dunvegan and British Columbia Ry.—We are officially advised that D. F. McArthur has the contract for the construction of this line from Edmonton to the Athabaska River, 120 miles. The clearing of the right of the right of way for 70 miles has been let. D. F. McArthur will grade the first 10 miles out of Edmonton. The contracts for the further grading have been let as follows: Porteus Bros, next 10 miles; next three miles, J. F. Cassels; next 10 miles, L. A. Johnson. Surveys are practically completed to the crossing of the Athabaska River, 120 miles, but the point of crossing has not been definitely fixed. Further clearing contracts are to be let, as required.

The plans for the entry of the line into Edmonton, and for the terminals, are not settled, but negotiations are in progress with the city and other interests. The steel for 120 miles has been ordered in the U.S., for June delivery. This will carry the line to the Athabaska River, which it is expected to reach by the end of the present season. T. Turnbull is Chief Engineer. (May, pg. 238.)

Elkhorn and Northern Ry.—The Manitoba Legislature has extended the time within which the line authorized to be constructed by chap. 92, statutes of 1910, may be built. (April, pg. 181.)

Erie, London and Tillsonburg Ry.—J. H. Teall, President, is quoted as stating that work on this projected railway will be started at an early date, so that application can be made to the Department of Railways for a contract under the act to aid the building of certain railways, the right to which will expire in August. The route proposed to be followed is from Port Burwell to London, via Corinth, Kingsmill and Belmont. It is expected to have the line built to Aylmer by Aug. 1.

We are officially advised that engineers are making surveys from Port Burwell, passing through Calton, Aylmer, Kingsmill and Belmont, and terminating in London, Ont.

Esquimalt and Nanaimo Ry.—A contract has been let to M. E. Hord, Victoria, B.C., for the construction of a 10 mile section from Courteney, south to Union Bay in the Comox district. Camps are being located on this mileage and every preparation made for pushing the work to a speedy completion. Tenders are reported to be under consideration for the construction of a 10 mile section northerly from McBride Jct., northerly towards Union Bay. This will leave a gap of about 25 miles, the right of way on which is being cleared, for which tenders will shortly be invited. A further section of the line north of Courteney to Campbell River will have to be built, to connect with the section northwest of Oyster River to near Hardy Bay, the route map for which was recently approved. (May, pg. 238.)

Fredericton and Grand Lake Coal and Ry. Co.—We are officially advised that a contract has been let to A. E. Trites, Moncton, N.B., for the construction of the line from Gibson to a connection with the New Brunswick Coal and Ry. Co.'s line at Minto, N.B., 31 miles. The company will supply the ties and bridges, the rails and fastenings, the contractor doing all other work. The track will be laid with 73 lb. steel relaying rails supplied by the C.P.R.

The contract for the steel bridges has been let to the Dominion Bridge Co. as follows:—Nashwaak River, four 80 ft. half deck girder spans; Noonan Creek, one 40 ft. half deck girder span; Burpee Mill stream, one 80 ft. half deck girder span; Little River, two 80 ft. half deck girder spans.

Press reports state that subcontracts have been let for construction as follows:—G. McPhail, Woodstock, N.B., three miles; J. C. Kitchen, Fredericton, N.B., five miles; D. C. Burpee and Son, Gibson, N.B., concrete and mason work.

The plans and book of reference showing the lands to be taken for the construction of this railway from Gibson on the Intercolonial Ry., and a connection with the New Brunswick Coal and Ry. Co.'s line west of Minto, have been deposited with the Commissioner of Public Works at Fredericton, and with the clerks of the peace for the counties of York and Sunbury.

The New Brunswick Legislature amended the charter of the company in certain particulars, details of which have already been given. Sir Thos. Tait is President and H. W. D. Armstrong Chief Engineer. (Mar., pg. 238.)

Gatineau and Ungava Ry.—The Dominion Parliament has changed the name of the company to the Ottawa and Ungava Ry., and extended the time within which the lines authorized to be built by chap. 102, statutes of 1910, may be built. (Dec., 1911, pg. 1137.)

Glengarry and Stormont Ry.—The Ontario Legislature has incorporated a company with this title, C. L. Hervey, A. A. Mellor, Montreal, and T. Burgess, Ottawa, as provisional directors, to build a railway from the C.P.R., on the eastern boundary of the province in Lancaster tp., to the St. Lawrence River, in

Charlottenburg tp., and thence to Cornwall, and branch lines. (Mar., pg. 120.)

Grand Lake and Bell River Ry.—A subsidy has been voted by the Dominion Parliament in aid of the building of a railway from Bell River on the National Transcontinental Ry., along the Bell River to Twenty-one Mile Bay on Grand Lake, or to Rabbit Lake on the Ottawa River, not to exceed 45 miles.

The Quebec Legislature has voted 2,000 acres of land a mile in aid of the projected line, from the National Transcontinental Ry. to Twenty-one Mile Bay.

Great Northern Mining and Ry. Co.—A subsidy has been voted by the Dominion Parliament in aid of building a line from Little River, through Belle Marche, to Eastern Harbor, Cape Breton Island, N.S. (July, 1911, pg. 645.)

The **Guelph Patent Cask Co.** has been authorized by the Quebec Legislature to build and operate a railway and branches.

Halifax and Eastern Ry.—The Provincial Engineer of Nova Scotia in his annual report for the year ended Sept., 1911, states that early in the year the plans for a large portion of the proposed line from near Halifax to Guysboro, and Country Harbor, etc., were submitted to the company and preparations were made for early construction. The company entered into negotiations with the Dominion Government, with the result that the work was taken over by the Federal authorities, thus relieving the province of all responsibility in connection with this important work. (Jan., pg. 21.)

Howe Sound and Northern Ry.—Tenders are being asked for construction from the end of the present line to mileage 12, from mileage 12 to 24.1, and for a branch line from mileage 2.3 on the present line, for 2.7 miles along the Squamish River Valley. Cleveland and Cameron, Vancouver, B.C., are engineers.

The existing line starts from near Newport, on Howe Sound, B.C., and extends to the Cheakamus River, about 11 miles. The extension of the main line will carry it to near the Green Lake summit, and the work will be fairly heavy. The spur line will give access to the water front on the east side of Howe Sound. The line is used for the purpose of providing shipping facilities for logs, and has power to carry on a general business, for which special rolling stock has been added. (June, 1911, pg. 505. See also Pacific Great Eastern Ry.)

Hudson Bay and Pacific Ry.—An application has been made in the courts in London, Eng., for the compulsory winding up of the company. The matter was allowed to stand over, as counsel for the company stated that arrangements were being made for raising money for construction and other purposes, when the petitioners would be paid off. (May, pg. 238.)

Intercolonial Ry.—We are officially advised that Cavicchi and Pagano have sublet the work on the line from Dartmouth to Deans Settlement as follows:—Mile 1 to 12, D. Washburn, Woodside, Dartmouth, N.S.; mile 12 to 27, G. S. Whitehead Construction Co., Lawrence-town, Halifax County, N.S.; mile 34 to 36, W. Waddell, Musquodoboit Harbor, N.S.; mile 36 to 45, Garrett and Campbell, Musquodoboit Harbor, N.S.; mile 45 to 55, McDonald and MacIntosh, Little River, N.S.; mile 55 to 62, Chisholm and McGillivray, Middle Musquodoboit, N.S.; mile 62 to 68, Bellman, Gillis and Co., Deans Settlement, N.S.

Tenders are under consideration for the building of a brick and stone passenger station at Chatham, N.B., and for a standard wooden passenger station and dwelling at Nelson, N.B.

We are officially advised that the route for the proposed cut-off from the new shops at Moncton, N.B., to Sunnybrae, has not yet been finally located, nor the plans decided upon. (May, pg. 238.)

Iron Range Ry.—The Ontario Legislature has extended the time within which the company may build the line authorized by chap. 127, statutes 1907. (Feb., pg. 68.)

Kettle Valley Lines.—The route plan from Penticton to Osprey Lake summit has been approved by the Minister of Railways, while the application for the approval of the route plan from Vernon to Kelowna, B.C., was held over to enable the company and the Canadian Northern Pacific Ry. to come to terms. The Board of Railway Commissioners has approved location plans between mileage 53.92 and 65, west of Midway.

Press reports state that contracts have been let C. H. Williams and Co., six miles; Milligan, Dussault and Co., nine miles, and Porter and Connelly, ten miles, west of Carmi, B.C. This mileage, it is said, will take the line to within 15 miles of the summit. Another report states that G. A. Carlson and Co., Spokane, Wash., have been given a contract for building of 35 miles from above Trout Creek, to Osprey Lake, the work to be completed during 1913. (May, pg. 239.)

Kingston and Pembroke Ry.—It is proposed to expend about \$200,000 upon betterments this year, the principal expenditure being for the relaying of the line from Renfrew, Ont., for 80 miles towards Kingston with new steel rails, 65 lbs., C.P.R. standard section. A considerable quantity of ballast will be added, and a turntable is to be put in at Kingston. (Oct., 1911, pg. 937.)

Kootenay and Alberta Ry.—We are officially advised that the company does not contemplate any further construction this year, beyond the completion of the line started in 1910. This line starts from the C.P.R. Crow's Nest Pass line about a mile west of Pinetree station, and extends southwesterly for about 13 miles to Beaver Creek, the site of the Western Coal and Coke Co.'s mines. Owing to the wet season of 1910, the construction was not completed as was expected. (May, pg. 239.)

Lac Seul, Rat Portage and Keewatin Ry.—The Ontario Legislature has extended the time within which the company may build the lines authorized by chap. 102, statutes 1903. (Mar., pg. 121.)

L'Avenir and Melbourne Ry.—A subsidy has been voted by the Dominion Parliament for building a line from Melbourne to Drummondville, Que., 28 miles, in lieu of the subsidy voted in 1910. (April, 1911, pg. 321.)

Lindsay and Minden Ry.—The Ontario Legislature has incorporated a company with this title to build a railway from Lindsay to Mountain Lake, in Minden tp., with branch lines, and to develop and distribute electric power. The provisional directors are:—J. H. Delamere, M. Brown, J. J. Mortimer, Minden, Ont.; J. W. Wood, Lindsay, Ont.; S. F. Stinson, J. M. Delamere, Toronto. (April, pg. 182.)

Little Nation River Ry.—A land grant of 3,000 acres a mile has been voted by the Quebec Legislature for the projected railway from between Thurso and Montebello to Lake Minningue, about 30 miles. (Feb., 1911, pg. 155.)

Liverpool to Caledonia, N.S.—The Dominion Parliament has voted a subsidy for the building of a line, not exceeding 30 miles, from Liverpool, via Milton, to Caledonia, N.S. This is a re-vote of a subsidy first granted in 1907. It is available for any company building such a line.

London and Port Stanley Ry.—A representative of a British firm has laid a

proposition for the lease or purchase of the line before the London city council. A proposal from the Lake Erie Coal Co. for the electrification of the line is also under consideration. Press reports state also that G.T.R. officials have been looking over the line with a view to leasing it, but this is denied by the superintendent of the division. (May, pg. 239.)

Maine Central Rd.—By an act passed by last session of the New Brunswick Legislature, the company was given incorporation, with an office in St. Stephen, N.B., and formally vested with the ownership of the line from St. Stephen to Sprague's Mills. This piece of line was built as the Lewy's Island Rd., under an act passed in 1855. The title of the company was changed in 1880 to that of the St. Croix and Penobscot Ry., on the sale of the line and franchises under mortgage it passed under the control of the Washington County Ry., a company organized in the State of Maine, which was subsequently purchased by the M.C. Rd. The line has been operated during recent years as the Washington County branch.

Medicine Hat, Alta.—A bylaw has been passed by the taxpayers of Medicine Hat, Alta., authorizing the construction of a line of three miles, within the city limits, to connect with a three mile line without the city limits, to the Ansley coal mine. The latter section is to be built by the colliery company, and the first section will be controlled by the city. Construction will be started immediately. It is intended to run spur tracks off the line for industrial purposes. (See Ansley Coal Co., April, pg. 181.)

Metabetchouan Ry.—The Quebec Legislature has granted 1,000 acres of land a mile for a line from Lac Bouchette to St. Andre, on the River Metabetchouan, Que.

Michigan Central Rd.—The contract for the erection of the company's new station and terminals at Detroit, Mich., has been let to the George A. Fuller Co. The railway company will do the excavation, put in the foundations, and other preparatory work. It is estimated that there will be 10,000 tons of steel in the new station and train shed; that the station building will cost about \$2,500,000, and the total outlay on the terminals will be about \$6,000,000. (April, pg. 182.)

Midland Continental Ry.—Press reports state that plans have been prepared for a line from Edgeley, N.D., via Franklin, Nortonville and Millerton, to Jamesville, thence to Pembina, at the international boundary, 230 miles. Some grading has been done, and it is reported that contracts will be let at an early date for the completion of the line. F. K. Bull, Racine, Wis., is president, and H. H. Hurning, Edgeley, N.D., is engineer. (Mar., pg. 121. See Winnipeg, Salina and Gulf Ry.)

Midland Terminal Ry.—The Ontario Legislature has extended the time for the building of the line authorized by chap. 105 of the statutes of 1903, and has authorized the building of a line from Midland Harbor southeasterly to the G.T.R., near Coldwater, Ont. (April, pg. 182.)

Minneapolis, St. Paul and Sault Ste. Marie Ry.—Press reports state that a line is being built from Fordville, N.D., westerly via Devil's Lake to Drake, 130 miles, the contractors being Foley, Welch and Stewart. (Mar., pg. 121.)

Miramichi Valley Ry.—The New Brunswick Legislature has incorporated a company with this title to build a railway from Newcastle, or from a junction with the Intercolonial Ry., near Newcastle, along the valley of the Miramichi River to Tracadie. The company is authorized to operate vessels, and to build

docks, wharves and warehouses as a part of its undertaking. The provisional directors are:—Jas. Robinson, E. A. McCurdy, D. Morrison, W. L. Allan, W. A. Park, E. H. Sinclair, Hon. A. Ritchie.

Montreal and Lake Victoria Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from Montreal to the National Transcontinental Ry at Grand Lake Victoria, Que., and thence to Migiskan River, and on to Hannah Bay, on James Bay, Ont. The railway committee directed that the title of the company as applied for be abandoned, and that the present one be adopted. (See Montreal Transcontinental Ry., April, pg. 182.)

Montreal and Northern Colonization Ry.—The Quebec Legislature has extended the time for the building of the lines mentioned in our Mar. issue. (Mar., pg. 121.)

Montreal to National Transcontinental Railway.—It is reported that F. H. Clergue, Sault Ste. Marie, Ont., is negotiating with the Dominion Government, with the view of obtaining a contract to build a line from Montreal to the National Transcontinental Ry. and thence to the mouth of the Nottoway River on James Bay, for which a subsidy was voted last session. A land subsidy in aid of such a railway has been voted by the Quebec Legislature.

F. H. Clergue is quoted as stating that the first vessel of the Hudson Bay Navigation Co. will sail from Montreal, July 1, for the mouth of the Nottoway River, carrying a party of engineers, explorers, etc. It is proposed to make a thorough examination of the valley of the river, and to make surveys in connection with a projected railway.

While this line is mentioned as being the one in which Mr. Clergue is interested, there is a possibility that he may be looking after the location of a terminal on Hudson Bay for the Algoma Central and Hudson Bay Ry., which has power to extend the line now building to the National Transcontinental Ry. to Hudson Bay. (May, pg. 239.)

Montreal Tunnel Co.—A delegation representing municipalities on the south shore of the St. Lawrence River contiguous to Montreal, waited on the Dominion Government, May 2, to ask that the company's bonds be guaranteed for \$15,000,000 at 4½% for 50 years. The company proposes to bore a tunnel from St. Lambert and Longueuil, under the St. Lawrence River to Montreal, following the line of St. Denis St. to Cote St. Michel. It is proposed to provide accommodation in the tunnel for steam railways and for high speed electric lines. Terminals are to be provided, with a passenger station at the Champ de Mars. Consideration of the application was promised.

Naas and Skeena River Ry.—The Dominion Parliament has voted a subsidy for a line from Nasoga Gulf, or other point on Portland Inlet or Naas River, towards the anthracite coal deposits on the Skeena River, near Groundhog Mountain, B.C., not to exceed 100 miles. (Dec., 1911, pg. 1139.)

Nerepis and Long Island Ry.—The New Brunswick Legislature has incorporated a company with this title to build a line from Welsford on the C.P.R. to the proposed St. John River Valley Ry., between Gagetown and Hampstead, a spur line from near Petersville to the Clones district, and other branch lines. The provisional directors are:—H. M. Woods, J. M. Queen, J. B. M. Baxter, F. C. Taylor, A. R. Slipp. (Apr., pg. 182.)

New Brunswick Coal and Ry. Co.—Traffic on this line was resumed May 13, a temporary pile structure having been put in to replace the span of the Washademoak bridge which was washed out April 10. Owing to the present high water it will not be possible to put in a

permanent span until later in the year. (Sept., 1911, pg. 835.)

Northern Vancouver Island Ry.—Press reports state that T. A. Kelly is making a reconnaissance survey from Rupert Arm on Quatsino Bay, and that a second party is working to meet him from Fort McNeil and Hardy Bay, on Vancouver Island. The survey parties are expected to be in the field for about four months. (Apr., 1911, pg. 321.)

North Shore Ry. and Navigation Co.—The New Brunswick Legislature has incorporated a company with this title to build a railway from near Adamsville, on the Intercolonial Ry., to a connection with the National Transcontinental Ry. near Snowshoe Lake, and from Beersville to Richibucto Head, with a branch line from Harcourt to the Salmon River, and other branch lines. It is also authorized to acquire the North Shore Ry., originally the Beersville Coal and Ry. Co., extending from Adamsville to Beersville, with the branch from Beersville to Mount Carlyle, and operate it in connection with its authorized line as one railway. The provisional directors are:—G. W. Fowler, Sussex, N.B.; M. F. Keith, Moncton, N.B.; A. B. Carson, Rexton, N.B.; H. J. Von Hazen, E. E. Smith, New York City; J. H. Wood, W. A. P. Davis, Philadelphia, Pa. H. J. Von Hazen is one of the principal owners of the present North Shore Ry. (See North Shore Ry., April, pg. 182.)

Northeastern Ry.—The Quebec Legislature has extended the time within which this projected railway may be built, and authorized a change in its title to the North Ry. (Jan., pg. 22.)

Pacific Great Eastern Ry.—P. Welch, Vice President, is quoted as stating that several survey parties are in the field, and that it is expected that the reports will be prepared so that construction can be started at both ends of the line at an early date. Some preliminary construction work is being done at Fort George, the point of junction with the G.T. Pacific Ry. The company has power to take over the Howe Sound and Northern Ry. line, and while negotiations with that object in view have taken place, nothing definite appears to have been settled. Press reports state that there is a difference of \$10,000 between the price offered by the P.G.E. Ry. and the amount which the H.S. and N. Ry. asks. (May, pg. 239.)

Pacific and Hudson Bay Ry.—The Minister of Railways has approved the route plan of this projected railway from Kimsquit to Netal-Kus Lake, B.C. (July, 1911, pg. 647.)

Prince Edward and Hastings County Ry.—The Dominion Parliament has incorporated a company with this title for the purpose named in our April issue. (April, pg. 182.)

Quebec Central Ry.—The Dominion Parliament has voted subsidies for a line from mileage 30 out of St. George to St. Sabine, and thence to Sionne tp., Que., not to exceed in all 51.34 miles.

A subsidy of 3,000 acres of land a mile has been voted by the Quebec Legislature to the Q.C.R. Co. to extend the line from St. George to the boundary line between Dorchester and Bellechasse, 1.50 mile; and of 2,000 a mile to "a company" to extend the Quebec Central Ry. from the Dorchester-Bellechasse boundary, easterly for 20 miles. (Jan., pg. 23.)

Quebec Eastern Ry.—We are officially advised that surveys are being made for the proposed line between Sherbrooke and Quebec, and that it depends entirely upon the completion of these surveys when construction will be started. (April, pg. 182.)

Queen's Central Ry.—The Nova Scotia Legislature has extended the time within which the company may build the line authorized by chap. 166, statutes of

1910. The company has power to build a line from Brooklyn via Milton, to a junction with the Halifax and South-western Ry., between Pleasant River and Caledonia. (Sept., 1910, pg. 729.)

Queen's County Ry.—The Nova Scotia Legislature has extended the time within which the railway, authorized to be built by chap. 174, statutes of 1909, may be built. The company was authorized to acquire the line from Wilkin's Siding on the Halifax and Southwestern Ry., built by the Sable Lumber Co., and to extend it as may be required. (Nov., 1909, pg. 831.)

Quinze River and Ottawa Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from Kipawa northwesterly to the Quinze River, Que., with power to make connection at Kipawa with the C.P.R. (Mar., pg. 121.)

Richmond, Magog and Stanstead Ry.—The Quebec Legislature has granted 2,000 acres of land a mile for a line from Richmond to Stanstead, about 50 miles, with a branch from Cherry River to Waterloo, 20 miles. (May, 1911, pg. 413.)

Richmond-Melbourne-Drummondville.—The Quebec Legislature has granted 2,000 acres of land a mile for a railway from Richmond or Melbourne to Drummondville, Jue.

Rosevale to Moncton, N.B.—A subsidy has been voted by the Dominion Parliament for a railway from Rosevale, Albert County, to Stoney Creek, and thence to Moncton, 22 miles.

St. Agathe des Monts to Howard.—The Dominion Parliament has voted a subsidy for the building of a line from St. Agathe des Monts station, on the C.P.R. Northern Colonization Ry., to Howard tp., Argentine county, 15 miles.

St. Croix Docks and Ry. Co.—The New Brunswick Legislature has incorporated a company with this title to build a line from St. Stephen to Oak Bay, or below the Ledge, on the St. Croix River, and to construct terminals, docks, wharves, etc., there. The provisional directors are:—G. A. Grimmer, D. F. Maxwell, W. H. Berry, F. P. McColl, F. M. Murchie, G. J. Clarke.

St. John and Quebec Ry.—A press dispatch states that an issue of \$4,500,000 of 4% debentures, guaranteed by the province of New Brunswick, has been placed on the London market at 98½.

We are officially advised that contracts for grading, tracklaying and ballasting, have been let as follows: Frederickton to Woodstock, 62 miles, Quebec Contracting Co., Montreal; Woodstock to Centreville, 23 miles, Kennedy and McDonald, Antigonish, N.S. The contracts for the line from Frederickton southerly were under consideration when we were advised, and press reports state that a contract for this work has been let to James S. Corbett and Sons, Ltd. Ross Thompson, Frederickton, is Chief Engineer. (April, pg. 182.)

St. Leonards to Dudswell.—The Quebec Legislature has granted 2,000 acres of land a mile for a line from St. Leonards, on the Intercolonial Ry., to the junction of the Quebec Central Ry. and the Maine Central Ry., in Dudswell tp., Que.

Saskatchewan Central Ry.—The Dominion Parliament has extended the time within which the company may build the line authorized by chap. 160 statutes of 1910. (Dec., 1911, pg. 1141.)

Saskatoon and Hudson Bay Ry.—Press reports state that a committee has been appointed to look after the company's interest in the West, with a view to enabling organization to be completed by the fall. The provisional directors are:—F. O. Fowler, Winnipeg; V. T. Bartram, Toronto; C. O. Foss, St. John, N.B.; H.

Pardee, Philadelphia; J. B. Craven, New York City. (July, 1911, pg. 649.)

Saskatoon Transfer Ry.—The plans of this projected railway show lines connecting the C.P.R. with the G.T. Pacific Ry., and the Canadian Northern Ry., and passing through what is being developed as a manufacturing district in West Saskatoon. Two industries are starting up in the district in June, and negotiations are in progress which it is hoped will result in the erection of additional factories in the near future. The factory district will extend the whole way between the lines of the three railways named, and in width from Caledonian to Wabash Avenue, and a site reserved for union stock yards will also be served. The plans of the line have been prepared by T. W. Brown, C.E., and we are advised that it is hoped to complete the organization of the company and to start construction by July. The provisional directors named in the Saskatchewan act incorporating this company are:—C. I. Alexander, L. N. Le Valley, J. G. Hill, Saskatoon, Sask. (April, pg. 182.)

Simcoe, Grey and Bruce Ry.—A subsidy has been voted by the Dominion Parliament for 50 miles of the projected railway between Kincardine and Orillia, Ont., this mileage to include the portion of the line between Owen Sound and Meaford, Ont. (July, 1911, pg. 649.)

Southampton Ry.—Contracts have been let, according to press reports, to Wm. McDonald and Sons, and to McDonald Bros., for the completion of the line from Millville south and southwest to Hawkshaw Bridge, on the St. John River, N.B., 13 miles. G. A. Brown, Millville, N.B., is engineer. The Dominion Parliament has voted a subsidy for a line from Millville, on the C.P.R., to Pokrok Bridge, on the St. John River, N.B., not to exceed 13 miles.

Sussex, Studholme and Havelock Ry.—The New Brunswick Legislature has incorporated a company with this title to build a railway from Havelock to a junction with the Intercolonial Ry. in Sussex parish, King's County. The provisional directors are:—S. A. McLeod, G. B. Jones, J. E. McAuley.

Sydney and Louisburg Ry.—The Nova Scotia Legislature has granted, among other powers, an extension of time for building branch lines. (Oct., 1911, pg. 937.)

Temiskaming and Northern Ontario Ry.—An act has been passed by the Ontario Legislature repealing sec. 5, chap. 18, statutes of 1907, and substituting therefor a section providing that the location of the line and of all branches, the plans of all works proposed, and the bylaws of the corporation, shall be subject to the approval of the Lieutenant-Governor-in-Council. A new section provides that the Commission may make regulations fixing the fares and tolls to be charged, which are to be approved by the Lieutenant-Governor-in-Council before they become operative, and confirming the regulations fixing fares and tolls already made. The act also confirms the agreements made with the G.T.R. and the Canadian Express Co. A summary of the first of these agreements, as confirmed by the Dominion Parliament, was given on pg. 235 of our last issue. (May, pg. 240.)

Toronto, Hamilton and Buffalo Ry.—Engineers are engaged in making surveys of the line in the city, and of the streets in its vicinity, and the city authorities state that they expect shortly to receive a proposition from the company, regarding improvements, which would include the lowering of the streets at the railway crossings. (April, pg. 183.)

Toronto, Lindsay and Pembroke Ry.—The Dominion Parliament has voted a subsidy for a line from Golden Lake to

Bancroft, Ont., not exceeding 51 miles. This is a revote of the subsidy of 1910.

United Goldfields of British Columbia.—The Dominion Parliament has authorized the company to build its projected railway from Frank, Alta., through ranges three or four to Grassy Mountain.

Vancouver Island and Eastern Ry.—The Dominion Parliament has extended the time within which the company may build its projected railway and bridges from Vancouver Island across Seymour Inlet to the mainland, and thence easterly. (Dec., 1911, pg. 1141.)

Western Dominion Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from near Cardston, Alta., via Pincher Creek, to the C.P.R. Crows Nest Pass branch at Lundbreck, thence northerly to Calgary and Edmonton, Alta., and Fort St. John, B.C., with a branch from Pincher Creek to the Old Man River. The provisional directors are:—J. E. Askwith, J. O. Carss, W. R. Askwith, O. E. Culbert, Ottawa; H. McI. McCallum, Regina, Sask.

Press reports state that U.S. capital is being invested in this projected railway, which is said to be a revival of the Alberta Pacific Ry. proposal. Arrangements are said to be nearly completed for surveys from Pincher Creek to Calgary, Alta. H. M. Goodman is reported to be in charge.

A meeting of the shareholders was called to be held in Ottawa, May 21, for organization purposes. This company has power to take over the Alberta Pacific Ry. charter. (See Alberta Pacific Ry., May, pg. 238.)

Winnipeg North Eastern Ry.—The Manitoba Legislature has given the company power to amalgamate with other companies, and has otherwise amended the act of incorporation passed in 1911. The amendments do not affect the company's power to build railways. (Mar., pg. 122.)

Winnipeg River Ry.—The Manitoba Legislature has granted the company power to amalgamate with other companies, and has amended its charter in several particulars. Its power to build railways is not affected by the amendments. (Mar., pg. 122.)

Winnipegosis and Northern Ry.—The Manitoba Legislature has incorporated a company with this title to build a railway from the Porcupine Mountains district, near Steep Rock River, to Dawson Bay, on the west shore of Lake Winnipegosis, and crossing the Canadian Northern Ry. near Mafeking station. The provisional directors are:—B. A. C. Craig, P. A. McEvoy, W. J. Rooney, G. F. Morrison, Toronto. (April, pg. 183.)

Winnipeg, Salina and Gulf Ry.—Press reports state that negotiations are in progress for the sale of \$13,000,000 of the company's bonds in Paris, France, and that construction will be started as soon as the funds are available. Surveys are reported to be completed on about 200 miles of the line in the U.S., and a general contract for construction let to the Brindley Co., New York. H. L. Miller is president, and H. G. Wylie, Salina, Kan., is engineer. (Feb., pg. 68. See also Midland Continental Ry.)

Yukon Railway Extension.—A. Thompson, M.P. for the Yukon district, in an interview at Vancouver, B.C., May 1, said he hoped that the Dominion Government would send out an expedition to make a reconnaissance survey of a route for a railway from the Lynn canal into the interior. The people resident in the territory hoped that in time there would be a railway traversing the Yukon plateau from end to end and connecting with the line proposed to be built by the U.S. Government through Alaska, from Seward to the Yukon River.

Railway and Allied 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, T. Marshall, Canadian Express Bldg., 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.

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.

NOVA SCOTIA SOCIETY OF ENGINEERS, A. R. McCleave, Halifax, N.S.

QUEBEC TRANSPORTATION CLUB, J. S. Blanchet, Quebec.

WESTERN CANADA RAILWAY CLUB, W. H. Rosevear, 25½ Princess St., Winnipeg. Meetings at Winnipeg 2nd Monday each month except June, July and August.

Transportation Conventions in 1912.

June 4.—Association of Railway Telegraph Superintendents, New York City.

June 5.—American Association of General Baggage Agents, New York City.

June 11-13.—International Association of Railway Special Agents and Police, Buffalo, N.Y.

June 12-14.—Master Car Builders' Association, Atlantic City, N.J.

June 16-18.—Wood Preservers' Association, Chicago, Ill.

June 17-19.—American Railway Master Mechanics' Association, Atlantic City, N.J.

June 18.—Train Dispatchers' Association of America, Louisville, Ky.

June 18-21.—American Association of Freight Agents, Detroit, Mich.

June 19.—Freight Claim Association, Buffalo, N.Y.

June 25-26.—Association of Transportation and Car Accounting Officers, Bluff Point, N.Y.

June 26.—Association of American Railway Accounting Officers, Quebec, Que.

July 9.—American Railway Tool Foremen's Association, Chicago, Ill.

July 23-26.—International Railway General Foremen's Association, Chicago, Ill.

Aug. 15.—International Railroad Master Blacksmiths' Association, Chicago, Ill.

Aug.—Travelling Engineers' Association.

Sept. 9.—International Association of Ticket Agents, Muskoka, Ont.

Sept. 10-12.—Roadmasters' and Maintenance of Way Association, Buffalo, N.Y.

Sept. 10-13.—Master Car and Locomotive Painters' Association of United States and Canada, Denver, Col.

Oct.—American Railway Bridge and Building Association, Baltimore, Md.

Oct. 7-11.—Association of Transportation and Car Accounting Officers, Chicago, Ill.

Oct. 7-11.—American Electric Railway Association, Chicago, Ill.

Oct. 8-9.—Canadian Ticket Agents' Association, Ottawa, Ont.

Oct. 15-17.—American Railway Bridge and Building Association, Baltimore, Md.

Oct. 17-19.—American Association of Dining Car Superintendents, Denver, Col.

Oct. 23-25.—Society of Railway Financial Officers, Atlantic City, N.J.

Nov. 6-10.—Association of Railway Electrical Engineers, Chicago, Ill.

Nov. 15.—American Railway Association, Chicago, Ill.

Nov. 15-16.—American Association of Freight Traffic Officers, Chicago, Ill.

Nov. 19-21.—Maintenance of Way Master Painters' Association, Chicago, Ill.

Dec. 12-13.—Association of Transportation and Car Accounting Officers, Louisville, Ky.

Among the Express Companies.

G. L. Misener has been appointed agent, Canadian Ex. Co., at Galt, Ont., vice W. H. Montgomery.

J. W. Herbert has been appointed agent, Canadian Northern Ex. Co., at Regina, Sask., vice W. A. Best, appointed cashier.

The Board of Railway Commissioners has defined the express delivery and collection limits of Sydney, N.S., Toronto, Ont., and Kelowna, B.C.

The Canadian Northern Ex. Co. has opened offices at St. Norbert, Man.; Ceylon, Marcellin and Wroxton, Sask., and has closed its office at Vandura, Sask.

The Board of Railway Commissioners has issued order 16399, dated Apr. 27, ordering express companies to prepare tariffs, or supplement to Express Classification, showing scale of charges for the return of the proceeds of c.o.d.'s, upon other than merchandise rate basis, and to file same within three months.

The Dominion Ex. Co. announces that on the opening of navigation on the Muskoka Lakes, it has established waybill offices at Beaumaris, Minett, Port Carling, Port Cockburn, Port Sandfield, Rosseau, Royal Muskoka and Windermere. Shipments to other than regular ports of call on the lakes are accepted at tariff rates to Bala, with the addition of the following rates: For seven pounds or under, 15c; 7 to 20 lbs., 20c; 20 to 80 lbs., 25c; 70 to 100 lbs., 35c; over 100 lbs., 35c. per 100 lbs. All charges must be prepaid and shipments waybilled to Bala only. Shipments will not be handled on the vessels on Sundays, and money and valuables will not be handled on the lakes. They will be waybilled to Bala and the consignee notified.

Canadian Express Company's Staff.

The superintendents' divisions and route agents territory have been revised as follows:—

SUPERINTENDENTS.

E. ALLEN, Western Division, including Northern and Midland Divisions, except the portion of the division between Belleville and Peterboro and between Whitby and Manilla Jct. Route Agents, agents, and other employes in this territory will report all routine matter to him. Office, Toronto.

H. C. CREIGHTON, Atlantic Division, has charge of all details on Intercolonial Ry. east of Riviere du Loup, and all lines operated by the company in the Maritime Provinces. Office, St. John, N.B.

P. A. PATERSON, Central and Eastern Divisions, including the portions of

Midland Division between Belleville and Peterboro and between Whitby and Manilla Jct., Ont. Office, Montreal.

N. J. ROSS, North Western Division, including main line of the Grand Trunk Pacific Ry. and branches, from Port Arthur, Ont., to Hinton, Alta. Office, Winnipeg, Man.

ROUTE AGENTS.

W. G. BALFOUR, Montreal, routes 3, River Beaudette to Kingston, inclusive; 4, Kingston to Port Union, inclusive. 18, 21, 25, 80, 81, 82, 83 and 109 reporting to Supt. Paterson.

G. W. HICKEY, Hamilton, Ont., 12, 16, 26, 27, east of and including Eastwood, 29, 30, east of and including Simcoe; 31, not including Toronto; 38, south of and including Hespeler; 42, not including Stratford; 47, 106 and 108 reporting to Supt. Allen.

R. H. JONES, Toronto, Ont., 5, not including Toronto and Parkdale; 13, 36, not including Galt; 38, north of and including Guelph Jct.; 39, 40, 41, north of and including Clinton Jct.; 43, 45, 126 reporting to Supt. Allen.

H. N. LINGLEY, Truro, N.S., 57, Amherst to Halifax, both inclusive; 60, 61, 62, 63, 64, 66, 91, 98, 100, 101, 102, 111, 116, 117, 118, 119, 123 reporting to Supt. Creighton.

B. S. MURRAY, London, Ont., 6, not including Stratford; 14, 15, 17, 27, east of and including Nixon; 35, 37, 41, south of and including Brucefield; 103, 124 and 126 reporting to Supt. Allen.

R. H. MCINNIS, Montreal, 1, 2, St. Lambert to Island Pond inclusive; 7, 8, 11, 52, St. Lambert to Levis inclusive; 53, 54, 89 and 110 reporting to Supt. Paterson.

G. H. H. NASE, St. John, N.B., 55, 56, 57, Moncton to Aulac inclusive; 58, 59, 65, 90, 92, 93, 94, 95 and 122 reporting to Supt. Creighton.

W. E. NORMAN, Toronto, Ont., 4, west of and including Scarboro; 5, Parkdale only; 18, Lakefield only; 19, not including Port Hope; 20, 22, 23, Woodville to Blackwater Jct.; 32, 33, south of and including Orillia; 48, north of and including Cheltenham; 49, 50, 51 reporting to Supt. Allen.

H. C. M. POBRIIT, North Bay, Ont., 23, Lorneville Jct. to Midland, but not including Orillia; 24, 34, 99, 129, 72, Scotia Jct. to Depot Harbor; 130, 131, 132, reporting to Supt. Allen.

A. J. SEATON, Montreal, Que., 2, Montreal to Point St. Charles inclusive; 3, Montreal to Coteau inclusive. 9, 10, 67, 68, 69, 70, 71, 72, Madawaska to Kearney inclusive; 73, 84, 112, 113 and 114 reporting to Supt. Paterson.

F. M. SMITH, Winnipeg, Man., all routes on Grand Trunk Pacific from Port Arthur, Ont., to Hinton, Alta., inclusive, reporting to Supt. Ross.

Telegraph and Cable Matters.

The Great North Western Telegraph Co. has opened an office at Chaudiere Basin, Que., and has closed its offices at Ahmic Harbor, McKellar and Magnetawan, Ont., and Tracadie, N.B.

C. E. McManus, who has been circuit manager, Great North Western Telegraph Co., Toronto, for several years, has retired on a pension, on account of ill health. He was recently presented with a purse of gold by his associates.

L. A. Hutton, whose appointment as Inspector of Telegraphs, District 1, Alberta Division, C.P.R., Medicine Hat, was announced in our last issue, was born at Winnipeg, Mar. 1, 1883, and entered C.P.R. service, July 26, 1909, as telephone inspector, at Medicine Hat, Alta. He installed the first telephone train dispatching circuit in Alberta, was transferred to Calgary, Aug. 14, 1911, and retained the same position, to Apr. 1, 1912, the date of his present appointment.

Electric Railway Department

The Moose Jaw Electric Ry's Equipment, Plant, Etc.

This company, which is operating at Moose Jaw, Sask., has about eight miles of track, over three miles of which are double tracked. It is expected to build about 2½ miles more. Eight cars are being operated giving a service varying from five minutes on the principal line to ten minutes on the least travelled one.

The cars are single truck, p-a-y-e, manufactured by the Ottawa Car Co.

2 grinders, fitted with carborrhundum wheels, one single stage engine air compressed. This is to be used for cleaning generators, car motors and general purposes. The building is heated with a fan and vento heaters.

The power house part is 125 x 62 ft., and at the present there are two four cylinder crude oil Diesel engines, direct connected to two 125 kw. 550-600 v.d.c. compound railway generators. These Diesel engines are supposed to be 204 brake h.p. at sea level, and are operated on crude oil, the normal speed being

of another Diesel engine unit direct connected to generator, this unit being of sufficient size to operate one 275 k.w. railway generator.

The total expenditure on the system up to date is about \$350,000, including power house, etc., about \$50,000; power house equipment about \$45,000; rolling stock about \$53,000.

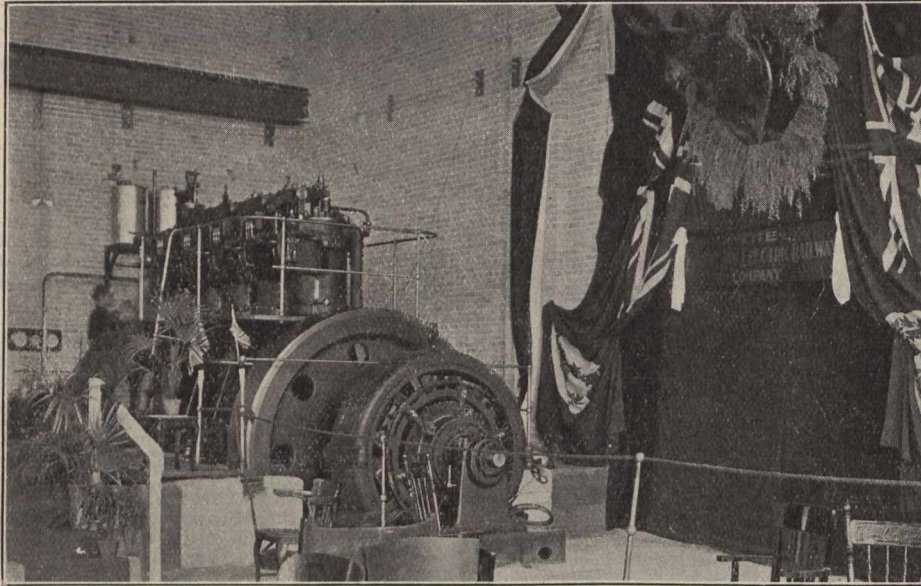
The company officials, etc., are:—President, A. A. Dion, Ottawa, Ont.; Vice President, N. F. Ker, Ottawa; Secretary, D. R. Street, Ottawa; Superintendent, A. Hector Dion, Moose Jaw, Sask.; Accountant, C. E. McGee; Master Mechanic, R. W. Moore; Power House Engineer, G. Connors.

London and Lake Erie Railway Co.'s Car Barns.

The plans for that company's new car barn at St. Thomas, Ont., show a building 208½ ft. deep, by a width of 97¾ ft., to the street and of 89 ft. at the rear. The foundations will be of concrete. The basement section will contain boiler and coal room, and the pits under the car tracks. The foundation walls will be 18 ins. thick, and one wall will extend from front to rear down the middle of the building. The area on one side of this wall will not be excavated, tracks being laid on the level; and on the other wall there will be two pits under the car tracks, one extending the entire length of the building, and the other extending half way. This will give accommodation for four sets of tracks inside the barn. The superstructure will be brick, with large window space, and special roofing.

The accommodation on the car floor, in addition to the storage of cars, will consist of a washroom for cars, 67 by 15 ft.; carpenter's shop, blacksmith's shop, mechanic's room, armature room, stock room, and master mechanic's office, these being contained in an area of 12 by 145 ft.; and on the opposite side of the building, in an area 12 by 54 ft. deep, will be the inspector's office, conductors' room, line department room, and sand and coal room. W. G. Murray, London, Ont., is architect.

Western Canada Power Co.—W. McNeill, Assistant General Manager, informed a meeting of ratepayers in New Westminster, B.C., April 30, that sur-

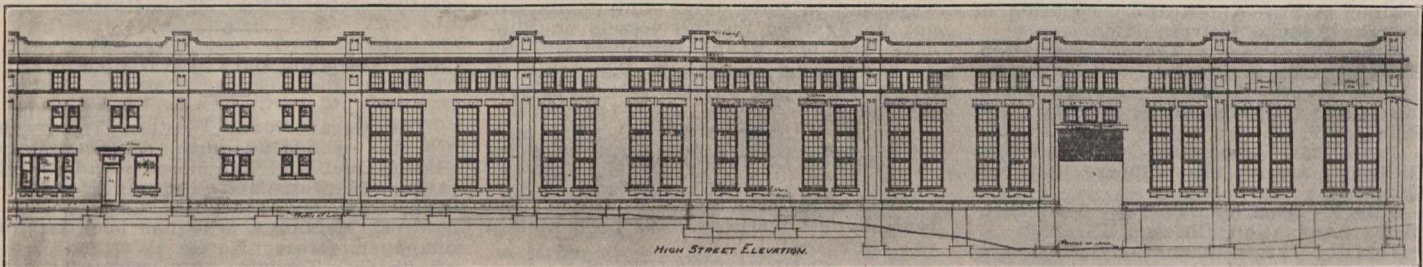


Moose Jaw Electric Ry. Power House Equipment.

They are equipped with two 40 h.p. Westinghouse motors, hand brakes being used. Single end cars are used throughout with the aid of three way Y's at the ends of the lines for turning.

The power house building, at the corner of Fourth Ave. and High St., 250 x 62 ft., one story high, contains the power generating units, as well as a heating plant, smithy, machine shop, car barn and office. The car barn is modern in every way, being exceptionally high and well lighted. A pit extends throughout the barn underneath tracks. Along one

250 r.p.m. This Diesel plant was the outcome of a great deal of study and thought as to conditions existing in Saskatchewan, the coal procurable being exceptionally poor, principally lignite, and imported coal is so expensive that it makes a steam proposition almost out of the question. These engines have been operating 18 hours a day since commencing on Sept. 1, 1911, and there has not been an interruption in service of any kind. The manager advises us that he considers their flexibility really remarkable, it being possible for the engine-



Moose Jaw Electric Ry. Car Barn.

pit a five-ton hydraulic jack is in use for changing wheels and other repair work to cars. One section of rail can be taken out at machine shop doors. A jib crane with trolley can pick up a pair of wheels or motor from pit and transfer to the beam runway in machine shop or transfer to any machine in the shop. The machine shop equipment consists of one geared lathe; one 24 x 30 back geared lathe; one 16 in. swing, 6 ft. bed, back geared lathe. one 24 x 30 back geared shaper with down feed power, all made by the Canada Corporation manufacture. One 5 lb. 26 in. vertical drilling machine,

eer in charge to have engines in operation and voltage on the board in 30 seconds. The photograph from which the accompanying illustration fig. 1 was made was taken when one unit was installed, and the decorations were put up for inauguration day. An eight ton crane spans the entire width of the building, a 50,000 gallon tank is located at the back of the power house, and with this size of tank it has been unnecessary to go into a cooling tower, as the volume of water is sufficient to procure efficient cooling. It is expected the very near future to have under way the installation

veys would be made immediately for the New Westminster-Port Moody section of the proposed Vancouver-Mission electric railway. (Mar., pg. 149.)

It is reported that the C.P.R., Canadian Northern Ry., and the G.T. Pacific Ry. are joining with the Saskatchewan Government in a scheme for the utilization of the South Saskatchewan river, for a water supply for cities and towns in the province, and for railway use. T. Aird Murray, M. Can. Soc. C.E., Toronto, is stated to have been engaged as consulting engineer, and it is estimated that the work will cost about \$20,000,000,

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for March, \$491,782; operating expenses, \$307,958; net operating earnings, \$183,824; renewal funds, \$37,935; net earnings, \$145,889; approximate income from investments, \$25,000; net income, \$170,889, against \$363,766 gross earnings; \$229,658, operating expenses; \$134,108, net operating earnings. \$29,770, renewal funds; \$104,338, net earnings; \$20,000 approximate income from investments; \$124,338, net income for March, 1911. Aggregate gross earnings for nine months ended Mar. 31, \$4,283,459; net earnings, \$1,510,420, against \$3,072,500, aggregate gross earnings; \$1,221,113 net earnings for same period 1910-11.

Calgary Municipal Ry.—Passenger earnings for April, \$43,235.45; miscellaneous earnings, \$452.05; total earnings, \$43,687.50; operating expenses, maintenance, etc., \$26,253.33; net earnings, \$17,434.17, against \$25,631.30 passenger earnings; \$730.25, miscellaneous earnings; \$26,361.55, total earnings. \$12,507.21, operating expenses, maintenance, etc.; \$13,854.34, net earnings for April, 1911. Revenue per car mile for April, 31.977c; operating expenses per car mile, 19.216c; surplus per car mile, 12.761c; cost of power per car mile, 4.5c; proportion of expenses to revenue, 60.9%, against 36.983c revenue per car mile; 17.546c operating expenses per car mile; 19.437c surplus per car mile; 6.260c, cost of power per car mile; 67%, proportion of expenses to revenue for April, 1911.

Cape Breton Electric Co.—Gross earnings for March, \$24,409.89; expenses and taxes, \$15,856.32; net earnings, \$8,553.57; interest charges, \$4,495.84; balance, \$4,057.83; sinking and improvement funds, \$1,140. net income, \$2,917.73, against \$24,198.60, gross earnings; \$14,752.20, expenses; \$9,446.40, net earnings; \$4,512.50, interest charges; \$4,933.90, balance; \$1,141.67, sinking and improvement funds; \$3,792.23, net income for March, 1911.

Edmonton Radial Ry.—Receipts for March, \$29,966.20; expenditures, \$35,084.61; deficit, \$5,118.41.

London St. Ry.—Gross earnings for April, \$22,646.78; expenses, \$17,113.33; net earnings, \$5,533.45; deductions, \$2,371.25; net income, \$3,162.20, against \$20,671.96, gross earnings. \$15,684.03, expenses; \$4,987.93, net earnings; \$2,363.05, deductions; \$2,024.88, net income, for April, 1911. Aggregate gross earnings for four months ended April 30, \$91,433.19; expenses, \$65,378.34; net earnings, \$26,054.85; deductions, \$9,547.25; net income, \$16,507.60, against \$81,752.82, aggregate gross earnings; \$60,749.97, expenses; \$21,029.85, net earnings; \$9,363.10, deductions; \$10,950.68, net income for the same period, 1911.

Hamilton St. Ry.—Receipts for quarter ended Mar. 31, \$118,810, an increase of \$30,172 over those for the same period, 1911. The city's percentage and mileage was \$11,384.78, an increase of \$2,312, as compared with the same quarter in 1911.

St. Thomas St. Ry.—It was recently reported that the debenture liability of the City of St. Thomas, Ont., in respect of the street railway, on Dec. 31, 1911, was as follows:—Original issue guaranteed by the city, maturing in 1928, \$50,000. second issue, \$7,428.39. The building of the line through the Ross street subway cost \$6,067.95, but no debentures were issued on account of this.

Toronto Ry., Toronto and York Radial Ry., Toronto Power Co., etc.—Gross earnings for March, \$668,194; operating expenses, \$333,371; net earnings, \$334,823, against \$588,662 gross earnings; \$297,931, operating expenses; \$290,731, net earnings for March, 1911. Aggre-

gate gross earnings for three months ended Mar. 31, \$1,964,549; net earnings, \$984,099, against \$1,735,136, aggregate gross earnings; \$869,857, net earnings for same period, 1911. The gross earnings of the Toronto Ry. alone, for May, were \$421,250.82, on which the city percentage and mileage was \$1,502.31, against \$367,534.65 gross earnings, and \$55,198.12, city percentage and mileage, for May, 1911.

Winnipeg Electric Ry.—Gross earnings for March, \$298,838; operating expenses, \$161,825; net earnings, \$137,013, against \$316,714, gross earnings; \$166,586, operating expenses; \$150,128, net earnings for March, 1911. Aggregate gross earnings for three months ended Mar. 31, \$917,519; net earnings, \$415,338, against \$972,359, aggregate gross earnings; \$455,349, net earnings for same period, 1911.

Street Railway Situation in London, Ont.

In our last issue reference was made to the work of a street railway expert, in London, Ont., in connection with the operation of the street railway, with a view to submitting a report to the city utilities committee, which is discussing the question of purchase on behalf of the city. The franchise granted to the company expires in 1925, and, under its terms, the company is compelled to make certain extensions to its system, and additions to its general equipment. Suggestions as to the acquirement of the property by the city have been under consideration from time to time, and this was thought to be a good time to take the matter up with the company, in view of the heavy expenditure called for under the franchise. The city council, at a recent meeting, decided to give the company ten days' notice that it intended to enforce the terms of the franchise as to new schedules, etc., or, in case of the company's default, to annul the charter. In commenting on this, a local press report stated that it is believed that in the event of the company failing to meet the city's demands, the value of the franchise would be forced down, and the city would get the property for less than it would otherwise cost.

At the recent annual meeting it was announced that the directors had decided on a considerable addition to the steam power plant, and since then, the street railway committee of the city council and the company have come to an agreement as to a number of extensions, details of which we give on another page, under electric railway projects, construction, betterments, etc.

An option was reported to have been held on the stock of the company, at 150, by Hon. Adam Beck, Chairman of the Ontario Hydro Electric Commission, and it is stated that this has been allowed to lapse, on the report on the railway property, made by an engineer of the commission, on Mr. Beck's behalf.

The report, which has not been published in detail, states that the earnings in 1911 were \$279,606, an increase of \$85,000 in six years, and a net increase of \$14,000 over 1910. While the earning power is increasing, the company has, it is said, made no provision for retiring the bonds from 1915 until the end of the franchise in 1925, a matter of \$30,000 a year. Upon this basis, it is stated that the stock is not valued at more than par.

It is reported that another offer will probably be made by private parties.

The municipal scheme, if carried out, involves the electrification of the London and Port Stanley Ry., and its incorporation in the civic system. The railway is owned by the city and leased to the Pere Marquette Rd.

A deputation of the street railway committee of the city council visited Toronto, May 8, to discuss the question

with the Toronto parties interested, but nothing definite was done. It is stated that negotiations are in progress with the Canadian Northern Ry. in connection with the London and Port Stanley Ry.

The Winnipeg Electric Railway Co.

For some time past negotiations have been in progress regarding the transfer of the company's properties to another ownership, but notwithstanding many rumors to the contrary, nothing definite has been done. A bill was introduced in the Manitoba Legislature, last session, for the incorporation of the Manitoba Power Company, with a capital of \$15,000,000, and office in Winnipeg, with power, among other things, to exercise the powers of the Winnipeg Electric Ry. Co., and to take over the whole of the company's properties, and other properties of a similar nature. Among some of the projects which it is stated were to be incorporated under the new company, are the Brandon St. Ry., the Rural Ry. of Manitoba, Winnipeg River Ry., and Winnipeg Northeastern Ry. The proposed incorporators were R. R. Muir, E. B. Reese, D. L. Mather, A. E. Muir and W. R. Mulock.

Considerable opposition was made by the city, and the bill was subsequently withdrawn.

Another bill was introduced for the incorporation of the Winnipeg Electric Co., W. J. Moran, R. D. Guy, E. F. Frith, C. W. Chappell and P. J. Scott being the incorporators, with a capital of \$30,000,000, to acquire stocks of other companies, engaged either wholly or partly in the operation of railway, light heat or similar businesses.

The negotiations between the company and the promoters of the first named bill are being continued, the latter having recently approached the city with a view to reaching a general agreement which would enable the deal to go through.

It is stated that the Winnipeg Electric Ry. may be placed under the jurisdiction of the recently formed Public Utility Commission, and that this would relieve the situation so far as the city is concerned, owing to the litigation with the company, as to poles on the streets, etc.

If an agreement with the city is reached, it is stated that the syndicate, of which E. B. Reese is the head, representing the J. P. Morgan interests, will make a new proposal to the company. A press report recently stated that an appraisal of the properties was being made on behalf of the syndicate.

Canadian Street Railway Association.

PRESIDENT, James Anderson, General Manager, Sandwich, Windsor and Amherstburg Ry.; VICE PRESIDENT, P. Dubee, Secretary Montreal Tramways Co.; SECRETARY-TREASURER, Acton Burrows, Managing Director, The Railway and Marine World.

ASSOCIATION'S OFFICE, 70 Bond St., Toronto. EXECUTIVE COMMITTEE.—E. P. Coleman, Manager of Railways, Dominion Power and Transmission Co.; H. M. Hopper, General Manager, St. John Ry.; J. E. Hutcheson, Superintendent, Ottawa Electric Ry.; C. B. King, Manager, London St. Ry.; D. McDonald, General Manager, Montreal Tramways Co.; M. N. Todd, President, Galt, Preston and Hespeler St. Ry.

ASSISTANT SECRETARY, Aubrey Acton Burrows, Secretary and Business Manager, The Railway and Marine World.

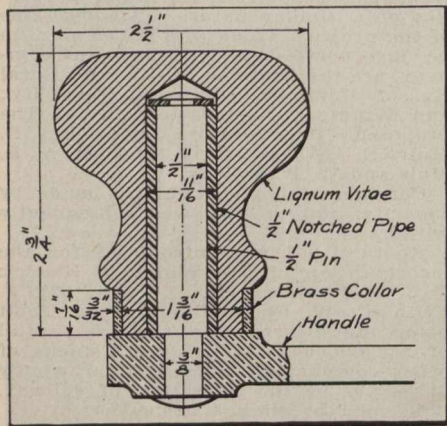
OFFICIAL ORGAN, THE RAILWAY AND MARINE WORLD.

A conference was held at Victoria, B. C., between officers of the British Columbia Electric Ry., and the Provincial Government, May 10, with reference to regulations governing the operation of electric railways and tramways in the province. The company suggests that the present regulations be amended in certain particulars, and the Government promised consideration.

Controller Handle Grip on Halifax Electric Tramways Co's Cars.

The Halifax Electric Tramway Co.'s cars, as they are delivered by the makers, are furnished with the usual type of controller handle grip. D. B. Logan, foreman machinist, having experienced considerable difficulty in maintaining them in good working order, made up a handle to his own design, as shown in the accompanying illustration, which is distinctively original in construction.

The standard design so commonly seen has several undesirable features of construction as observed by Mr. Logan. Principal among these is the tendency the grip has to bind on the supporting pin after the handle had been in service for some time and has been subjected



New Design of Controller Handle Grip.

to varying climatic conditions. The construction of the standard grip is the reason of its inherent weakness in this particular. The wooden body of the grip has a hole bored from end to end through the centre, into which a sleeve is pressed to receive the carrying pin on which the grip is free to revolve. The upper end of the carrying pin is threaded to receive a nut and washer for holding the parts together as a unit. This nut and washer are contained in a recess in the top end of the grip. As a filler to cover the opened end of the handle and to present a smooth end surface, there is inserted a tapered wooden plug, glued into the end. This construction would seem to be its undoing. The grip, when exposed a number of times to a damp atmosphere, or if for any reason it should be roughly used, has been found by Mr. Logan to let the end pin loosen and allow moisture to enter around the centre pin. This will in time cause the centre pin to rust, and if allowed to proceed sufficiently far, the grip will seize and no longer revolve on its centre pin. This is a cause of annoyance to the motorman, and the results from the efforts made by him to move it frequently result disastrously to the grip. Another factor of annoyance in this construction occurs from the moisture collected inside the grip, splitting it.

These drawbacks would seem to have been overcome in the design of grip produced by Mr. Logan. As before, there is a central pin rivetted into the brass handle of the controller. This pin, 1/2-in. in diam., is 3/8-in. diam. at the lower end, where it passes through the controller handle, and is 1/4-in. diam. at the upper end to receive a thin washer. Previous to rivetting over the end on the washer, a section of 1/2-in. pipe is slipped over the pin. This pipe section is notched with a cape chisel all over its outer surface, the resulting fish-hook projections pointing downwards. The grip is made from lignum vitæ, on account of its great durability. It is made to the

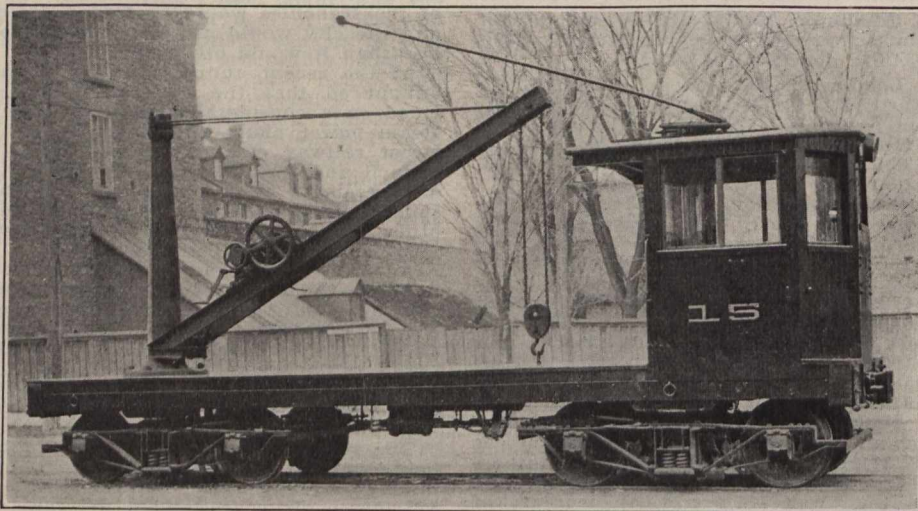
shape indicated, and has a tight fitting brass collar on the lower end to prevent the grip from splitting upward from that point. The bore of the grip is made a snug fit on to the pipe before the latter has its surface notched, and then both parts—that is, the pin and pipe section and the grip—are pressed together in a vise or any other convenient means of compression, forcing the wood down over the fish-hook projections, which, projecting downward, offer little resistance to the downward passage of the wooden grip. The projections prevent the grip from working off when once assembled.

This construction of grip has been found most satisfactory, having a remarkable degree of durability. Many of the drawbacks existing in the other type of handle are not to be found. In the first place, there is no plug to work loose and allow moisture to enter and rust the inner parts nor is there any other means of moisture entering. Likewise, the tough quality of the wood reduces the possibility of its splitting to a negligible quantity. Graphite placed in around the pin when being assembled in the first place, provides ample lubrication at all times.

Crane Car for Ottawa Electric Railway.

The accompanying illustration shows a handy crane car constructed for the Ottawa Electric Ry., and which was put in service last fall. The body was originally that of an old nose plough, with the superstructure removed and a 2-ton Brown Hoisting Machinery Co.'s crane placed at one end of the car body over the truck.

The car is 33 ft. long, with a short closed-in compartment at one end like a typical work car. The 2-ton crane on the open part of the car is hand operated, and has a clear swing in all directions. It is equipped with four 38B Westinghouse motors, mounted one on



Crane Car for Ottawa Electric Railway.

each axle, and operated from a K12 General Electric controller. It is also equipped with air brakes.

In the winter this car is used on its old service for removing snow on the suburban lines, having a large steel plough attached to the front for that purpose. This plough is raised and lowered by air pressure. The car is thus a double utility outfit, adaptable for service at all seasons. The crane feature in particular has been especially valuable at different points over the system in assisting in the loading and unloading of track materials, equipment, etc., and in general utility work.

Electric Railway Notes.

The London Street Ry. is in the market for six new cars. The size and style have not been decided on.

The Regina Municipal Ry. has received two single truck city cars from the Preston Car and Coach Co.

The Toronto and York Radial Ry. has received two express cars from the Preston Car and Coach Co.

The London and Lake Erie Ry. and Transportation Co. has received four passenger cars from the U.S.

The Edmonton Radial Ry. has ordered 15 passenger cars, two spare trucks, one work car and one flat car, in the United States.

Cable advices state that the city of Aberdeen, Scotland, has adopted the pay-as-you-enter system for its double deck electric cars.

John Baxter has been appointed acting Superintendent, Edmonton Radial Ry., vice H. Doughty, Superintendent, who resigned Mar. 31.

The Moose Jaw Electric Ry. has ordered one 21 ft. single end, convertible, pay-as-you-enter car body, 31 ft. over all, from the Ottawa Car Co.

E. A. Robert, President, Montreal Tramways Co., was elected a member of the Legislative Assembly for Beauharnois, in the Quebec elections, May 15.

The Lethbridge Municipal Ry. has ordered five double truck city cars, 41 1/2 ft. long, and five single truck city cars, 32 ft. 8 ins. long, from the Preston Car and Coach Co.

The Winnipeg Electric Ry. is negotiating with the city council to sprinkle all the streets on which the cars operate for \$4,000 a year. The agreement, if approved by the council, will run for three years.

A bylaw to bring all the public utilities of Winnipeg under the recently constituted Manitoba Public Utilities Commission was read a second time by the

city council, May 8. Further consideration of the matter was adjourned.

The New Brunswick Public Utilities Commission has directed the Moncton Tramways, Electricity and Gas Co. to issue eight tickets for 25c on its electric line in Moncton, N.B., to be used by all between 6.30 and 7.30 a.m., between noon and 1.00 p.m., and between 6 and 7 p.m.

A delegation from the American Electric Railway Association, which has been making a trip through the United States to the Pacific coast, visited Vancouver, B.C., May 15, when a public reception was held under the auspices of the B.C.

Electric Ry. and the Vancouver board of trade.

Following the passing of an act by the Ontario Legislature, granting, among other things, the right to operate motor busses on the streets, the city of Toronto has authorized the purchase of five double deck motor busses at \$10,000 each. They will be operated from the centre of the city to the Rosedale district.

The Toronto Ry. employees are asking for advances of wages to 28c and 30c an hour, an eight hour day on Sunday with time and a half pay, and free uniforms. The present agreement, which provides for 21c, 23c and 25c an hour, with first year men paying the whole cost of uniforms, second year men paying one half, and third year men having free uniforms, expires June 16.

Jas. Roosevelt, who, in Oct., 1911, was appointed Manager of the Transportation and Sales Departments, British Columbia Electric Ry., Vancouver, with supervision of the company's tram systems, both urban and interurban, on the main land and Vancouver Island, as well as the control of the sale of light and power at all points of the company's territory, has resigned.

W. H. Elson, heretofore Trainmaster, Interurban Lines, New Westminster, Lulu Island and Eburne, British Columbia Electric Ry., has been appointed Superintendent, District 1, covering Vancouver-New Westminster interurban line; District 4, covering Burnaby Lake Line; the New Westminster city lines, and terminals at New Westminster and Carrall St., Vancouver, with office at Vancouver.

The Dominion Power and Transmission Co. has received three double truck city cars for its Hamilton, Ont., service, from the Preston Car and Coach Co. They are 30 ft. long over bodies, with omnibus sides, double ends, 42 ft. long over all, finished inside with cherry, agasote ceilings, 3/8 in. agasote panelling on the outside instead of wood, which is a new departure, and are mounted on 27-G-1 trucks, with 4 1/2 ft. wheel base.

The case of the Winnipeg Street Ry. against the city of Winnipeg came before the Manitoba courts, May 27. The company is applying for a declaration that it has the right to maintain, operate and extend its present overhead system without interference, and for an order to compel the council to remove its poles and overhead system, which are in too close proximity to the company's system. Other orders and injunctions are also asked for, which affect the company's power and gas franchises.

E. Sterling, who has been appointed Superintendent, District 2, covering Lulu Island and Eburne-New Westminster line: District 3, covering Fraser Valley Branch, British Columbia Electric Ry., New Westminster, was born at Thornbury, Ont., Oct. 3, 1875, and entered railway service May, 1891, since when he has been, to Oct., 1896, operator and agent, C.P.R.; Oct., 1896, to Mar., 1897, train dispatcher, C.P.R., Smelter Jct., B.C.; Mar., 1897, to July, 1909, conductor, C.P.R.; July to Oct., 1900, acting Trainmaster, C.P.R., Nelson, B.C.; Oct., 1909, to May 1, 1911, Chief Dispatcher, B.C. Electric Ry.; May 1, 1911, to May 1, 1912, Division Trainmaster, B.C. Electric Ry., New Westminster.

A short time since a committee of employes of the Ottawa Electric Ry., appointed by Division 279 of the Amalgamated Association of Street and Electric Railway Employes, waited on Superintendent Hutcheson to present some 29 requests on the question of wages, hours of work and working conditions. Mr. Hutcheson declined to deal with representatives appointed by a union, but expressed his willingness to meet a committee of the conductors and motormen. The men applied to the Minister

of Labor for a board of conciliation, which has been granted. Travers Lewis, K.C., has been appointed to represent the company, P. M. Draper to represent the men, and Judge MacDougall, of Hull, Que., is chairman.

Following are the chief details of the 22 interurban passenger cars, which the British Columbia Electric Ry. is having built at St. Louis, Mo., as mentioned in our last issue:—

Length over body	40 ft. 0 ins.
Length of each platform from end of body to outside vestibule sheathing	4 ft. 8 ins.
Length over vestibules	49 ft. 4 ins.
Length over bumpers	50 ft. 8 ins.
Width at sill including panels	8 ft. 5 ins.
Width over posts	8 ft. 4 1/2 ins.
Extreme width	8 ft. 7 ins.
Height from rail over trolley boards	13 ft. 4 1/2 ins.
Height from rail to under side of sill	3 ft. 3 ins.
Height from rail to top of floor	4 ft. 2 ins.
Height from rail to centre of drawbar	2 ft. 10 1/2 ins.
Wheel base of truck	6 ft. 6 ins.
Wheels, diar.	34 ins.
Truck centres	27 ft. 10 ins.
Seats	Walkover reversible
Trucks, type	M.C.B.

E. L. Milliken, whose appointment as Manager, Cape Breton Electric Co., Sydney, N.S., was announced in our last issue, graduated from the Technical High School, Springfield, Mass., in 1905, and obtained the B.Sc. degree from the University of Maine in 1908. He has been engaged at different times with the Westbrook Electric Light and Power Co., Westbrook, Me.; Bodwell Water Power Co., Oldtown, Me., and in the Track Maintenance Department of the Bangor and Aroostook Ry. In 1908 he entered the Stone and Webster Management Association's Statistical Department, and in the same year was transferred to the Cape Breton Electric Co., Sydney, N.S., and has since held the position of solicitor, Superintendent of Distribution, and Superintendent of Lighting.

W. M. B. McDonald, heretofore Assistant Superintendent of Lighting, Cape Breton Electric Co., Sydney, N.S., has been appointed Superintendent of Lighting, vice E. L. Milliken, who was appointed Manager on the resignation of H. C. Foss, as announced in our last issue. Mr. McDonald graduated from McGill University with the degree of B.Sc. in 1907, when he entered the service of Allis-Chalmers-Bullock, Ltd., Montreal. He was later a demonstrator in the electrical laboratory at McGill University, and in 1909 was appointed foreman of the meter department of the Pensacola Electric Co., Pensacola, Fla., and transferred to the Cape Breton Electric Co., Sydney, N.S., Jan., 1912, as Assistant Superintendent of Lighting. Both of the companies named are under the Stone and Webster Management Association.

Allan Purvis, who has been appointed Manager of Interurban Lines, British Columbia Electric Ry., New Westminster, was born at Batavia, Java, June 29, 1878, and educated at the Merchant Taylor's school, Liverpool, Eng. He entered railway service at 12 years of age, with the C.P.R., being successively, Aug., 1890, to Feb., 1891, messenger, Stores Department; Feb. to Nov., 1891, storeman; Nov., 1891, to Sept., 1892, junior clerk at Vancouver, B.C.; Sept., 1892, to Aug., 1893, timekeeper, Donald, B.C.; Aug., 1893, to Oct., 1894, clerk, Vancouver, B.C.; Oct., 1894, to Mar., 1895, assistant storekeeper, North Bend and Kamloops, B.C.; Mar., 1895, to Sept., 1896, clerk and operator, Car Service and Fuel Department, Vancouver, B.C.; Sept., 1896, to Jan., 1899, chief clerk, Fuel Department, Vancouver, B.C.; Jan., 1899, to Feb., 1908, chief clerk to General Superintendent, Vancouver, B.C.; Feb. to Nov., 1908, Superintendent, District 4, Central Division, Souris, Man.; Nov., 1908, to Oct., 1909, Superintendent, District 3, Pacific Division, Nelson, B.C.; Oct., 1909, to Oct., 1911, Local Manager, Fraser Valley Branch, British Columbia Electric Ry., Vancouver, at which latter date he resigned.

Remodeling British Columbia Electric Railway Cars.

The company has about completed the remodelling of 27 interurban cars which were formerly equipped with four 50 h.p. motors and k-14 controllers. Seventeen of the cars are being altered to the General Electric Co.'s type m multiple unit equipment, consisting of four 75 h.p. motors and c-60 trucks. Ten cars, which are of lighter type, with less seating capacity, are being equipped with the Westinghouse type h.l. pneumatic control, with four 50 h.p. motors.

All of these cars are arranged for train operation, and those fitted with 75 h.p. motors will be available for service on the Fraser Valley line, the regular equipment of the cars on this division being similar as to control and motors.

The 17 large cars have each a seating capacity of 56 persons, 20 in the smoker, and 36 in the general compartment. The smaller cars seat 44 people, 10 in the smoker and 34 in the general compartment.

Fake Accident Cases in Toronto.

Following on the fake accident claims recently made against the Toronto Ry., as mentioned in our last issue, the charges of conspiring to fabricate evidence, and contempt of court were taken up at the Assizes held at Toronto, May 16, against J. W. Curry, K.C., J. H. Forrest, Claims Agent, Toronto Ry., A. Burnett and W. E. Smalling, detectives, the grand jury having thrown out the bill against R. J. Fleming, General Manager, Toronto Ry. The defendants, who pleaded not guilty, admitted indiscretion, and tendered a full apology. J. W. Curry, K.C., having been given leave, made a personal statement, to the effect that he had been called in consultation, and certain information placed before him which had been obtained from the Toronto Ry.'s special officer, A. Burnett, and subsequently, papers connected with the case and later reports were sent to him. The points on which he was consulted were the criminal prosecution of the medical man concerned, or the bringing of the case before the discipline committee of the Ontario Medical Council. He, having heard that the solicitor acting for Burnett was seeking instructions to issue a writ against the company, instructed that such instructions should not under any circumstances be given, and he had no idea that any civil action would be taken. What was in mind was the obtaining of sufficient evidence to bring the doctor before the Medical Council, and not to bring the court into contempt in any way. Since the case had been brought he had given the matter a great deal of consideration, and realized that the proper course for him to have taken was to have refused to go to court with the case and to have notified counsel for the then plaintiffs that there was no cause for action, and that coming into court with an action of that kind was an impropriety for which he could offer no defence.

Justice Latchford, who stated that there was nothing meretorious in the matter from beginning to end, decided that in view of the apologies tendered, the case need proceed no farther. He also stated in respect to the counsel who acted for the plaintiffs in the damage cases, that he was deceived, as anyone in the same position must have been, and that there was no imputation that he had acted in an unprofessional manner.

The grand jury returned a no bill against Dr. A. H. Garratt on a charge of wilfully obstructing a court of justice.

Electric Railway Projects, Construction, Betterments, Etc.

Alberta Interurban Ry.—See Railway Development, elsewhere in this issue. The line was originally projected as an electric railway, but has been renamed and proposes to run by steam or individual motor cars.

Bassano Electric Power and Development Co.—We are advised that no active steps have yet been taken towards the building of this company's projected railway from Bassano, Alta. Permission is being sought from the Board of Railway Commissioners to cross the C.P.R. tracks at Bassano, and from the Dominion Government to carry the line across an Indian reserve. A franchise has been secured from the town of Bassano, and preparations have, it is said, been made to start construction as soon as the permissions mentioned above have been obtained. (Mar., pg. 147.)

Berlin and Northern Ry.—The Ontario Legislature has changed the name of the Berlin and Bridgeport Electric St. Ry. to that of the B. and N. Ry. (See Berlin and Bridgeport Electric Ry., April, pg. 196.)

Berlin and Waterloo Electric Ry.—The Berlin, Ont., city council is being asked to submit a bylaw to the ratepayers to provide \$17,000 for the purchase of two new cars, and to build new car barns. (Oct., 1911, pg. 973.)

Brandon, Man.—A bylaw confirming an agreement between the city council and J. D. McGregor for the building of an electric railway in the city was voted on by the ratepayers May 21. The agreement provides that after its final execution the contractor will proceed with the construction of the railway, and have five miles completed by Dec. 1, and an additional two miles by June 1, 1913. The line to be standard gauge, laid with 70 lb. T rails. The contractor is to take over the track already laid or in progress of laying by the corporation at the original cost. The franchise is to extend for 30 years, and provision is made for the building of additional lines as required. The contractor undertakes to obtain the necessary act authorizing the building of the line, and to pay the corporation 3% of the gross earnings after it has been in operation five years, for a period of ten years; 4% for the next ten years, and 5% for the remainder of the term. Upon giving a year's notice the city can take over the line on termination of the franchise at replacement value, or renew the franchise for further periods of five years each. (See Brandon Electric Ry., May, pg. 251.)

British Columbia Electric Ry.—It is proposed to reconstruct the track on Hastings St., Vancouver, between Cambie and Main Streets, as soon as the Grenville St. reconstruction has been completed.

Construction has been resumed, west from Main St., Vancouver, of the line on Sixteenth Ave., towards Oak. This line will be double track except on the portion of the avenue which is within the Point Grey municipality, where a single track will be laid on the side of the avenue within the city.

At a meeting of the Burnaby board of works, May 1, an arrangement was entered into for the building of a line on Royal Oak Road, from the main line to the Government prison farm. The line is being built for the Provincial Government by the company and will be operated by the company under a special agreement, the Government protecting the municipality.

A conference has been arranged between the company and the municipalities affected by the proposed cut off from Highland Park to New Westminster, for the settlement of certain difficulties which have arisen in respect of street

crossings, and as soon as these matters have been adjusted construction will be resumed. This cut off passes through Burnaby municipality.

The Sixth St. extension in New Westminster has been completed and was put in operation May 6.

A contract is reported to have been let to Franklin and Sheppard for grading on Nanaimo St., from Hastings St. to Broadway, Vancouver. Provision will be made for a double track line, although it is only proposed to lay a single track at present. A contract is also reported to have been let to the same firm for grading for the second track on Fraser Ave., south from Twenty-fifth Ave., South Vancouver.

The laying of second track on Superior and Niagara Streets, Victoria, has been completed. (May, pg. 248, and April, pg. 196.)

Coquitlam, B.C.—Application is being made to the municipality in which the Coquitlam, B.C., townsite is situated, by the Minnehada Ranch Co., for the right to lay a tram line through the town. The company wants a tram line from the C.P.R. at the junction out to the ranch, five miles, and do not want a general franchise. The line would be built within three years, and the contract would run for 25 years, and if the municipality did not then buy out the company's rights, the franchise would be automatically renewed for a further 25 years. The proposed agreement was referred to the municipality's solicitors for consideration. H. L. Jenkins is president of the company.

Dunnville, Wellandport and Beamsville Electric Ry.—The Ontario Legislature has extended the time within which the company may build its line from Dunnville to Beamsville, Ont., and has authorized it to use any form of motive power. (Feb., pg. 91.)

Edmonton Radial Ry.—We are officially advised that the following improvements, extensions, and additions to plant will be made during this year:—Paving on 9,050 ft. of streets on which double track is laid, and 7,600 ft. of ballasting on improved streets. Track extensions—Spruce Ave., connecting Kirkness St. with loop at Park St., double track, 55,300 ft. paved and 500 ft. ballasted; First St. to Twenty-fourth St., via Wilson and Short avenues, double track, 3,700 ft. paved, 2,000 ft. ballasted; Saskatchewan Ave. and Murtle St. to south side of bridge, double track, 3,700 ft. open; Strathcona east extension, 4,000 ft. single track ballasted; Fifth St. west, Strathcona from bridge to Whyte Ave., double track, 2,330 paved, 1,320 ft. ballasted. Additional plant for the substation, and a testing equipment is now on order from the Canadian Westinghouse Co. (May, pg. 251.)

Edmonton Radial Ry.—A contract has been let by the Edmonton, Alta., city council, to Manders and Gregory for excavating, grading and paving on the extensions of the municipal street railway. The steel and other material to be provided by the city is in course of delivery. (May, pg. 251.)

Flathead Interurban Ry.—An enquiry has been made by D. R. McGinnis, President, F.I. Ry., if the Calgary, Alta., city council was willing to encourage the building of an electric railway between that city and Kalispel, Mont.

Greenwood-Phoenix Tramway Co.—We are officially informed that the tunnel under the mountain at Phoenix, B.C., has been driven for 3,000 ft., and that work has been closed down for over three months. No definite information is available when work will be resumed. The tramway is to connect Greenwood and Phoenix, B.C., and it is intended en-

tirely as a mining transport tunnel. The full length of the line will be underground for between 17,000 and 18,000 ft. The tunnel will be 9 by 9 ft. in the clear. The material up to the present has been hauled out by horses, but later it is intended to install electric power, which will be obtained from the South Kootenay Power and Light Co. at Bonnington Falls on the Kootenay River, south of Nelson. The tunnel is being built with the intention of using a 10 ton car, but whether this size will be used or not will depend entirely upon the amount of ore to be handled. D. McIntosh, Greenwood, B.C., is manager. (May, pg. 251.)

Halifax Electric Tramways Co.—Two measures affecting the company's railway were under consideration at the recent session of the Nova Scotia Legislature. The first sought to restrict the dividends to 8%, to prevent further capitalization, and to divide profits with the city after certain provisions had been made for extensions, while the second sought to compel the city to make extensions in a certain district. The measures were opposed, the first by the company and the other by the city, with the result that a compromise was arranged, under which some amendments were made, and the other matters were left over for a year. (Apr., pg. 196.)

Hamilton Radial Ry.—Engineers are reported to be in the field surveying a line from Oakville, Ont., the present terminus, via Lorne Park, to Port Credit. The route will, it is said, be along a private right of way, and an endeavor will be made to so locate it that it will have a station adjoining the Mississauga Golf Club, on the Credit River, between Port Credit and Lorne Park. (Apr., pg. 196.)

Hamilton St. Ry.—Discussing about railway matters, May 8, Manager Coleman is quoted as having stated that the great problem was to relieve the congestion on James St., between Barton and King Streets, and one of the suggestions made to effect this was to loop up Barton and King St. by a cross line on Ottawa St. (May, pg. 251.)

Humber Valley Electric Ry.—The Ontario Legislature has incorporated a company with this title to build a railway from Dundas St., Lambton, to the Humber River, southerly along the west bank to Bloor St., thence along the east bank of the river to the Lake Shore road, and thence easterly to Sunnyside Ave. R. H. Smith, C. M. Garvey, F. Regan, W. J. Jackson are the provisional directors. (Apr., pg. 196.)

Hamilton, Waterloo and Guelph Ry.—J. Patterson, Hamilton, is quoted as stating that the projected line from Hamilton to Guelph, Ont., will be gone on with this year, and that the extension to Toronto will come later. Press reports state that the intention is to connect up the Hamilton end of the line with the Hamilton Radial Ry., run over that line to Oakville, and build a new line into Toronto. (May, pg. 251.)

Kawartha Transportation Co.—The Ontario Legislature has incorporated a company with this title to build railways from Peterborough to Lakefield, Clear Lake, Stoney Lake and Apsley; from Peterborough to Chemong Lake, and from Peterborough to Rice Lake. The provisional directors are L. H. Grahame, E. R. Tate, C. W. S. Dunn, H. G. Fitzgerald, Lakefield, Ont. R. B. Rogers, L. M. Hayes, Peterborough, Ont. (May, pg. 196.)

Lacombe, Alta.—E. K. Strathy, President, is quoted as having stated that financial arrangements for the building of his company's line have been practically completed. The line is projected to run along Bennett Ave., Lacombe, westerly to Gull Lake. It is said that the right of way has been secured, and that

a large area of land has been laid out at Gull Lake as a summer residential park and pleasure resort. There are two charters in existence for electric railways radiating from Lacombe, but the press dispatches do not indicate which is interested in the present project. (See Lacombe and Blindman Valley Electric Ry., and Lacombe, Bullocks-ville and Alix Electric Ry., Dec., 1910, pg. 1069.)

The London and Lake Erie Ry. and Transportation Co. is preparing to erect a shop in St. Thomas, Ont., this summer, to be 210 by 91 ft., one story high, and built of brick. It will be divided by a brick wall, each half containing two tracks capable of accommodating four cars each. Under three of the tracks pits will extend from the front half way back, and under the fourth track the pit will extend the full length of the building. Accommodation will be provided for the master mechanic and other officials and operating staff, with stock room, etc. A request has been made to the St. Thomas city council to put in additional switches for the new shops on Talbot St. A contract for erection has been let to G. A. Ponsford.

Two propositions have been put forward with the object of securing an electric railway to Port Burwell. One is for a line starting from London and passing through Milestown, Orwell and Aylmer, and the other is a direct line from St. Thomas to Aylmer, from which point the two propositions run parallel to Port Burwell. The latter proposition seems to meet with most favor. Representatives from the three townships through which the proposed line would pass waited on the directors of the company and discussed the matter in April, and a further meeting was held May 3, when the representatives of the townships expressed themselves favorable to guaranteeing the company's bonds for \$20,000 a mile, and agreed that a committee be formed to apportion the amount on the four municipalities interested. The directors went over the proposed route in company with the township representatives and J. A. Bell, county engineer. The line will be an easy one to build, the only difficult piece of work on the route being the crossing of a ravine at New Sarnia.

The projected extension of the line from Lambeth to Delaware, six miles, was discussed with the directors by representatives of Delaware tp., May 2. The township offers a free right of way and a guarantee of bonds. The directors promised consideration of the proposal.

Representatives of municipalities interested recommended, May 8, that the townships be asked to guarantee the company's bonds for \$10,000 a mile towards the cost of extending the line from St. Thomas to Aylmer. The company asked a guarantee of \$20,000 a mile.

A proposition is under consideration for the building of a line from Ingersoll to London, and some approaches have been made to the company. General Manager Mower is quoted as stating that if a definite proposition is made the directors will consider it. (May, pg. 252.)

London, Aylmer and North Shore Electric Ry.—In connection with the projected electric railway to Aylmer mentioned under the title of the London and Lake Erie Ry. and Transportation Co., the first route spoken of is that originally proposed to be followed by the L.A. and N.S.E. Ry., which was incorporated by the Ontario Legislature in 1901. The London and Aylmer boards of trade are endeavoring to have the charter revived and a meeting was held in London, May 3. It was reported that the L.A. and N.S.E. Ry. Co. had not sold any common stock, but had issued 5% bonds, selling some and giving others in payment for services rendered. There

were also outstanding 160 shares, and W. Warnock, of Aylmer, held a judgment of \$10,000 against the company. It was decided to ask the municipalities to agree to the guaranteeing of bonds for \$300,000 as a preliminary to applying for a renewal of the charter. Dr. Sinclair, Aylmer, Ont., is interested in the project. (Oct., 1910, pg. 875.)

London St. Ry.—We are officially advised that the company has practically agreed with a committee of the London, Ont., city council upon certain changes and extensions of the tracks. The Wellington St. line is to be removed to Richmond St., thus straightening out one line, and a branch or belt line from this through Cheapside St. and William St., connecting with the present line on Oxford St., is to be built. A line is to be built from the end of the Oxford St. line at Adelaide St., on Adelaide St. to Central St., crossing the C.P.R. near the latter point. Three places on the system where the traffic is too heavy for single track are to be double tracked. These are on the Hamilton road from Rectory to Mamelton St., on Horton St. from Richmond to Wellington St., and on York St. from Ridout St. to the bridge. The tenders for the several works are not yet all in, consequently no definite decision has been reached as to who will do the work or when it will be gone on with. The company has been informed that another proposition is to be made by the Hydro-Electric Commission with regard to the supply of power.

Plans have been prepared by Moore and Munro, architects for a new powerhouse for the company, the estimated cost of which is \$15,000. (April, pg. 197.)

Moncton Tramways, Electricity and Gas Co.—We are officially advised that a change has recently been made in the control of the company, T. N. Barnsdall of Pittsburgh, Pa., and associates having acquired a majority of the stock. The following are reported to have been elected directors and officers:—President, R. Law, jr.; Vice President and General Manager, E. B. Reeser; directors, D. Henderson, F. W. Summer, O. P. Boggs, H. C. Stuart, O. E. Bartlett, H. N. Price is Superintendent of Tramways and Electricity, and A. B. Farmer, Superintendent of the Natural Gas Department.

The new management, we are advised, is devoting its energies chiefly to the introduction of natural gas at first, and the question of the street railway and its extensions is in abeyance. In all probability there will be some alterations in the routes proposed to be followed in the extensions as arranged by the former management. The company was restricted by its act of incorporation from using T rails, but as the use of grooved rails has proved unsatisfactory to both the company and the city, arrangements have been made with the city council to use T rails on all but paved streets. The work of completing the first section of the line is being gone on with. Natural gas has been installed under the boilers in the power house, thus doing away with coal. It is proposed to take up the question of extensions at an early date. (Mar., pg. 148.)

Morrisburg and Ottawa Electric Ry.—The Ontario Legislature has extended the time within which the line authorized by chap. 130, statutes 1909, as amended by chap. 145 statutes 1910, may be built. (Apr., pg. 197.)

Montreal and Southern Counties Ry.—Press reports state that contracts will be let at an early date for about 25 miles of extensions, and that a contract has been let to the Byers and Anglin Co. for the building of car barns, repair shops and offices in St. Lambert, Que. (May, pg. 253.)

Montreal Tramways Co.—Negotiations are in progress between the company

and Canadian Northern Ry. interests for the establishment of a street car service in the new suburb being laid out by the railway company at the back of Mount Royal. (May, pg. 252.)

Moose Jaw Electric Ry.—A site of 25 acres for park purposes has been secured by the company on the river, about two miles from the post office at Moose Jaw, Sask. Track is to be laid to the park at the earliest possible date. (Mar., pg. 148.)

Mount McKay and Kakabeka Falls Ry.—A proposition has been submitted to the Fort William, Ont., city council for running rights for the company over the street railway in Fort William, Ont. The company proposes to use large electrically driven cars.

The Ontario Legislature has extended the time within which the company may complete its projected lines and has authorized an increase of capital stock from \$250,000 to \$500,000. (May, pg. 252.)

Niagara Falls, Welland and Dunnville Electric Ry.—An act has been passed by the Ontario Legislature authorizing the increase of capital stock from \$200,000 to \$500,000, and the bond issue from \$20,000 to \$30,000 a mile of line; authorizing the company to generate and dispose of electrical power, and extending the time within which its railway may be built. (May, pg. 252.)

Niagara, Welland and Lake Erie Ry.—A route plan for lines in the vicinity of Welland, Ont., has been approved by the Minister of Railways.

The Board of Railway Commissioners has approved location plans for the line between the G.T.R. on Main St. and the Michigan Central Rd. on South Main St., Welland, Ont., 1.5 miles. (May, pg. 252.)

Niagara, St. Catharines and Toronto Ry.—The St. Catharines, Ont., city council has under consideration a bylaw granting a franchise to the company to build a line on Niagara St., as a part of a proposed line to Niagara-on-the-Lake. The route proposed to be followed is along Niagara St. to the Lake Shore road, and along that road to Niagara-on-the-Lake, with spur lines. It is said that a route map of the line to Niagara-on-the-Lake has been filed at Ottawa and that the extension will be built this year. (May, pg. 252.)

Nipissing Central Ry.—The work of extending the line from Haileybury to New Liskeard, Ont., was started May 6, and over 100 men with a steam shovel are engaged on the works. (Apr., pg. 197.)

North Midland Ry.—The Ontario Legislature has extended the time within which the company may build the lines authorized by its several acts, from London through the counties of Middlesex, Perth and Huron, and from London to Toronto. (Mar., pg. 149.)

Ottawa Electric Ry.—The Ottawa city council was informed, May 9, that the company would lay tracks along Pretoria Ave. on the construction of a bridge over the Rideau canal; tracks on Queen St. to relieve the Sparks St. congestion; a double track on Broad St. from the C.P.R. station to Queen St. and along that street to a connection with the Bridge St. line. This latter line will, it is said, be started almost immediately. (May, pg. 252.)

Ottawa Electric Ry.—The Ottawa, Ont., city council has under consideration plans for laying tracks on Queen St. and Laurier Ave., as a temporary measure of relieving the congestion at the corner of Bank and Sparks Streets. (May, pg. 252.)

Ottawa, Rideau Lakes and Kingston Ry.—An act has been passed by the Ontario Legislature changing the title of

the Ottawa, Smiths Falls and Kingston Ry. to that of the O.R.F. and K. Ry., extending the time within which the line authorized by chap. 127 statutes 1910 may be built, and authorizing the building of an additional line from Ottawa to Manotick and through the townships of Gloucester and Osgoode, in Carleton county. (See Ottawa, Smiths Falls and Kingston Ry., Mar., pg. 149.)

Lethbridge Municipal Ry.—A contract was let by the Lethbridge, Alta., City Council, May 8, to the Wisconsin Steel and Ironworks, for the erection of car barns for the street railway now under construction as a municipal enterprise. Superintendent Reid reported that the branch on Sixth avenue was ballasted, while progress had been made with the paving on Fifth street south. The contractors were slow in delivering ties, and he was authorized to purchase two car loads from the C.P.R., so that the work would not be delayed.

We are officially advised that it is proposed to lay 10½ miles of track, some of which will be on double track lines. Construction was started April 8, and to May 7, two miles of line had been completed, and work was in progress on an additional three miles. It is expected to have the entire 10½ miles of line completed in time for the exhibition, which opens Aug. 19. The steel rails and intersections were ordered in the U.S., and delivery has been made. The orders for overhead material were divided up between the Canadian General Electric Co., the Northern Electric Co., the Eugene F. Phillips Electrical Works, the Imperial Wire and Cable Co., and the Ohio Brass Co.

Power is to be generated as alternating current in the power house, about a mile from the city, and changed to 600 volts d.c., at a substation located in the car barns, and from there will be distributed over the line. The plant for the power station consists of one 400 k.w. synchronous motor generator set, and one 200 k.w. synchronous motor generator set. (May, pg. 252.)

Porcupine Rand Belt Electric Ry.—The Ontario Legislature has incorporated a company with this title to build the railway already described in these columns. (Apr., pg. 197.)

Port Arthur and Fort William Electric Ry.—The ratepayers of Port Arthur, Ont., voted May 23 on two by-laws affecting the electric railway lines in the city. The first was to provide \$1,400 for replacing 40 wooden poles with iron ones, and the second to provide \$11,500 for laying 80 lb. steel rails on the Fort William road. (May, pg. 252.)

Quebec Ry., Light and Power Co.—We are officially advised that while it is altogether likely that the Crown St. line will be extended across the Drouin bridge into Limoliou, and the St. Malo line extended about 0.25 of a mile in the neighborhood of the C.P.R. tracks, nothing definite has been decided upon. The total distance to be built is about 2.5 miles. (May, pg. 252.)

St. John Ry.—The New Brunswick Legislature has authorized the company to extend its railway to points outside the city of St. John, within Kings County. (May, pg. 252.)

Col. H. H. McLean, Vice President, is quoted as stating, May 10, that the company will proceed at once with the laying of tracks on the east side of Courtenay Bay. The new tracks will run down as far as the breakwater, or further if necessary. Including its share of the cost of the new bridge at the reversing falls, the company has made arrangements for spending \$250,000 upon improvements this year. (May, pg. 252.)

St. Thomas Street Ry.—Two bylaws were voted on in St. Thomas, Ont., May 13, one for the extension of the street railway lines, and the second for betterments of the existing lines. The first provided for building a cross-over at

William St., and to extend the Ross St. line to Wenlock St., and the second provided for spending \$23,500 in overhauling the present lines, to purchase three additional cars and to repair the present cars at a cost of \$16,500. (May, pg. 252.)

The bylaw authorizing the expenditure of \$23,500 on the improvement of existing lines, and to purchase three new cars was approved by 638 to 166 votes, and that to expend \$6,500 on two extensions was approved by 565 to 244 votes.

Saskatoon Electric Ry. and Power Co.—A report on the proposed power development on the Saskatchewan River was made to the Saskatoon, Sask., city council, May 8, by H. M. E. Evans. Referring to the street railway part of the undertaking Mr. Evans said he had nothing definite to say, except that the work was being kept well in view. The company had made arrangements for the materials, and there would be no delay in construction as soon as things were ready for going ahead. When it became apparent that the Nutana hill would be the first road ready for the steel, he bought the necessary rails to lay it out of his own private funds.

A proposition is being considered by a committee of the city council for the taking over of the street railway part of the company's undertaking as a municipal work. (May, pg. 252.)

At a special meeting of the city council, May 13, preliminary steps were taken to finance the building of an electric railway in the city as a municipal undertaking, and to release the Evans syndicate from its agreement. Mr. Evans promised to allow the city the use of the company's engineers' reports, and to give whatever aid he could in promoting the building of the line. As to the power plant, the report of the engineers is to the effect that the project at present could not be made to pay. Further consideration of the matter was adjourned, pending consideration of certain proposals being made by Stone and Webster, Boston, Mass.

Simcoe Ry. and Power Co.—The Ontario Legislature has extended the time within which the authorized line from Penetanguishene easterly through Victoria Harbor, Sturgeon Bay, Tannerville, Waubauskene and Fesserton to Coldwater, Ont., may be built. (Mar., pg. 149.)

Stratford St. Ry.—The Stratford, Ont., city council passed a resolution, May 2, extending the time for starting construction on the line in the city to June 1, 1912. J. E. Rothery, representing Mackenzie, Mann and Co.'s interests, stated that Stratford would be one of the centres for radiating lines when the company's plans for a comprehensive plan for electric railways had been worked out. It was planned to build an extensive system through all that part of Ontario lying west of a line from Toronto to the Georgian Bay. These would be feeders not only to the Canadian Northern Ry., but to the other railway lines. The main electric line would pass through Stratford, but he could not definitely state the route by which it would reach the city. The terminus on Lake Huron would probably be at Grand Bend. Mr. Rothery subsequently spent a day going over the country between Stratford and Lake Huron. (Mar., pg. 149. See also Toronto Suburban Ry.)

Sudbury-Copper Cliff Suburban Electric Ry.—The Ontario Legislature has incorporated a company with this title to build lines from Sudbury to Copper Cliff, and to Comston with branches. The provisional directors are W. J. Bell, W. Cochrane, J. Markey, D. M. Morin, and L. Laforest, Sudbury, Ont. (Apr., pg. 197.)

Toronto and Eastern Ry.—Ewen Mackenzie, of Toronto, has been given a contract for the construction of this line

from Bowmanville east via Oshawa and Whitby, and has started work. The original intention was to make connection with the Canadian Northern Ontario Ry.'s Toronto-Ottawa line at Cherrywood, mileage 17 east of Toronto, and to run over the C.N.O.R. tracks into Toronto, so as to save the heavy expense of a separate entrance. It is now said that it may be decided to build independently right into Toronto. If this is done electricity will probably be the motive power, but should the C.N.O.R. tracks be used between Cherrywood and Toronto gas electric cars will probably be adopted so as not to have to electrify the line between Cherrywood and Toronto. Another proposition is to build a separate line on the C.N.O.R. right of way between Cherrywood and Toronto.

Toronto Suburban Ry.—An act has been passed by the Ontario Legislature authorizing an increase of capital stock to \$3,000,000; authorizing the issue of bonds to the amount equal to 75% of the actual cost of power stations, transmission lines, bridges, right of way, etc.; extending the time for the building of its previously authorized lines; authorizing the building of a line from the Hamilton line near Cooksville, and giving power to build the following additional lines:—From Guelph passing through Hespeler and Waterloo to Berlin; from the line to Hamilton in Wentworth tp. to serve Hespeler, Preston and Galt, and from near Cooksville to Brampton and easterly to a junction with the company's line to Weston at Davenport.

Work has been started at Weston on the extension to Woodbridge.

A letter was received, May 5, by the chairman of the Railways Committee in Berlin, from the Secretary of the Canadian Northern Ry., stating that as soon as the direction of the route was settled the company would start with the building of the projected electric line from Toronto to Guelph.

The company has obtained approval of the route for an extension of the present line terminating at Lambton, via Sunnyside, and Dixie to Churchville and Meadowvale, and engineers were out on the route, May 15, making additional surveys. The company's right of way agent is buying property along this route. The charter provides for a line off this through Cooksville to Hamilton. The powers granted last session of the Ontario Legislature provide for a line from what is described as the Hamilton line, near Cooksville, to Brampton, thence easterly to the present line near the G.T.R. station at Davenport. Such a line would connect with the company's present lines at the point whence the line to Bathurst St., along Davenport road, branches off from the line to Weston. It is not improbable that this line, which is to be built on a private right of way, will become the main line from Toronto to Guelph, etc. A contract is reported to have been let to Ewen Mackenzie for the building of the line to Guelph, but details as to route, etc., are not available.

Press reports state that negotiations are in progress for the taking over of the London St. Ry., the London Electric Co., and various other electrical railway and power projects, between Toronto and Windsor, and working them in as part of the system. (Apr., pg. 198. See also Stratford St. Ry.)

Winnipeg Electric Ry.—Work is in progress on the new line on Donald St. between Portage Ave. and Broadway. It is also intended to extend the Broadway line to Sherbrooke St., joining the Portage Ave. line, and to lay tracks on Mountain Ave., from St. John's to McGregor St. Work on these two lines is to be started immediately. It is proposed to lay track on other lines during the summer, but just which ones has not yet been definitely announced. (May, pg. 253.)

Marine Department

Steel Floating Dry Dock for Toronto Harbor.

Constructional work on the steel floating dry dock for the Polson Dry Dock and Shipbuilding Co., Ltd., the original design of which was described in *The Railway and Marine World* for Sept. and Oct., 1911, is in progress and will be pushed to early completion. The cost of construction, including a complete marine repair plant, is estimated at \$900,000, on which the Dominion Government will pay a subsidy of 3% annually for 20 years.

The dock is to be of the sectional U type, and was designed by Wm. Newman, Works Manager, who is a member of the Institution of Naval Architects of England, and also of the Society of Naval Architects and Marine Engineers in the United States. He was sent by

must be held down on the bilge block tracks, underhung wheels attached to the bilge blocks accomplishing this and at the same time making it possible for them to be operated by one man with ease. They will slide down the slight incline of the tracks with but little effort.

The dock consists of two integral parts, identically the same in construction, each composed of three transverse bulkhead sections. These two integral parts are secured together by a 6 x 6½ in. angle rivetted to the ends all around at the mating ends, with 1¼ in. machine bolts through the projecting flanges at a 6 in. spacing, with a rubber gasket between to make watertight. A 30 x ¾ in. butt strap is bolted to the side of the attached ends of the dock above the

gate valve operated from the upper deck of the dock by a long threaded shaft. The volume of the discharge may be regulated by the valve as well as from the central electrical control, by varying the amount of the opening. Outside the valve there is a hinged screen which is swung out of the way by the rush of the discharging water, but which closes when the dock is being filled, the screen preventing the entry of foreign or solid matter. The same opening being used for both discharge and intake accounts for the absence of piping.

The pumping equipment is entirely frost proof, as such a construction was made necessary by the severity of the winter. The manner in which this is accomplished is simple in the extreme, as will be seen from fig. 3. The pumps, it will be noticed, are raised about 2 ft. from the bottom of the dock. Under ordinary conditions, the suction of the pumps is through the four openings opposite the point of the propeller, for, unless a vessel near the full capacity of the dock requires to be raised, the full lifting capacity obtained from completely ejecting all the water is not required. When, however, the full lifting power of the dock is required, or when the dock has to be completely emptied in winter weather, the level of the water is reduced as low as possible through the side openings. These openings are then plugged and the water drawn up through a sump running lengthwise of the dock, the body of the dock being thereby completely drained. To free the pump itself of all water, a drain plug is provided on the lower side of the largest part of the casing. This leaves the pump absolutely dry and frost proof in consequence. The construction of the sump of a channel as indicated in figs. 3 and 4 is a new construction. It was felt that to cut the transverse truss frame on each side to accommodate a sump on the level of the dock bottom would weaken that member at a point where it could least stand it—near the tension edge.

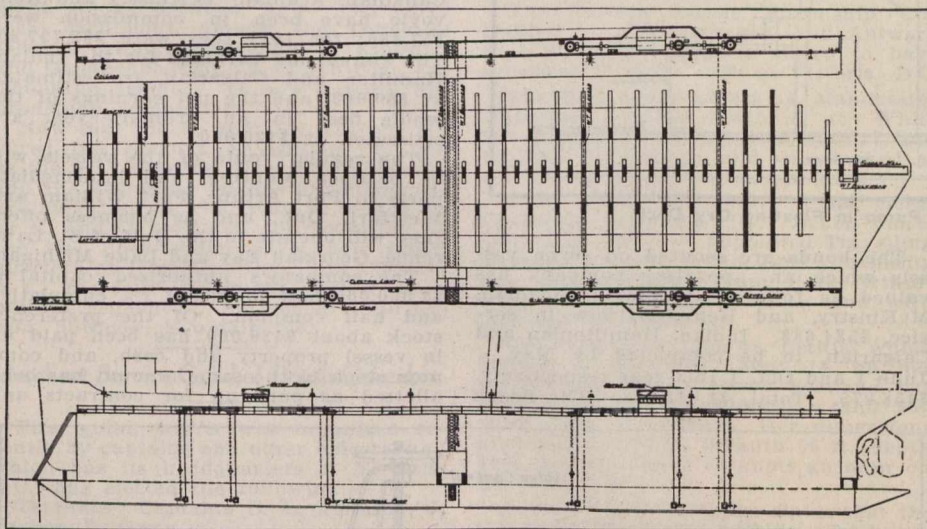


Fig. 1—Plan and Side Elevation of Floating Dry Dock.

the company to visit shipbuilding plants and Admiralty dock yards in Great Britain and on the European continent, and on returning visited various plants on the Great Lakes and Atlantic seaboard, with the object of studying floating dry docks. The result of this trip was that the designs previously made and described in these columns were abandoned and the present ones adopted in their stead.

The general dimensions of the dock are:—Length, 330 ft.; width, 100 ft.; depth, 35 ft. 4 ins.; inside width on deck, 72 ft.; inside width on top, 88 ft.; and depth of hold, 8½ ft. It will weigh approximately 2,400 tons, and will have a lifting capacity of 5,400 tons. When light it will draw 30 ins. The cost of the dock will be about \$392,000.

The construction consists of one longitudinal watertight bulkhead amidships, and a transverse watertight bulkhead every 50 ft., dividing the dock into 12 equal compartments 50 ft. square, with a pump in each. All framing is transverse, 30 in. centres, and the plating is 50% in excess of Lloyd's requirements. Besides the longitudinal watertight bulkhead, there are six longitudinal lattice bulkheads, equally distributed, which, with the sides, insure absolute longitudinal rigidity. There is a transverse truss frame fitted every 10 ft. of ample proportions, which support the bilge block cross tracks. The bilge blocks will have a relieving screw under the top block, and will be of British Columbia fir instead of the usual oak. The fir, being light, gives them a certain amount of floating power, so that they

low water mark. At the inside corners of each section of the dock there are rolling fenders to protect the dock from entering boats striking the corners.

The only opening into each of the watertight compartments of the dock is through a small hatch on the upper deck, which can be sealed in the event of accident and compressed air pumped in to expel the water.

It will be possible with the pump equipment to be installed to completely empty the dock and thereby raise to the full height with the largest size of vessel for which it is designed in 24 mins. The pumping equipment consists of twelve 12 in. centrifugal pumps of the form shown in fig. 3, having a united capacity of 42,000 imp. gals. per minute. These pumps work in batteries of three in each quarter of the dock from a 75 h.p. d.c. motor mounted on the upper deck, driving a horizontal shaft from which the pumps are driven by vertical shafts through bevel gears as indicated in the plan and elevation of fig. 1. The four batteries are centrally controlled from a station ashore, which commands a view of the whole dock. The controller equipment is similar to that on an electric car, and is conveniently arranged for one-man operation.

The entire absence of levers and piping is one of the noticeable features of the dock. This may be noticed by referring to fig. 4, which shows the pump location and the discharge and intake control of the pump. The discharge connection of the pump is a very short flanged pipe coupling attached to the dock wall, and discharging through a

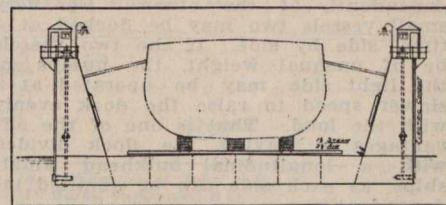


Fig. 2—End Elevation of Floating Dry Dock, at Edson, Alta.

There will be compressed air, steam, and electric power conduit systems run on both sides of the dock, with manifolds every 20 ft. for operating the tools. Sixteen arc lamps will be hung from the upper deck with plugs for drop light every 10 ft., thereby permitting of continuous work when necessity requires.

Four ship's capstans are situated on the upper deck to handle the ship lines when docking. Another feature is the mooring device. An I beam is rivetted perpendicularly to the outside of the dock opposite each of the bulkheads. These I beams are held in loose clips on the edge of the wharf, allowing the dock to raise or lower, and, if necessary, to list, without any adjusting.

The dock, as at present being constructed, will be large enough for the largest vessel now navigating Lake Ontario, which is the G.T.R. car ferry Ontario No. 1. This vessel is 317 ft. long between perpendiculars, and weighs

5,146 gross tons. It is the intention, however, to increase the length of the dock at some future date by the addition of a central portion 300 ft. long, similar in construction to the end portions without the platform ends. This will make the capacity of the dock 630 ft., which it is expected will meet all

Canadian Interlake Line Limited.

Reference was made in our last number to an issue of \$520,000 6% 1st mortgage 15 year sinking fund bonds by this company. Following are extracts from the prospectus:—

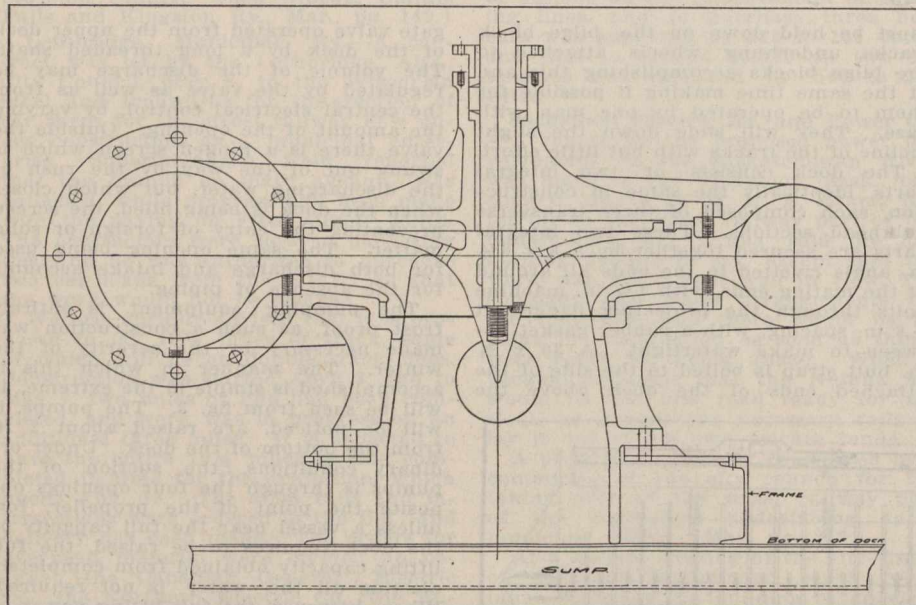


Fig. 3—Horizontal Centrifugal Pump in Floating Dry Dock.

requirements during its life, long as that may be.

The dock is very adaptable to all sizes of boats, and for boats in various conditions. For long freighters that when light have a considerable draught at the rear end, with the bow taking but a couple of feet, the dock can be immersed to suit by a proper manipulation of the valves. This is done by throttling the forward discharge valve of the dock on both sides of the dock, with the rear valves wide open, grading the intermediate valves to suit. This will give the dock bottom the correct slope to evenly catch the bottom of the boat and raise it uniformly. For smaller vessels, the dock can be divided into its two integral parts, and each used independently of the other. For very small vessels two may be docked at a time, side by side. If the two vessels be of unequal weight, the pumps on the light side may be operated at a slower speed to raise the dock evenly with the load. That is one of the advantages in having the dock divided with a longitudinal bulkhead amidships, as each side can be emptied independently.

The plans and specifications of the dock have been examined by the Chief Engineer of the Department of Public Works, and by the Resident Engineer at Toronto, and have been approved without a change.

In order to obtain a site of sufficient size on which to construct the dock, the company had to acquire two water lots to the east of the present plant. The completed dock will be located in a basin to the west of the plant on silps acquired specially for this purpose. A special plant has been obtained from Great Britain for the construction of the dock, so that the capacity of the present plant will in no wise be hampered.

A bylaw which is in course of preparation at New Westminster for submission to the ratepayers covers the building of a wharf from Tenth St. to Merrivale St. The work must be carried out by the city, after which it is expected that a harbor board will be formed to take charge of the harbor front.

The bonds are secured on seven vessels which an appraisal company has valued as follows:—Canadian, Acadian, McKinstry, and Renvoyle, now in service, \$584,683. Indian, Hamiltonian and Calgarian, to be completed by May 1, June 1 and Oct. 1 this year respectively, \$458,275. Total, \$1,042,958. The fleet's

A. E. McKinstry, built in 1910 at Glasgow; single deck with raised quarter deck, modern construction, steel, length 250 ft., beam 42 ft. 9 ins.; engines, triple expansion, 17-28-48 x 36; tons burden, 3,250; carrying capacity, 115,000 bush.

Renvoyle, built in 1910, at Glasgow; single deck with fore-castle and raised quarter deck, modern construction, steel, length 250 ft., beam 42 ft. 7 ins.; engines, triple expansion, 17-28-46 x 33 ins.; tons burden, 3,100; carrying capacity, 100,000 bushels.

Indian, which was to be completed May 1, 1912, being built at Glasgow, double deck, modern construction, steel, side ports, length 250 ft., beam 42 ft. 6 ins.; engine, two-cycle Diesel, 4 cylinders 18½ x 32¼ ins.; tons burden, 3,650; carrying capacity, 130,000 bush.

Hamiltonian and Calgarian, sister vessels, the Hamiltonian to be completed June 1 and Calgarian Oct. 1, 1912, being built at Port Arthur, Ont.; double deck, modern construction, steel, length 250 ft., beam 42 ft. 6 ins.; engines, triple expansion, 18-29-48 x 40 ins.; tons burden, 3,550; carrying capacity, 120,000 bush.

The average net earnings since the Canadian, Acadian, McKinstry and Renvoyle have been in commission were \$57,485; for 1911 they were \$62,797.40. The annual net earnings for the Indian, Hamiltonian and Calgarian are estimated at \$60,000, and the net earnings of the whole fleet in an ordinary year are estimated at \$120,000.

The regular route of the vessels will be between Montreal and intermediate ports to Port Arthur, Fort William and Westfort, Ont., and as business offers they will operate to the Gulf of St. Lawrence, Georgian Bay and Lake Michigan.

The company's authorized capital is \$2,000,000 half preferred 7% cumulative and half common. Of the preference stock about \$420,000 has been paid up in vessel property and cash, and common stock to the same amount has been allotted as paid up for contracts and

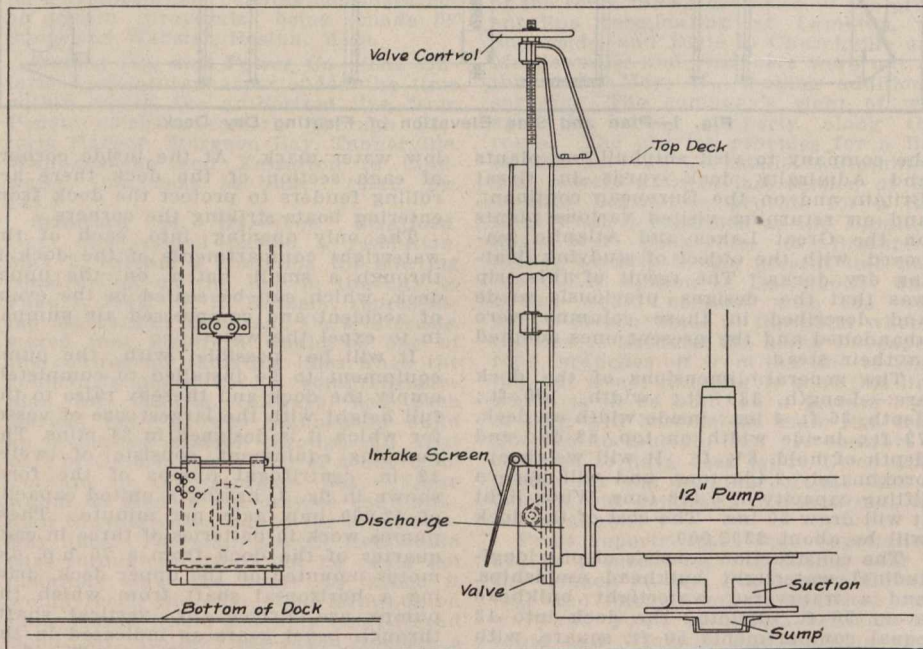


Fig. 4—Valve and Valve Control on Floating Dry Dock.

total carrying capacity will be 825,000 bush.

Following is a condensed description of the vessels:—

Canadian and Acadian, sister vessels, built in 1907 and 1908 at Newcastle-on-Tyne and Glasgow, respectively. double deck, modern construction, steel, side ports, length 248 ft., beam 43 ft. Engines, Canadian, triple expansion, 19-32-52 x 36 ins.; Acadian, 18-30-50 x 36 ins.; tons burden, 3,550; carrying capacity, 120,000 bush.

other trade connections, etc.

The board is composed as follows:—President, M. J. Haney, Toronto; Vice President, R. M. Wolvin, Winnipeg; Managing Director, J. W. Norcross, Toronto; other directors, H. Munderloh, Montreal; E. H. Ambrose, Hamilton; J. F. M. Stewart and T. Bradshaw, Toronto.

The Dominion Public Works Department is making arrangements for building a dock at Kenora at an estimated cost of \$11,800.

**St. Lawrence River Steamboat Co. and
Thousand Islands Steamboat Co.**

There are persistent rumors that these two companies which little over a year ago were acquired by a syndicate headed by Sir Edmund B. Osler, President, Niagara Navigation Co., and W. D. Matthews, President, St. Lawrence and Chicago Steam Navigation Co., and including B. W. Folger, General Manager, Niagara Navigation Co., are to be absorbed by the Richelieu and Ontario Navigation Co.

Both lines operate in connection with the New York Central and H.R. Rd. The St. Lawrence River Steamboat Co. has three boats, America, Pierrepont, and Jessie Bain, which run between Kingston, Ont., and Cape Vincent, N.Y., an important ferry service of some 20 miles, serving territory east and west of Kingston, and, on the U.S. side, Watertown, Syracuse, Utica, Rome and other important points. The Thousand Islands Steamboat Co. has three boats, St. Lawrence, Ramona and New Island Wanderer. These boats run between Clayton and Alexandria Bay, N.Y., with eight stops between, and also carry local excursions among the Thousand Islands, calling occasionally at Kingston and Gananoque, Ont. A fourth boat, the Thousand Islander, is now rapidly approaching completion.

Now that the R. and O.N. Co. has secured the Niagara Navigation Co. and as the St. Lawrence River Steamboat Co. and the Thousand Islands Steamboat Co. are operating in what may be looked on as R. and O. territory, the acquiring of the two lines which have their headquarters at Kingston, Ont., and Clayton, N.Y., respectively, might follow as a natural sequence. No official information, however, is obtainable.

Merchant Service Guild of British Columbia.

This guild, which was organized recently by captains and other officers, and which has its headquarters at Victoria, B.C., has elected the following:—

TRUSTEES: Captains B. L. Johnson, J. Parkes, D. Owen.

EXECUTIVE COMMITTEE: Capts. Johnson, Shadforth, Whitley, Wearmouth, Davies, Gilchrist.

SECRETARY: Capt. D. J. Jarvis, R.N.R.

**Continuous Operation of Ontario and
Quebec Canals.**

In response to the Dominion Marine Association's representations, the Minister of Railways and Canals has given authority for keeping open certain canals on Sundays during the current navigation season, as follows:—The Sault Ste. Marie, Welland and Murray canals, the lift lock on the Galops canal leading into the St. Lawrence river near the head of the canal, the Williamsburg, Cornwall, Soulanges and Lachine canals will be kept open continuously during the season. The St. Ours lock, the Ottawa River canals, and the Rideau canal, will be kept open on Sundays, except between 6 a.m. and 9 p.m.

Atlantic and Pacific Ocean Marine.

The Dominion Government has granted a subsidy to Pickford and Black, Ltd., for its West Indies service, every 12 days from St. John, N.B., and Halifax, N.S.

The Eastern Asiatic Steamship Co., trading from Copenhagen and Antwerp to U.S. Pacific ports, is stated to have arranged to make calls at Victoria, B.C.

The Manchester Liners s.s. Manchester Importer touched bottom at White Island when outward bound, May 17, and returned to Quebec, and was docked at the Louise basin for examination.

J. F. Pratt, heretofore chief clerk, Canadian Northern Ry. ticket office, Winnipeg, has been appointed Travelling Passenger Agent, Allan Line Steamship Co., with territory from Port Arthur, Ont., to Moose Jaw, Sask., and with quarters at Winnipeg.

The Donaldson Line s.s. Letitia, which arrived at Montreal, May 14, on her maiden trip, from Glasgow, Scotland, has accommodation for 300 cabin and 600 third class passengers. Her dimensions are—length 470 ft., breadth 56 ft., depth 39 1/2 ft. She made 14 knots an hour on her trial trip.

A dispatch from Japan states that the C.P.R. s.s. Empress of China, which was wrecked off the Japanese coast some time ago, is being offered for sale by the underwriters at \$100,000, and that \$60,000 has been offered for her by Japanese shipowners. It is stated that estimates

for repairing her run from \$150,000 to \$200,000.

The Allan Line s.s. Scandinavian, formerly Romanic, which was bought recently from the White Star Line, arrived at Montreal, May 14, on her maiden trip to a Canadian port. Her dimensions are—length 550 ft., breadth 93 ft., depth 59 ft., registered tonnage 12,000. Her engines are of the reciprocating type, 985 n.h.p., driving twin screws.

As a result of the recent Titanic disaster, and in view of the extraordinary trend of icebergs to the south this year, the various trans-Atlantic steamship lines have decided to adopt a more southerly course for the present than has hitherto been used. On the westward route, vessels will follow latitude 38 north, and on the eastward route latitude 37.40 north, between the 45th and 50th degrees of longitude.

In response to questions in the British House of Commons recently, the President of the Board of Trade stated that the total passengers of all classes and nationalities carried outward and inward on British and foreign vessels between the United Kingdom and Canada, Newfoundland and the United States during 10 years ended Dec. 12, 1911, was 6,053,382, of which the great proportion were carried in British vessels. The number of passengers reported to the Board of Trade to have lost their lives by casualties to vessels belonging to the United Kingdom on these voyages was nine.

Maritime Provinces and Newfoundland.

The general contractors for the St. John, N.B., harbor improvements, Norton Griffiths and Co., have sublet contracts to Macdonald and Doheny, Alexandria, Ont., and C. L. Hervey, Montreal, for the construction of the breakwater, one mile long, and the removal of a large hill at the rear, involving an expenditure of \$4,000,000.

The Boston and Yarmouth Steamship Co., Ltd., has been incorporated under the Dominion Companies Act, with \$350,000 capital, and office at Montreal, to carry on a general steamship owning and navigation business in the Dominion and elsewhere. The incorporators are:—J. W. Brophy, F. A. Jones, Vice President, Eastern Steamship Corporation, Boston, Mass.; A. R. Holden,

List of Steam Vessels Registered in Canada during April, 1912

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
A. J. Wheaton	130,635	St. John, N.B., 1912	Screw 2 n.h.p.	29.2	9.5	4.9	10	7	St. John, N.B.	A. J. Wheaton, St. John, N.B.
Circle B.	130,858	Eburne, B.C., 1911	" 2 "	42.0	10.4	3.7	13	9	Vancouver, B.C.	D. Barns, Vancouver, B.C.
D. S. Pratt	126,655	Midland, Ont., 1911	" 43 "	81.3	20.0	10.5	161	74	Midland, Ont.	Canadian Dredging Co., Midland, Ont.
Dagon	130,823	Tancook, N.S., 1912	" 2 "	45.0	10.4	5.8	13	12	Lunenburg, N.S.	E. Covey, M.O., Tancook, N.S.
Edrie	130,855	U.S.	" 10 "	92.3	18.0	6.8	110	75	Vancouver, B.C.	British Columbia Fisheries, Ltd., Victoria, B.C.
F. H. Folsom	130,617	Portland, Ore., 1898	" 17 "	80.9	15.8	7.3	61	37	Victoria, B.C.	"
Haysport I.	130,857	Vancouver, B.C., 1912	" 5 "	59.0	16.2	8.2	50	34	Vancouver, B.C.	C. H. Leigler, Vancouver, B.C.
Lo Olbee	130,856	" 1911	" 2 "	64.0	13.0	4.6	35	24	"	R. P. McLennan, Vancouver, B.C.
Nellie J.	130,711	Kenora, Ont., 1911	" 3 "	52.0	12.5	5.0	31	21	Kenora, Ont.	Armstrong Trading Co., Portage la Prairie, Man.
Rupert City	93,691	Barrow, Eng., 1886	" 300 "	310.3	38.1	25.2	2898	1999	Vancouver, B.C.	F. S. Watt, London, Eng.
Tsubame	130,854	Nanaimo, B.C., 1908	" 2 "	37.0	9.8	3.4	9	6	"	C. Uchido, Vancouver, B.C.

List of Sailing Vessels and Barges Registered in Canada during April, 1912

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Beaver	130,634	U.S.	Dredge	104.8	40.6	10.0	514	St. John, N.B.	Beaver Dredging Co., St. John, N.B.
Elsie L. Corkum	130,827	LaHave, N.S., 1912	Schr.	101.5	26.0	10.6	97	Lunenburg, N.S.	H. Corkum, M.O., LaHave, N.S.
Florence E. Getson	130,830	" 1911	"	104.8	26.2	10.2	99	"	N. Reinhardt, M.O., LaHave, N.S.
Frank J. Brinton	130,825	Mahone Bay, N.S., 1912	"	96.2	25.0	10.3	92	"	W. Gilfoy, M.O., Lunenburg, N.S.
Marion A. Silver	130,829	Lunenburg, N.S., 1912	"	103.8	26.3	10.4	99	"	A. Himmelman, M.O., Rose Bay, N.S.
Matanzas	130,822	" 1912	"	106.8	26.0	10.6	96	"	N. Wentzel, et al., Rose Bay, N.S.
Original	130,826	LaHave, N.S., 1912	"	104.8	26.2	10.2	98	"	R. Conrad, M.O., Rose Bay, N.S.
Phyllis L. West-									
haver	130,828	Lunenburg, N.S., 1912	"	106.8	26.3	10.4	99	"	M. Rodenhiser, M.O., Lunenburg, N.S.
R. L. MacKenzie	130,506	East Jordan, N.S., 1912	"	56.8	17.6	6.9	33	Shelburne, N.S.	R. MacKenzie, M.O., East Jordan, N.S.
V. I. T. No. 2	130,616	Victoria, B.C., 1912	Barge	85.0	25.0	7.9	155	Victoria, B.C.	Vancouver Island Towing Co., Victoria, B.C.
W. H. Smith	130,824	Mahone Bay, N.S., 1912	Schr.	103.0	25.5	10.5	94	Lunenburg, N.S.	W. Smith, M.O., Lunenburg, N.S.

C. G. Heward and A. E. Woodworth, Montreal.

The ratepayers of Sydney, N.S., will vote on June 3 on the proposal to grant a bonus of \$1,000,000 to the British Canadian Shipbuilding Co., for the construction of a dry dock and shipbuilding plant there. It is proposed to pay the bonus in four equal instalments, the first payable on the completion of the work, and the last about 1930. The plant is to be assessed for taxes at \$500,000 for 10 years, and the company will have to finance the necessary sewer and street extension up to \$500,000, accepting the city's 50 year bonds in payment. Sir Henry M. Pellatt, Toronto, is interested in the company.

The Reid Newfoundland Co.'s s.s. Bruce, recently built in Great Britain, to replace the vessel of the same name, wrecked last year, is considerably larger than the older vessel, and has more power as an ice breaker. She is 1,600 tons gross and 663 tons register, and has accommodation for 70 first class and 200 second class passengers. Her dimensions are—length 250 ft., breadth 36 ft. The company will establish, June 3, a daily service between Port aux Basques and North Sydney, N.S., the steamships Bruce and Invermore leaving Port aux Basques daily except Saturdays, and North Sydney daily except Sundays. Two other steamships are under construction, one of which will replace the s.s. Invermore on the Cabot Strait, and the other will be operated in the St. John's to Labrador service.

Province of Quebec Marine.

An order in council has been passed confirming the Montreal Harbor Commissioners' amendments to bylaws regarding tariffs of grain and storage, and for handling cars.

The Sincennes McNaughton Co.'s tug Nathalie R. was launched at Sorel recently. A similar tug is under construction at Sorel for the same company, and a third is being built in Scotland. The last mentioned is to be named Aurelie G., and will cross the ocean under her own steam some time in June.

The Dominion Government ice-breaking steamboat, Bellechasse, for service in the lower St. Lawrence, was launched at Kingston, Ont., May 15. Her dimensions are, length 142 ft., breadth 27 ft., depth 13 1/2 ft. She was christened by Mrs. E. Grimason, aged 90, who was presented with a loving cup by the builders. C. S. Duguid represented the Department of Marine, Ottawa.

The floating dry dock which is being built in England for Canadian Vickers, Ltd., and which is to be located at Maisonneuve, Montreal, is rapidly approaching completion. It will be capable of docking vessels up to 700 ft. long and 100 ft. wide, with a gross tonnage of 25,000 tons. The site for the dock is being prepared by the Montreal Harbor Commission.

The Montreal Harbor Commission announces plans for improvements to the western end of the harbor as follows:—Concrete pier 1,200 ft. long opposite the offices; removal of the entrances to the Lachine canal to west of Windmill point; construction of a concrete wharf in basin no. 1, deepening of the basin, and lengthening King Edward, Alexandra and Jacques Cartier piers by 300 ft.

The Quebec Harbor Commission, at a meeting, May 6, decided to proceed with the preparation for the construction of an elevator of 1,000,000 bush. capacity, with links so that it can be increased to 2,000,000 bush. capacity. The structure will be of concrete and steel, and arrangements were made to commence the foundation work on or about May

20. Plans for the two piers to be built in addition to the Louise embankment in line with the breakwater extension from the main pier to the centre of St. Charles River, were also discussed, and the necessary dredging was ordered to be commenced.

The shipbuilding and repairing plant which has been operated at Levis by G. T. Davie and Sons for some years has been sold to the Quebec Wrecking and Salvage Co., Ltd., in which it is said A. A. Allan, of the Allan Line, and F. L. Wanklyn, General Executive Assistant, C.P.R., are chiefly interested. The plant, which has not been successful for the past three years, received a subsidy of \$10,000 a year from the Dominion Government, and on representations being made to the Government recently, it is stated that a promise was made that the amount would be increased to \$25,000 annually.

Ontario and the Great Lakes.

The steamboat Turret Crown will shortly be docked at Port Arthur, where she will have two new boilers 14 ft. diam. by 11 ft. long installed.

A press report from London, Ont., states that the steamboat Forest City, which was operated last year between Port Stanley and Cleveland, Ohio, has been sold to Fort William parties.

The Western Steamship Co. has appointed R. G. Bassett, captain, and A. M. MacInnes, chief engineer, of its steamboat J. A. McKee; and G. H. Playter, captain, and J. G. McHattie, chief engineer, of its steamboat Wexford, for the current season.

The Merchants Mutual Line Steamboat A. E. Ames, in leaving Hamilton harbor, May 16, struck the G.T.R. swing bridge, causing considerable damage to the bridge and necessitating it being kept closed a short time until repairs could be executed. The vessel was not damaged and proceeded on her route.

Canadian Interlake Line, Ltd., the incorporation of which, under the Dominion Companies Act, we noticed in our last issue, has been licensed to carry on business in Ontario, provided that no larger amount of capital stock than \$2,000,000 be used in the province. J. W. Norcross, Toronto, is the company's attorney.

Montreal press reports stated recently

that negotiations were in progress for the Richelieu and Ontario Navigation Co. to obtain a controlling interest in the St. Lawrence and Chicago Steam Navigation Co. W. Wainwright, Vice President, R. and O.N. Co., stated, May 7, that there was nothing to be made public.

E. C. Miller, heretofore City Passenger and Ticket Agent, Northern Navigation Co., Sault Ste. Marie, Ont., has been appointed District Freight and Passenger Agent, same company, with office at Sault Ste. Marie, Ont. His territory covers North Bay to Sault Ste. Marie, Ont., including Sault Ste. Marie, Mich., Georgian Bay, Manitoulin Island and Mackinac Island.

The Belle Isle Park Co., Ltd., Ottawa, has purchased the steamboat Quinte Queen, for operation between Ottawa and Kettle Island, where the company's amusement park is situated. The Quinte Queen was built at Valleyfield, Que., in 1902, and is screw driven by engine of 13 n.h.p. Her dimensions are—length, 99.5 ft.; breadth, 20.9 ft.; depth, 4.7 ft.; tonnage, 203 gross, 143 register.

It is stated that the charges recently brought against employes of the Great Lake Towing Co., in connection with the alleged theft of cargo from the steamboat Wissahickon, which was wrecked on Duck Island in Lake Huron in Dec., 1909, for the salvage of which the company had the contract, have been dropped, and that settlement of all claims on either side has been made.

The Otonabee Navigation Co.'s steamboat Otonabee is reported to have been sold to H. D. Jamieson, Barrie, on behalf of a syndicate controlling summer hotels there. The price paid is stated as \$12,000. The Otonabee was built at Peterboro in 1907, and is screw driven by engine of 21 n.h.p. Her dimensions are—length 111.2 ft., breadth 24 ft., depth 5 1/2 ft., tonnage 136 gross, 87 register.

The arrangement for the absorption of the Niagara Navigation Co. by the Richelieu and Ontario Navigation Co., of which full particulars were given in our last issue, will be carried out, as over 93% of the N.N. Co.'s stock is reported to have already been transferred by shareholders, a number of shareholders taking cash instead of R. and O.N. Co. stock for their holdings. It is said that the long drawn out negotiations for the acquirement of the Inland Lines, Ltd., by the R. and O.N. Co. are about completed and that that deal will also go through.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during April, 1912:

ARTICLES	CANADIAN CANAL	U. S. CANAL	TOTAL
Copper..... Eastbound..... Short tons	1,740		1,740
Grain..... "..... Bushels	1,158,299		1,158,299
Building stone..... "..... Short tons		32	32
Flour..... "..... Barrels	45,060	75,820	120,880
Iron ore..... "..... Short tons		32,816	32,816
Pig iron..... "..... ".....			
Lumber..... "..... M. ft. b.m.	277		277
Silver ore..... "..... Short tons			
Wheat..... "..... Bushels	757,842	165,628	923,470
General merchandise..... "..... Short tons		2,112	2,112
Passengers..... "..... Number	40		40
Coal, hard..... Westbound..... Short tons			
Coal, soft..... "..... ".....	22,400	24,379	46,779
Flour..... "..... Barrels			
Grain..... "..... Bushels			
Manufactured iron..... "..... Short tons		12,739	12,739
Iron ore..... "..... ".....			
Salt..... "..... Barrels			
General merchandise..... "..... Short tons	33	10,273	10,306
Passengers..... "..... Number	33		33
Summary.			
Vessel passages..... Number	30	102	132
Registered tonnage..... Net	52,955	146,974	199,929
Freight—Eastbound..... Short tons	29,536	67,558	97,094
—Westbound..... ".....	22,433	47,391	69,824
Total freight..... ".....	51,969	114,949	166,918

Both canals opened April 24.

The North Bay Land Co., Ltd., has been incorporated under the Ontario Companies Act, with \$50,000 capital, and office at Toronto, to carry on a general land improvement business, and in connection therewith to build and operate wharves, docks, dockyards, elevators and vessels. The incorporators are:—F. H. Phippen, K.C., A. D. Davidson, A. G. McRae, W. McBain and H. Fitzsimons, Toronto, all of whom are associated with Mackenzie, Mann and Co.'s interests.

The U.S. Lake Survey reports the stages of the Great Lakes in feet above tidewater, for April, as follows:—Superior, 601.46; Michigan and Huron, 579.44; Erie, 572.25; Ontario, 246.32. Compared with the average April levels for the past ten years, Superior was 0.31 ft. below, Michigan and Huron 1 ft. below; Erie 0.09 ft. below, and Ontario 0.05 ft. below. It was anticipated that there would be a rise of 0.4 ft. in Lake Erie during May, and of 0.3 ft. in the other lakes.

The Minister of the Interior returned to Ottawa recently after investigating the question as to whether it would be feasible to lengthen the season of navigation. He considers that the season might be continued through December, instead of closing on Dec. 1 as hitherto, and that Thunder Bay could be kept open for navigation by means of powerful ice breakers, thus allowing about 20,000,000 bush. of grain to be shipped that would otherwise have to be stored at Fort William and Port Arthur for the winter.

F. Mitchell, heretofore land steward, Northern Navigation Co., Collingwood, has been appointed Chief of Commissary, with full charge of the cabin departments on all the company's vessels and the land stewards' offices at Collingwood and Sarnia; also the operation of, and the linen at, the company's laundry at Sault Ste. Marie, Ont. His office is at Collingwood. The accounts and records of the laundry will be handled by E. C. Miller, City Passenger and Ticket Agent, Sault Ste. Marie, who will receive instructions from the audit office.

F. H. Clergue, who is interested in the proposal to build a dry dock and ship building plant at Sault Ste. Marie, Ont., is reported to have stated there, May 14, that his company would spend about \$1,500,000 on the work, developing a plant large enough to employ 1,000 men. During the first years of the operation of the plant, the construction of two vessels would be undertaken, and later the capacity would be increased to six vessels each year would be undertaken, and later the capacity would be increased to six vessels a year. The plans had been deposited with the Public Works Department, and as soon as they were passed, the project would be proceeded with.

The Toiler, which was brought from England last year, and which is equipped with internal combustion engines, of which we have already given full descriptions, has been sold to a syndicate, in which Jas. Playfair of Midland, H. W. Richardson of Kingston, and H. H. Gildersleeve of Sarnia are principally interested. She will be operated under the management of J. Richardson and Sons, Kingston, trading almost exclusively between Montreal and Port Colborne, and possibly to Lake Erie ports for coal. It is not likely that she will be operated to Fort William this season. She was reported aground in a dangerous position near Cardinal, May 24.

The works which, it is stated, will be undertaken for the improvement of Hamilton harbor during the current season include the continuation of the revetment wall for 466 ft., in line with the east side of Wellington St. produced; the construction of close sheet piling with concrete superstructure to connect

the revetment wall with the shore of Wellington St., and filling in at back of same; extensions of existing channels, and the construction of a wharf, 450 by 50 ft. The Dominion Parliament has voted \$200,000 on account of the work, and plans have been prepared and filed with the Department of Public Works, together with a report by J. G. Sing, Government Engineer.

The St. Lawrence and Chicago Steam Navigation Co. is having a vessel built at Collingwood for delivery in 1913 season. The dimensions are—length, 550 ft.; breadth, 58 ft.; depth, moulded, 31 ft. She is to be built on the arch web system of framing, and fitted with side tanks and water bottom for the whole length, and there will be 32 hatches with sliding doors. The machinery will consist of vertical triple expansion engines with cylinders 24, 40 and 66 ins. diam., by 42 ins. stroke, supplied with steam at 185 lbs. by three Scotch boilers equipped with forced draught. She will be built to the highest classification of the Great Lakes Register, and is estimated to cost \$375,000.

The Northern Navigation Co. has contracted with the Marconi Wireless Telegraph Co. of Canada for the equipping of its steamboats Hamonic, Huronic and Saronic, with wireless telegraph installation, and it is expected that the installations will be completed before the heavy passenger season commences. The Dominion Government has erected wireless telegraph stations at Tobermory, Midland and Sault Ste. Marie, all of which, it was stated, would be equipped by June 1. A station is also to be erected at Sarnia, and it is expected to be ready for operation by the end of August. We are informed that the Marconi Company will operate all the stations under contract with the Dominion Government.

C. P. Edwards, of the Dominion Government Radio Telegraph Service, is reported to have stated recently that in the near future the Government would establish a series of wireless telegraph stations, extending from the head of the lakes to Belle Isle, Que., or Cape Race. The stations would probably be built at distances of about 180 miles, between Port Arthur and Kingston, Ont., where a powerful station would be erected to communicate with Montreal. Stations are already practically complete at Port Arthur, Sault Ste. Marie, Tobermory and Midland, Ont., and other stations will be completed very shortly, covering the north shore and Georgian Bay. It is also stated that stations will be erected at Point Edward, Port Stanley and Port Colborne, Ont.

The Peoples Steamboat Co., Ltd., has been incorporated under the Ontario Companies Act, with a capital of \$150,000, and office at Toronto, to take over the business of the Argyle Steamship Co., Ltd., and the steamboat Argyle, which was formerly operated between Toronto and Olcott Beach, N.Y. The Argyle was built at Picton, Ont., in 1899, and is a paddle wheel steamer, with engine of 274 n.h.p. Her dimensions are—length, 185.1 ft.; breadth, 26 ft.; depth, 9.7 ft.; tonnage, 700 gross, 374 register. It is the intention to run her this season between Toronto and Lewiston, N.Y., twice daily, commencing towards the end of June, and to purchase another vessel to take up the passenger business, leaving the Argyle for freight business. The officers of the company are:—President, F. Denton, Toronto; Vice President, C. W. Perkins; Managing Director, H. W. Crawford, Toronto; other director, J. J. Doyle, Niagara-on-the-Lake, Ont.

Manitoba, Saskatchewan and Alberta.

Navigation opened on the Athabasca River, May 6, when the Hudson Bay Co. sent its first vessels down the river from Athabasca Landing. Vessels are also

running up the river as far as Little Slave Lake.

The Saskatchewan Navigation and Recreation Co. is in process of organization, for providing summer resorts, and owning and operating motor driven and other vessels in connection therewith. The capital stock is \$10,000, and the head office is at Saskatoon, Sask.

The Public Works Department has recommenced survey work on the North Saskatchewan River in connection with the proposal to make the river navigable. The work is in charge of L. R. Voligny, and two parties are working from Edmonton, Alta., under G. P. Morse and H. H. Smith.

The Public Works Department has awarded the contract for the erection of a bascule lift span bridge for the St. Andrews lock, on the Red River below Winnipeg, to the Brown Construction Co., Ltd., Winnipeg. The whole work must be completed within 15 months, the contract price being about \$150,000.

The U.S. Government will spend \$17,000 on a survey of the Red River, from Breckenridge, Minn., and Wahpeton, N.D., to the International boundary, to determine the practicability of establishing a series of locks and dams. The scheme is being supported by the Red River and Hudson Bay Navigation Association, recently formed in Grand Forks, N.D., and in which a number of Manitoba men are interested.

British Columbia and Pacific Coast Marine.

The C.P.R. commenced its new service between Victoria, B.C., and Tacoma, Wash., May 15, with the s.s. Iroquois. The service is a daily one, and the vessel will call at Seattle each way.

A bill was recently introduced in the U.S. Congress providing that no passengers shall be carried by water between any other port in the U.S., and any port in Alaska, either directly or by a foreign port, except in U.S. vessels.

The Union Steamship Co. is suing J. H. Welsford, Liverpool, Eng., for the final payment of the purchase price of the company's undertaking, and an application has been made for an accounting. It is stated that the completion of the purchase is not in any way affected by the case.

A dispatch from London, Eng., states that C. F. Pretty, of Vancouver, has arranged with English capitalists to confer with the Dominion Government with a view to taking up the proposed bond issue of the Vancouver Dock and Harbor Development Co., which has planned a large harbor and dock scheme on Lulu Island.

Work on the vessel which the C.P.R. is having built at Esquimalt was commenced during May. A large quantity of the material to be used in construction has been brought from Great Britain, and it is said that the engines will be built there. This vessel will be the largest steel steamer and the third of the C.P.R. coast service to be built in British Columbia.

The Union Steamship Co.'s s.s. Chelohsin, which recently struck a rock in the Skeena river, was docked at Vancouver, May 3, for examination and repairs. It was discovered that about 100 frames would have to be straightened and a number of plates renewed, at an approximate cost of \$25,000. The Chelohsin only arrived on the coast in February, from Ireland, where she was built.

The G.T. Pacific Coast Steamship Co. has decided to equip its steamships Prince Albert and Prince John with oil burning apparatus, similar to that installed on its steamships Prince Rupert and Prince George, and which was fully described in our March issue. It is possible this change may not be made until the fall, as it may not be convenient to take the vessels out of service until then.

The C.P.R. s.s. Princess Sophia, which recently arrived at Vancouver from Scotland, has been placed on her route between Vancouver, Prince Rupert and Queen Charlotte Island ports. She is a single screw vessel, with triple expansion engines, having a speed of 13 knots an hour, and has been so equipped that he may use either coal or crude oil as fuel. Her dimensions are—length 247 ft., breadth 44 ft., depth 18 ft.

The G.T. Pacific Coast Steamship Co. has made a number of changes in the officers of its vessels. D. MacKenzie, captain of the Prince Albert, has been transferred to Prince George, vice F. T. Saunders, appointed agent of the Department of Marine at Prince Rupert; D. Donald, captain of the Henriette, has been transferred to the Prince Albert; D. O'Brien, heretofore on the Prince George, has been appointed captain of the Henriette.

The Department of Marine has erected two echo boards on the bank that dries on the north shore of the first narrows of Burrard Inlet, to assist in guiding vessels through the narrows in foggy weather, by reflecting echoes of their whistles. One of the boards is located at the west entrance, 3-10 mile north from the lookout on Prospect Bluff, and the other is at the east entrance of the narrows, entrance to Vancouver harbor, ½ mile 351 deg. from Brockton Point lighthouse. Each is painted white.

It is reported in Victoria that a company is being formed by a number of U.S. capitalists for the purpose of operating a line of steamships along the Pacific coast, between U.S. and Canadian ports. It is stated that the intention is to commence the service with three vessels, and that orders for construction will shortly be placed. Docking facilities are being arranged for at Victoria, Vancouver and other points in British Columbia. C. W. Clark, who has been connected with the Guggenheim interests for several years, is reported to be chiefly interested in the project.

It was reported in Vancouver, May 2, that E. L. Kinman, who, with his associates, is interested in the proposal to build dockage facilities at Deadman's and Co., Ltd., Vancouver, to prepare plans and estimates for the construction Island, had requested Norton Griffiths of a concrete dock with six piers each 1,400 ft. long, with structural steel warehouses and car tracks, and a bridge to connect with the mainland, the dock to provide accommodation for about 28 vessels. F. W. Nicholson, local manager, Norton Griffiths and Co., is reported to have stated that the company had been asked to prepare designs and estimates, but had since been asked to suspend operations on account of possible alterations.

The Dominion Government steamboat Estevan, which is intended for the light-house and buoy service on the Pacific coast, was launched at Collingwood, Ont., recently. She is built of steel throughout with double bottom running the entire length. Her dimensions are—length 212 ft. over all, breadth 38 ft., depth, moulded, to main deck 17½ ft. She has a deadweight capacity of 375 tons on a mean load draught of 11½ ft., with bunker capacity for 260 tons, and has a speed of 12 knots an hour. She is built with a straight stem and elliptical stern, with seven watertight bulkheads, and is equipped with two sets of inverted vertical direct acting triple expansion surface condensing engines with cylinders 15, 25 and 42 ins. diam., by 26 ins. stroke, supplied with steam by two Scotch boilers, 10½ by 14 ft. diam., at 180 lbs. pressure, and with all the necessary pumps for condensing, fire purposes, etc.

The Minister of Trade and Commerce has addressed a communication to the Vancouver board of trade in connection

with the numerous petitions the department has received from municipalities, etc., for the construction of elevators and other grain shipping facilities at British Columbia ports. The points on which he desires information are, the extent of wheat exportation through Vancouver during the past two or three years, the countries to which it has been shipped, and whether in bag or bulk; the grounds on which a suggested increase is based, and upon what calculation of rates and transport facilities is the opinion based that when the Panama canal is opened, grain from the prairie provinces will seek the western route to Europe in competition with existing routes, and what points in the province would be considered available and necessary for establishing elevator facilities. The board of trade has formed a special committee to gather information.

St. John Harbor Improvements.

The general contractors, Norton Griffiths and Co., Ltd., have awarded the contract for the quarrying of the rock from the large hill recently acquired for quarry purposes, and on which the site of the dry dock will probably be situated, to Doheny and Macdonald, Alexandria, Ont., and C. L. Hervey, Montreal. In addition to the quarrying of the stone, the subcontractors will have to haul it to the site of the breakwater, and form the breakwater itself, the subcontract calling for the construction of a large portion of the breakwater.

The breakwater at the sea end is to be built in cribwork, but the method of dealing with this portion of the work has not been decided on.

The general contractors are carefully considering the material to be dealt with in the bay, in connection with the dredging to be undertaken, with a view to designing the most up to date dredging plant it is possible to build. The exact type of dredges to be used will probably be decided shortly. The dredging contract calls for an average output of 15,000 cu. yds. in each 24 hours.

Vessels Removed from the Register.

The following vessels were removed from the Canadian register during April, for the reasons assigned:—Steam—Annie Blanche, Parrsboro, N.S., 68 tons, sunk; Bridgetown, Chatham, N.B., 10 tons, broken up; Enterprise, Halifax, N.S., 14 tons, broken up; Georgia, Windsor, Ont., 19 tons, out of existence; Olive, Victoria B.C., 4 tons, broken up. Sailing—Alexander, St. Catharines, Ont., 351 tons, lost; Archie, St. Catharines, Ont., 172 tons, lost; Emerald, St. Catharines, Ont., 322 tons, lost; Florence M. Smith, Sydney, N.S., 99 tons, lost; Hibernia, Maitland, N.S., 298 tons, abandoned at sea; Malta, St. Catharines, Ont., 198 tons, lost; Mary Ellen, Port Hope, Ont., 51 tons out of

existence; Pride of America, St. Catharines, Ont., 285 tons, lost; Sylvester Neelon, St. Catharines, Ont., 291 tons, lost.

The Marine Directory of the Great Lakes for the current year, published at \$3 by Mitchell & Co., Cleveland, Ohio, has been issued. It contains information regarding the construction of United States and Canadian vessels, names and addresses of owners, lists of steamship owners, information concerning grain elevators, coal docks, and a great deal of miscellaneous matter.

A conciliation board has been appointed to enquire into the request of the employes of the Canadian Northern Coal and Ore Dock Co., a subsidiary of the Canadian Northern Ry., Port Arthur, Ont., that the same wages be paid them as to C.P.R. employes for similar work.

At the International Congress of Navigation at Philadelphia, Pa., which opened May 23, Canada was represented by Col. W. P. Anderson, Chief Engineer, Department of Marine; John Kennedy, Consulting Engineer, and F. W. Cowie, Chief Engineer, Montreal Harbor Commission, and J. F. Armstrong, of Fredericton, N.B. On the rising of the congress, a party of about 150 will travel the Canadian waterways from Sault Ste. Marie to Quebec, as guests of the Dominion Government.



New Steamship for Hydrographic Service for the Atlantic Coast.

TENDERS are invited and will be received by the undersigned at the office of the Department of the Naval Service, Ottawa, and the office of the High Commissioner, London, Eng., for the design and construction of the above vessel up to noon, June 30th, 1912. Designs and specifications for the above ship, for the information of prospective tenderers, may be obtained on application to the undersigned, or to the office of the High Commissioner for Canada, London. The vessel is to be delivered free of all charges to H.M.C. Dockyard, Halifax, N.S. The time of delivery to be in accordance with that established in the specifications, viz., within twelve months of the date on which the contract is awarded. The Department does not bind itself to accept the lowest or any tender, the awarding of the contract will depend upon the ability of the tenderer to execute the contract, as well as a consideration of the tendered price. A certified cheque payable to the Deputy Minister of the Naval Service, amounting to Ten Thousand Dollars (\$10,000), must accompany tender, as a guarantee that the contract will be undertaken if awarded.

G. J. DESBARATS,

Deputy Minister of the Naval Service,
Department of the Naval Service,
Ottawa, Ont., May 11th, 1912.

Lake Grain Shipments.

The following statement prepared by F. Symes, Acting Grain Inspector, Fort William, Ont., shows the bushels of grain shipped by vessels from Fort William and Port Arthur, Ont., from the opening of navigation, April 24 to May 7. The figures in each column, after the period, represent lbs.

	1912	Wheat	Oats	Barley	Flax
Canadian Ports					
Goderich.....		201,780.40	157,804.14		
Midland.....		456,354.30	219,000.00		
Montreal.....		1,853,457.00	239,686.28	22,203.16	55,758.36
Port Colborne.....		588,443.20			
Port McNicol.....		62,891.30			
Tiffin.....		702,917.50			
		3,865,844.50	616,491.08	22,303.16	55,758.36
Foreign Ports					
Buffalo.....		5,855,498.20			293,768.10
Erie.....		554,778.40			
Port Huron.....		326,744.10			
		10,602,861.00	616,491.08	22,303.16	349,526.46

Tides on the British Columbia Coast.

In the investigations of the tides by the Naval Service Department's tide and current survey branch the future development of British Columbia is kept in view, and data are already given for the tides at Alberni, Port Hardy, Kiti-mat, Bella Coola and other places which may quite possibly become railway terminals in the near future. Not only is the direct interest of navigation benefited by the information published, but several important industries that are dependent on water transport, notably the lumber industry and the coal trade, which carry on their business by towing to so large an extent. Vancouver Island may be considered as an immense natural breakwater against the heavy seas of the Pacific, enclosing between itself and the mainland a series of sheltered passages and channels, which form a network of natural canals probably unrivalled anywhere in the world. This system of water communication is one of the assets of British Columbia which may not be appreciated at its full value, but this is emphasized by the constant use of these Canadian channels by United States vessels on the route from Puget Sound to Alaska.

The only difficulty in their navigation arises from the strong tidal currents met with in the various narrows, so strong that in some of them navigation is only possible at slack water. This problem the tidal survey undertook to solve and the practical outcome now obtained places navigation of all grades under a debt of obligation for its persevering efforts. The most important of these passes is the notorious Seymour Narrows, and it will interest mariners to learn in what way it is now possible to calculate correct tables for slack water there.

Observations at Seymour Narrows were obtained as long ago as 1897 by the U.S. Coast and Geodetic Survey. As a rule, the turn of a tidal current has some definite relation to the time of high and low water in the locality, but these observations showed at once that in this case no such relation could be found. The Coast Survey also failed to establish a relation with their tidal stations in Puget Sound and Alaska, because the tides there are of a different type. The Dominion Tidal Survey undertook this problem with better hope of success, as it has well-established tidal stations in British Columbia, with which to compare the complicated behavior of the currents in Seymour Narrows.

After a lengthy research the discovery was made that the turn of the current was governed by the rise and fall in the open Pacific, and now that this is known it seems quite natural, because the Pacific tide comes round both ends of Vancouver Island from the north and south. The best tidal station on the open Pacific with which to make comparison was Port Simpson.

Having thus got within sight of a solution further observations were obtained in 1910. Although there is so heavy a traffic through Seymour Narrows, the shores are uninhabited, and observers for these narrows and the Yuculta were supplied with an outfit for camping at commanding points and chronometers for accurate time. In reducing both the old and new observations, tide tables were first calculated for the back year of 1897 at Port Simpson, and the observations of 1910 were compared with the simultaneous tides there. In making the comparisons between the time of slack water and the tide, it was found necessary to distinguish the half tides from the others, but even then the results were not altogether satisfactory till a fresh discovery was made. The difference in time with the tide at Port Simpson was reasonably constant

for high water slack, but for low water the difference had to be taken with the next following tide there. This curious result is in accord with the difference in the time of the tide to the north and south of the narrows, as the difference is practically the tidal period of six hours. The data thus obtained, with a special allowance for the half tides, at last afford a satisfactory basis for the calculation of slack water, as now published in the tide tables.

This achievement has made it possible to give data for all the passes and rapids which lie along an irregular line from Seymour Narrows eastward to the mainland at the mouth of Bute Inlet. The extreme pass on that side is the Yuculta, and it was therefore chosen as the companion to Seymour Narrows in the simultaneous observations of 1910. With the two extremes, next Vancouver Island and next the mainland, it became possible to deduce data for all the intermediate passes. For the time of slack water in these, in relation to the principal narrows, is known to many of the captains of the tugs and coasting steamers who use them, and this information has now been brought into practical shape, and is published this year for the first time in the tide tables.

A knowledge of the time of slack water in such narrows as Okisollo, Wellbore, Green Point rapids and others, is of substantial value to the lumber industry especially, as the most powerful tugs with a tow of logs can only attempt such places at slack water. These passes are in frequent use also by coasting steamers for a rapidly increasing traffic.

These additions in the new tide tables make them very complete, as slack water tables are already published for Active Pass, Porlier Pass and First Narrows, on the routes from Victoria and Nanaimo to the mainland, and the tides at the most important harbors in the province are fully given. It is to be hoped that all mariners will take advantage of these, as they are quite superior in accuracy to anything heretofore available.

Canadian Notices to Mariners.

The Department of Marine has issued the following:—

23. Apr. 24. 62. Quebec, Gulf of St. Lawrence, Gaspé Bay, Gaspé basin, buoys discontinued. 63. Quebec, River St. Lawrence, Cap Brule, main light to be moved to the front range lighthouse.
24. Apr. 25. 64. Ontario, Lake Erie, Port Colborne, light on eastern breakwater temporarily discontinued.
25. Apr. 25. 65. New Brunswick, Bay of Fundy, Machias, Seal island, westerly light permanently discontinued. 66. New Brunswick, St. Croix river, buoy established east of Docket island. 67. New Brunswick, south coast, Bay of Fundy, off Negro head, submarine bells not in operation. 68. Nova Scotia, south coast, Green bay, Green ledge, bell buoy established. 69. Nova Scotia, Cape Breton island, Lennox passage, buoy established east of Dog island. 70. Nova Scotia, Cape Breton island, east coast, Glace Bay, Glace cove, change in position of storm signal mast.
26. Apr. 27. 72. Prince Edward Island, Northumberland strait, West point wharf, range lights established. 73. Quebec, Gulf of St. Lawrence, Little Natashkwan harbor, uncharted reef, buoy established, wharf built.
27. Apr. 30. 74. British Columbia, Strait of Georgia, Burrard inlet, Atkinson point, new lighthouse and fog alarm under construction. 75. British Columbia, Burrard inlet, First narrows, echo boards established. 76. British Columbia, Dixon entrance, non-existence of reported shoal.
28. May 7. 77. British Columbia, Strait of Georgia, sandheads of Fraser river, advertised change in positions of

gas and whistling buoy and lightship, not made.

29. May 8. 78. Ontario, River St. Lawrence, Lake St. Francis, Lancaster light station, hand fog horn discontinued. 79. Ontario, St. Clair river, Sarnia, barge established to mark wreck. 80. Ontario, Lake Huron, north channel, Manitoulin island, Little Current, description of dredged channel. 81. United States of America, Detroit river, changes in Grosse Isle south channel range lights. 82. United States of America, Detroit river, change in Ecorse back range light.
30. May 10. 83. Nova Scotia, Cape Breton island, east coast, Scatarie island, Mainadieu, intended change in character of light. 84. Quebec, entrance to the St. Lawrence, survey steamer, engaged in the investigation of currents, to be avoided. 85. Quebec, Saguenay river, change in position of buoy above Riviere Lachance.

31. May 11. 86. British Columbia, William Head, Alberni, and Prince Rupert, quarantine regulations.

32. May 14. 87. Gulf of St. Lawrence and Atlantic coast, corrections to telegraph chart in reference to ocean cables. 88. Nova Scotia, south coast, Cross island, intended change in character of light. 89. Quebec, River St. Lawrence, ship channel between Quebec and Montreal, Lake St. Peter, gas buoy at no. 3 curve, change in color of light.

33. May 15. 90. Ontario, Lake Ontario, South Bay point, light again in operation. 91. Ontario, Lake Huron, Port Elgin, change in position of front light of south range, daymarks established.

34. May 18. 92. Ontario, St. Clair River, Sarnia, wreck of steamer Joliet being removed, caution.

35. May 18. 93. Nova Scotia, south coast, entrance to Halifax harbor, Sambro outer bank, lightship removed, gas and whistling buoy replaced in position.

The Heathcote-Malmstad Collision.

Following is a summary of the judgment delivered Apr. 26 by L. A. Demers Wreck Commissioner, and concurred in by Capt. R. MacDonald, North Sydney, N.S., and Capt. N. H. Townsend, Port Warden, of Sydney N.S., re the collision between the s.s. Heathcote, owned by the Dominion Coal Co., and the s.s. Malmstad, under charter to the same company, in Louisburg harbor, N.S., Mar. 20.

The court finds that the Malmstad occupied what is considered the proper anchorage, and that its position did not obstruct the range lights which serve as a guide for the passage between White rock and Battery shoal. A proper watch was kept and the regulation lights were burning, and when the collision seemed imminent, chain was promptly paid out, this being the only practical alternative for the anchored vessel. Regarding the Heathcote, it is evident that with an extremely limited draught forward, she was carried rapidly to leeward by the prevailing winds, and insufficient allowance was made therefor, and the court holds that the master of the Heathcote acted imprudently and showed lack of judgment in navigating his vessel as he did under the conditions existing. All examinations of the Heathcote's logs disclose their incompleteness in recording the details of the circumstances preceding and attending the collision. In view of the facts, the court exonerates the master and officers of the Malmstad from responsibility for the collision and finds that Capt. Alex. Muir of the s.s. Heathcote committed a grave error of judgment in attempting to cross the bow of the Malmstad in the manner he did, for which he is severely censured and cautioned to exercise more prudence and discretion in future.

New Steamboat for C.P.R. Kootenay Lakes Service.

The C.P.R. recently awarded a contract for the construction of a vessel for its Kootenay Lakes service, to the Western Dry Dock and Shipbuilding Co., Port Arthur, Ont. The chief dimensions will be as follows: Length between perpendiculars, 200 ft.; beam moulded, 40 ft.; beam over guards, 43 ft.; depth, 8 ft. The hull will be of steel, with wrought iron stem, square stern with two longitudinal water tight bulkheads, one longitudinal truss and seven transverse bulkheads. Three steel interchangeable rudders will be fitted in place, and one spare one will be supplied. The deck will be of $\frac{1}{4}$ -in. plate throughout, all flush rivetted, $\frac{1}{4}$ -in. straps, all longitudinal seams single rivetted and transverse seams double rivetted. There will be openings from the deck to each compartment, with light plate door flush with deck. The stem will be of wrought iron $1\frac{3}{4}$ by 7 ins., to extend 18 ins. above the main deck. The transverse bulkheads will be $\frac{1}{4}$ -in. thick with single 3 by 3 by $\frac{3}{8}$ ins. angle frames, stiffeners flanged $2\frac{1}{2}$ ins., spaced 3 ft. vertically, and one $3\frac{1}{2}$ by $2\frac{1}{4}$ by $\frac{1}{4}$ ins. horizontal plating. The longitudinal bulkheads will be of $\frac{1}{4}$ -in. plates attached to shell plate and deck by $2\frac{1}{2}$ by $2\frac{1}{2}$ by $\frac{1}{4}$ ins. angles, angle stiffeners 3 by 3 by $\frac{3}{8}$ ins., spaced $3\frac{1}{2}$ ft. apart under hog posts. The engines will be of the tandem compound type with cylinders $16\frac{3}{4}$ and $35\frac{3}{8}$ ins. diam., by 96 ins. stroke. Centre to centre of engines to be 25 ft. $8\frac{1}{4}$ ins., and they will be of ample strength for a working steam pressure of 200 lbs.

Stranding of the s. s. Earl Grey.

Following is a summary of the judgment delivered by L. A. Demers, Wreck Commissioner, concurred in by W. R. Lugar, Examiner of Masters and Mates, Halifax, N.S., and Capt. W. McKenzie, Pictou, N.S., Apr. 23, re the stranding of the Dominion Government s.s. Earl Grey at the River John in the Northumberland Straits, Apr. 17.

The court finds that Capt. Angus Brown was unable accurately to determine the speed of his ship, as the day of the stranding was the first occasion that she had been navigated in clear water, following the loss of her propeller blades, and that realizing the unreliability of his calculation with regard to the speed he should have adopted all available methods of establishing his position. His action in proceeding at full speed in a dense fog, without sounding, despite the fact that the vessel was equipped with a machine capable of determining the depth of water while proceeding at full speed, as well as his failure in insisting that a lookout be kept on the fore-castle head, constitute, in the opinion of the court, grave errors of judgment. Further, it is held, that instead of relying almost entirely on assistance from other sources, he should have utilized the wire remaining unused in his hold, to lay a bower anchor, and in the event of the wire not being of sufficient strength to dislodge the vessel, it would have acted as a deterrent against the vessel being driven ashore by strong gales. The reason given by the captain for the non-usage of the wire, to the effect that the chain attached to it, combined with its own weight, could not be sustained by the boats, cannot be accepted, for the mate in his evidence stated that he had procured spars from which to suspend the anchor between the boats to be utilized in hauling the vessel off. The captain's statement that he issued verbal orders for the speed to be reduced prior to the stranding remains uncorroborated, and the mode of procedure which he claims

to have followed cannot be countenanced. The court therefore suspends the captain's certificate for three months from Apr. 22. The court also holds that the pilot, McGregor Fraser, whose license extends from Pictou to Prim Point, was guilty of negligence through his failure to exercise necessary precautions with regard to the navigation of the vessel, and a copy of the finding will be forwarded to the Pictou Pilot Commissioners in order that they may deal with him. The second officer, F. P. Gallant, is considered to be insufficiently experienced in steamship navigation to occupy such a responsible position.

Lake Vessel Insurance Rates.

Largely owing to the Canadian Lake Protective Association's very successful work last season insurance rates on the Great Lakes and contiguous waters have been materially reduced this year directly in the premium charged and indirectly by the lowering of the valuation at which ships will be insured.

As a result of conferences between the Association's representatives and the underwriters the values have been reduced from £11 or \$53.50 a ton to £10 1s 2d or \$51 a ton. Last year the Great Lakes Protective Association, a United States organization, had a rate of $5\frac{1}{2}\%$ with U.S. insurance companies, while the Canadian owners were charged $5\frac{3}{4}\%$ in the U.S. against $5\frac{1}{2}\%$ by British companies. This year a list of preferred fleets will get a $5\frac{1}{4}\%$ rate pro rata. On all vessels attaching on and after Aug. 1 $\frac{1}{4}\%$ will be added, and to those attaching on and after Oct. 1 $\frac{1}{2}\%$ will be added.

An agreed policy will be used as in previous years. The Association and the London underwriters will consult and agree as to form of protection and indemnity clause, in view of recent workmen's compensation acts.

Declaration as to Vessel Ownership.

The British Colonial Secretary has forwarded to the Governor General a copy of a letter issued by the Board of Trade on the subject of the alteration of the form of declaration of ownership required by sec. 9 of the Merchant Shipping Act, 1894, to be made on application for registry of a vessel owned by a body corporate, and requesting to know whether it would not be desirable to bring the new forms into use in Canada. The letter referred to reads:—

"It will be seen that the principal alteration consists in the insertion of a paragraph to the effect that the company on whose behalf the declaration is made 'has its principal place of business at — where all the important business of the company is, in fact, controlled and managed at meetings of directors of the managers of the company.' Recent experience has shown that foreign shipowners who are desirous of obtaining the advantage of the British flag for their vessels without relinquishing their control of them, sometimes attempt to effect their object by registering a company under the British Companies Act and having merely a registered office in the United Kingdom without in fact transacting their business there; and the object of the alteration in the form is to check as far as possible the registration of vessels owned by such companies."

The Inland Lines steamboat Empress of Midland, while running light from Midland to Cleveland, May 5, ran aground at Cabots Head during a fog and was released, May 7, and taken to Collingwood, where she was docked for repairs to about 20 plates.

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 to distinctly 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.

The Preston Car and Coach Co., Ltd., Preston, Ont., has been granted supplementary letters patent, increasing its capital stock from \$200,000 to \$500,000.

McKeen Motor Car Co., Omaha, Nebraska, has opened a central sales district office at 1451 Marquette Building, Chicago, Ill., with E. E. Wright as manager.

The Brown Hoisting Machinery Co.'s catalogue J 1912, covers illustrated descriptions of various kinds of hoisting and conveying machinery, including the Brown-hoist pillar crane, hand wrecking crane, mast jib crane, bracket jib crane, pillar jib crane, stationary bridge crane and transfer table. The illustrations include a two ton Brownhoist hand pillar crane, with 15 ft. radius, erected on a car for street railway work, for the Ottawa Electric Ry., a description of which is given in the Electric Railway Department of this issue.

The Robb-Brady Scotch boiler, which is manufactured at Amherst, N.S., and South Farmingham, Mass., was tested recently at the sewerage pumping station, Farmingham, Mass. This boiler is a modified form of the standard Scotch marine boiler, it being claimed that the changes from the standard form greatly increase the circulation. The heating surfaces are arranged as in the standard form and there are the same internal furnace flues, but there are two smaller shells, one above the other, in place of the large one, and an annular circulating passage is formed at the front end by the use of a plate beneath the front neck. This plate guides the cooler feed water around the shell, discharging it beneath the furnaces at the front. The water is heated while passing around the furnaces and among the tubes, and enters the steam drum by the rear neck. In the test referred to the boiler was equipped with thermometer oil wells so that the temperature could be noted at four points, viz., at the top of the shell near the front end, at the top of the shell at the rear just over the combustion chamber, at the front and rear close to the bottom. We are advised that with water in the boiler at about 80° the fires were started and readings of every thermometer taken every five minutes. The temperature of the water at the top of the shell increased steadily until the boiling point was reached. At the bottom the temperatures increased very slowly up to the time the upper thermometer indicated the boiling point. Then the lower thermometer showed sudden rise, jumping to within a few degrees of those at the top. From this time on all four kept within a few degrees until 100 lbs. was reached, at which time practically no difference could be noted at the four points, showing that the circulation was positive and rapid.

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

Canadian Northern Ry.	Acre.
Canadian Pacific Ry.	6.39
Grand Trunk Pacific Ry.	1,352,938
	20.43
Total	1,379,758